Civic Ecology

Stories about love of life, love of place

Written by students of the

Reclaiming Broken Places: Introduction to Civic Ecology

CornellX 2015 MOOC

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You can learn more about civic ecology through the following sources:

Civic Ecology Lab website (www.civicecology.org)

Civic Ecology: Adaptation and Transformation from the Ground Up; by M. E. Krasny and K. G. Tidball. 2015. MIT Press. http://mitpress.mit.edu/books/civic-ecology eBook: iTunes https://itunes.apple.com/us/book/civic-ecology/id963512364?mt=11

Reclaiming Broken Places: Introduction to Civic Ecology. edX/CornellX MOOC. https://www.edx.org/course/reclaiming-broken-places-introduction-cornellx-envsci1500x-0#.VEJ-eBaFlom

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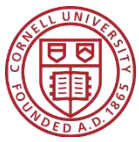

Cornell University

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Foreword: the joys of civic ecology

It is always a joy to sit in a garden, happily basking in the warmth of early morning sun, listening to the birds, and seeing flowers bloom in red, white, yellow, and blue colors.

In the spring of 2015, several thousand participants from different countries all experienced that joy, as we shared not just one, but a variety of green spaces and stewardship practices across continents, from North and South America to Europe, Asia, Australia and Africa. This happened virtually through an edX MOOC and a combination of internet social media that the good scholars of Cornell University integrated into the course.

We discussed everything from bees, trees, soil, and drought in California to extreme weather events from around the world. We shared ideas about food and the harvest of fruits and vegetables from a once-vacant lot transformed into a beautiful green space. We exchanged stewardship projects, talked of environmental issues and concerns, dabbled in policy making, even zeroed in on government incentives in transforming ugly vacant lots to lush gardens for everyone in the community to enjoy for a long time. We all made friends and found co-volunteers and families online. We all happily talked *sans* borders of the issues we face and what we can do to help the environment in our own little ways.

All these came to fruition through Cornell University faculty Marianne Krasny and Keith Tidball and PhD student Samar Deen and their unique online course: *Reclaiming Broken Places: Introduction to Civic Ecology (CornellX - ENVSCI1500x)*, which they shared in the free edX online educational platform. I have always wished to attend a world-renowned university like Cornell and this course made it possible.

I whizzed through the online course like a pro, enjoying every moment of its no-stress, no-paper chase, and no-classroom schedule. I attended the course because I want to prepare for my dissertation on global warming, one challenge of which is the difficulty in communicating global warming to people. This is evidenced by past and current surveys, which have found that a "major challenge facing scientists and organizations that view global warming as a major threat to humanity is that average citizens express so little concern about the issue" (Frank Newport, commenting on Gallup Poll, Release Date: April 4, 2014). This mindset is reflective too of the concerns of other countries vis-à-vis global warming.

Other climate scholars have lamented over their inability to connect with people so much so that they are taking creative ways of telling us about the environment. Physicist Robert Davies of Utah State University finds music could be the answer. He combines musical performances and evocative images of nature with his lectures on the environment.

Nobel Prize laureate Daniel Kahneman is pessimistic about us acting on the "future" threat of global warming simply because our brains are not wired to do so. Yet the accounts you are about

to read explore the connection, emotion, and the social world we live in and tell stories of people coming together and helping their communities care for the environment.

There is simply just too much negativity whenever people discuss the state of the environment. Dr. Krasny even noted this of her Cornell students. "When students learn about the environment, it's almost always bad news. We teach our students how humans have contaminated our waterways, carved up rainforests, greedily extracted mineral resources, and introduced foreign insects that kill off native trees. Sadly, all of this and more is true."

So often, it is easy to just sit with all these negativities and do nothing. However, Professor Krasny took on the negativities:

> *Scientists at Cornell University's Civic Ecology Lab are offering a counter perspective to viewing humans solely as destroyers of the environment. We are examining how humans in cities and elsewhere are caring for — restoring and stewarding — local nature. We study how people come together to create community gardens, reintroduce oysters to the New York City estuary, and clean up local parks and cemeteries.*

These are the "stories" you are about to read — stories that showcase the positivity and benefits of caring for our environment and the community-building aspects of tending to green spaces, and perhaps even inciting other behavioral change.

One book worth mentioning is Dr. Niki Harré's *Psychology for a Better World: Strategies to Inspire Sustainability* (2011), which shows that presenting sustainability as a "positive, fun, enriching experience" can immediately create well-being and willingness to engage. Contrary to fearful messages — which often lead to inaction or intense defense of previously held beliefs about climate change — reinforcement of positive emotions will help us successfully communicate sustainability.

The same conclusion was made by Professor Krasny during our *Civic Ecology* course. The beautiful transformations of broken places in communities around the world happen with and through others in search of solutions to the environmental degradation they see in their communities.

This is what made me cry "*Eureka*!" for my dissertation — seeing civic ecology's potential to communicate global warming in a fun and engaging way and possibly influence the way we behave towards our environment. This impetus made me volunteer to suggest that we publish the course's stories, knowing their potential for bringing a message of hope to the rest of the world. I am glad Professor Krasny made me a part of this project. The compiled stories will bring you the authors' personal metamorphoses and the benefits reaped by their own and their communities' commitment to environmental stewardship.

I am positive that every individual who would like to make an impact in this world will resonate with these stories that explore how people's engagement in environmental projects and urban ecosystems benefit cities and communities. The stories come straight from the volunteer stewards themselves, doing positive things for the environment. As you flip through the pages, you will discover their motivations, triumphs, successes, failures, disappointments, benefits, and the general well-being they experienced. From this, you will learn what you can do and what the governments and institutions of the world can do (aside from the usual pat on the back).

I hope you will be inspired by these stories. I also hope that the young ones of the present generation may study civic ecology and personally engage in civic ecology practices. This is because the practices illustrated in the course affect not only our own lives, but the realization that all of us are connected and will always be responsible not just for the present generation, but the future generations to come. The benefit of green spaces to the health of communities is likewise a good source of material for future research in the field of civic ecology. The social and cultural factors leading to care and concerns for the environment will hopefully attract more young scholars to connect the health of communities to the local environments in their studies.

Finally, these stories that highlight what volunteer stewards do for the environment give people positive role models and demonstrate the benefits of outdoor time for health and well-being. We hope to publish more stories from across continents in the future in the hope of sharing the joys and remembrance of sitting in a garden.

Personally, my green spaces journey has just started—first with Kevin Bayuk and David Cody of the 18th and Rhode Island Community Garden in the heart of San Francisco, then with Cornell MOOC instructors Marianne Krasny, Keith Tidball and Samar Deen, and to this day I am still learning a lot from others. Nothing beats a journey with your loved ones, especially with my wife Michelle, as we enjoy reading initial pages of our class stories one Sunday morning.

Other authors in this book will likewise be delighted to see their stories come to life. Thanks to our editors Marianne Krasny and Kimberly Snyder for their indefatigable determination to edit, design, arrange, and put the final aesthetic touches on our stories. We hope to continue this sharing of stories of people from around the world who are making a difference transforming the broken places they love and places that made them love life and the environment.

Perhaps these and future stories can help move our respective governments to take actions for the betterment of our environment. As a whole there are so many things that can be done especially in the area of environment care. But these bigger issues can only be addressed in partnership with a network of stewards, with and through our partnerships with those in governments and formal institutions, wherever your "story" may be.

Perhaps your story will be next.

Danny Rueda Cruz

Preface

In spring 2015, Keith Tidball, Samar Deen, and I taught our first Massive Open Online Course — or MOOC. Our *Civic Ecology* MOOC was about how and why people in cities and after disasters reclaim and steward "broken places" — like trashed out vacant lots, polluted rivers, or landslides caused by earthquakes. Little did I know that students in the MOOC, from Kyiv Ukraine to Nishinomiya Japan, from Damascus Syria to Zhangzhou China, and from New Delhi to Holešov in the Czech Republic and beyond, would write so many moving stories. These are stories about how our students, alongside their friends, families and neighbors, are creating green oases on apartment balconies, in residences for juveniles with mental illness, on landslides caused by earthquakes, or simply along a forgotten stream in their neighborhood.

One student in our MOOC stood out. He was Danny Rueda Cruz, who divides his time between the Philippines and San Francisco. Danny was active on our course Facebook group and wrote extensively about his experience with the 18th and Rhode Island Street Permaculture Garden. One day during the course, he asked if we could produce a "coffee table" book of the MOOC students' stories of reclaiming broken places.

This eBook is the result of Danny's vision. I applaud Danny and my co-editor and book designer Kim Snyder — without their vision and determination over many months this book would not have come to fruition. I also thank Keith Tidball, who contributed many of the ideas covered in the MOOC lectures and textbook (*Civic Ecology: Adaptation and Transformation from the Ground Up)*, and who conducts his own stewardship practice, which his daughter and MOOC student Victoria Tidball documented for this ebook. Finally, I thank the many students who contributed to the discussions during the MOOC, and especially those who wrote the stories in the pages that follow. These are the stewards who, because of their love of places and love of life, work tirelessly to reclaim broken places and broken communities, transforming them into something of beauty. They are the inspiration for how people can care for each other while also caring for our Earth.

Marianne E Krasny, Ithaca, New York

2 June 2016

Ten Principles of Civic Ecology

Emergence: Why do civic ecology practices happen?

1. Civic ecology practices emerge in broken places.

2. Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places.

Bricolage: Piecing the practice together

3. In re-creating place, civic ecology practices re-create community.

4. Civic ecology stewards draw on social-ecological memories to re-create places and communities.

5. Civic ecology practices produce ecosystem services.

6. Civic ecology practices foster well-being.

7. Civic ecology practices provide opportunities for learning.

Zooming Out: A systems perspective

8. Civic ecology practices start out as local innovations and expand to encompass multiple partnerships.

9. Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems.

Policy Makers: Understanding and enabling

10. Policy makers have a role to play in growing civic ecology practices.

Government associations, students, and local farmers cooperate to restore mangrove mudflats in Zhangzhou, China.

Cultivating Mangroves

Zhangzhou, China

Jane Abigail © 2015

Former mangrove forest

On the 23rd of May 2015, twenty-five volunteers from my university and I had a tiring, but meaningful trip to Fugong, Zhangzhou City, in the Fujian Province of China. The goal for this trip was to plant mangrove seedlings onto coastal mudflats to reclaim the broken place created by human activities. The project was organized by Greenfield — an association in many universities in China — which aims at improving and protecting our environment. I am a member of Greenfield. Fortunately, we get support from the Fugong Forestry Bureau. They provide us with mangrove seedlings and reimburse our travel expenses.

It was a rainy day, but the weather didn't prevent us because we were eager to cultivate these new lives. We made an appointment at 7:40am in a bus station so my friend and I had to set off at 6 am from my school (it was a long bus journey). After all volunteers gathered, the leader took us to a ferry. I was excited; both about riding the ferry and about meeting the mangroves so far away. When the 30-minute sea travel ended, it took us another 30 minutes to get to our destination: Fugong.

We arrived at a local farmhouse, where the host was willing to guard our personal items. Shortly thereafter, we changed our shoes and put on raincoats. The leader then gave away the seedlings. At last, every one of us had a packet of small mangroves.

Mangrove seedlings

Mangroves seedlings in bags

We set off again, walking to the mudflat. Despite the bad weather and road conditions, we were happy to listen to the stories about the local mangroves. "They are all the *Kandelia candel* species," our leader said, pointing at a lush forest by the bay. *Kandelia candel* is a common but declining species of mangrove that grows on tropical coastlines in the northwest Pacific and Indian Oceans. "And our working area used to be like this, but it was turned into a fishpond by local people for economic purposes in the 1990's."

Passing by cultivated mangroves

"However, it was abandoned after a few years because the mudflats were not proper places for fish growing on a large scale. What's more, the mangroves removed for the establishment of the fishpond never came back again. Together with climate change and a rise in sea drift waste, there were fewer mangroves as time went by.

"Fortunately, the Fugong Forestry Bureau discovered the bad condition of the mangroves and planned to reclaim the abandoned fishpond into mangrove forests again. And so Greenfield made an agreement with the Forestry Bureau to volunteer in the project as long as materials were supplied."

After arriving at the abandoned area, the leader showed us the mangrove hypocotyl and taught us how to plant it. From what he said, we knew it would be hard for the hypocotyl to survive if we planted them directly in the mud by the sea, because the crashing sea water can wash the mud away, leaving no place for seedlings to stand. Instead, we learned that we should cultivate seedlings in nutritional bags first. The nutritional bag is made of bio-degradable material and has four tiny holes at the bottom. The holes enable air to enter into the mud in the bag.

We were assigned tasks by gender. The boys went into the mud to fill buckets with mud for the bags. The girls worked in pairs: one filled the nutritional bags with the boys' mud, the other planted the seedlings in the bags and put bags alongside the edge of the coastal mudflat. As soon as we began to work, we were so motivated that we ignored the rain, dirty hands and feet, — even faces — sore backs, and injures from fragments

inside the mud. I felt that I was cultivating life, and life was more important than anything else.

Mudflat with mangrove tree

Planting mangroves

Two and a half hours later, we finished our work and went back to the farmhouse, where we were allowed to wash up. Then we volunteers had a break together for lunch.

During lunch time, the leader told us that to promote the survival rate of mangrove seedlings, local people help check the living conditions regularly and send a report of their observations to Greenfield. For example, if locals find the nutritional bags destroyed by wind or sea water, the association will send members and volunteers to solve the problem.

Although my volunteer trip to the mangroves in Zhangzhou ended in the late afternoon, I know the volunteer activity will continue and the mangroves' lives will continue with our care and love. Maybe one day I will come back with Greenfield to remove the seedlings from their bags and plant them in the mudflats near the sea. I am looking forward to it!

Mangroves seedlings in nutritional bags.

Civic ecology practices emerge in broken places

The mangroves mudflat was a broken place that was abandoned after the failure of a fishpond. Some people keep digging up mud nearby. From either aspect, it's a slow burn zone. The area where the mangroves are destroyed is called a 'black map' area — a

place where no mangroves grow — as opposed to a 'red map' area — where mangroves grow well.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Volunteers and local people come to help recreate the mangrove forests because of their love for life and love for the place. We like mangroves and we want to see them connected to form a large area — not fragmented. We want to be able to work together, despite all the bad conditions. As for the local people, they have good memories about the mudflats, which used to be covered by large numbers of mangroves. So biophilia and topophilia are the motivation for recreating this place.

Civic ecology practices provide opportunities for learning

We learned a lot from this civic ecology practice. We can recognize mangroves now, and distinguish several species. We know the right way to cultivate hypocotyls; they need to spend the first months of life in nutritional bags, with about half of their length covered in mud. We learned not only skills, but also the beauty of nature and the importance of working together.

Civic ecology practices produce ecosystem services

Recreating mangrove forests can produce multiple ecosystem services. According to a brochure I read about mangroves, this plant has great value to our environment. First, mangroves pile up mud with their roots, providing living room for sea creatures such as fiddler crabs and shoal fish. This improves the biodiversity of the mudflat, which contributes to the stability of the local ecosystem. Second, mangrove roots can absorb heavy metal, acting as a cleaner of our environment. Third, their branches provide living space for many water birds, such as egrets. Mangroves produce these magnificent ecosystem services.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

By working together, we created a community among the volunteers, villagers and staff of Fugong Forestry Bureau. In my opinion, the Fugong Forestry Bureau is the 'tree,' which provides materials and methods, and we volunteers and villagers are the 'bees' who take action using these resources. To add more detail, I'd describe the villagers as 'observing bees,' because they check on the condition of the mangrove hypocotyls after we leave. As for the volunteers, we are the 'working bees,' as we labor in the mudflat.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

This small activity had an influence on other mangroves areas by inspiring schools near other coasts to organize this sort of volunteer work. Learning from our work, they can adapt and improve on it. This moving from small to larger cycles is called a 'revolt' in a panarchy. On the other hand, we volunteers gained skills from the Fugong Forestry guide who led our group. This process of information traveling from higher to lower levels in the panarchy is called 'remember.'

Reflection

After the experience, I realized that mangroves are in danger around the world. They are disappearing at a worrying speed, and if we don't take action they, as well as many other species living by them, will be in great danger. We hope that by doing these civic ecology practices, we can spread awareness!

A garden helps juvenile delinquents in Qudsaya Damascus, Syria overcome their troubles and build brighter futures.

Project 'The Spirit of the Earth'

Qudsaya Damascus, Syria

Mona Alsabouni , Albatool Mardini , and Ranim AL Takrity © 2015

Introduction

The environment has been highlighted recently, so the idea of our project was to invest the energy of people marginalized in society into agriculture and environmental learning. This included inmates at the Institute Khalid bin Waleed for juveniles, where young prisoners ages 16-18 are socially rehabilitated. We also hoped to plant the principles of active citizenship in these teenagers. The overall objective of the project is to help inmates to become citizen actors linked to society, and to learn responsibility through professional agricultural training. This project took place under the supervision of the Syrian Association for Social Development[1], and the auspices of the British Council.

The most important objectives of this project are:
1) Training inmates in agricultural skills that bind them to the ground and make them aware of the importance of being productive.
2) Educate inmates on concepts of active citizenship and how sense of responsibility is integrated with a feeling of belonging to a community.
3) Highlight the importance of the environment and the earth, as well as the importance of directing potential marginalized community members to invest and take care of it.

The project seeks to draw the attention of the community to the importance of the environment and the need we have for environmental education and interest in the land. The project is also trying to change the negative point of view society has of the juvenile inmates at the Institute and convert it — as much as possible — into a positive view of their abilities and their potential. Civic ecology is seen as a productive livelihood, especially for marginalized peoples. We want to help our communities to invest more in the correct places and this project highlights the importance of the capacity of marginalized groups and of directing their energies to invest in practices that better the whole community. The project tries to send a message to the community to not just look at the health of the community for the dominant members of society, but also for those people who are marginalized. This is what supports peaceful coexistence and acceptance of the other despite differences, and leads to people cooperating to build a society based on trust and support.

Civic ecology practices emerge in broken places

This Institute was a very bad place. Most people could not tolerate even one day living in it. This is a deserted, broken place which needs reconstruction and rehabilitation if the juveniles who come out of it will be healthy and able to become better people. The Institute was in a state of chaos and indifference; the people who come out of it still psychologically broken.

This project was started to improve the place. A beautiful garden was planted around the Institute and in the internal area and corridors to try to change the features of the place. Color and greenery can help addresses psychological disorders in young people, especially green spaces of their own making.

Juveniles at the Institute have tried their best to cope with their lives inside, but with the dire situation of the facility, juveniles were not able to thrive in it. It became apparent that when a teenager comes to this place, the staff must make them able to adapt to the place and become capable of living there for a long period of time. So the project came about to build a healthy place for the trainings of good citizens and the rehabilitation of these juveniles by linking them to a better life for themselves and their community.

In re-creating place, civic ecology practices re-create community

In this practice, the juveniles appeared to feel a stronger sense of community than before and their love towards others was reflected in their behavior. Social capital

also played a role. All the friends and neighbors contributed to this idea. They brought seeds and the tools for farming, even food and drinks. The project was supported from both inside and outside the Institute.

Our practice is about collective efficacy. The teenagers and the supervisors worked together to achieve what they aimed for and they were ready to continue this job even after its end. Government agencies recognized the success and importance of the effort; the ministry of Social Affairs and Labor approved the appointment of a permanent agricultural coach to support the continuity of the project. The teenagers involved decided when they got out of the Institute, they would try to forget what they had learned early in their lives and continue their ecological work.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

When the supervisors of the work planed the project, they decided to plant vegetation that the teenagers had told them about before. For example, they planted white jasmine, as well as lemon trees because the smell and look reminded the teenagers about their homes and childhood, and encouraged them to think about being back home. We also made new social memories – that is, new friends and new experiences to stay in their minds forever.

Civic ecology practices foster well-being

This project had such an amazing impact on juveniles that many of them have decided to help restore their local lands when they get out! Even after the project, the whole garden was managed by these young men, who felt like a part of the garden system. The garden actually created a positive atmosphere at the Institute.

Civic ecology practices provides opportunities for learning

The teenagers learned how to collaborate with each other and cultivate community by doing a lot of things like playing games, drawing, and dancing. They learned self-reliance and how to translate ideas into real life. When they were interacting with other people, we noticed that the teenagers were less aggressive, more polite, and had more respect for each other and for their environment. They wanted to re-build their community and they continued their work because they saw that the gardening practice was helping them to do this. They knew they had the knowledge to plant or restructure any garden and take care of it.

This project also highlights the more important topic of the importance of learning a profession. Having professional skills is essential, especially as it is the agricultural profession that meets the needs of the local community. Landscaping, planting and care of flowers, and growing medical and economic plants are all jobs in demand right now.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

There has been a plan to conduct this project with all juvenile institutes, but the current situation in Syria has challenged efforts to expand. The project was presented in Egypt at a young active citizens forum as a success story to help spread the knowledge.

Policy makers have a role to play in growing civic ecology practices

This is a very important aspect in working with all kinds of communities, because change begins with small active community groups — or in this case an NGO. Then ideas and innovations are brought to policy makers and push them to remake their policies based on the new flashes of change all over.

Reflection

What we learned from this project was how to work with this age group, which we usually found difficult to work or talk with. The atmosphere of joy and happiness we found among friends while learning how to cultivate plants was uplifting. We gained experience in working together and took advantage of the boundless energy in these young prisoners. We learned how to build a balanced human being environmentally and socially, and how the nature around us affects us whenever we work for it.

We are overwhelmed by the complete satisfaction of what we have done, and we feel great psychological comfort.

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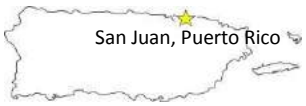

Volunteers are the driving force of a conservation initiative in Puerto Rico.

Para la Naturaleza

San Juan, Puerto Rico

Kelly I. Cari Arvelo © 2015

Finding a civic ecology practice wasn't hard to do in Puerto Rico. But I really want to talk about a conservation organization that I stumbled upon a couple of years ago — *Para la Naturaleza.* Once I found them, I began taking their tours, participating in their citizen science, and volunteering.

To begin, let me shed light on what this organization is about: *Para la Naturaleza* is a unit of the Conservation Trust of Puerto Rico[1].

As they state on their website[2], *Para la Naturaleza*'s main goal is to make sure that 33% of Puerto Rico's natural ecosystems are protected by 2033. To that end, they offer educational tours, workshops, citizen science opportunities, and educational programs.

The love that this organization has for their island is evident in their actions. They are trying their best to conserve, protect, and educate people about its biodiversity.

One of their educational programs includes habitat restoration. Another program is their outreach initiative with public schools in Puerto Rico, where they have established native tree nurseries, including in Escuelas Amigas (Friend Schools), under the name Biocomisos.

Along with all of these activities, they also offer spaces for volunteers in their conservation efforts. Within these volunteering spaces, they offer the possibility of aiding civic ecology practices. For example, the public can volunteer in various locations around the island through planting trees, cleaning up litter, gardening, and maintaining gardens. The two that I have participated in include a day of gardening/garden maintenance, and a beach clean-up day I attended last year.

Practice 1: Gardening and Maintenance

One summer's day I visited one of the many little gardens and tree nurseries belonging to *Para la Naturaleza*, located within the Botanical Gardens of the University of Puerto Rico in San Juan. This small garden is a place which is in need of maintenance. Volunteers are invited to this garden to help prevent environmental decline.

I met up with other volunteers who were ready to dig into weeding, raking, and shoveling. There were about 10 of us, of all ages. There was a grandmother with her granddaughter, a group of four high school girls who were there for community credit, and two couples. As the day started out, our guide/leader introduced himself and talked about the organization.

We then proceeded to introduce ourselves and why we were volunteering that day. The grandmother and her granddaughter had been there various times before; they loved being able to work on their garden and learning about garden work. One couple stated that they wanted to do something productive with their Saturday morning, while the other couple said they wanted to find a state of peace together. I replied that I wanted to try out something new.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Throughout the morning, with sweat falling into my eyes, I observed the other volunteers while bending down and weeding... and noticed that most were smiling while they were working. Biophilia — or the love of live — was just radiating off of them.

In re-creating place, civic ecology practices re-create community

I observed a sense of community was developing as the hours passed maintaining the garden. Lunch was provided by *Para la Naturaleza* and experiences and gardening knowledge was shared among volunteers.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

I guess you could say that social-ecological memories are important in this practice. Memories about stewarding plants are shared among a group of people.

Civic ecology practices produce ecosystem services

Supporting services were provided through helping out with the little composting station; this activity was part of garden maintenance. Provisioning services were provided as a product of the volunteers' work in the garden. Community gardening produces vegetables but the plants were still in dire need of work. Nothing was to be harvested any time soon. However, by knowing that the flowers and vegetables would eventually bloom and ripen after continued stewardship work, the hard work felt satisfying and not for naught. Finally, a cultural service was provided by means of education, recreation, and the beautification of the gardens.

Civic ecology practices foster well-being

During the garden maintenance work, I felt both physically and mentally well. I was getting exercise, Vitamin D from the sun, and my stress levels were going down. Overall, I was feeling happy, productive, and had a sense of pride. I could tell that the spirits of the other stewards were uplifted as well, for we were all smiling while working hard.

Civic ecology practices provide opportunities for learning

We learned about gardening through our guide, and by swapping stories amongst the volunteers. The guide showed us plants we were unfamiliar with and shared information about them. One volunteer — the grandmother who came with her granddaughter — showed us a way to more easily distinguish plants from each other.

Practice 2: Beach Day Cleanup

Stretch of coastline between the Rio Grande de Manatí and Punta Manatí. Part of the Hacienda la Esperanza property belonging to Para la Naturaleza.

Volunteers are invited to help clean up this stretch of coastline and to protect it from environmental decline — or littering.

There were about 15 of us, ranging from 10 years to about 40. We proceeded to introduce ourselves and explain why we were volunteering. Many mentioned wanting to give back to their island and clean up one of Puerto Rico's beautiful beaches. Volunteers lived nearby and had previously visited the beach.

We then went to the coast with our guide/team leader sporting gloves, closed-toed shoes, trash bags, and spirit. We cleaned for about three hours and filled a hefty number of bags.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

During some activities, I overheard participant-stewards say they participate in these activities because they moved to the city and haven't had the opportunity to reconnect with nature in a while.

The beaches offer sanctuary for beach loving inhabitants — which I would dare say most of us are since we are surrounded by beaches! Topophilia — or love of place — was emanating off all of us while we were discussing the wonderful beach sprawled out ahead of us.

In re-creating place, civic ecology practices re-create community

The stewards participating in *Para la Naturaleza* activities show a sense of closeness to the others in the group. I also observed that these stewards share their love and passion of the island with their peers during these outings. This establishes a sense of community among those present, especially since the majority of the participants have expressed that they share a similar interest when it comes to conserving the island's natural beauty.

While participating in *Para la Naturaleza* citizen science and tour activities, I have seen stewards volunteering in their own communities and neighborhoods. Sometimes, during the course of one of these practices, the stewards would mention how they demonstrated collective efficacy. The willingness of people to intervene for the public good is creating an awareness of the types of environmental conservation practices needed for the organization and for the natural areas of Puerto Rico.

Civic ecology practices produce ecosystem services

The cleanup provided both regulating and cultural ecosystem services. Regulating service was provided by reducing the amount of litter on the beach. As part of this clean-up, a cultural service was provided by means of education, recreation, and beautification. While we were picking up the trash, our guide would explain different

aspects of the area. He would talk about how the Río Grande de Manatí emptied out to the beach right next to where we were cleaning up and how surfers would come out to that beach almost every day for recreational use.

Civic ecology practices foster well-being

During the cleanup, I felt both physical and mental well-being. I was active, moving around, receiving my dose of Vitamin D from the sun, feeling loose and limber, and my stress levels were declining. I was also feeling productive and had a sense of purpose, of giving something back to nature.

While picking up litter along that stretch of coastline, we were able to do our part in protecting a natural habitat while learning more about it.

Civic ecology practices provide opportunities for learning

Our guide taught us the importance of the river and coastline. He also pointed out crabs, birds, plant life, and the types of sand that we stumbled across. While pointing out flora and fauna, he would give us fun facts and reasons why the organisms are important for the environment.

At the end of the day, the trash that we had collected was quantified by number of bags and how much they weighed. I don't remember the precise amount, but it was a lot!

We were then able to go home, feeling satisfied with the day's work, leaving behind a cleaner beach.

MAPA INTERACTIVO para la Naturaleza

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

Para la Naturaleza is a unit of the Conservation Trust, a private nonprofit organization in Puerto Rico. Their goal is to conserve as much land and natural areas as possible on the island. The practices involve educating and providing environmental experiences for various communities and Puerto Rican citizens to help conserve as much land as possible. They hope to have 33% of Puerto Rico's land protected as opposed to the current 8%. The practice is affecting larger adaptive cycles or levels in the panarchy through the process called revolt. It is slowly protecting and conserving more pocket areas of land throughout the island by starting off with small community citizen science and civic ecology practices.

Possible opportunities might be moving down the panarchy from higher levels to the community level or the level of *Para la Naturaleza* activities. Relative to *Para la Naturaleza*, the Conservation Trust has more connections and power with government departments, scientific bodies, and other

organizations that provide funding and set policies. The higher levels also provide expertise and support to *Para la Naturaleza*.

Unfortunately, the civic ecology practices provided by *Para la Naturaleza* can be prevented from reaching their full potential due to constraints at higher levels, such as government policies, laws, and codes. Examples include: lack of funding, limited promotion, restrictions, policy changes, big companies buying off or reclaiming land to turn into buildings, resorts, or casinos, and other constraints.

Reflection

I must admit — since I am reflecting upon my participation in these activities — I had absolutely no idea that these could be considered civic ecology practices. However, now that I have participated in the Civic Ecology MOOC, I have been able to find out about civic ecology practices and understand the principles and properties of civic ecology. I can say that I experienced what I can now define as civic ecology stewardship. I better understand the possible reasons why people are driven to participating in these types of practices, and how these practices can help not just an individual, but on a much larger scale.

The civic ecology practices, citizen science, workshops, and educational tours that *Para la Naturaleza* offers are helping to shape Puerto Rican society's perspective on conservation practices on their island. These activities provide each person and each community with transformative experiences that can inspire and motivate concrete actions for nature. These experiences can also support social capital, well-being, and happiness.

If I were still living on the island, I would have loved to continue participating in the garden and community clean-ups. I loved the feeling of giving back and the sense of community and safeness I got from participating in this environment.

I also wanted to add that this organization holds an annual fair in which they give out free trees for you to plant. My husband and I were able to attend their educational fair last year — which had kiosks, workshop stations, and artisan vendors. Here, you can see the tree that my husband took with us to plant in the backyard of his house.

All photos © Kelly I. Cari Arvelo, 2015

References and Additional Resources

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A creek is restored to respect the Aboriginal heritage of the community of Eltham North.

Nillumbik Indigenous Plant Park

Eltham North, Melbourne, Australia

Marc Campobasso © 2015

Introduction

Karingal Yalloc[1] is a small creek, functioning as a flood drain which resurfaces just downstream from Malcolm Blair Reserve in Eltham North, a suburb of Melbourne, Australia. Local custodians, the "Friends of Karingal Yalloc," have started working on a civic ecology project to educate and empower local residents, along the creek's banks in the Nillumbik Indigenous Plant Park.

Karingal Yalloc starts from Malcolm Blair Reserve in Eltham North and runs downstream through Meruka Park and the Nerreman Gateway Dam (Figure 3). It flows into Diamond Creek, which is part of the Yarra catchment and arguably the "blood stream" of metropolitan Melbourne.

The creek has several interesting sites on its banks, including an old fish pond outside a hat factory that has become a mecca for bowl skating in Melbourne. Local legend has it that the world famous Bones Brigade skateboarding crew skated there unannounced during their world tour in the late 1980s[2].

MY GROUP

DIAMOND VALLEY LEADER 16/1/13

Landscape cleaned up

Ian Burns

THE Friends of Karingal Yalloc will be working between Weidlich Ave and Meruka Park in Eltham on the last Sunday of the month between February and November.

We are assisted wonderfully by Nillumbik Council staff and the nursery at Edendale Farm.

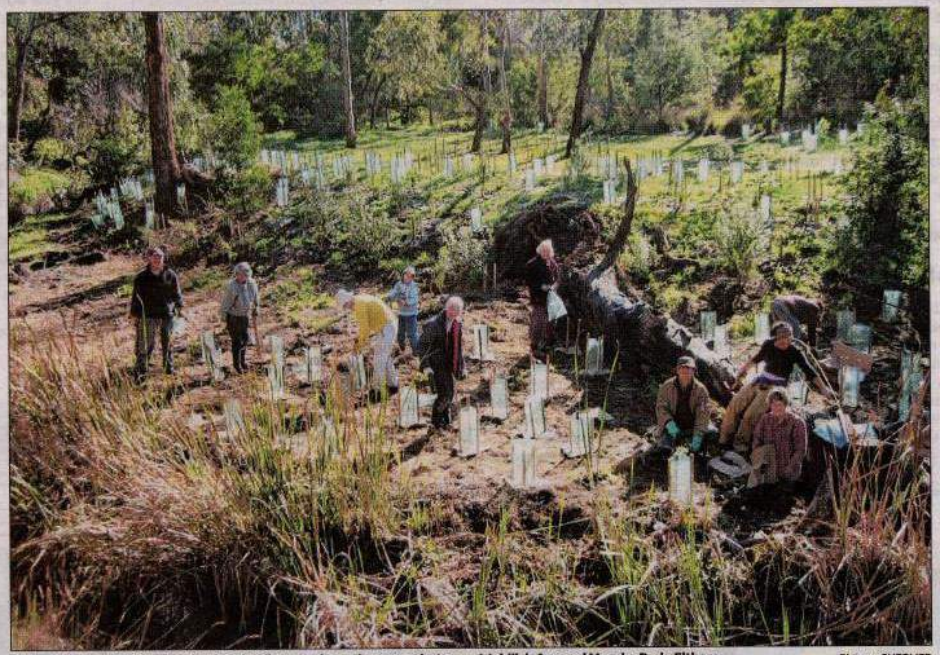
Much of our work involves removing weeds and exotic plants and replacing these with plants propagated at Edendale Farm.

We are about to begin our 11th year, and have so far put in more than 7000 plants.

Everyone enjoys the work — it's extremely rewarding seeing the new Australian plants growing and flowering so well.

We work from 10am to noon. Refreshments are provided.

If anyone is interested in what we're doing, or might like to join in, they can contact me on 9435 8603, or go to elthamwest.friends.melbournewater.com.au



Valley volunteers: Friends of Karingal Yalloc members plant trees between Weidlich Ave and Meruka Park, Eltham. Picture: SUPPLIED

Figure 1 An article by Ian Burns, founder of the original "Friends of Eltham West Drain" and now "ringleader" of "Friends of Karingal Yalloc" (Courtesy of Leader Newspapers).

For many years, the creek was called “Eltham West Drain” until a local "Friends of" group under the leadership of Ian Burns successfully petitioned to have the name changed to one that reflected the Aboriginal heritage of the Nillumbik area. This name change was officially granted in late 2010 and "Friends of Karingal Yalloc" was born.

Civic ecology practices emerge in broken places

Although originally overgrown with invasive weeds, the creek still had patches of significant remnant bushland and endangered plants, including rare orchids that are occasionally found in Meruka Park. The park also has historical value in the fine example of a rare arched dam wall, the design of which won an award from the American Society of Civil Engineers in 1920 — the first such award outside of the USA. The plaque commemorating this achievement certainly hasn’t been simplified for a ‘non-engineer’ audience.

Figure 2- The rather dense plaque commemorating the historical dam that borders the park. I hope one day someone can truly grasp what is written and experiences some kind of awakening! Edit: I’ve now read it so many times, I think I understand! But I’m not telling. I don’t want to spoil your moment of revelation. (Photo by Marc Campobasso).

Figure 3 - Nerreman dam (photo by Marc Campobasso).

On Christmas Day in 2011, the creek experienced a major flooding event. The flood highlighted the need to restore ecological function to the creek by replacing littoral and riparian vegetation, which would buffer flood waters from destroying public property.

Figure 4 - Christmas day flash flood 2011. This is the street outside my parents’ house about 50 m from the channel (photo by Maurice Campobasso).

Figure 5- Christmas day flash flood 2011. This is the street outside my parents' house about 50 m from the channel (photo by Maurice Campobasso).

With this in mind, the modern history of the creek is almost a morality tale about what happens when people exploit ecosystem services beyond the functional capacity of the system.

The creek, as well as a neighbouring convergent creek that once adjoined it, were diverted underground in the early 1970s so a road could be built cheaply along the main creek channel. As such, if it once had a common name, it lost this part of its identity. By checking maps and records of artificial drainage lines, we determined that the creek was mainly rain-fed from the surrounding hills. The creek had no real headwaters but a well-defined riparian zone can still be identified.

Therefore, its future is less a function of living memories of the actual creek but more an idealised interpretation of what the creek should be. Its current function as a flood drainage system almost guarantees that the current flow regimes will be very different from the original system, which seems to have formed its own ephemeral sub-catchment. Luckily, there are bushland reserves and undisturbed properties adjacent to the site, which have acted as reference sites that may be more reflective of what the creek once was.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

There are also plans to "daylight" a section of the creek that runs through a nearby flood basin. The area is within Malcolm Blair Reserve and as part of the process we have rediscovered who Malcolm was. All the records at local councils had been lost and local historical societies didn't have any records of Mr. Blair either. Through local history groups on Facebook, grandchildren and former neighbours of Malcolm Blair were contacted and the gaps in our knowledge of local history were able to be filled.

It turns out Malcolm Blair was a Systems Engineer who — amongst other things — enabled orange juice to be more widely available thanks to his work in rehydration. He was also a member of the Greenhills Progress Association, an organization that was instrumental in protecting local environmental assets through the process of urban development. In many ways, bringing the creek to the surface seems like a fine way to highlight this piece of hidden history and continue the work of the Greenhills Progress Association, but in a modern context and through restorative actions.

An old map from 1850 has shown up with what might be an original name for the creek. The copy I scanned off (which was from an old government water company report) was too blurry to read, but it's assumed the original should be legible. As yet I haven't had a chance to head into the national archives to have a look, but this is an exciting prospect.

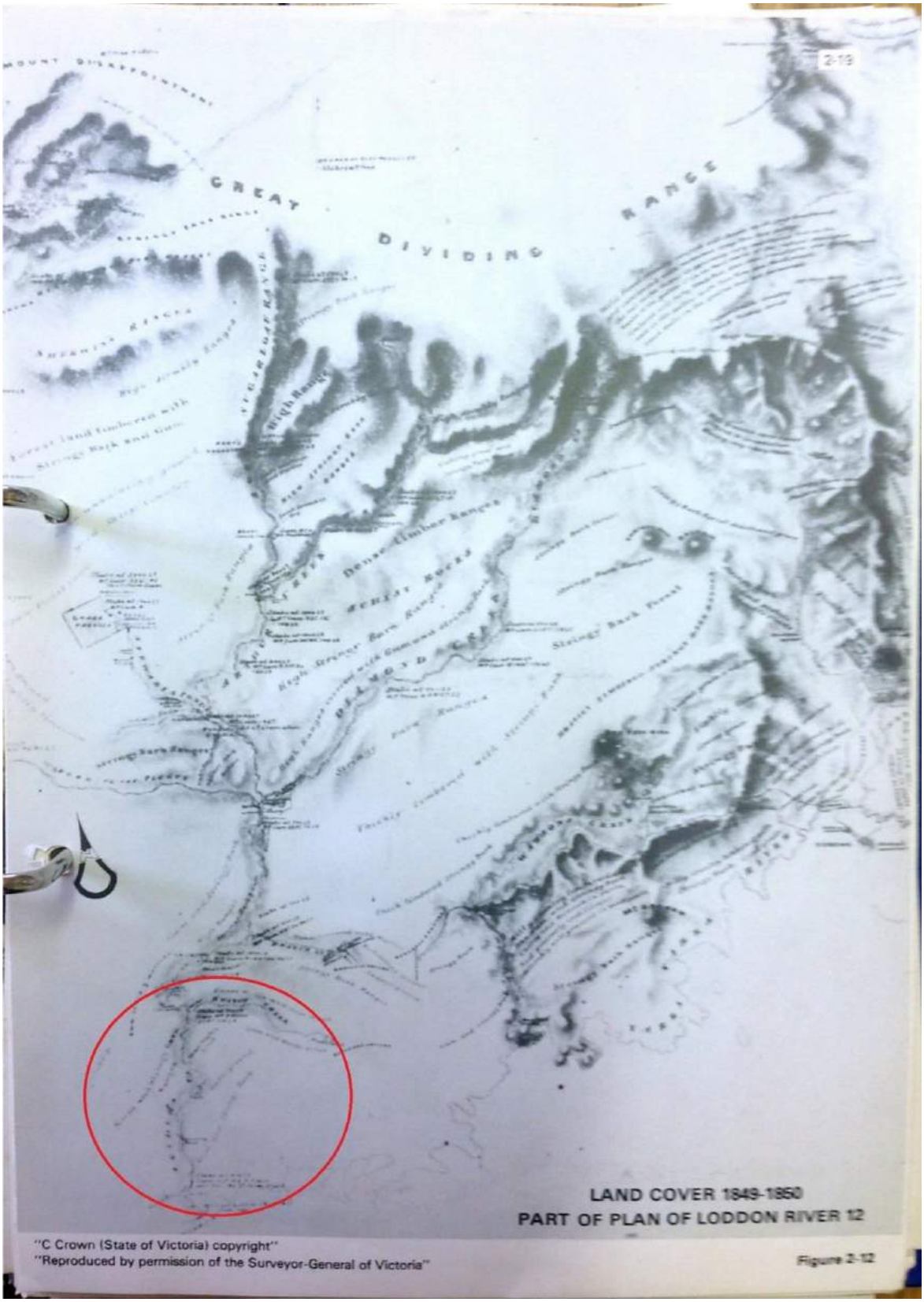


Figure 6- An old map of the wider catchment produced in 1850. It was too blurry to read from the copy I saw, but the original exists in the national archives and should be legible. The area of the map highlighted shows streams that roughly correspond to where the creek would have flowed. A fact finding mission is planned.

Civic ecology practices produce ecosystem services

The replanting of the creek and adjacent Native Plants Park provide the following (expected) ecosystem services:

· Flood mitigation by slowing storm surges and creating a greater surface area to soak up rains

· Improved habitat through weed removal and the replanting of native species from local seed stock

· Filtration of stormwater and run-off pollutants

· Refuge for wildlife, including predatory species that help control pests in adjacent gardens

· Creation of a habitat corridor that connects wildlife reserves to parkland (which may soon boast a wetland, if the original creek is daylighted)

Figure 7 - The park features a range of different habitats including areas for frogs and skinks (photo by Marc Campobasso).

By preventing bank erosion and restoring the vegetation, some of the original function of the creek has returned and damage to private property near the channel can be buffered from further bank collapse.

Civic ecology practices foster well-being

Figure 8 - The site of the park on a busy day (photo courtesy of "Friends of Karingal Yalloc" archives).

Activity is a natural part of bushland rehabilitation and activity fosters well-being. But the native park model provides unique opportunities for well-being outside of the usual public space paradigm. Although landscaped and "natural" gardens are relatively popular in the city, suburban parks tend to be a preserve for dogs, and balls, and kites, and noise. Which is brilliant for most activities.

This park will be unique in the area because it will provide a space for quiet contemplation and activities such as yoga, listening to the frogs, and simply "being". The public oval nearby should divert all the noisy people away from quiet areas.

Civic ecology practices provide opportunities for learning

The purpose of the Native Plant Park is to show people native plants in their natural communities, therefore educating (via osmosis!) and empowering them to create habitat on their own blocks. The plants can be purchased at the same local nursery that provides us with tube-stock (seedlings) of locally sourced natives for replanting. Hopefully, the nursery's valuable and generous contribution is good for business as well.

Ideally, the park will act as a hub from which the original ecology can spread throughout suburbia. I like to imagine it as an island that creates its own archipelago of smaller habitat "islands" around it, allowing migration of insects and birds, and hopefully even our wonderful, small arboreal mammals. A mini-big bang of urban ecology potential!

The creation of the parkland and its ongoing maintenance provide many opportunities for action learning. Different people with different skill sets complement each other and teach each other about everything: local species, general ecological practice, mycology, entomology, to name a few. The knowledge works in cycles and swaps; people teach and learn in equal measure as their understanding and appreciation of the environment grows.

Figure 9 - Park people 2015 (photo courtesy of "Friends of Karingal Yalloc" archives).

Ecology is wonderfully holistic in its conception and application, as it can also foster collaboration that brings many people together. People's interests may be different, but we are all working towards the same thing. In our group, we have people who have lived on bush blocks — essentially reference sites for restoration — and have the practical knowledge of seasonal influences and cycles, but most importantly know what the local bush looks like. Therefore, they also have a good working knowledge of what to plant and where.

We also have people who know about general ecological practice through higher education, but have little field experience or specialised local knowledge. There are people from the council who know how to get the job done, have their own highly practical knowledge base, and also act as intermediaries between participants and opposing views (theoretically speaking!).

There are also organic gardeners who have experience in weed management, as well as people skilled in general horticultural practice and all kinds of aficionados in their own fields. For instance, having people who know about local bird species is a great help when planting habitat trees. Each person can bring their own experience to the group. Some people participate by bringing cakes and coffee down to the park at the end of the monthly working bees. And when they share their recipes and techniques for tasty cakes and slices, another learning cycle begins...

Figure 10 - Sue being thanked for a 100 morning teas!

Reflection

Although the group has been going for 13 years, I have only been involved for a couple, and only for about 12 months regularly. Being a part of this project has greatly enhanced my experience of moving back into the area that I grew up in after an extended stint in the city.
Biophilia and topophilia are essential elements in this experience. I have a sense of place by caring for the local environment and I feel as if I'm giving a gift to my neighbours, which they are free to appreciate as they wish and if they want.

The greatest satisfaction however, is planting a bulb and coming back a month later, to find a spike of flowers in its place, with a chorus of frogs and a backdrop lit in sunshine.

Figure 11 - A chocolate lily (Arthropodium strictum), planted by the author a month before this photo. Smells delicious! (Photo by Marc Campobasso).

Most of the facts, thoughts, emotions and words, fused to form this piece are thought to reflect the truth of things, through research and the highly subjective experiences of Marc Campobasso, as rendered on 22/10/2015.

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A young woman in Angera, Italy, finds satisfaction and love in cleaning up an oasis.

Earth's Eye into the Woods

Angera, Italy

Anastasia Cardone © 2015

Introduction

I have lived by the lake for my entire life. Thus, at least in a way, reading Henry David Thoreau's masterpiece, *Walden, or Life in the Woods* (1854), has represented a necessary step in my life. After that step, everything has changed. My life has changed, completely. The way I see myself in relation to the world has changed, as well as the whole world around me. I changed my perspective on things. I started to see the lake as the real Earth's Eye, as Thoreau himself defined his beloved Walden Pond. I have always lived by the lake, but I had never understood its vital importance in my life before reading *Walden*. Now I know. Now I am conscious, or, at least, more conscious. I have woken up, with the sun in me.

Photo by Diriye Amey
https://creativecommons.org/licenses/by/2.0/deed.en

This is the place, this is *my place* – Lake Maggiore, in northern Italy near the border with Switzerland and Tessin. Having finally found my own *sense of place*, in the same way that Thoreau found his on the shore of Walden Pond, I started thinking that I wanted to actively do something for this wonderful place.

Civic ecology practices emerge in broken places

Sometimes, I have the impression that people do not care at all for the place where they live. They just live and let it be. They appreciate the mountains in winter, the beaches in summer, the possibility to use a bike when it is sunny, and to eat an ice-cream by the lake. However, looking at my fellow citizens, I feel that they have not nourished and cultivated topophilia or their sense of place. As a dangerous consequence, they organize trips in the woods to pick mushrooms and berries, but they will not pick up litter and trash. They pick up what the environment freely has to offer, but they will not do something to repay our environment.

Photo by Marion Cerrato
https://creativecommons.org/licenses/by-nc-sa/2.0/

This is how I came to think about my little project. It is not that innovative or big, and I did not join any existing group of activists. I simply fell in love with a guy who shares my values and my love for the environment and the place where we live. It is quite funny, because we also share the same lake. But I live in Piedmont, while he lives in

Lombardy, on the other side of our big and wide lake. I have to thank him, because, on a brisk March morning, he shared with me his favorite place, the Oasi della Bruschera.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and recreate these broken places

Oasi della Bruschera is a wonderful spot. It is officially defined as a protected area by the shore of Lake Maggiore, in the town of Angera. The oasis is 400 hectares wide and it is — or should be — an oasis of peace and calm, where you can recover your soul and your body in community with Nature. There are sections in which the oasis takes on the characteristics of a swampland, while in other places it is woodland. There are tall alders and white willows, which are typical of this area. Rushes define the shore of the oasis, and among the reeds, wildlife proliferates. Mallard couples are the commoners of the lake and the little marshes in the oasis. If you are lucky, you may see a wonderful belted kingfisher as he dives into the water, or you can hear a woodpecker knocking on one of the tallest trees.

Because of this beauty, you may think that this area is really an oasis — untouched and untouchable. However, it is not so. The impression is immediately destroyed as you look closer on the ground or if you pay attention to the shrubs near the main paths. Plastic bottles, plastic bags, cans, glasses, cards, papers, cigarette butts, clothes, food waste, tires, even a mattress. Almost every kind of thing that human beings throw away can be found in this wonderful, yet abandoned oasis. This made me really sad, because I see broken places everywhere around me -- in big cities and in forgotten parks. I thought this was really a saved place, but I was wrong, because the scope of humans' inhumanity can be seen even in such astonishing and calm places like these. This place has awakened my biophilia, my love for Nature and for all creatures. I did not want to just go for a walk once in a while and do nothing at all to preserve and restore the beauty of this place. This is how I started my personal civic ecology practice.

My boyfriend and I started only with little bags and gloves, in order to pick up the smallest waste products, such as bottles and pieces of glass. However, one clean-up led to another. Last summer we found a large amount of waste covered under a tree. We started digging just with our hands, thus creating a big hole. We found lots of waste there, from other old plastic bags to strange pieces of plastic that are still a mystery to us. It seems like someone has been burning waste under the clean surface of this oasis. We are still collecting a huge amount of waste from the area.

In recreating place, civic ecology practices recreate community

Sometimes cleaning up the oasis is actually a civic ecology practice, in the sense that more than two persons — my boyfriend and I — take part in the activity. However, this seldom happens, usually just when the local group of Legambiente, the Italian league for the environment sponsors "Cleaning Up the World" days. Otherwise we are mostly alone. I do not know whether there are other people who sometimes clean up the oasis and the woods. Considering the condition of the area, there might be someone else who at least gathers some waste bottles in a corner. Thus, this is still a practice that has to enlarge and create a proper community.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

The local government does not have clear legislative authority in the area. It has already been said that the municipality will create a group of volunteers for the oasis, in order to clean up the area and to control the activities that take place inside the oasis. Illegal acts have been perpetrated inside the oasis, unfortunately. Illegal fishermen have been spotted, even though fishing is not permitted. There are spiteful people who once left a bag full of rotten fish in the oasis. A dead bird was found hanging from a tree near the lake. This must never happen again.

commons.wikimedia.org

Conclusion

As you can see from these stunning photos, the Bruschera Oasis should be preserved, in order to preserve our own humanity. Civic ecology practices can help cleaning up both the oasis itself and our lost souls. We have driven ourselves away from Nature. We have become disrespectful and full of hatred. We should transform ourselves into the stewards of Nature, in order to reconnect with our authentic roots. The outcome can be great, even greater than we think. Not in terms of money, but in terms of well-being, health, and love.

A community garden helps an immigrant find his place in a new community.

Fixing a broken place by fixing first our heart and mind

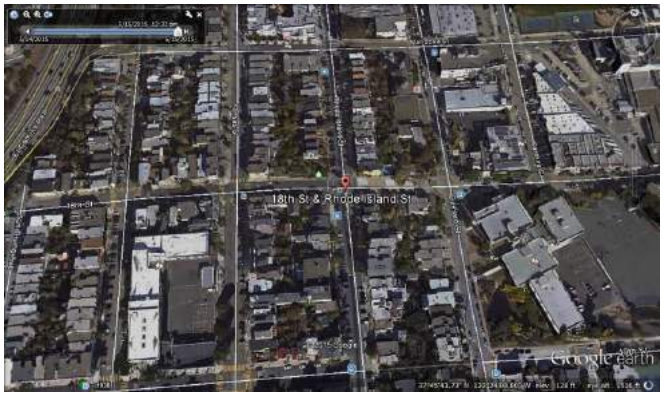
San Francisco, California, USA

Danilo Rueda Cruz © 2015

"The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings." - Masanobu Fukuoka, The One-Straw Revolution

Introduction: Garden in the heart of San Francisco

Last year, I was fortunate enough to attend the permaculture seminar of Kevin Bayuk and David Cody of the Urban Permaculture Institute of San Francisco. Both Kevin and David are seasoned speakers and have 8 years of experience doing not only permaculture lectures here and there, but real practical design and creation of urban gardens all over the Bay Area. Much to my delight, tuition came free for me. This was a relief because of the holiday and airfare expenses my wife and I incurred in our yearly sabbatical visits to the Bay Area from the Philippines. Otherwise, our family budget may not allow us to learn permaculture. Trading work for the tuition is both a blessing and a solution thanks to the vision of the mentors who conceived the trade-for-work idea. Almost every day (except for Wednesdays and Saturdays) from January to March in 2014, I committed myself to devoting 3 to 4 hours of my time doing what I like best — working in the garden at 18th and Rhode Island.



A birds-eye-view of the lush urban garden at 18th and Rhode Island Streets, SF

Since I am now retired from the food business, I dream today about going into education and teaching our schoolchildren about permaculture and farming. My time in the garden is usually planned to maximize the morning sun as it warms the garden. I miss the sunshine of my tropical country and basking in the warmth of sun from morning till late afternoon, but like I said in my write-up of the garden last year:

> *....lately my 'sun(s)' nowadays are the engaging talks of Kevin and David, the hours spent touching the soil and often meditating by the pond of the garden at 18th and Rhode Island.*

Downtown venue of our lectures in permaculture design

My wife enjoying the ambiance of the garden at 18th and Rhode Island -- a garden of abundance in the heart of San Francisco.

Every day was a discovery day for me back then. The now lush garden was a barren piece of a vacant city lot common around the Bay Area, I was told. Only neighbors' dog poo would feel at home in that vacant lot. Absent any visible topsoil, not even grass would thrive in the area 8 years ago.

But now, you do not even need tools to dig into the soil. My fingers, protected by a glove only, can dig into the soil like it is sand. This lot has gone from barren to abundance in such a short time.

When I was working there, visitors would pass by the garden every day and engage me in a conversation about how beautiful the garden was. All I can say is "thank you but I am just a volunteer here." I bet whenever I am here in the Bay Area, I will be coming back to the garden over and over again. Consider me a volunteer for life.

Graduation hugs and reading of who you are. At the start of the class Kevin asked us to write 'who am I?' on a piece of paper….and come graduation time what you wrote will be read back to you…"Danny you are a ….leader…etc" and then the hugs….

While I have been a volunteer, I have seen a lot of people with cameras capturing the beauty of the lush garden. I know they have been inspired by our plot and may build their own garden somewhere in the Bay Area or even in some remote area of the world. These photos will not remain embedded only in 2-dimensional glossy papers; I am sure they will go beyond just being pretty pictures.

Bees need our help: they're critical pollinators — alongside butterflies and hummingbirds — but they're misunderstood. Many people are afraid of bee stings and think bees are aggressive, but when bees visit a garden, they're really not interested in people. They come for the buffet of bloom.... (In a garden, bees) will increase your harvest of apples, okra, blueberries, and beans, among other crops. Insectary gardens also play an important role in preserving the diversity of ecosystems in modern times.[1]

A little background on what Permaculture is all about: "Permaculture is the design of a self-maintained agricultural systems inspired by natural ecosystems," as culled from Wikipedia. Call it small-scale mimicry, mimesis, or design of natural ecosystems. Some prefer to call it "permanent agriculture." The un-swept fallen leaves, the weeds made into compost tea, the rainwater collected, the mulch -- all of it becomes part of the natural system within our garden.

Greenhouse or tool shed....we also used it for germinating seeds

Kevin and David introduced a deeper perspective of urban permaculture in their lectures in downtown San Francisco. They taught us the "secrets" of how to achieve abundance in your very own urban garden -- be it on a rooftop, or right smack in the middle of the city. I wrote back then:

> *The abundance in the garden is not just literal. I feel the abundance in my inner being too, connected to this world and sharing ideas and learning with people from all walks of life and with one vision alone to live in harmony with our world or environment.*
>
> *It may not save the world from hunger overnight, but maybe your family and community will have more food for the table for many years to come and all these tomatoes, fava beans, asparagus, broccoli, lettuce, even mushrooms, picked real fresh from the vine and just a few steps from your house or community farm may be a reality in the near future. A reality at 18th and Rhode Island Garden. From barren to abundance.*

Even the United Nations recognized that creating these living spaces worldwide can address the problem of hunger and poverty. So living spaces in developed countries would serve as alternative to high maintenance modern urban parks and a tool for communicating climate change, but for developing nations these living spaces will be food on their table for years to come.

Today, I am back in the Bay Area. The first thing I did was inspect the garden at 18th and Rhode Island. There are some changes in the garden: they are repairing the pond, the bees are gone, the cob oven still needs final touches, the bench has some graffiti written on it, and there is a new dilapidated and leaking greenhouse made from old sliding glass doors. Other than these changes, the garden lives on, frozen in time. As I was about to leave the garden, I saw our class tree that we had planted during our graduation from Permaculture Design. It was much taller now but still struggling to embrace the morning sun.

Prepping where to plant our class tree with Kevin Bayuk and (chef) David Cody. .

As the days pass, I will be saving some time from my busy schedule to go back again and again to the place my wife and I love so much. David Cody has informed us that Wednesdays are days we can volunteer in the garden to help renew and recreate this community.

In the fall I will start my graduate studies, and believe it or not, the garden (or the broken place it used to be) inspired me to look for strategies to overcome the barriers of communicating climate change.

Creating healthy soil, the more you can do to keep your soil healthy, the more productive your garden will be and the higher the quality of your crops.

Bench made of rock, clay and soil easily available, free and environment friendly

Civic Ecology Principles

Eureka ! - *Archimedes*

"Importantly, professionals working in urban environmental education also help young people deal with loss — sometimes profound loss such as the death of a sibling or friend, or loss of a valued community green space. The ability to help people deal with loss, transform eyesores into assets, work in communities facing multiple stresses, and integrate community and environmental issues are all ways in which urban environmental education can contribute ....efforts needed to address ongoing issues of environmental degradation and disinvestment. Such capacity is also critical as we face larger issues of climate change." - Dr. Marianne Krasny, The Nature of Cities

Civic ecology practices emerge in broken places

Nowadays, despite my busy schedule and bouncing back and forth to fulfill my other obligations, whenever I have the time, I always visit the garden and reflect on whether this beautiful garden will be here forever.

There are so many broken places in the city where you find empty bottles, empty soft drink cans, soiled paper, and trash lying around. The stench of animal feces in these places is an assault to your nose and weeds sprout from every crevice of once beautiful buildings and parking lots. These are what we consider aspects of broken places in every city. These are places where there were once trees, birds, bees, and vibrant living ecosystems but through neglect and gradual deterioration, people erased the natural beauty.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and recreate these broken places

These esoteric terms like *biophilia* (love of life) and *topophilia* (love of place) will illuminate in our reflections why people care so much for the places we have come to know. This is evident in the case of me

Principles of Civic Ecology from Krasny, ME and KG Tidball. 2015. Civic Ecology: Adaptation and Transformation from the Ground Up. MIT Press.

loving the 18th and Rhode Island garden, where life has created new dimensions of meaning for me.

Our class is trying to find (rather, discover) these broken places and restore them into the beautiful places they once were. The garden at 18th and Rhode Island has great beginnings -- it was once an ordinary vacant lot in the heart of San Francisco, possibly slated to become a home for the owners. But after a friend's death, the owner instead planted an oak tree and dedicated the lot to permaculture. It's hard to infer to what goes in the mind of the owner during such a time; perhaps the painful departure of a dear friend may have triggered the owner's heart-warming decision to leave the vacant lot untouched and donate it to the San Francisco Permaculture Guild. Maybe they visualized the place as a spot to build a house surrounded by nature, like my wife and I dream of to this day — a house surrounded by a lush garden.

We will never know for sure. The owner's decision to donate the lot could have been the owner's legacy to the city -- one that continues to inspire people to work in the garden and share their experience with so many people. According to Krasny and Tidball, "love of a particular place —or topophilia — compels people to take stewardship action." Perhaps this love for a friend and the place is one "love" both the owner and the friend would want to share with everyone in the community. Looking back, this vacant lot is now a place where kids are playing with their moms. People are drawn to it and they navigate the contoured pathways lost in time for a moment within a labyrinth garden and come out at the other end refreshed, renewed, and hopeful. This is the garden's effect on people, including my wife and myself whenever we are in this place. *This love of life and place* is what makes the garden unique among the many gardens we have seen in this world. The owner's love of life and the place is being relived in others' lives.

In re-creating place, civic ecology practices re-create community

One warm day last year, an elderly woman visited the garden while I was working.

"Good morning!" she said as she picked up red and yellow sweet peppers. "Can…eh…. get some this?" she asked me kindly in broken English. I surmised she was a

neighbor of Asian descent and I told her she could take it. As she left the garden, she patted my left arm and said, “Good work, gardener!”

I replied kindly, “did you leave some for the other neighbors?” She winked at me and said: “I like you gardener….I lean… (arn) English with you, very good.” She left the garden laughing.

In the days I was in the garden, I felt what every pioneer of a land must have felt. The start of a *community* where people can connect, share the common good, or just say hello to each other. Soon we will have a thriving community of people engaged in one common place, a place they will treasure for many years and pass on to future generations. A place where stories will intertwine and build a thriving and vibrant community

Civic ecology stewards draw on social-ecological memories to recreate places and communities

Small initiatives here and there can be very effective in creating community gardens. People visit the 18th and Rhode Island garden, drawn by the social-ecological memories of their homes — growing avocados, sweet chili peppers, figs, kalabasa (squash) etc. — and say things like "I might grow them in my garden.” Sooner than you think, there is an abundance of gardens in your area and you will know by the way visitors frame their questions and snap pictures how this garden can be transported to their hometowns. People rejoice at seeing native plants in their neighborhood, be it in Florida, Mexico, the Philippines, or even China. They engage in social-ecological memories: reminiscing their childhood picking figs, olives, and squash when they were small. I know of a friend who even smuggled some kalamansi seeds (Philippine lime, similar to the Florida key lime) from the Philippines to LA and planted them. He now has a beautiful tree with prolific harvests of kalamansi all year round. Although I told him of some caveats of his actions — that moving seeds is illegal and could harm both communities — he shyly muttered: "but I love that tree, lime here is different *kuya* (brother)....specially when you cook bistek (a beef steak marinated in lime and soy).”

Another day at 18th and Rhode Island garden, another neighbor caught my attention. “Dan, I want to show you something!” he said to me and we both went across the street to his house and into his garage. He showed me his woodcrafts masterpiece. “It’s a passion for me and I saw your passion day in and day out in the garden,” he told me. “I have seen a thousand volunteers in that garden. I once was a volunteer too and I loved what you are doing. It’s all peaceful and the only noises you hear are the singing of the birds and the buzzing of what I call ‘friendly bees.’ Drink some juice and drop by here anytime when the garage door is open?”

“I will and thanks for showing me your passion…It’s really a priceless thing you do!” I replied.

“So are you my friend,” he told me, “with your beautiful garden!”

Civic ecology practices produce ecosystem services[2]

“How are you doing, Dan?” Felipe, the architect head gardener, said to me about a month after I started being a volunteer. He took me around the garden, teaching me all about the aspects of permaculture we had in place.

I will never forget his vivid introduction to the world of permaculture as we toured the garden that day. The entrance and exit are important; the pathways have to make it easy or allow access to everything you do. The stones shaping the contours of the garden and acting as borders around the pathways are made of what we call "urbanite," that is, recycled construction debris and road pavement we get from the Department of Public Works. The contour of the garden and its elevation allow for rainwater to go through and around the garden before it reaches the street drainage and out to the Bay. The pond is also strategically located to gather rainwater from the neighbors' drainage system.

Any body of water is a haven for wildlife, and you'll be surprised just how popular your nature pond will become with the local plants and animals. Even if you live in a big city, you'll soon find your pond is colonized by a wide-range of interesting flora and fauna. [3]

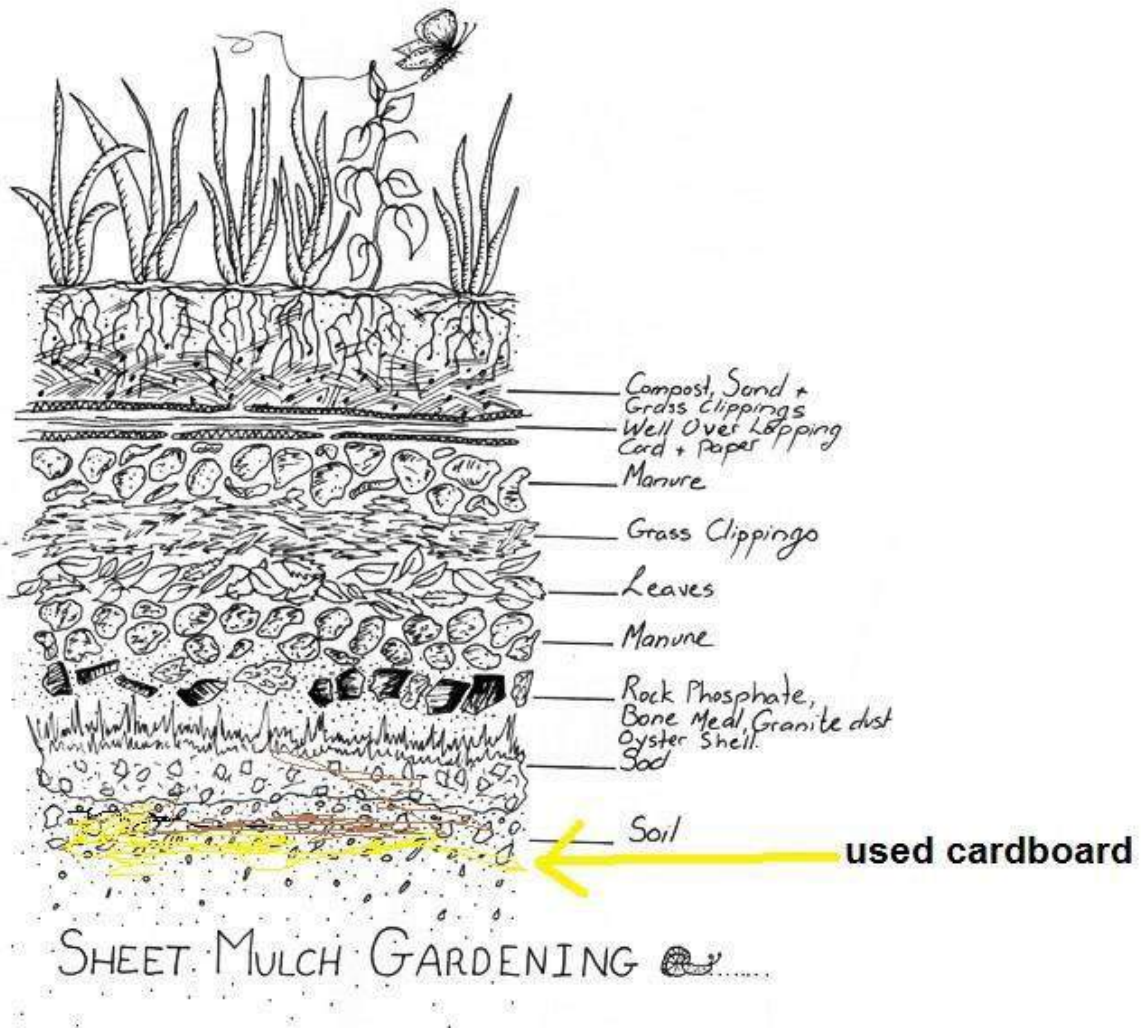
The top soil is protected by mulch (which I brought in one wheelbarrow at a time for days to augment the 8 year-old mulch), which covers the topsoil and reduces water evaporation. Look around this garden and you will see it does not need to be watered everyday like other gardens. There is no need for tilling the soil either, and the fallen leaves are allowed to mix in, decompose, and become soil again.

The compost is where you put leaves and dead plants, and turn it over to create soil. As a newbie, I was thinking about Home Depot's soil back then. Felipe continued, explaining that the bees, and butterflies you see are not just awesome to look at, they serve a bigger purpose in the living ecosystem we have at 18th and Rhode. As a fledgling volunteer into the new world of permaculture, I asked him if I would need a garden as big as this to practice permaculture. He smiled and said: "what do you think?"

I had so many questions for Felipe back then, like wondering about the grass. He said from time to time there will be grasses that will sprout. We pull them out and sort them separately and make a compost tea (he showed me this later on). He also revealed that if you dig deeper into the soil of the garden, you will hit on a thick layer of packaging material donated by our neighbor Whole Foods market many years ago. This "treasure" prevents weeds from running all over the place and suffocating the healthy and vibrant growth of the vegetables and trees in this garden. It is a practice called "sheet mulching."

"What do I do then?" I asked. "Nothing other than looking for and pulling out weeds from time to time," was Felipe's reply.

In the days to come, I realized that a permaculture garden draws its strength from allowing nature to take over. For us, our duty is to watch and allow this to happen -- the bees, the birds, and butterflies flapping all around and the fallen leaves allowed to become soil again[4].



Soil diagram retrieved from https://wildwesleyan.wordpress.com/category/community-partners/ April 27, 2015 (with my annotation)

Used cardboard, please don't throw away, instead use it to prevent grass from overtaking your lush garden!

Creating soil, harvesting the rain, using no fertilizer, providing food, and cleaning the air around us. These are the awesome *ecosystem services* a garden like the one at 18th and Rhode Island can provide us. Not only does it have a great esthetic view that we all want in our neighborhood, but it also serve as an alternative park to the modern well-manicured parks that we are all familiar with around our community.

Civic ecology practices foster well-being

In working with compost, patience is a virtue. You have to "turn over" the compost every day, adding the vegetable and fruit peelings donated by a young entrepreneur making fruit and vegetable juices for the nearby supermarket. The heat inside a compost heap can be so hot that I fondly call it: "Mother Nature's way of cooking soil." It's really how you create good and healthy soil[5].

To segue a bit, knowing that civic ecology practices can help our health and well-being, my wife and I are still dreaming of doing gardening when we are old.

Gardening is never work for me. In fact, I consider it therapeutic both psychologically and physically. My mind and body are used to the corporate life of going around inspecting multiple chain food stores -- work that usually involved just my lower arms or hands while I wrote my reports and carried my office briefcase and keys. A little walking had been my only exercise. Now that I am enrolled in graduate studies, I suspect I will not have much chance for strenuous physical activity. But with gardening, I feel the health benefits not only in my muscles but also in my pumping heart and deep breaths as I catch the cold air of San Francisco. Using the shovel, pushing the wheelbarrow, and bending to pull out (no need for a tool, you can practically dig holes with your bare hands) weeds for compost tea allow my ageing body the much needed exercise lacking from a long and boring sedentary corporate life of the past. Learning innovative ideas is always a refreshing experience during Wednesday and Saturday classes with Kevin's and David's group: Urban Permaculture Institute-San Francisco.

Towards ending this reflection on civic ecology in a once broken place, I can only surmise the benefits felt by the other volunteers. But the feeling of well-being, the rush of dopamine in my brain is something I can pretty much account for without asking other volunteers. Certainly the people coming in and out of the garden need no interview, I can look them in the eye and see their gladness every moment they spend in the garden.

I don't know for certain whether the other volunteers feel the same way I did, but I guess they have lots of fun too in that garden. Somehow, while there I get a rush of insight, which is why I always bring a pen and paper while gardening.

Civic ecology practices provide opportunities for learning

The place is so unique and I feel as though some magical force has drawn me to it. Sitting under the oak tree and looking out to the highrise buildings of downtown San Francisco, I wonder how many have passed through this place before me and been transformed into deeper ways of thinking about life, philosophy, and our duty and legacy to this world. Looking at old pictures inside the greenhouse, I have seen dozens of smiling faces and said to myself, "It is a smile of learning; a smile of finding something, learning from it, and sharing it with others…."

To my relief, I found answers in my graduate studies as I reflected in the garden one time on how to communicate climate change considering a survey that stated a majority of people are still skeptical about it. Nobel Prize laureate Daniel Kahneman[6] may be right after all -- climate change is all about the emotions that we have and how it involves our family and the other social and emotional aspects of our lives. 18th and Rhode Island is where *learning* happens and I never doubt for a second in claiming that the decades that I have spent in academia cannot measure up to just one day in this lush garden in the heart of San Francisco.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

A place like the garden is virtually zero money to put up and maintain. How is this possible? Virtually everything we use is given as a donation.

One can also sponsor cheap one-time purchases or even crowd-fund solar panels for electricity instead of borrowing electricity from a kindly neighbor. The water comes from the rain but we sometimes use the water pipe — donated by again, a kindly neighbor — because of the long drought here in California.

This civic ecology principle also refers to the grassroots beginning of an idea or innovation and spurring subsequent changes in other communities like what I described earlier on. This mechanism is what we call "revolt," where people and communities change at various levels and share those changes across other levels. Soon enough, even Michele Obama is into gardening and advocating good nutrition. Though this process is slow, maybe one day the principles of the "tipping point" may make the garden a staple in every household,

similar to how the refrigerator is now. My submissions with the Buckminster Fuller foundation delineated the way to fast-track this "revolt" (including communicating climate change), but that will be another story to tell. Overall, there is not much to do except wait for the practice to be adopted on multiple levels.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social ecological systems

Honestly, whoever said that scientists don't have a love of literature? C.S. Holling opted for a panarchy, in honor of the naughty god ***Pan*** (the "god of the wild, shepherds and flocks, nature of mountain wilds, hunting, and rustic music," mesmerizing people to behave in other ways), versus using the term hierarchy. Panarchies describe how small and large adaptive cycles influence each other. Krasny and Tidball apply the notion of adaptive cycle to denote how civic ecology practices can transform "broken places" and help people and places to cope and morph into a glorious ecosystem again. This is what scientists like Holling observed with the renewal of a forest that had been destroyed by gnawing insects. A damaged coral reef visible from the upper atmosphere was restored back to its pristine beauty through conservation practices. Like the malevolent god Pan, destruction, chaos, preparing for change, adapting, and transformation or resiliency on the part of communities are "secrets" to the practice of civic ecology. "Resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks," according to Walker et al (2004)[7]. Resiliency is how civic ecologists worldwide describe these broken places and give them a fresh breath of air.

The concept of *chaos and renewal* is raison d'être on why civic ecology is so important nowadays. The seeds of change sown today may one day blossom into a forest of people and communities caring for the environment.

Helping to plaster the wall of a greenhouse at one of the other farms we visited for our permaculture course.

The 18th and Rhode Island experienced upheaval for close to a year; the beehive was taken, the pond leaked, and Felipe, the garden steward, moved to the east coast. But it was not enough to dislodge the community around the garden. Now, civic ecologists like Kevin, David, a lot of others and myself are doing some house cleaning!

Sadly, not all broken places can overcome chaos. The nearby abandoned Portola's Rose Nursery Garden[8] remains a broken place. These dilapidated greenhouses once grew beautiful roses for early immigrants to San Francisco. Maybe someday it will be able to renew into what it once was — a beautiful, thriving florist paradise. I hear of some legal issues that currently keep it as it is, stuck in a poverty and/or rigidity trap.

Abandoned rose nursery in Portola district. It has a rich historical significance for the early immigrants of San Francisco.

The big picture of this principle of "chaos and renewal" and civic ecology as a whole may be applied to my future graduate studies as well. They also say that seeing people and places engage in environmentally-friendly activities allows other people to engage in their own environmentally-friendly activities for their own environment or locale. Indeed, I am tempted to incorporate these studies about caring for the environment, as well as my experiences in the garden, into my future studies in hopes to overcome the communication barriers to climate change. Barriers to effective climate change communication may be because we try to engage people in a never-ending debate: who is right, who is to blame about climate change, etc. Perhaps a simple garden can communicate to us the importance of not just knowing about climate change, but understanding it and engaging in it through changes in the way we think and feel about the environment. Communication may become a part of civic ecology and its definition, since our ultimate objective is how to fix broken places in our local communities. With communication as a part of civic ecology, perhaps there will no longer be "borders" in environment care. There will be only one home where we are all dependent and interrelated with one another. Imagine a world with civic ecology in every community and all those communities sharing and communicating with one another, learning from each other's mistakes and triumphs. In the end, we have global civic ecologists helping this world be a better place to live.

Policy makers have a role to play in growing civic ecology practices

Lastly, a broken place can allow cooperative effort not only with communities but with the outside world at the municipality, regional, and even national governance level. California gave some tax incentives for the utilization of vacant lots to a garden[9]. Kudos to the *policymakers* of California for this decision. The major cities in California may have finally hit on a solution not only to beautify the paved jungle with a living ecosystem but also a new way of thinking for making sense of city life. Perhaps the only way for our policy makers to be socially relevant now is not just to give tax incentives but to loosen their tight grip on public land or parks. Instead of the high maintenance lawns and water-thirsty parks, maybe provide urban permaculture gardens mimicking nature as an alternative. Leave fallen leaves untouched and plant vegetables and fruit-bearing trees in lieu of ornamental plants on urban sidewalks and other public areas.

If you were to ask me, broken places abound in cities and every year the numbers are getting bigger. The help, incentives, and support of people in public offices around civic ecology practices are forms of *remembrance* in the context of civic ecology practices. It is when policy makers acknowledge the efforts of small groups and encourage people to continue.

Reflection

Imagine a living space like the garden at the heart of San Francisco dotting every city block in the world. People young and old enjoying these living spaces like a modern park; people, plants, bees, birds, and other organisms living together and learning from one another. Imagine a living space where food can be harvested and communities can get together to learn a better way of interacting with nature. Imagine a space where you get to learn about the waste we dump into the air, water and land of this Earth. Imagine a place where we create our own healthy soil and compost, harvest rainwater, harness alternative energy sources, choose local food, learn how individual action and simple lifestyle changes — like biking for small errands and taking shorter showers — can go a long way in removing heaps of waste we normally unknowingly or knowingly contribute to suffocate the earth.

These living spaces may show people to appreciate and care for the fragile ecosystems they see, feel, and experience in these places. Studies have shown that showcasing positive actions that other people are taking to address climate change can help motivate people to undertake their own climate friendly behavior. Moreover, Dr. Niki Harre (2012)[10] found out that presenting climate change as a "positive, fun enriching experience" can immediately create well-being, open-mindedness, creativity, and willingness to engage with it because participants can contribute to solutions or outcomes. This is in contrast to "fearful messages," which narrow their options to two actions: either intense defense of their previously held beliefs about climate change or inaction. Harre says reinforcement of positive emotions in our interactions will help us successfully communicate sustainability. These living spaces provide this positive emotion in our interaction and therefore help us successfully communicate sustainability.

With this I humbly would like to add one principle (if I may be allowed) to Dr. Krasny and Dr. Tidball's 10 Principles of Civic Ecology: fixing broken places can *communicate* to people and communities the importance of how our individual actions, behaviors, and lifestyle changes can contribute to solutions to what ails our world (call it climate change or extreme weather events), and help us to look at the world through different lenses and finding new ways of seeking the common good, not only for our generation but for those to come.

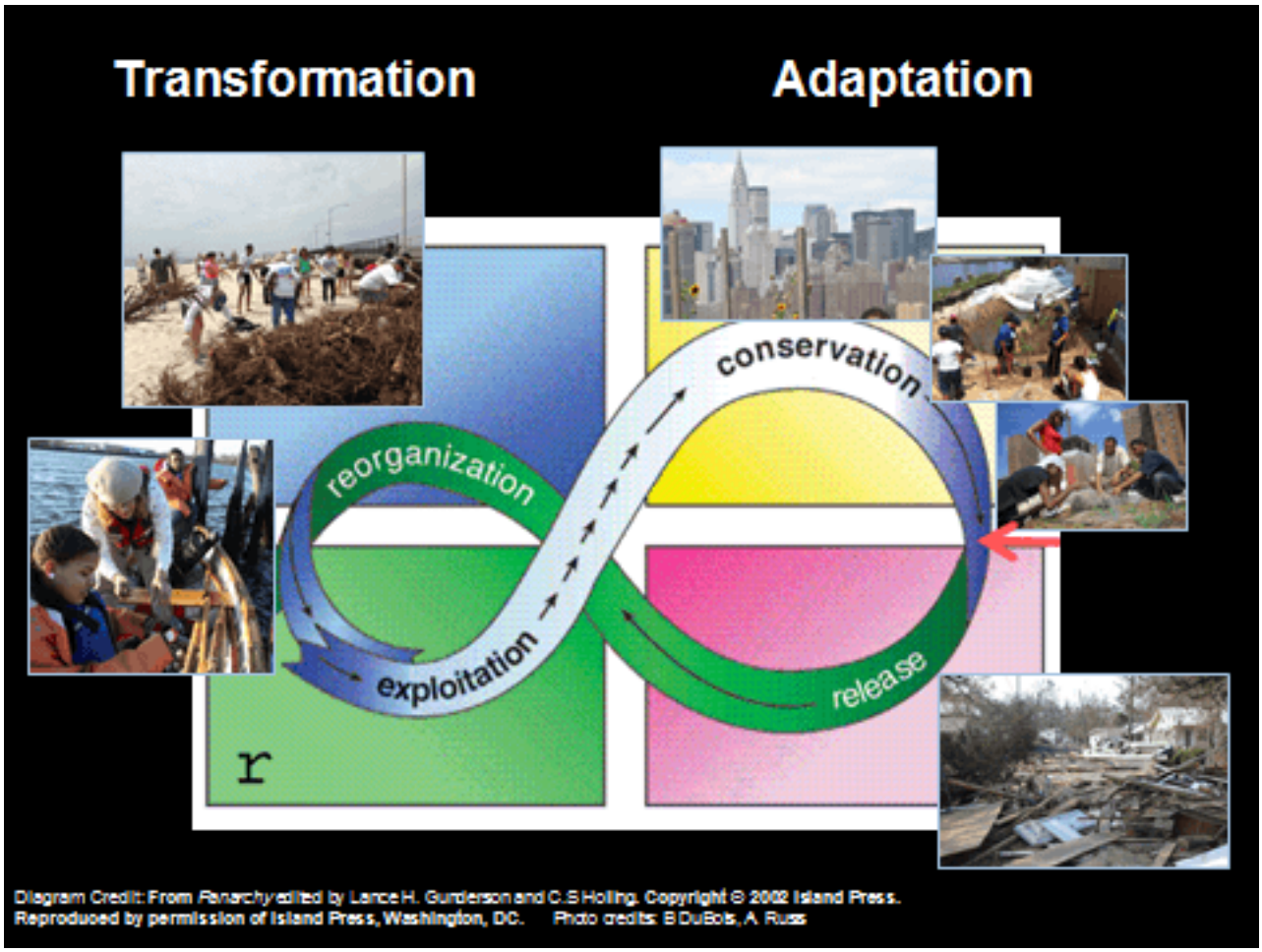
To reiterate, another principle in civic ecology may well be *communication.* Only through communication like this reflection can we truly integrate and understand all the principles of civic ecology and its importance. This includes communication about the love of place and where we start with broken places, the community building effort that will be entailed, the lessons we get out of it, social-ecological memories of a place, and the renewal we all want to happen. Even a city can be seen as a broken place but the hurdle will be a gargantuan task: removing trash, cleaning up the putrid urine smell in every part of San Francisco, helping the homeless people, etc. All of these examples are the *chaos* we want to see go away someday. Unfortunately, they won't go away on their own -- it takes people and communities in every corner of the city to do this.

I even jokingly said to my wife one time, that had George Cory and Douglass Cross (composers of the song "I Left my Heart in San Francisco") lived in San Francisco in this day and age, that maybe they could have not composed that song. This memory of a

beautiful city is what civic ecology is trying to understand and save from urban decay, to enable us to bounce back and fix broken places. The policy makers, the people, and communities can allow a "renewal" to happen, since every major city seems to have gone way past the threshold of what it is like to have a healthy and productive life in the city. It's now time we reexamine our paths through civic ecology because the stage will need more actors to communicate love and care for the environment.

A meaningful change in people's mindset is also one factor to consider in designing alternative communication strategies for treating the environment with care. Author and professor, Steve Taylor wrote about glimpses of a shift towards this end when he said, ".... If the fundamental problem is a psychological one, then the only sure way of ensuring our survival as a species would be for us to undergo a psychological shift — specifically, to transcend our sense of separateness and regain a sense of connection to nature and a 'sacralised' vision of the natural world." Perhaps civic ecology practice is one way we can regain this connection to the environment.

The senior lecturer in psychology at Leeds Metropolitan University also said, "Hopefully these trends will grow stronger, until there is a powerful collective will to take effective long-term action against these problems." Perhaps he is referring to civic ecologists, scientists, communities, governments, and even ordinary people who care about the environment. People and the numerous practices that can one day influence friends, family, communities, and even the world.



Panarchy diagram for the San Francisco Garden.

I was about to close this reflection, happy at the thought that I learned a lot from this MOOC. But then I realized; what was once an ordinary description of my connection to a lush garden in the heart of San Francisco and an ordinary assignment has been transformed into a new meaning of seeing things and transcended into something else. A sense of awe overtakes me when I realize I've found a way to communicate climate change for my graduate studies. Eureka! All of the sudden, the videos, the mapping of the class' practices, the exchange of ideas, and my taking the responsibility to create an eBook (*Civic Ecology Reflections from Around the World -- Love of Life and Places*) are completing the puzzle, allowing me to find my voice in academia on how to remove the barriers to communicating climate change.

Only through communication can we empower people and communities all over the world to care for their environment and this course in civic ecology is allowing these to happen.

To temporarily end these civic ecology reflections (since I consider this a growing takeoff point for a dissertation on change in communication), I feel it is appropriate to include these words from a sage who spoke of our fragile interconnections with all living things on this Earth:

If all the beast were gone, men would die from a great loneliness of Spirit, for whatever happens to the beast also happens to the man. All things are connected.
-Chief Seattle

Acknowledgements
Maraming salamat sa tulong ni (Thank you so much for the help) Dr. Krasny at si (and) M' Samar Deen.

To Dr. Krasny, whom I expected to read cursorily owing to her busy schedule as a professor and scientist and yet to my surprise read everything I wrote and provided powerful and pithy feedback, which only goes to show her heartfelt interests and dedication to her students. Truly you are a masterful teacher.

Thanks also to Kevin Bayuk and David Cody for giving me this opportunity to find my voice in academia. Thank you for opening my eyes to a new world!

Endnotes
More about Dr. Marianne E. Krasny
Civic Ecology: Integrating Social and Environmental Sciences

- Krasny, ME and KG Tidball. 2015. *Civic Ecology: Adaptation and Transformation from the Ground Up*. MIT Press. *http://mitpress.mit.edu/books/civic-ecology*
  Civic Ecology | The MIT Press

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Professor Steve Taylor is senior lecturer in psychology at Leeds Metropolitan University. His latest book is *Back to Sanity: Healing the Madness of the Human Mind.* He is also the author of *The Fall*, *Waking From Sleep*, and *Out of the Darkness*. His books have been published in 16 languages. His research has appeared in *The Journal of*

Transpersonal Psychology, *The Journal of Consciousness Studies, The Transpersonal Psychology Review, The International Journal of Transpersonal Studies*, as well as the popular media in the UK, including on BBC World TV, The Guardian, etc. Source from Ecocide: The Psychology of Environmental Destruction

Additional relevant information about urban permaculture in the Bay Area

Some useful links to the 18th and Rhode Island permaculture garden in the heart of the city
Gardens that grow food for the Free Farm Stand - freefarmstand.org

Permaculture Design at 18th and Rhode Island Garden - YouTube
Apr 24, 2014

Urban Permaculture Garden in San Francisco Grows Thousands of Pounds of Food
Jul 22, 2013 www.cityfarmer.info

The 18th + Rhode Island Street Permaculture Garden In San Francisco
Jun 25, 2014 www.backyardrootsbook.com

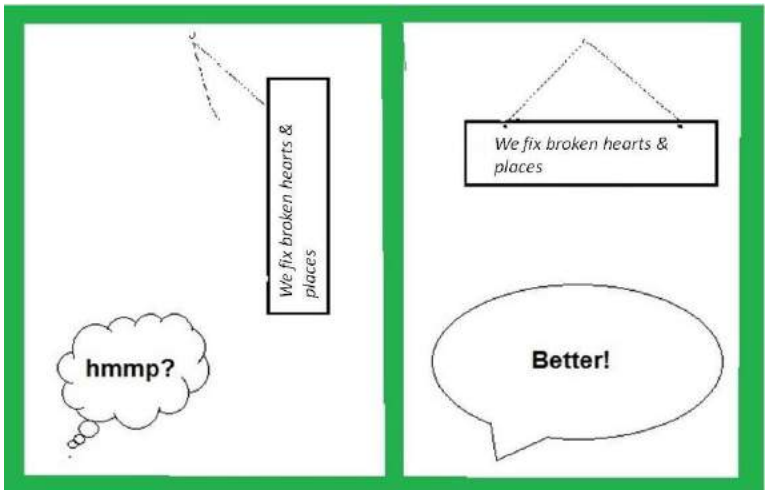
www.49farms.org

Permaculture Garden Takes Root in Potrero - www.potreroview.net

The coolest spot on Potrero Hill - 18thandrhodeislandgarden.org

My website - http://dannyruedacruz.wix.com/livinglab#%21color-photography/citr

Why we fix broken places? - A picture I was planning to place at the beginning but I decided to end this story with this picture instead. Thank you for your time and I hope you also find the story of a once broken place inspiring.



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Volunteers clean up a historic cemetery in Ithaca, NY.

Friends of Ithaca City Cemetery

Ithaca, NY, USA

Samar Deen © 2015

Engaging in the Practice

I read an advertisement in the Ithaca Journal: *Ithaca City Cemetery Clean-up to be held Saturday*[1]. This would be a perfect opportunity for my daughters and me to get involved in a local civic ecology practice. I had three goals for getting involved with the Friends of the Ithaca City Cemetery. My learning goal was to identity the specific principles of civic ecology in the practice. Second, I wanted to actively participate in an organized service that met the needs of the community. Third, I wanted to take my daughters to a fun weekend outing.

My daughters were very excited about the prospect of going to a cemetery clean-up event. They invited their best friend over the night before. They picked out special clothes to wear for the event. It was a bright warm day, so we took the TCAT Bus #30, got off at West Campus, and walked down to the cemetery. A little sign titled "Cemetery Clean-up TODAY" at the entrance indicated that we were in the right place!

The City Cemetery is one of those historic sites near the Cornell University campus that I've always wanted to explore. According to the Ithaca City Cemetery website, the oldest burial in the cemetery took place in 1790 or 1791 of a young girl named Rachel Allen, whose parents were traveling through the area when their daughter became sick and died.

When I entered the cemetery, at first glance everything looked perfect. I saw a manicured lawn, clean walkways, and magnificent tombstones -- old and new. But then I saw a young man with a bag full of trash, weaving through the shrubs. I saw broken gravestones covered with moss and overgrown foliage. I saw graves misaligned and people shoveling the dirt around them. Then more volunteers appeared and I saw them working towards maintaining what initially appeared to me as magnificent. I later found out that the volunteers were mostly students from Cornell University and families from nearby. The volunteers were realigning and restoring old gravestones that had been knocked over. I also noticed a gentleman sitting on the grass with maps. I later found out that his name was Al Chaffee. Mr. Chaffee had mapped all the tombstones in the cemetery 30 years ago. He was directing us to where we might find a tombstone that had become buried over the years, and that we might dig out and resurrect.

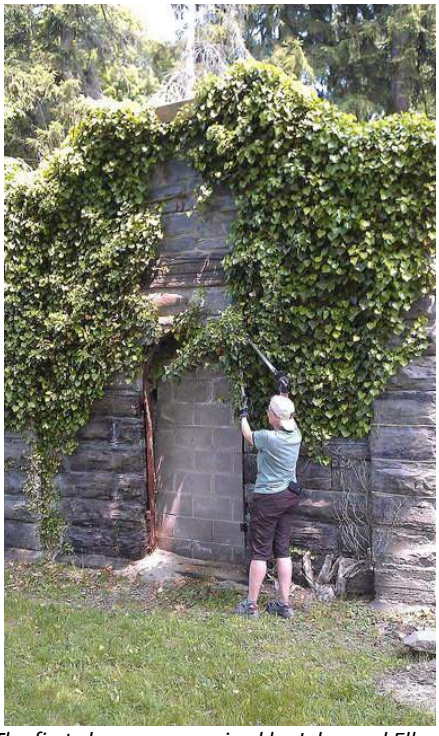
My daughters were very eager to start right away[2]. So I looked for the organizers of the event and approached a woman who was directing undergraduate students cleaning a tombstone. I introduced myself to Julee Johnson, who gave the girls some tools and cleaning materials and the girls got started. As they scrubbed, Julee narrated the story of the woman whose gravestone they were cleaning. Multiple questions ensued as the work progressed. I also got a chance to learn about the Friends of the Ithaca City Cemetery (FICC).

Julee Johnson is the General Manager at Historic Urban Plans, Inc., a company that sells reproduction antique maps. She also organizes FICC events, along with Ellen Leventry, a Media Relations Specialist at Cornell University. After a while, Julee proceeded to direct the work on other tombstones. I made a mental note to meet with her and Ellen to get more information about the event.

A few weeks later I had the opportunity to speak with Ellen about her involvement with FICC at her office. "Why the Ithaca City Cemetery?" was my obvious question. She said she loved the cemetery. It was a place she felt was deteriorating, and her love for it motivated her to work towards preserving it. Ellen explained to me that the position of the city cemetery caretaker was abolished and the cemetery fell under the administration of the city's Department of Public Works. The city forester would now oversee the cemetery along with the larger Cass and Stewart Parks, which take up most of the budget.

"So then how did it all start?"

Ellen was Julee's pilates teacher. Ellen told me excitedly that, "we both loved the cemetery, so Julee invited me to join her for the Halloween tour that had been organized by Historic Ithaca[3]. That was about five years ago." It was then that we decided to organize a clean-up day the following May on Memorial Day, which led to another clean-up the following May, and we've been consistently organizing these events ever since."



The first clean-up organized by Julee and Ellen.
© Julee Johnson

Trash in the bag! Ellen and Julee's first clean-up at the Ithaca City Cemetery.
© Julee Johnson

Next I met with Julee over coffee at Starbucks. She and Ellen are supported in their work by Carol Kammen, the county historian. Carol was concerned about the cemetery's state of disrepair, so she earmarked funds through Historic Ithaca to improve the cemetery. Before rushing back to her office, Julee invited me to join the Ithaca City Cemetery Sprint, a 1-mile race within the cemetery coinciding with Halloween, being organized to raise awareness about this green space, the city's largest. She said the objective was to make people conscious of the fact that the cemetery is both a park and a historic site.

The following Halloween, on a cold wet Saturday, I participated in the Ithaca Cemetery Sprint. Nearly all the participants dressed in Halloween costumes and ran or walked through the marked lanes of the cemetery.

There were prizes for the winners of the sprint[4], and of course, the wildest costumes! The finish line had warm cider, fruit, water, cookies, and other snacks for the contestants. It was a good turnout and people went home happy!

Civic Ecology Principles

Civic ecology practices emerge in broken places

Civic ecology practices often emerge in broken places. Broken places are those that have been destroyed by war or natural disasters, or impacted by economic downturn and environmental degradation (slow burn). The FICC founders noticed the cemetery was not well taken care of by the city government. Many gravestones had fallen or been pushed over, often shattering and sometimes becoming buried in the dirt. Moss and algae were allowed to accumulate on the headstones, the trees and bushes were left to grow wild in some places, and there was a lot of litter, much of it being washed into the cemetery's creeks and ravines.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

According to Krasny and Tidball (2012), "love of a particular place – or topophilia -- compels people to take stewardship action". Both Ellen and Julee expressed their love for the cemetery and appreciated its history and tranquility. This suggests that topophilia may have played a role in motivating them to start FICC.

In re-creating places, civic ecology practices re-create community

Not only the volunteer stewardship activities, but also the Ithaca City Cemetery Sprint is a wonderful example of FICC[5] efforts to build a sense of community.

Before discussing FICC any further, I'd like to draw a comparison of a clean-up initiative in Iran. In the case of the Nature Cleaners of Iran[6], through participation in clean-ups in public spaces, and sharing a meal afterwards, the volunteers seem to have developed a sense of community. A sense of community among a group of people exists when members have feelings of belonging, of making a difference, of their needs being met, and of shared emotional connection with others[7].

Similar to how people may be developing feelings of belonging and of making a difference in Nature Cleaners, I observed how a sense of community might be developing among the volunteers during our FICC clean-up. It was more apparent among the sub-groups that worked on a common task, like cleaning a tombstone. Being part of a group working together for a common goal can also foster trust and social connections, or social capital. Finally, collective efficacy, or the willingness of people to clean up "broken places" in their neighborhood, was demonstrated during the FICC volunteer day.

Civic ecology practices produce ecosystem services

Natural areas such as forests and watersheds harbor biodiversity, which in turn provides ecosystem services. For example, green spaces like the Ithaca City Cemetery provide ecosystem services by absorbing street runoff and filtering out rainwater contaminants before the water flows into Ithaca's gorges and Cayuga Lake. Recreation, education, and aesthetic experiences (cultural ecosystem services) are being provided by the cemetery when people use it as a park. The Ithaca City Cemetery has beautiful walkways. People jog, bike, and leisurely stroll through its green space. The cemetery provides a space for reflection, clean air, and recreation. For my daughters and me, participating in the clean-up was fun -- itself a form of recreation. So by allowing us to have this recreational experience, we might say the clean-up activities provided cultural ecosystem services.

Civic ecology practices foster well-being

A wealth of research demonstrates how spending time in nature reduces stress levels and improves cognition. For example, Japanese researchers found that "taking in the forest atmosphere or forest bathing" resulted in "lower concentrations of cortisol, lower pulse rate, lower blood pressure, greater parasympathetic nerve activity, and lower sympathetic nerve activity" compared to spending time in city environments[8]. It is apparent[9] that the FICC volunteers were not only "taking in the atmosphere" of the cemetery and its green space, but also felt a sense of pride in contributing towards leaving a legacy for future Ithaca citizens. This sense of pride was evident even while they were pruning the trees.

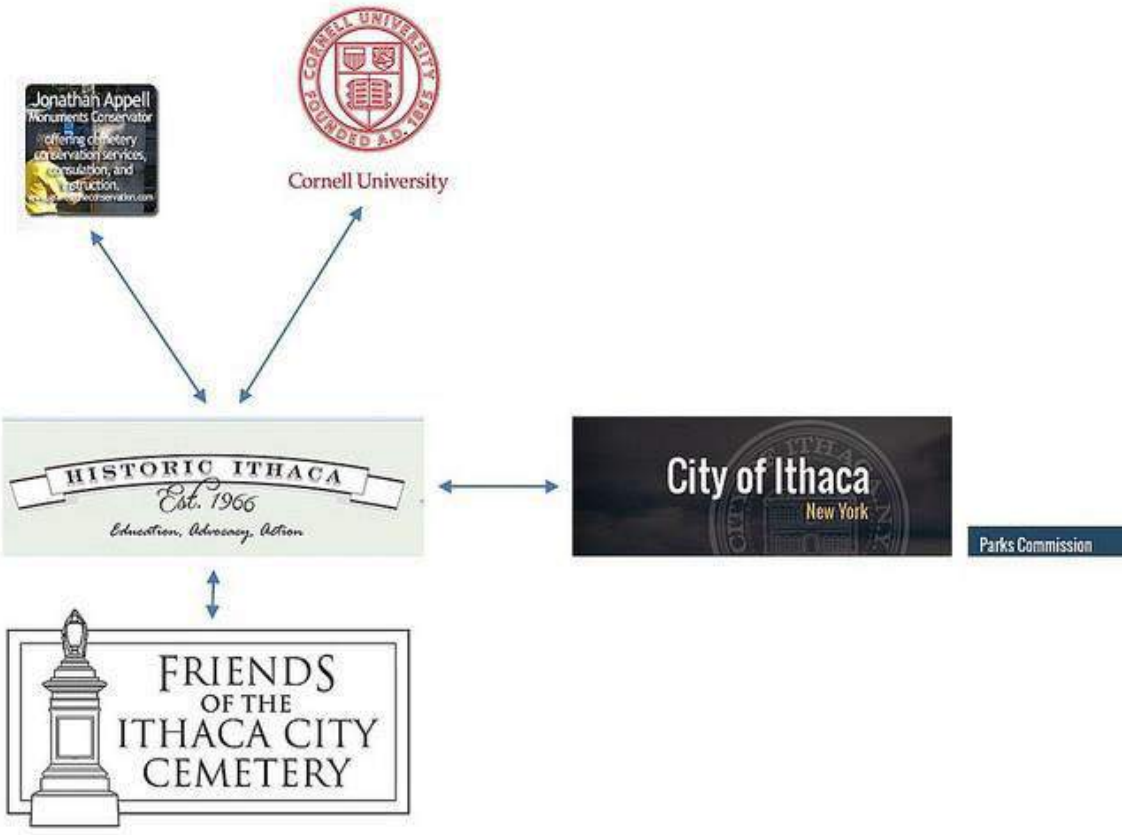
Civic ecology practices provide opportunities for learning

As we removed trash, washed gravestones, and pruned overgrown foliage, the volunteers learned about the historical significance of the cemetery. I also gained a broader appreciation for the ecosystem services provided by the cemetery.

Cleaning a cemetery on a voluntary basis would be considered a strange concept for someone from Pakistan, like myself. In Pakistan, people normally pay gravediggers and graveyard officials money to take care of their relatives' graves. In actuality, most gravestones lie untended with overgrown foliage, while others get damaged through natural weathering processes[10]. In contrast, as a volunteer at the FICC clean-up, I noticed how a community of civic ecology stewards came together to care for this historic cemetery. I learned how a cemetery can be considered as a park, a historic site -- a place where people don't only come to mourn, but also to celebrate and pay respect to their historic and natural heritage.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

I made the diagram below to illustrate the governance institutions with which FICC interacts. In September 2013, Historic Ithaca hired Jonathan Appell, founder of a gravestone preservation organization, to teach stewards how to conserve gravestones during a 2-day workshop. FICC operates under the umbrella of Historic Ithaca, an organization supported by the New York State Council on the Arts. The workshop was financed by Historic Ithaca, the City of Ithaca, and Cornell University. The City of Ithaca's Parks Commission has jurisdiction over the cemetery, and makes recommendations on maintenance and other



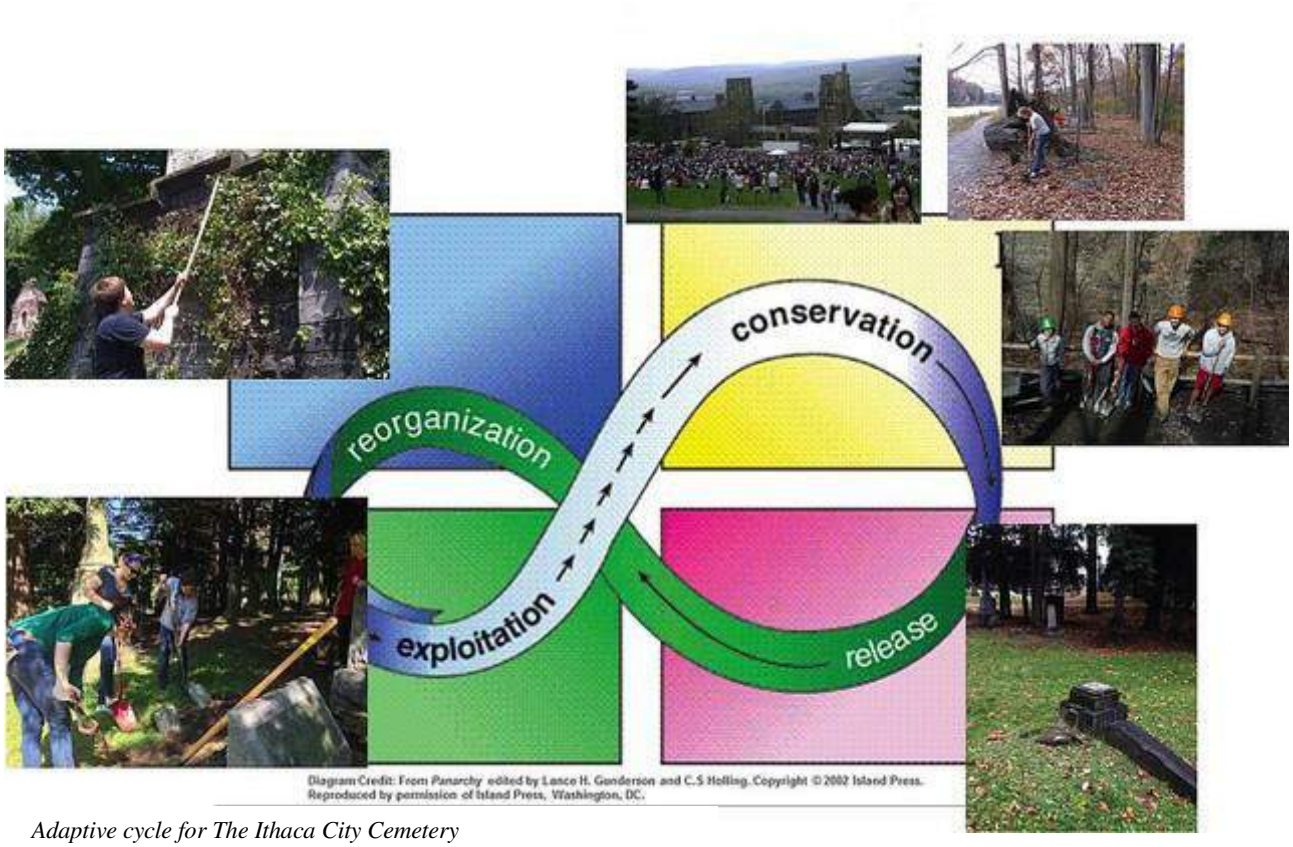
issues affecting it to the Board of Public Works and Common Council. The Parks Commission also provides support for FICC's rebuilding and restoration work.

Professor Krasny talks about how we can think of civic ecology practices as "practice innovations." One aspect of practice innovations that particularly stuck out for me during my work with FICC was "repurposing meanings" about a place or practice. For my daughters and me, the clean-up and the Cemetery Sprint changed the meanings we attribute to a cemetery -- from thinking about death and neglect, to thinking about green space, history, and a community caring for nature.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

I made an adaptive cycle diagram for FICC thinking about the cemetery as the social-ecological system.

FICC has been active for about five years. It seems a bit premature to determine the role that this civic ecology practice can play in the adaptive cycle of the larger social-ecological system (e.g., City of Ithaca) in which it occurs. Some civic ecology practices become part of the reorganization phase in a city that has been hit by a hurricane or suffered years of economic decline. At the moment, FICC's influence is within the immediate vicinity of the cemetery. In my diagram, I picture the fall of a tombstone (and many tombstones have fallen and broken in the cemetery) as the "release" phase, followed by reorganization. But for a social-ecological system to enter a release phase, it has to cross a threshold where things are radically different. I am wondering if these very small "disturbances" in a cemetery or park really constitute the kinds of disturbances scientists studying resilience would think of as crossing a threshold.



Adaptive cycle for The Ithaca City Cemetery

Policymakers have a role to play in growing civic ecology practices

One of the reasons FICC has been successful in rebuilding the City Cemetery is that it has had support from the City of Ithaca government, particularly the Dept. of Public Works. [Please note that Historic Ithaca isn't part of city government; it's an NGO.] When I spoke to founders Julee Johnson and Ellen Leventry, they said that FICC has a long way to go. The Ithaca City Cemetery Sprint is just one event that they host to raise awareness about the cemetery. Ideally, they would want more people to learn about the cemetery and be able to raise more funds to rebuild the many broken gravestones.

Reflection

When I reflect back on my goals for volunteering with FICC-- to learn about the civic ecology principles, do service, and provide a fun experience for my daughters -- I think I accomplished all three.

When I went to the cemetery I had an idea about the concept of love of place -- topophilia. However, when I saw how passionately Ellen and the volunteers were working it all made sense. They were doing what they were doing out of love for their city and its historic cemetery. There was an energy in the cemetery that my daughters and I picked up on and we worked together towards a common goal. And in the achievement of the goal there was a sense of accomplishment. In order for me to really understand how social capital is built in these situations, I would have to spend more time with the group. However, I also understand that this is a place where people with common interests can make lasting friendships. And it is these friendships that can carry over towards building the social capital that we learned about in class.

While my daughters were scrubbing the graves, it also gave me time for self-reflection and an appreciation for my surroundings. As a participant, I learned how important it is to step away from the pressures of daily life to devote time to the outdoors and participate in initiatives that benefit the entire community. Therefore, spending time in the cemetery was not only an activity to benefit the community, but was also a healthy way to unwind and de-stress. I went home feeling more rejuvenated than exhausted. And of course, the girls got to spend time away from their iPads!

My girls described the Ithaca Cemetery clean-up as a "great experience," "fun," "something they hadn't done before," and that the best part was "scrubbing the gravestones!" They also added that, "We did it, because it shows respect for the people who died, and that all the people there were very helpful in telling us why we were cleaning the graves."

Acknowledgements

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instructor Marianne Krasny and guest lecturer Shorna Allred for their inputs on Civic Ecology and Reflections on Service Learning. A special thanks goes to Ellen Leventry and Julee Johnson for taking the time to tell me about their experiences and their stewardship in the cemetery. Thanks to the Friends of the Ithaca City Cemetery for including us in their cemetery clean-up activity and sprint.

For more information about civic ecology, go to: http://civicecology.org/

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Senior citizens in Providence, RI give back to their community by growing produce for a local pantry.

Floreciendo el Sur de Providence

Providence, RI, USA

Bryce DuBois © 2015

This is the story of a passionate leader, a group of seniors from the Elmwood Community Center, and a community garden in South Providence, RI.

In spring 2015, a group of seniors started to plan and build a garden on the Elmwood Community Center property, led by master gardener and community center program leader Joemliy Collazo. Joemily saw the vacant and fenced off space around the Elmwood Community Center as an ideal place to flex her gardening muscles, and to connect and empower her group of seniors to grow their own food.

Photo by South Side Community Land Trust, vimeo.com.

Civic ecology practices emerge in broken places

In the language of civic ecology, the Elmwood neighborhood and greater South Providence area is a broken place due to poverty and disinvestment on the part of the city. It is an example of a "slow burn" red zone. Unfortunately, many of the seniors themselves struggle to make ends meet and so are experiencing the effects of poverty and disinvestment first hand.

As a response to this historical trend, the Elmwood Community Center established a food pantry in 2010 to help feed those in need. Although the food pantry gives residents access to foods that recipients would otherwise go without, the pantry is often unable to get an adequate supply of fresh produce. In turn, a number of seniors struggle with poor health that they attribute to lack of access to fresh and healthy foods.

The seniors would later dedicate the garden to Loni McGrath, a community activist who played a key role in keeping the Rhode Island Food Bank[1] running. Their dedication was in admiration for McGrath's work helping Elmwood and other low-income communities in Providence. She connected the Food Bank to areas of food scarcity and unequal access to fresh foods across the city.

Photo by www.forevermissed.com/Loni-McGrath/lifestory

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

During their gardening practice, the gardeners spoke profoundly about their love of life, their love of place, and how their efforts were helping to respond to the disturbances in their neighborhood — their biophilia, topophilia, and their desire to perform restorative topophilia. One senior said to me, "there is nothing more beautiful than nature" and others spoke of a deep love for their neighborhood. They understood their gardening practice as something that was restoring nature. Although the soil was too contaminated with heavy metals to plant vegetables for consumption, the gardeners built raised beds that were lined with material and wood chips to avoid contamination, and they used organic gardening techniques in order to help "heal the local ecosystem."

"There is nothing more beautiful than nature." **-** senior citizen at Elmwood Community Center Garden

In re-creating place, civic ecology practices re-create community

The sense that the seniors could enact change in their garden and local community — also known as their collective efficacy — became the strongest theme of their practice. By the end of the spring planting season, the gardeners no longer thought of their "Floreciendo el Sur de Providence" practice as being only in their garden, but also of having larger social implications in the South Providence community. They were proud of their work, with one gardener proclaiming that, "I drive by the center because it is now so beautiful." And they began to believe that they could expand this effort beyond the garden.

As the seniors learned and worked together, they established a greater sense of community. Through their shared practice — having to seek help to move heavy bins full of soil, passing watering cans, or sharing tools — they developed trusting relationships with one another and developed increased social capital (not to mention improving their own physical fitness).

"I drive by the center because it is now so beautiful." - senior citizen at Elmwood Community Center Garden

Civic ecology stewards draw on social-ecological memories to re-create places and communities

The group established new social-ecological memories in the neighborhood. Neighbors across the street from the community center began to plant gardens of their own and inquisitive school children who walk by every day to use the center's gym undoubtedly took in the care and appreciation for nature and the environment shown by the seniors. Thus, the seniors of the Elmwood Community Center have begun not only to engage in civic ecology practices, but to help their community begin to see what is possible when people come together to engage in stewardship of a beloved place.

"On Sunday I walked by the garden with my grandchildren and showed them the garden and told them that this is what I have been working on. They couldn't believe it!"
- senior citizen at Elmwood Community Center Garden

"I love to see the smiles of the children and their teachers when they pass by the garden." - senior citizen at Elmwood Community Center Garden

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Joemily leveraged her connections with the South Side Community Land Trust[2] to get the supplies to build the garden, and received additional help from the Rhode Island Community Food Bank and the City of Providence. These donations made it possible for the Elmwood Community Center's seniors to establish a garden to contribute fresh produce to the pantry for the residents of the south side of Providence. Joemily also connected with me to lead a course on civic ecology concurrently with their practice. I work for Cornell University so my involvement added a university partner.

All photos © Bryce DuBois, 2015 (unless otherwise indicated)

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A Community Supported Agriculture cooperative tackles issues of community connection and food security

Restoring Community through Agriculture and Education

Dayton, Ohio, USA

Maddie Dunfee © 2015

Introduction

One very cold day this past January, the school where I work was closed due to bad weather, so I had some time to page through my local newspaper. I was excited to find a fascinating article — an exposé about obesity and under-nutrition in developing countries[1].

While I am currently a science teacher in Dayton, Ohio, my undergraduate education focused on ecology and nutrition. After reading the article, I contacted Professor Castellanos of the University of Dayton to ask whether she was researching similar patterns of obesity and under-nutrition in our area.

About a week later, Dr. Castellanos and I met to discuss her work relating to food sovereignty and nutrition in Dayton. As we brainstormed points at which our interests in nutrition, agriculture and education aligned, Dr. Castellanos mentioned her involvement with the Mission of Mary Cooperative's Community Supported Agriculture (CSA) program[2].

I was already a part of a different CSA, but as Dr. Castellanos and I continued to meet to plan a collaborative research project, I learned more about this innovative experiment in restorative urban agriculture.

As I started learning about civic ecology through the course CornellX: ENVSCI1500x *Reclaiming Broken Places: Introduction to Civic Ecology*, I realized the Mission of Mary Cooperative has grown from a community garden into a multifaceted civic ecology practice aimed at supporting residents in the Twin Towers neighborhood of Dayton. The Cooperative aims to improving community life through urban agriculture, land restoration, and community education. In only seven years, the Mission of Mary Cooperative has blossomed to include four projects: a CSA, a youth corps, a youth summer camp, and a worm casting micro-enterprise.

Civic ecology practices emerge in broken places

Michael Schulz started the cooperative in 2007, shortly after graduating from the University of Dayton. Schulz and several friends moved to the Twin Towers neighborhood in inner-city, Dayton where roughly half of the residents were living below the poverty line. Soon after moving to the area, Schulz noticed many abandoned lots and decided that establishing a garden in one of these spaces could improve the community in a variety of ways including increasing people's access to fresh foods and encouraging neighbors to bond[3]. By starting the garden, the lay Marianists envisioned lifting up the community.

The stewards define their purpose as four-fold. First, "to acquire, restore, and maintain vacant urban land, so that it is functional and attractive to the neighborhood." Second, "to cultivate and distribute nutritious food to the people of the neighborhood who do not have economic or geographical access to this food, and to educate them on the use of this food." Third "to educate persons on simple and just Christian living, social justice,

urban agriculture, native land restoration, and land stewardship." Fourth, "to undertake the necessary administrative and fundraising activities to advance the Mission of Mary Cooperative." With these purposes in mind, the stewards continue their work restoring their community and steering it towards a remarkable future through sustainable innovations.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Mission of Mary Cooperative stewards demonstrate biophilia — the love of life — through their investment in their community. Each season, stewards plan, cultivate, and care for the plants, the farm and their neighbors. I had a chance to meet with Steven Mackell, one of the farm's co-managers, and I learned that since the cooperative's start, the organization has expanded to include a staging area and three gardens — all located in the heart of one of the city's most disadvantaged neighborhoods. At this location, biophilia meets topophilia — the love of place — as the stewards' purpose is to serve, uplift, and involve their neighbors in programs that resonate with the culture, circumstances, and schedule of the community.

Photo by Mission of Mary Cooperative

In re-creating place, civic ecology practices re-create community

Through land restoration initiatives, community meals, and workshops, Mission of Mary facilitates revitalization of the Twin Towers community[4]. Relationships are at the core of this work. Even while planting, growing and tending to the needs of the farm, Mackell and his partners focus predominantly on cultivating relationships. Since beginning the cooperative, Mackell notes that the demographics in the community have changed, and as a result, Mission of Mary Cooperative has changed not only the crops they grow, but also their advertising. Recently stewards added signs and documents in Spanish in order to provide access to the farm to non-English speaking neighbors.

Looking beyond the Twin Towers neighborhood, social capital in the form of affiliations with the University of Dayton and the Marianist community in Dayton adds strength to the organization. Additionally, the Cooperative partners with several local community centers, schools, churches, and food pantries in and around the Twin Towers.

The most obvious manifestation of the community the cooperative is cultivating is the project's expansion over the past seven years. Trust, connections, and collective efficacy exist in people sending their children to join the youth corps and the summer camp, as well as growing numbers of people choosing to join the CSA, which started with six people and now includes more than twenty. As the practice continues to grow, new norms are taking form, including the incorporation of micro-enterprises that Mackell hopes will someday employ neighbors of the garden.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

Mission of Mary Cooperative revives social-ecological memories as community members band together to plan, plant, tend, harvest and enjoy the gardens. The Mission of Mary's biological and ecological memories include the soil, water, and air in the local neighborhood as well as the agricultural varieties the community chooses to grow and the pollinators attracted to the area.

By converting abandoned spaces in the neighborhood to productive places, this practice fosters the restoration of the Twin Towers neighborhood, and perhaps helps restore all of Dayton to the vitality the area exuded in the first half of the twentieth century[5].

Civic ecology practices produce ecosystem services

Ecosystem services produced through this practice include fresh foods and vegetables. By converting abandoned lots into thriving agricultural systems, the cooperative also helps to maintain the regulating ecosystem services of clean soil, water, and air. Composting degradable materials — so that they can be used to improve the soil instead of being put in landfills — builds supporting ecosystem services. Finally, cultural ecosystem services develop through the garden inviting people to enjoy a more aesthetic neighborhood.

Civic ecology practices foster well-being

All program participants, including volunteers from outside the community, can get exercise and decrease their stress by engaging in the Mission's activities. The most prominent mental health benefits shared by all participants include self-esteem, self-efficacy, empowerment, and social connections. To ensure that members of the Twin Towers neighborhood are able to access the Mission of Mary Cooperative's locally grown fruits and vegetables, a share from the CSA costs less for neighbors than for people living outside the community. Given the economic hardship plaguing much of the community, this policy is vital to supporting residents' quest toward improved health and well-being.

Photo by Mission of Mary Cooperative

Civic ecology practices provide opportunities for learning

Participants in the Mission of Mary Cooperative learn to grow food, care for plants, cook healthy meals, and partner with others to accomplish a goal. Further, through recognizing changes in their health, mood, and relationships, stewards gain knowledge of the feedbacks among individuals, the community, and the environment.

Learning at the cooperative occurs cooperatively through monthly community meals, volunteer work days, and educational

events. As they create meals from foods grown on the farm, stewards learn, share ideas and collaborate. At volunteer work days, participants gain skills and experience related to gardening and farming. The youngest community members also take part in the organization's cooperative learning opportunities through participating in school field trips — for students of all ages — during the school year, as well as through camps and youth corps activities during the summer.

Stewards use the information that they gain through interacting with peers and with the environment to grow and share food with members of their community who might not have access to nutritious sustenance. Additionally, as stewards interact with other members of their community, they gain new perspectives on socio-economic and cultural aspects of Dayton.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

The Mission of Mary Cooperative is a training ground for youth and adults interested in practicing and developing skills related to urban agriculture, collective efficacy, and social justice. Facilitating programs that help people build these skills requires partnerships with other organizations in and around Dayton. For the community meals, Mission of Mary Cooperative partners with a local church at which many members of the community worship. The cooperative's youth corps program and summer camp are possible because of partnerships with a county-level job placement program and local elementary schools, respectively. The stewards also join other agriculturalists to discuss experiences and learn. While Mission of Mary Cooperative's focus is clearly the local community, the Cooperative balances this focus with relationships with the Marianist community throughout Dayton and the United States.

Photo by Mission of Mary Cooperative

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

Over the past two decades, the release phase of the adaptive cycle has occurred as numerous key industries left the Dayton area resulting in an economic slump. The neighborhood near the Mission of Mary Cooperative is one of the areas hardest hit.

In recent years, pockets of the city have started to recover as communities band together to create innovative solutions to local ills. While the Mission of Mary Cooperative clearly impacts the community members and the ecosystem services in positive ways, the project's further-reaching impacts, such as its effect on governance, is more difficult to document[6].

Policy makers have a role to play in growing civic ecology practices

Although the stewards have close ties to the University of Dayton, the Mission of Mary Cooperative does not currently engage with faculty in researching the programs' outcomes. Mackell mentioned that this simply has not been a focus for the

organization in recent years, and acknowledges the delicate balance between research and relationships. Currently, stewards are exploring ways to expand the practice to make it sustainable through grant writing and micro-enterprises. In the coming years, stewards will continue to invite individuals and organizations to collaborate and lend a hand.

The program has grown immensely since its inception in 2007. Concurrent with this rapid growth, stewards have remained passionate and faithful to their mission. Collaboration with other organizations has been critical in helping the Mission of Mary Cooperative grow. Only time will tell how effectively the Mission of Mary Cooperative will improve the Twin Towers neighborhood and Dayton in the coming years. At the organization's current rate of expansion, though, the future is looking very bright for this community.

Photo by Mission of Mary Cooperative

Reflection

Through talking with people familiar with the practice and by searching for information on the internet, I was able to learn a great deal about the Mission of Mary Cooperative. I was fortunate also to be able to talk with Steven Mackell at the site of the first garden and staging area.

This civic ecology practice revolves around four main programs:
1. Converting abandoned lots into small, urban farms.
2. Distributing produce to local residents in some of Dayton's most disadvantaged regions through the CSA program, farm stands, and monthly community meals.
3. Engaging community members from outside the neighborhood in the practice by including them in the CSA program, and
4. Engaging youth in urban agriculture.

The most important thing that I learned through investigating the Mission of Mary Cooperative is that there is a group of people in my community who not only passionately believes that access to healthy food is a human right, but also live and work tirelessly in the community alongside other residents to turn this belief into a reality. It was unfortunate that I was not able to engage in the mission's work during this course. As a result of investigating this practice, I plan to connect my students and their families with the cooperative, since many of them live very close to the organization.

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Civic ecology stewards preserve a vital natural area in Ithaca, New York, USA.

A Century of Six Mile Creek Stewardship

Ithaca, NY, USA

Janet Edwards © 2015

Introduction

The Six Mile Creek watershed in Tompkins County, New York, has a rich history of civic ecology engagement. The watershed -- which is approximately 50 square miles -- provides water for City of Ithaca residents from its reservoirs. Six Mile Creek Natural Area within the watershed has dams to control the water flow into the city's water treatment plant. Surrounding the dams are gorgeous babbling brooks and streams created by ancient glacial activity, as well as habitats for wildlife, and beautiful wooded trails for walking and hiking. The Mulholland Wildflower Preserve is the main gateway to Six Mile Creek Natural Area. But the natural area, which is close to downtown Ithaca, became the focus of civic ecology stewards nearly a century before it contained a wildflower preserve.

Stewardship History -- Early 1900's

Concern for the watershed area closest to the city began in the 1903 when the thirty-foot dam (known locally as Second Dam) was built to create reservoirs to supply water for the growing population of Ithaca. As the dam was being built, the construction crew contaminated the water with typhoid, causing a deadly outbreak in the city. Plans for a water purification plant were swiftly executed to ensure the safety of the city's water supply. The Water Filtration Plant near the Mulholland Wildflower Preserve, and Potters Falls' sixty-foot dam (known locally as Third Dam) in the Town of Ithaca, were completed in 1911 to keep up with the city's demand for clean water[1]. The Water Filtration plant is still in use, and is being replaced with a modern facility that is currently under construction and slated for completion in the fall of 2016[2].

Water pipe in Six Mile Creek. General Photo Collection, The History Center in Tompkins County.

In the early 1900's, Robert H. Treman, a local businessman and Cornell University trustee, gifted a parcel of land surrounding Six Mile Creek Glen to the City of Ithaca, with the caveat that the land be used as a park and maintained for public use[3]. Shortly thereafter, he made plans for creating a recreational park on the land. His plans culminated in an event in 1917 called

Plan for Six Mile Glen Park. A Resolution to Form a City Natural Areas Commission. Elizabeth Mulholland Collection, The History Center in Tompkins County.

Community Day, that was sponsored by Ithaca's Bureau of Commerce. Local residents helped to clear areas for walking paths, an amphitheater, a baseball field, a playground, and a parade field. High school students built bridges and razed areas for school gardens. The area, which is near Van Natta's Dam (known locally as First Dam), became known as Six Mile Glen Park[4].

Six Mile Glen Park. (May 15, 1917). Seth L Sheldon, General Photo Collection, The History Center in Tompkins County.

Stewardship History -- Mid to Late 1900's

Over time, presumably due to lack of resources for maintenance, the formal Six Mile Glen Park deteriorated, but the natural area was still in use. In 1970, a Board of Public Works employee was inspecting the water pipes in Six Mile Creek Natural Area and happened upon surveyors' flags.

Alarmed that the natural area was being earmarked for development, the Board of Public Works set a plan in motion to protect the area. The area surrounding the Water Filtration Plant then became a wildflower preserve. Shortly thereafter Six Mile Creek and the wildflower preserve became the focus of local resident Elizabeth Mulholland, a regional geographer, who was on the Area Beautification Council of the Ithaca Bicentennial Committee.

In the mid-1970s, the New York State American Revolution Bicentennial Commission was formed to support New York State municipalities in commemorating the 200th anniversary of the American Revolution[5]. Improving historic landmarks, including public parks, was part of their mission. Citing this mission, Elizabeth Mulholland and her fellow Bicentennial Committee members proposed the Circle Greenway Bicentennial Project to Ithaca's city council, as a way to celebrate the city's rich history by highlighting its historic landmarks and natural areas.

The Circle Greenway is a 10.5-mile self-guided walking tour around the city of Ithaca that includes: the Six Mile Creek Gorge on South Hill; Upland Walk, a former railroad bed on East Hill; the Cornell University campus which includes the Cornell Plantations and Cascadilla Gorge; the Fall Creek neighborhood downtown, including Ithaca Falls; the waterfront on Cayuga Lake, including the Fuertes Bird Sanctuary in Stewart Park, the Farmer's Market, and Treman Marina; the West End downtown site of Cherry Street Industrial Park; the Southside neighborhood downtown with its historical buildings; and the central Downtown Ithaca Commons pedestrian mall built in 1974[6]. The greenway concept was intended to be a permanent city attraction.

The proposal was accepted by the council, and the Circle Greenway Committee was formed to oversee maintenance of the natural areas[7].

Maintaining Six Mile Creek Gorge and the surrounding natural area was the main focus of the Circle Greenway Committee for nearly a decade. The committee partnered with local groups, including the Ithaca Youth Bureau and the Department of Public Works, to maintain the wildflower preserve and natural area within in the city[8].

A Six Mile Creek Study Committee was formed in 1983 to address increased concern about protecting the watershed. Shortly thereafter, a local high school student dove into the creek near Second Dam and died, causing outrage from the grieving parents and public concern with illegal swimming and diving in the creek. Due to attention on the unfortunate accident, four of the 14 recommendations in the committee's final report, "Six Mile Gorge, People and Preservation," were focused on swimming[9].

One recommendation made by the committee was to hire a Gorge Ranger to monitor the natural area and inform visitors of regulations[10]. Another recommendation was to form a Six Mile Creek Overseer Committee to follow through on the recommendations in the committee's report[9]. Both recommendations were approved by the Common Council. The Six Mile Creek Overseer Committee was

formed in the summer of 1984. Elizabeth Mulholland served on this committee and was instrumental to the continued stewardship of Six Mile Creek Natural Area. In 1986, the wildflower preserve was renamed the Elizabeth Mulholland Wildflower Preserve to honor her long service[11].

In the mid-1990s, the Six Mile Creek Advisory Committee (previously named the Six Mile Creek Overseer Committee) proposed the formation of a Natural Areas Commission (NAC) to advise the city in how to manage its natural areas[12]. The NAC worked closely with the Six Mile Creek Advisory Committee and the Circle Greenway Committee to ensure that the natural areas were being maintained and protected. Eventually the three committees merged into one committee -- the NAC -- composed of volunteers with expertise in natural systems, geology, and law who help to support the NAC's mission. The NAC still exists today and advises the city on the preservation of Ithaca Falls, the Fuertes Bird Sanctuary, and Six Mile Creek Natural Area.

Current Stewardship

Anna Stalter is the contact on the Friends of Six Mile Creek website, the current Vice Chair and Secretary of the NAC, and an Associate Curator and Extension Botanist at Cornell University's L.H. Bailey Hortorium Herbarium. She was happy to speak with me about her experience as a member of Friends of Six Mile Creek and the NAC. We had a lengthy conversation about the current stewardship, and the partners involved in the stewardship of the Six Mile Creek Natural Area. She noted that the NAC and Friends of Six Mile Creek are intertwined, with many of the members of the NAC also being Friends of Six Mile Creek stewards.

Shortly after Friends of Six Mile Creek group was formed in 2003, Anna was contacted to become a member of the Six Mile Creek Invasive Plant Advisory Committee. The committee was formed as a result of findings from a study performed by students taking a restoration ecology course at Cornell University. The students were initially interested in the levels of erosion in Six Mile Creek Natural Area, but found that the threat of invasive species loomed larger than previously thought. The committee investigated the invasive species threat further, and submitted a draft of their management plan to the NAC in 2005.

One suggestion in the proposed management plan was to hire a Natural Areas Steward to solicit volunteers to help monitor and remove the invasive species. One of the challenges to hiring a Natural Areas Steward was funding. Luckily, a group of students in an Ithaca College grant writing course took an interest in Friends of Six Mile Creek. The students wrote a grant to the Park Foundation to request funding for a Natural Areas Steward intern. The grant was approved and the Friends had short-term funding for an intern to organize volunteers

and outreach activities such as Wildflower Appreciation Day. The event was fun and educational. It included a contest for pulling up the largest root of the invasive garlic mustard plant and a wildflower identification hunt.

In addition to the Wildflower Appreciation Day, Friends of Six Mile Creek organize educational opportunities available to the public. "Nature Journaling in Six Mile Creek" is a series of workshops for children which have been offered for the past three years. Once a month in spring, a local naturalist meets with kids in the natural area to expose them to the natural landscape and encourage them to reflect on their experience by journaling. The workshops include topics such as animal tracking and native plant identification. The "Explore Your Watershed 2014: A series of walks and talks by local experts" is a series of educational hikes led by local experts who share their knowledge while the group hikes the trails of the natural area. Topics of the "walk and talks" include birds, trees, and the city's water supply. This spring, I joined Joe McMahon's walk and talk about Big Trees.

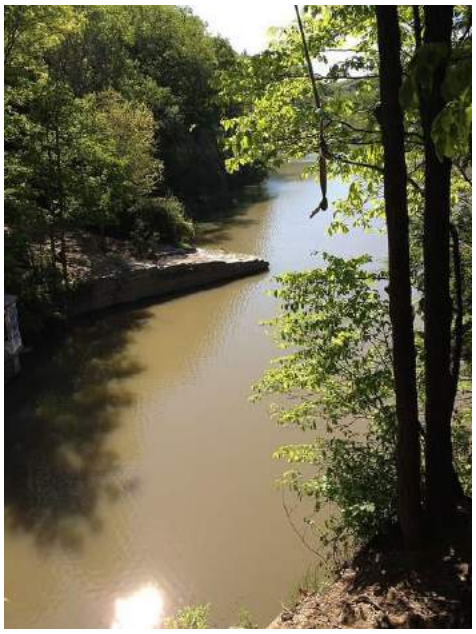
Joe McMahon is a teacher at Ithaca High School, and the current NAC Chair. He lives in the South Hill neighborhood that borders the Mulholland Wildflower Preserve and regularly hikes in Six Mile Creek Natural Area. About 10 years ago, he contacted Friends of Six Mile Creek to voice concerns about the trash and unleashed dogs wreaking havoc in the natural area. The Friends shared his concerns and solicited him to join them and the NAC to help with stewardship efforts. Since then, Joe has been involved with stewardship and outreach, leading invasive species removal days with local high school students, and educating the public about the landscape of the natural area (specifically the big trees).

Civic Ecology Principles Reflected in Six Mile Creek Stewardship

Civic ecology practices emerge in broken places

Deterioration of the Six Mile Glen Park, the threat of developers building in the natural area, ecosystem changes of the watershed, increases in the invasive species, and visitors' ignorance of land use regulations

have all led local residents to act as civic ecology stewards to preserve Six Mile Creek Natural Area. The ignorance and disregard of land use regulations — specifically illegal swimming — is the main focus of present day civic ecology stewards. Not only is swimming highly dangerous due to the turbidity of the water, hidden rocks, and swift currents, the illegal swimmers are causing erosion of trails because of increased foot traffic in concentrated areas[14]. Trees are also being damaged by the illegal swimmers using them to gain leverage as they jump into the water.



Because of their love for life and live for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

It is the inherent topophilia and biophilia within each civic ecology steward that influences them to protect Six Mile Creek Natural Area from the threats to the natural area's ecosystem.

Robert H. Treman gifted a parcel of land to the city for public use[3]. The Board of Public Works created a wildflower preserve when the natural area was threatened by development. Elizabeth Mulholland worked hard to protect, maintain, and share the beauty of Six Mile Creek Natural Area with the community[15]. Joe McMahon maintains and educates volunteers about how to maintain Six Mile Creek Natural Area, and also fights tirelessly against the promotion of illegal swimming that appears on social media outlets. These are all examples of civic ecology stewards showing their love of place, or topophilia.

Elizabeth Mulholland spoke openly about her enjoyment in watching the wildflowers blossom in the natural area. Anna Stalter investigated the invasive species of the natural area, and collaborated with committee members on an invasive species management plan. She also shared her knowledge of plants with the community on Wildflower Appreciation Day. Joe McMahon shares his knowledge of big trees while guiding informational hikes in the natural area. These are all examples civic ecology stewards showing their love of life, or biophilia. The civic ecology stewards engage in stewardship practices as a response to ecosystem threats so that Six Mile Creek Natural Area remains a place for people to visit and enjoy all the forms of life in the natural area's ecosystem.

Civic ecology practices produce ecosystem services

The Six Mile Creek watershed and natural area provide crucial ecosystem services for Ithaca. The watershed provides the provisioning service of fresh water to the city's residents. The dams built in the creek, and the water treatment plant in the natural area, provide the supporting service of water regulation. Six Mile Creek Natural Area, including Mulholland Wildflower Preserve, provides regulating ecosystem services. The trees help to regulate air quality and erosion. The plants also help with regulating erosion and attract pollinators. The trees and plants both regulate the water by helping to reduce flooding. Six Mile Creek Natural Area and Mulholland Wildflower Preserve provide the cultural service of an aesthetic and recreational experience for those who hike safely on trails and enjoy the area's natural beauty.

Friends of Six Mile Creek and the NAC are the civic ecology stewards of Six Mile Creek, who help support the provisioning services by maintaining trails, holding educational workshops, and advising the Common Council on how to best protect the watershed"[13].

Policy makers have a role to play in growing civic ecology practices

In addition to advising Ithaca's Common Council, the NAC collaborates with the Board of Public Works, the Department of Public Works, and the Conservation Advisory Council to preserve Six Mile Creek Natural Area.

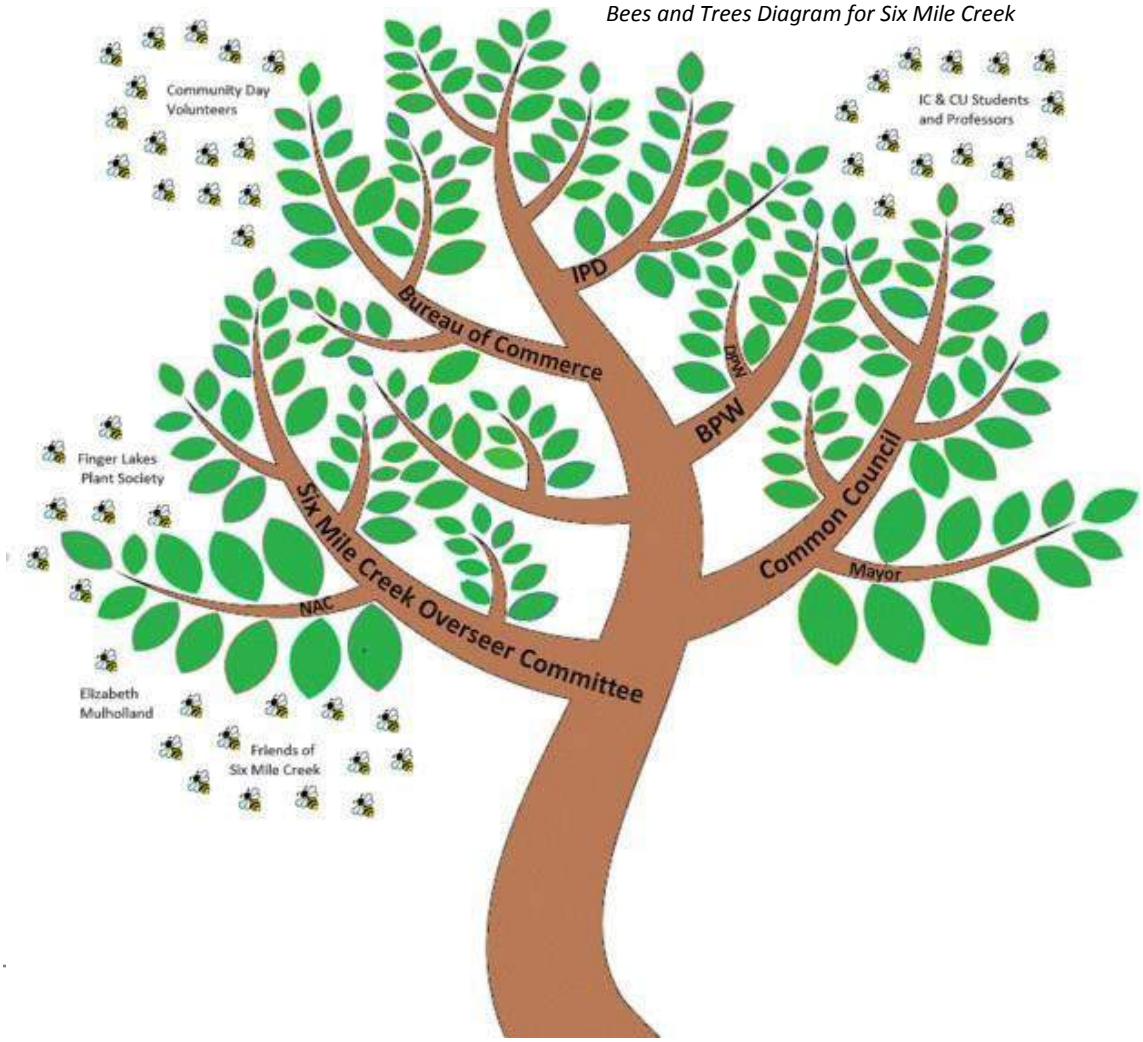
Of the three natural areas in Ithaca that the NAC oversees, Six Mile Creek Natural Area is often the main focus of the NAC because it faces the most imminent ecosystem threats. The threat of invasive species is becoming more and more prevalent. The NAC has partnered with the city forester, the invasive species and other committees, and the Finger Lakes Native Plant Society to reduce the threat of invasive species to the area. The city forester helps identify and assess the status of the Hemlock Woolly Adelgid; the Finger Lakes Native Plant Society helps with removing and monitoring Japanese stiltgrass; and Friends of Six Mile Creek help to remove invasive plant species, such as garlic mustard.

Visitors to the natural area who ignore land use regulations are also a threat to the ecosystem. The NAC partners with the City of Ithaca to hire the Natural Areas Ranger (formerly known as the Gorge Ranger) who is tasked with reminding visitors of land use regulations. The City of Ithaca works with the city police to support the Natural Areas Ranger in monitoring the activities of visitors in the natural area.

The partnership between the civic ecology stewards of Six Mile Creek Natural Area and local government can be visualized by using the "bees and trees" analogy in the governance chapter of the Krasny and Tidball text. The bees are "small groups that

recognize a need in their community, act quickly, and 'cross-pollinate' to…restore ecosystems"[13]. The trees are the "city, municipal governments and businesses [that] come to recognize and support"[13] the small groups. The residents of Ithaca who attended Community Day in 1917 to build the Six Mile Glen Park were the 'bees', supported by the Bureau of Commerce 'tree'. Elizabeth Mulholland was a 'bee' interested in highlighting natural areas in Ithaca for the Bicentennial celebration. The idea was supported by the 'tree' of the Common Council, and the Circle Greenway Committee became a new branch on the 'tree'. The people on the Six Mile Creek Study Committee were the 'bees' concerned with protecting the Six Mile Creek watershed. Common Council was the 'tree' that supported the recommendations of the committee. The Six Mile Creek Overseer Committee then became a new branch on the 'tree'. That branch grew into the Natural Areas Commission, which is part of the 'tree' of governance that supports the Friends of Six Mile Creek 'bees'. The additional branches on the 'tree' that supports Friends of Six Mile Creek include the Department of Public Works, the Board of Public Works, the Ithaca Police Department, the Common Council, and the Mayor. The 'bees' that work with the Friends of Six Mile Creek are the students and professors at Cornell University and Ithaca College who help to support and expand stewardship efforts, the members of Finger Lakes Native Plant Society who lend their knowledge and helping hands to remove invasive species in the natural area, and concerned citizens who become involved with stewardship efforts and eventually join Friends of Six Mile Creek.

Bees and Trees Diagram for Six Mile Creek



Reflection

I became curious about partnerships of local conservation groups in Ithaca while reading the governance chapter in the Krasny and Tidball text. A Google search of "Ithaca NY conservation" led me to the Friends of Six Mile Creek website. Having lived on South Hill with Six Mile Creek practically in my backyard, and currently living very close to the Mulholland Wildflower Preserve, I was excited to learn about the stewards helping to preserve the natural area.

My primary goal for the service learning project was to learn more about how the partnership between the Friends of Six Mile

Creek and NAC fit into the polycentric governance model with other local conservation groups and governing bodies. Anna Stalter was a tremendous asset in helping me learn about the partnership of Friends of Six Mile Creek and the NAC. As a member of the invasive species committee, Friends of Six Mile Creek and NAC, she was able to speak to the different partnerships that reflect the polycentric governance model. Anna was also helpful in describing volunteer and educational opportunities provided by Friends of Six Mile Creek, which facilitated my secondary goal of participating in an outreach activity to learn more about the landscape of the natural area. One of the outreach activities that was of interest to me was the Big Trees educational "walk and talk" led by Joe McMahon. Joe's talk about big trees was peppered with historical references that piqued my interest in the history of Six Mile Creek Natural Area.

After my conversation with Anna and the hike led by Joe, I felt compelled to research and write about the history of Six Mile Creek stewardship as it relates to civic ecology. As a result of the project, I was also inspired to attend an NAC meeting to further my knowledge about how the group helps to facilitate stewardship of the natural area. The stewardship of the Six Mile Creek watershed, including the natural area and wildflower preserve, is important because of the vital ecosystem services it provides to local residents. The watershed and natural area will continue to provide those services for many years to come with the help of local stewards and local government.

Acknowledgements

The History Center in Tompkins County for their assistance and the use of their archives.
Anna Stalter and Joe McMahon of the Natural Areas Commission and Friends of Six Mile Creek for inspiring this story!

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Rebuilding the Crystal River in Dayton, Wisconsin after the removal of Little Hope Dam.

The Un-damming of Crystal River

Dayton, Wisconsin

Angela Williamson Emmert © 2015

Introduction

Civic ecology is the study of how community environmental stewardship practices interact with people and other organisms, neighborhoods, governments, non-profit and business organizations, and the ecosystems in which they take place[1].

This project is a study of the events that preceded the removal of the Little Hope Dam and what followed after its removal.

The Little Hope Dam made a mill pond from a section of the Crystal River in the southeast corner of Waupaca County, in central Wisconsin. After a long period of decline, the dam was removed under orders of the Department of Natural Resources because it was deemed unsafe. The township and the county were unwilling or unable to restore the dam. This removal led to the loss of the mill pond which, as one might imagine, has angered some people.

The principles of civic ecology offer a framework for understanding both the ecological implications and the ways in which the community has had to heal from the controversy of both the dam's removal and the river restoration plans. Most importantly, the principles of civic ecology show us how the two — the community and its environment — are actually only one.

This project explores the four phases of civic ecology practices: 1. emergence, explaining why civic ecology practices happen; 2. piecing it together, showing how divergent interests come together to begin a civic ecology practice; 3. growing out of and connecting with a larger context, discovering ways in which civic ecology practices are part of the social and ecological systems surrounding them; and 4. from personal to policy, looking at how civic ecology practices can influence governmental practices.

For my project for the Spring 2015 section of Civic Ecology, I spoke with one of the new town supervisors in the Town of Dayton about the restoration of the Crystal River. Her work with the undamming and restoration project began as a community organizer. She made it her business to know all of the parties who would be affected by the removal of the Little Hope Dam and know their feelings about the project. Her decision to run for town supervisor was motivated by her desire to be able to do her community work more efficiently and be in a position where she could make a difference. She spoke to me about the restoration of the community — which is perhaps more important — and about how a strong future does not mean forgetting the past, but instead finding ways of tapping into social memories of that past and making it more meaningful to those who would feel the loss of the mill pond.

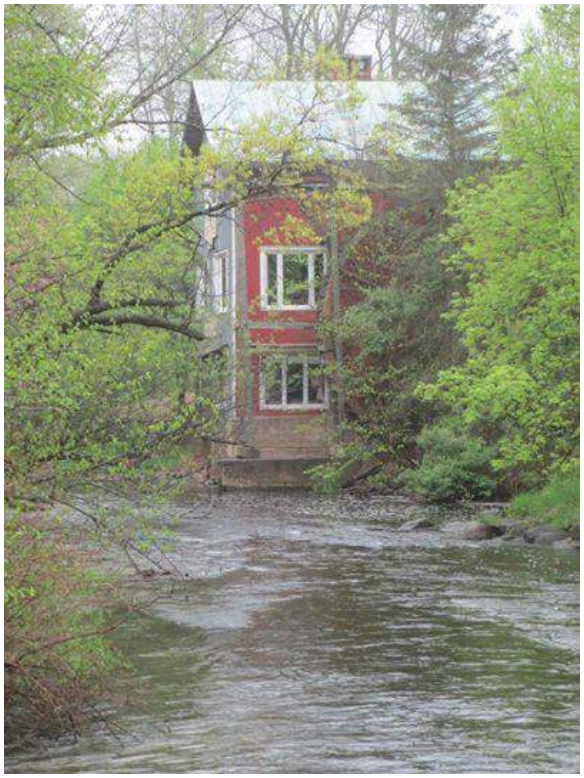
What follows is a story about the relationship between people and a place. It is a story about time and history and geology and ecology. It is a personal story and it is a community story. It is political. It is environmental. It is about ecosystem services and about love.

The Dam

The dam has been gone for some time now. Before this, the mill pond covered several long acres, creating "water front" for a large number of residents.

In 1835, the Red Mill was built on the dammed Crystal River[2]. Today it is a tourist stop.

A number of families have close, emotional connections to the now-drained mill pond. Some of them lived on the pond for generations.



There was a court battle over the dam[3, 4]. And then there was an election.

Civic ecology practices emerge in broken places

My understanding is that while the pond was lovely, it was only about a foot deep and like many old mill ponds in the area, it was struggling with invasive species, silting in, and weeds. Here is what the "pond" looks like now.

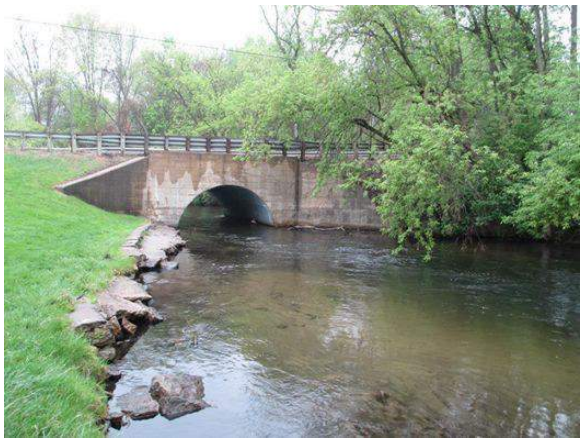
In this case, the Mill Pond was an overgrown, damaged ecosystem. Moreover, the dam was reaching the end of its structural life and neither the county nor the township was able or willing to fund its continuing repair.

Because of their love and life and love of place, civic ecology stewards defy, reclaim, and re-create these broken places

Scholars of civic ecology say that projects happen when people come together and take action — motivated by love of nature or love of place — in response to a broken place.

Early on, a large group of people promoted the restoration of the river and the expansion of an existing river park. Those who wished to keep the dam and pond also loved the place, but their desire was to maintain the existing ecosystem. Part of the complexity of a dam restoration project like this is that both sides truly love the place -- either the existing mill pond or a vision of what a restored river can be. In this case, though, the dam will be removed — mostly due to economic realities.

The "love" that motivated the un-damming and the emerging restoration project may not have been "love." The fact is, there were other elements involved. The cost of maintaining the dam was prohibitive. “The dam had served its function,” as the saying goes. There were no reasons to keep the dam, and plenty of practical reasons for its removal. And there was a model nearby for what the river *could* become. On the other side of the dam, there is a small park.



Here is the Crystal River in its natural state. With such a beautiful example nearby, it was easy for many to see the potential of restoring the Crystal River.

It is also easy to see why some people would mourn the loss of the pond, which was a place much loved and the depository of many shared memories.

This was the heart of the conflict: those whose love of the river came from social memories. From the days before the logging industry created the dams. Memories of a river with wildlife: One biologist said the restored river might even bring otter back to Dayton! People whose memories are of the pond they will lose. The river will be undammed — that decision has already been made. The challenge in Dayton will be to teach people these older, social memories and teach them to love this place even while they mourn the loss of the old.

In recreating place, civic ecology practices recreate community

This is the idea I have found most compelling in this situation because the restoration of the Crystal River is actually secondary. There are plenty of resources, both financial and intellectual, to recreate and restore the river. The leader I spoke with focused mostly on the re-creation of community.

In the case of the un-damming of the Crystal River, much of the "action" was in the courts, at least initially. However, now that there is no longer any choice but to let the dam go, people are beginning to consider how to act.

The key idea is this: recreating place recreates community.

This is perhaps the most important aspect of the un-damming in the Town of Dayton. The town supervisor with whom I spoke says that recreating community is her main concern. She is relying on lots of social capital. "I know everyone," she says. She is relying on memory, both biological and social. She is relying on the *promise* of something new and better — ecosystem services. She is relying on what people told her: they are tired of fighting, they want to move forward, they want to begin the next phase.

The restored river will also do something else — restore a lost history.

Civic ecology stewards draw on social-ecological memories to recreate places and communities

Perhaps what is most complicated about dam removal projects is that there are no

personal or individual memories of the place before the dam. Instead the mill ponds created by the dams are an important part of the shared memories of the community. So in a dam removal project, part of the work needs to help expand the community memories into the area of imagination. The community must rely on social memories provided by historians, naturalists, ecologists, and geologists in their quest to imagine the place as it was before the earliest settlers built the dams for the logging industry. In the Town of Dayton, this is certainly something that organizers are aware of. There is another layer of memory at work here as well -- leaders recognize that memories of the mill pond need to be honored and preserved.

Efforts to involve the Historical Society in this project are underway. First, the society will be recording the history of the pond and of the families associated with the pond. Second, they will record and uncover how the pond played a role in the area's history and how the river shaped the area before the dam. Expanding our idea of history to a time before the logging of the 1830s will give people more context, and more ability to adapt emotionally to this new landscape.

Civic ecology practices produce ecosystem services

Another aspect of civic ecology practices is that they create ecosystem services. The restored river will provide many ecosystem services: a cleaner river (which I was told is already evident), potential for trout fishing, more wildlife, and recreational opportunities through an expanded bike path and a park with a boat launch for small watercraft (already in the works by Waupaca County).

In this case, the new river area will support wildlife. The undammed river will better support the trout population and improve water quality. The township is also working to increase recreational opportunities in the area that was once the lake bottom by adding trails, access for small watercraft, and a park area.

Civic ecology practices foster well-being

I think in this case the well-being that is fostered is most evident in the leaders' commitment to restoring community. The leader I talked to was most concerned with restoring peace and helping people learn to love the new landscape that will be replacing the pond in this area. I found her intuitive understanding of the connection between a place and its people inspiring and very beautiful.

Civic ecology practices provide opportunity for learning

Landowners and residents will learn about river ecology and river restoration from this project. Leaders in the area are also working to teach people more about the history of the dam, including the history that took place before the dam.

Civic ecology practices start out as local innovations and expand to involve multiple partnerships

The people in the Town of Dayton are benefiting from other dam removal projects in Wisconsin, because a number of governmental, for-profit, and non-profit groups are already assisting similar communities. I would love to see more communities follow their lead in incorporating history into their restoration.

Civic ecology practices are embedded in cycles of chaos and renewal, which are in turn nested in social-ecological systems

Logging. This was the initial "development" that left the Town of Dayton in its current situation. Of course logging has not been carried out via rivers in a very long time.

Yet the dam remained, creating a lake that took on a great deal of social significance and provided ecological services as well. Perhaps the removal of the dam is the final step of recovery after the exploitation of clear-cut logging that stripped so much of Wisconsin of its resources and transformed the country into farmland.

Policy makers play a role in growing civic ecology practices

Again, the Town of Dayton benefits from projects that have gone before them; local and state governments have already put mechanisms in place to assist in the restoration of the Crystal River. The leader I spoke to ran for a position on the Town of Dayton board using a river-restoration platform. Her opinion is that in an area as rural as this, there is no real separation between the government and the community. To talk about "policy makers playing a role" is not exactly the conceptualization she sees. Instead, she believes that as a citizen, she is more effective in the role of government official — in this case, a town supervisor. I suspect that her conceptualization of her government position is deeply affected by her personal commitment to a democratic system of organization and to the ideals of self-government. I like her view of government, though. If we come to recognize that, in a system built on the idea of self-governance, there is no need to say: "policy makers pay a role," because *we* are the policy makers. The "us" and "them" binary has been eliminated. We are the government and the policy makers.

Some people in the Town of Dayton are interested not only in restoring the river and the community, but also in creating and restoring history. They want to change the narrative of the people there, to help them see themselves as part of a very long story, to take them back to the days before logging — which was the main force in creating our landscape and our way of life in this part of Wisconsin. Here, the logging opened the land to the first homesteaders[5]. The people are working — some of them in the capacity of policy makers — to restore the river, preserve history, and recreate community identity by teaching people to embrace the dynamic, resilient nature of the Crystal River, undammed.

River restoration is not new in Wisconsin. Both government and non-government organizations exist and are ready and waiting to provide resources to groups, local governments, and organizations looking to restore rivers[6]. Wisconsin has a whole system of aging dams from the logging days. The needs for these kinds of services will only grow, and there is likely to be a spiral effect: the more communities that have positive dam-removal experiences, the more other communities will be willing to undertake these projects themselves.

As is the case in all civic ecology practices, the people in the Town of Dayton are part of an adaptive cycle; a very long one that began with logging, and turned to agriculture[7]. Now the things we "need" from the river are different. Once again we need the river for its ecosystem services, including recreational, aesthetic, and biological.

Reflections

The undamming of the Crystal River is part of a larger, nation-wide effort to restore large rivers and small streams in cities and in rural areas. There is conversation in drought-stricken California, in the water-rich east, and around the world of removing dams. Those who study civic ecology call these systems "panarchies," a term that describes a sort of feedback system in which large, slow practices such as changes in

policies and mindset affect little projects, such as those working to undam the Crystal River in Town of Dayton. At the same time, these small projects can have an impact on the larger cycles and on the way in which other projects are done.

My hope is that more people will think about human history as part of undamming projects. I would like to see more civic ecology projects thinking about how we can return places to what they once were, even if those times are so long ago that our memories are all from local history and geology. Time is cyclical. Life is cyclical. In very few cases do we invent something completely new. It is true that there are limits to resilience, but even death — to humans and to landscapes — is a natural part of the cycle of life. In death, there is transformation.

We may need to think about this idea a lot if we are not to lose hope. And perhaps hope, also, is a "panarchy." The hope of small groups becomes the basis for a paradigm shift, leading to changes in values and policy — all of which can feed back into more groups and more small projects.

What is the future of Wisconsin's many small dams? In some cases, communities struggle to keep their dams[8]. In others, communities remove theirs[9]. Do our conservation efforts matter[10]?

What are the limitations of individuals, and even groups, to effect change?

What are the limits of our power?

Do our small victories bring us the change we need[11]?

Is it possible that one of the limits of panarchy is its inability to stop the next cycle of exploitation? If we are only now finally fully addressing the devastation of clear-cut logging, how long will it take us to recover from the next exploitative cycle, which is likely to be the removal of silica for the fracking industry[12]?

What are the limits of resilience? What are the limits of faith? What are the limits of *my* faith -- in transformation, in resilience, and in love?

To end this project, I was asked to identify my "learning goals" and to assess my own progress towards meeting those goals. I suppose that my learning goals were experiential: I wanted to see civic ecology in action. I wanted to have a conversation about a civic ecology practice. I wanted to think about how something as small as a dam can be related to something as huge as global warming, hydraulic fracturing and silica sand mines, a garbage float in the ocean, ground water pollution, and carcinogenic farming practices. I wanted to answer my larger questions about civic ecology, to ask if the local actions of small groups of people could create a better world.

My goal has been met, because I have an answer to that question. It is this: define your terms. Define "better." Define "world." Do civic ecology practices actions stop global warming? Put us on track to avoid more inevitable decline? Maybe. Certainly ecosystem services can help us weather climate changes. But stop them? Probably not. But ask it like this: do civic ecology practices make *your* world better. The world you live in, and see, and speak from, and breath, and smell, and taste, and love. Is it "better"? Is it more beautiful, healthier, stronger? Has it brought you closer to your neighbors? Do you all live together, live more fully and more joyfully and more together because of it? Does it teach you to love?

If those are the terms by which we measure success, if those are the ways in which we determine the "world" and decide to make it "better," then the answer is yes. Yes, this makes the world better. Like this.

Acknowledgements

My thanks to the Town of Dayton supervisor for her interview. I have done my best to be accurate; I apologize and take full responsibility for any misunderstandings or misrepresentation of either the details surrounding the dam or of the concepts presented in the Civic Ecology MOOC.

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Earth Day provides an opportunity for volunteers to show their love for a river in the Philippines.

1 Earth Clean-up

Manila, Philippines

Venus Fajardo © 2015

Introduction

Every action, no matter how small, helps to recommit us to our shared responsibility of good stewardship of the planet and all its inhabitants.

U.S. Ambassador Philip Goldberg led the activities for 1 Earth, a joint Earth Day creek clean-up and concert project at Estero de Pandacan in Manila. 1 Earth was sponsored by the U.S. Embassy in Manila and *Kapit-Bisig para sa Ilog Pasig* , the environmental arm of ABS CBN Foundation, Inc. Members of the Young Southeast Asian Leaders Initiative (YSEALI), as well as students from the English Access Microscholarship Program (ACCESS), the U.S. Embassy Manila's Green Team, and the ABS CBN Foundation's "River Warriors" participated in the activities. Guitarist Ron "Bumblefoot" Thal (Art of Anarchy, DMC/Generation Kill, Lita Ford, and Guns N' Roses), *The Voice* Philippines 2013 champion Mitoy, *Pilipinas Got Talent* champion Jovit Baldivino, and Razorback performed before the jam-packed crowd. #1Earth is U.S. Embassy Manila's contribution to the "billion acts of green,[1]" and their first joint project with the ABS CBN Foundation, Inc. to mobilize local communities to mitigate the impact of natural disasters and increase resilience to global climate change. -- U.S. Embassy, Manila Philippines

On April 4th, 2015, I got an invitation from the YSEALI and the U.S. Embassy in Manila, calling all nature lovers and young leaders to join them at the *Earth Jam 2015* project. As a member of YSEALI, an innate nature lover and a Civic Ecology MOOC student, I took the opportunity to get involved in this local civic ecology practice.

The activity started with a lecture explaining the cleaning /constructing materials, and a tour around Estero de Pandacan to see what changes have been happened there. The group then proceeded with a half-day clean-up of Estero de Pandacan.

Volunteers from all over the world attended the activity. Hand-in-hand, we cleaned Estero de Pandacan — removing trash and cleaning the surrounding area. This was one memorable moment of seeing the Ambassador, along with other top US officials, in a ceremonial cleaning-up project. I want to savor the memory of participating in this event.

As a member of Young South East Asian Leaders Initiative, I show support and raise awareness to clean up our environment. It has been one of the most uplifting and inspiring environmental projects I have participated in. I feel so blessed to have this kind of opportunity. Such a wonderful experience!

Me and Ambassador Philip Goldberg of U.S. Embassy Manila

Civic ecology practices emerge in broken places

Civic ecology practices emerge in places where you might least expect people to come together to take action as a community -- places that have undergone a period of gradual decline, or a major catastrophe or conflict.

Dumping of garbage into rivers is one of the reasons that the rivers in Metro Manila are considered "biologically dead."

Before river clean-ups, the people living along rivers and river tributaries are relocated and the illegal structures that prevent the natural flow of water are removed.

The Community of Estero De Pandacan has been destroyed by natural disasters and impacted by economic downturn and environmental degradation (slow burn). They have also experienced flooding of the creek during rainy days.

Because of their love of life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Biophilia attracts the people who fully love life to the process of life and growth spheres. This suggests that our innate biophilia may have played a role in our concern for their environment, motivating us to show our love and respect for our nature.

People in the communities are mobilized and trained to become River Warriors. They protect the river against people who cause environmental degradation.

I hope this will serve as an eye-opener and encouragement to residents of Pandacan to regain and maintain the cleanliness of the Estero de Pandacan. I hope that topophilia will enter in the heart of every citizen of Pandacan; that they will start to clean, love their environment, and have concern for their surroundings and community.

In re-creating place, civic ecology practices re-create community

According to David McMillan and David Chavis, *sense of community* is created when people feel as if they belong, are connected emotionally, and are able to influence others to meet their needs[2]. Green spaces by themselves are not sufficient to the creation of a sense of community. Social memories shared among a group of people help shape our behavior, including our actions in a community.

Helping other countries protect the environment and conserve biodiversity through people-to-people relationships, Ambassador Goldberg said, is one way of strengthening the US government's diplomatic relationships.

This activity is not just about cleaning, but also a jam-in evening benefit concert featuring international and local artists.

The beneficiaries showed tremendous gratitude to the artists, the U.S. Embassy Manila, and *Kapit-Bisig para sa Ilog Pasig*. Members of YSEALI created an uplifting program full of singing and dancing, which showcased their joy and talent to the volunteers.

Civic ecology practices produce ecosystem services

Education, recreation, aesthetic experience, and sense of place are all ecosystem services.

Through creating green infrastructure and engaging lay persons in meaningful stewardship activities, civic ecology

practices would be expected to produce provisioning, regulating, and cultural ecosystem services. In fact, studies have described the value of civic ecology practices relative to food pollinators, education, social connectivity, and other aspects of community and individual well-being that are tied to ecosystem services.

According to Krasny & Tidball (2015), civic ecology practitioners often make claims about the positive impacts of their work in terms that reflect an implicit understanding of ecosystem services, such as tree planters claiming cooling and other benefits.

Civic ecology practices foster well-being

Numerous studies support the claim that spending time in nature or viewing natural spaces through a window has a beneficial impact on people's stress levels, cognitive ability, immune function, and happiness. Spending time in nature can even lessen the symptoms of attention deficit disorder.

This idea will be a big help in communities like Pandacan, who are experiencing gradual economic downturn. Continued environmental restoration will help them come to understand the many health benefits associated with simply viewing nature through a window or spending time in nature. They'll learn that civic ecology practitioners benefit not only from spending time in nature, but also from actively stewarding both nature and the community.

Poverty, crime, and environmental degradation will be lessened as people can save money and energy if they're closer to nature. Additionally, they will likely feel as if they are doing something important and leaving a positive legacy for future generations.

Humans have a desire to contribute something to the world that extends beyond their own lifespan. One way to leave a legacy is to steward a natural area and restore broken places.

Civic ecology practices provide opportunities for learning

Learning is also a big part of civic ecology practices that occurs through interactions with other people and with the environment that surrounds you.

Our actions are guaranteed to affect others. Because we are not alone in this world, much of our learning about ourselves comes from our interactions. Our relationships are our teachers. We learn from each other.

Ambassador Goldberg said people in the communities should be educated about the economic importance of rivers and other bodies of water. He said they will continue to support activities towards this end.

I've been productive and also learned carpentry for the first time by constructing trash bins for the 1 Earth clean- up project. Everything that we learn becomes our wealth, a wealth that cannot be taken away from you — whether you learn it in a school building or in the school of life — to learn something new is a timeless pleasure and a valuable treasure. Not all things that you learn are taught to you, but many things that you learn you realize you have taught yourself.

I have always believed that whatever good or bad fortune may come our way, we can always give it meaning and transform it into something of value.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

We believe that dignity and hope are best achieved through equitable, accountable partnerships.

Government and NGO's showed support for this 1 Earth activity. Members of the Young Southeast Asian Leaders Initiative (YSEALI), students from the English Access Micro-scholarship Program (ACCESS), the U.S. Embassy Manila's Green Team, and the ABS CBN Foundation's "River Warriors" participated in the activities.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

Adaptive cycles operate at multiple scales. Processes of change and transformation, release and reorganization occur. Civic ecology practices can play in the adaptive cycle of larger social-ecological systems (e.g., Estero de Pandacan) in which they occur. Some civic ecology practices become part of the reorganization phase in a city that has been hit by a storm or suffered years of slow decline.

1 Earth day is the annual celebration of the environment and a time to assess the work needed to protect the natural gift of our planet. The US Embassy, partnering with the corporate social responsibility arm of network giant ABS-CBN for the first time, boosted the efforts to rehabilitate the Pasig River with the clean-up of Estero de Pandacan. Pandacan is a good example of how a practice that emerged during the release phase has contributed to the rebuilding/reorganization phase.

Policymakers have a role to play in growing civic ecology practices

Civic ecology practices are reshaping the way we approach the environment and its relation to community. They become part of regional resources management systems through a process called adapted co-management

According to Marianne Krasny, a concept that really resonates with her is the concept of resilience: it is so important in the world of sustainability and resource management but the term "resilience" is something that she can also intuitively relate to on a personal level. So resilience, whether psychological or social-ecological, is about being able to adapt to change.

Change happens in our individual lives and in our social-ecological systems. But humans have agency and the capacity to learn, so we can steer change in a more positive direction. By responding to smaller changes, we can build our capacity to respond to larger changes.

This event in support of KBPIP (a river-rehabilitation project funded by The ABS-CBN Foundation, Inc.) was launched on February 24, 2009 to rehabilitate Metro Manila's creek. The rehabilitation process has included the relocation of informal settler families who reside on the creek, community information campaigns, and training for community volunteers or "River Warriors."

One interesting thing about civic ecology practices: they also develop new ideas or opportunities with businesses who take the risks necessary to convert their vision into a reality. This partnership can develop a new idea or opportunity to change people's approach to the environment.

Bokshi balls are a great example of this kind of entrepreneurship. These little bio-balls provide strains of good bacteria that can be put in dirty water-bodies to clean and minimize the bad odor of polluted creeks and rivers. Bokashi balls are not mass produced by any company so they provide the perfect opportunity for collaboration. Ecological entrepreneurship is a reward-based approach to addressing environmental problems — rather than a punitive approach — and may prove more successful at changing attitudes and practices in the long run.

Reflection

Our life is like a plant: it must change to grow. The connection between our life and plants is the simple act of setting something into motion that will help us create the life we want to lead. It's taking a moment of sorrow and realizing that we can use it as fuel. Just like a beautiful flower attracts butterflies, your life will be a magnet to the right kind of people that will truly make it worth living to the fullest.

For me, civic ecology practice is reshaping the way we approach the environment and its relationship to community. These practices call for new and innovative programs, policies, and systems that would make our world a decent place to live for people of all walks of life — regardless of race or religion.

Nature provides us with all that we need; what more can we take from the Earth? What does the Earth ask of us in return?

I found myself wanting to do more to make the world a better place. I am very happy to be able to do it collaboratively.

Our nature has been good to us, let's move and raise awareness to help protect our environment simply because in few decades, the affinity between the environment and conflict may seem as obvious as the linkage we see today between human rights, democracy, and peace.

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Volunteers conduct a clean-up along the Hudson River, NY, USA.

Hudson River Sweep

Saugerties, NY, USA

Christina Falk © 2015

Introduction

The great Hudson River flows through New York State — from Lake Tear of the Clouds in the Adirondack Mountains,

past Ulster Landing near Saugerties,

past Tivoli Bays,

to the Tappan Zee,

and finally, through New York City and into the Atlantic Ocean.

commons.wikimedia.org

From the mouth of the river, to about 150 miles upriver — where the Hudson meets the Mohawk River — is a tidal estuary.

For the past four years, Riverkeeper has acted as the coordinating group for an annual citizen river cleanup of shoreline and riverside parks, previously hosted by Scenic Hudson. On the day of the *Sweep*, some groups also plant trees in parks. I offered my participation in this year's cleanup of shoreline between Turkey Point and Ulster Landing along the west bank of the Hudson as my civic ecology practice for this course.

Civic ecology practices emerge in broken places

As early as the 1960s, the Hudson River Estuary was a *broken place*. The health and beauty of the Hudson's waters and shoreline had been deeply impacted by industrial facilities that used the river as their private disposal facility, including municipalities, that intentionally or otherwise, conveyed waste from ineffective sanitary and storm sewer systems to the estuary, as well as citizens who failed to appreciate the cumulative impact of the waste they poured into sewers or directly into the water. Damage from these activities severely impacted once thriving fisheries, and made the Hudson estuary un-swimmable.

In response to the loss of the Hudson's biological integrity, organizations seeking to protect and restore water quality and public access to the river emerged. Robert Boyle, a writer for *Sports Illustrated* and cofounder of the Hudson River Fishermen's Association, organized fishermen, scientists, writers, and citizens with interests or roots in the Hudson River watershed into a coalition to address threats to the estuary. This association gave rise to Riverkeeper, a citizen group dedicated to identifying polluters, creating pressure on government to take responsibility for ending their destructive practices, and raising public consciousness about environmental stewardship.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

The Haudenosaunee — native people who have a deep connection to the biology and topography of the valley — have witnessed decades of degradation of their ancestral territory. In 2013, the Haudenosaunee Nation reached out in a heroic gesture of perseverance, and invited citizens of the United States to renew commitment to the Two Row Covenant, and to preserving "our environmental inheritance."

Two rows of boats travel along the river as part of the Two Row Wampum Renewal Campaign. This movement called to restore the historic partnership between the Onondaga Nation and Neighbors of the Onondaga Nation established in 1613.

Although Riverkeeper began decades before the Two Row Wampum alliance was renewed, the historical references from Riverkeeper's founders were more recent recollections of river ecological integrity. Both the alliance and Riverkeeper draw on their traditional memories of ecosystem integrity. Both movements defy limitations imposed by social, statutory, and regulatory norms.

On May 9, 2015, strangers with different motivations, but still united in the common cause of environmental stewardship, came together at numerous locations along 150 miles of the Hudson River shoreline, from New York City to the confluence with the Mohawk, to work on a civic ecology project on a grand scale. In addition to its broad geographic extent, the annual project continues through time.

All the participants of the cleanup are living along the Hudson, but some developed their love of nature elsewhere, brought their sense of stewardship for Earth and Water with them, and are applying it in their new home. The experience of topophilia for the site-specific stretch of bank we worked on was evident in the individual who led our sub-group upriver to Turkey Point. As we walked, he pointed to spots on the bank that had changed because of human impacts, storms, and even the positive impact of annual cleanups.

According to Riverkeeper, more than 2,000 volunteers turned out at 102 project sites, from Red Hook in Brooklyn to the Albany Capital District[1]. The total services delivered by many groups working on one day equaled more than 40 tons of debris removed from the Hudson River Estuary — including the East River, Gowanus Canal and Hudson Valley streams — 1,150 trees and native grasses planted, and more than 500 trees and native shrubs received maintenance care.

In re-creating place, civic ecology practices re-create community

Through activities like the Hudson River Sweep, Riverkeeper hosts or participates in public events where like-minded people come together to learn how to reclaim power and responsibility for the health of the Hudson River watershed. A palpable sense of shared identity among environmentally aware citizens of the Hudson Valley has crystallized around the shared agenda and efforts of the groups.

The group I worked with, the group my daughter worked with to plant trees down river, and groups my friends worked with are connected and communicate through new networks that are being formed. After the cleanup, there was a meeting of a group initiating a community solar energy project in Kingston. The connections are webbed and numerous, like a neural network, energized by common goals and various memories of the natural world.

Civic ecology stewards draw on social-ecological memories to recreate places and communities

Our group included individuals who grew up either during the time that the Hudson was severely impaired or during the time of improvement. Some had families that were living in the area when the Hudson was clean. Their awareness of its history is enhanced through their stories. I have friends who are in their eighties who tell me stories about how the Hudson was a seemingly limitless resource. The ice shed behind my house was once used to store ice cut every winter from the Hudson for use in the store that was next door.

Civic ecology practices produce ecosystem services

Provisioning services are being restored by the cleanup via improved estuarine habitat and water quality, which support local fisheries. Regulating services such as prevention of soil erosion and potentially, groundwater recharge, are supported by planting trees. Community/cultural services are being enhanced by making the experience of using the park we worked at a more pleasant place to be.

Planting trees. Photo © Nadya Hall

Civic ecology practices foster well-being

The act of walking along the shore — over trees and through the woods on our way to pick up debris and garbage — was very pleasant. There was a cool breeze. The sound of the water lapping against the sandy shore was soothing. The sense of accomplishment was nice. People fishing and picnicking along the shore were friendly and shared a love for the river with each other. Kids, already having fun, smiled at us as we passed. I think they caught a little of the feeling that they can make a difference, that there are ways to help, and that like-minded souls can accomplish things that are much harder to do alone.

Civic ecology practices provide opportunities for learning

As we walked and picked up debris, people told each other stories about where they lived and how they came to participate. We shared information on plants we saw, workshops available, good places to kayak, and other areas of shoreline that need attention.

The Hudson River Sweep coordinator and 'ambassadors' provided background on Riverkeeper's roots and current activities, made participants aware of other issues that need attention, and introduced ways to learn about other volunteer opportunities. Riverkeeper hosts public meetings at a variety of venues throughout the year where the public can learn about factors influencing ecosystem health.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

A wealth of organized groups targeting various ecosystem services and issues of accessibility generated by the environmental movement have grown from Hudson River Fishermen's Association and Riverkeeper. Over the last five decades, Riverkeeper and other Hudson River environmental groups have challenged and gained standing before the judicial system, legislators, and regulators. The work and support of John Cronin, the original 'Riverkeeper', as well as other well-known individuals like Robert Boyle, Pete Seeger, and Robert Kennedy Jr, have given rise to the Waterkeeper Alliance[2] — a worldwide coalition of over 250 citizen groups modeled after the original Riverkeeper. Waterkeeper's subgroups work to preserve the integrity of local waterbodies, protect the earth's water, and advocate for public access to waters.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

Water quality in the Hudson has clearly improved since the inception of Riverkeeper, along with its coalition with groups such as Scenic Hudson and Natural Resources Defense Council (NRDC), and the late-coming but valuable involvement of regulatory agencies. However, fisheries and water quality are still severely impacted,

requiring ongoing educational programs, citizen involvement, and pressure on rule-makers. To illustrate that point, while we were cleaning up and planting trees on May 9, 2015, a transformer fire at the Indian Point Nuclear Power Plant released fluid into the Hudson. The community of stewards tends to become energized, active and visible after events like this[3].

Policy makers have a role to play in growing civic ecology practices

On April 16, 2015, the New York State Department of Environmental Conservation Hudson River Estuary Program hosted a Hudson River Summit.[4] Sessions included presentations by state and federal regulatory agencies, scientists, community-based organizations like Hudson River Towns, as well as citizen groups like Clearwater and Riverkeeper. The speakers charged attendees to continue to actively engage with each other to grow citizen participation and to draw on their shared social-ecological memories of the better days of the Hudson River. Policy makers can draw on resources available to government to target funding for environmental projects and educational opportunities addressing ongoing needs.

Reflections

The result of the Hudson River Sweep is a cleaner shoreline, with fewer hazards for animals, fewer pollutants entering the water, and a more enjoyable experience for park visitors. Participants picked up litter and debris from the shores of the river. This simple act had the short-term effect of beautification, as well as the long-term effect of reducing accumulated waste materials that would have continued to break down and enter into the river. Other groups worked on tree planting — an investment of effort with long-term effects. The result of the Hudson River Sweep is a cleaner shoreline, with fewer hazards for animals, fewer pollutants entering the water, and a more enjoyable experience for park visitors. This long term project of reclamation is an act of defiance against the odds and has the concept of social justice at its core.

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A school garden helps residents of Athens, Greece, in the wake of an economic crisis.

My School, My Food

Athens, Greece

Theodora Fetsi © 2015

Introduction

Three years ago, I was involved in an environmental program focused on healthy eating in a public elementary school in Athens, Greece. It was an effort to introduce a healthier way of life to the children and to try to discourage bad eating habits by learning about fruits and vegetables. We created a school garden to teach students how to grow their own food. We reused five existing raised beds (1.5 m^2 each) for planting and growing vegetables and herbs. Our harvests – tomatoes, lettuce, and cucumbers, among others – were served at lunch time. We also introduced '*fruit day'*, a specific day of the week where eating fruits was encouraged.

In March 2015, the school principal, with financial support from the Parents Association, doubled the space available by creating a fenced area of 8.5 m^2 so that the project could expand and new students could become involved. The children were very engaged and showed great enthusiasm for this effort. Next, we started to organize the implementation of the project. A local nursery donated plants and the school provided shovels, tools, and watering cans.

Can a school gardening and healthy eating initiative be a civic ecology practice? Let's explore how the ten civic ecology principles apply to our school gardening project in Greece.

Civic ecology practices emerge in broken places

The school, PS34, is located in an Athenian suburb. In the last six years, Athens has become a broken place -- a slow-burn red zone. The economic downturn created a humanitarian and food crisis all over Greece. Athens is experiencing a deep recession which is becoming more severe as time passes. The austerity measures implemented by European governments caused a sharp rise in unemployment, an increase of homeless citizens (mainly evident in central Athens), and high poverty rates.

According to UNICEF's survey *Children of the Recession*[1], the child poverty rate in Greece is over 36%. One in five children said that at least one parent had lost their job and 5% of children stated that their family could not afford to buy food. From these statistics, it is obvious that food security is at stake. The survey notes that Greek families have lost 14 years of economic progress due

to the 2008-2012 crisis (official statistics for the years 2013-2015 are not yet available).

All these factors make Athens a "broken place." In order to reduce the incidents of malnutrition and starvation, the city government and private organizations have provided free meals on a daily basis to school children who are facing poverty[2]. In 2013, the Municipality of Athens provided 1,350 meals daily in 70 schools and 5,500 meals to kindergartens[3]. The Ministry of Education created a feeding program for public school students in degraded areas all over the country. In 2012-2013, 25,349 students were enrolled in this program, while in 2013-14, there were 61,876 students -- more than double. To give perspective, the total applications for the program were 152,397[4].

The Greek Orthodox Church also distributed meals to students whose families met certain criteria[3]. Because many cases of malnutrition have severely affected PS34, it is among the schools supported by feeding programs from both private organizations and the Greek Orthodox Church. According to a 2015 poll, 25% of Athens' school children go hungry[5].

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

During unstable times, humans are more likely to care about nature, their cities, and their quality of life. Whether you restore a place that has become broken (restorative topophilia) or protect nature during extreme situations (urgent biophilia), it is not only a contribution to society but also a way to heal oneself.

During the economic crisis in Greece, children have learned to love and appreciate their school and the surrounding environment, a place in which they spend many hours daily. The school community of PS34 was engaged in the effort for a cleaner and safer environment. This effort is more important now than it was in the past, because we have to teach students that only by working collectively can we improve our society.

In the context of the *My School, My Food* program, students learn to love their school. They learn to be responsible for the garden and protect it. It is their achievement and a way to stay connected to the school environment. In conjunction with the school garden project, which urges children to take care of their school, a cleaning program was launched to pick up trash from the schoolyard and the outdoor spaces. Keeping the school litter-free can actually help students' performance. This is the result of iterative feedback between learners and their environment, where the learners are changing the environment, and these changes are in turn affecting the learners. It also teaches them about cleanliness, something very important for their personal life, but also for the environment and the common good.

Civic ecology practices provide opportunities for learning

Our educational system is based on memorizing all the information provided in the classroom. As a society we are anxious about whether students are learning enough to proceed to the next level and finally pass their exams. We have forgotten that the role of a school should be to help form a students' character and motivate him or her through experiential learning to become excited to learn.

One may wonder: what can school gardening offer?

Through this school garden project, environmental awareness was raised and children were encouraged to acquire attitudes of cooperation. They re-connected with nature, and observed, experimented with, and participated in all aspects of growing and harvesting seasonal vegetables. School gardening helped students learn about good eating habits and understand where their food comes from, which vegetables are in season, and why it is important to eat healthy foods.

The students learned about the procedures followed to successfully grow vegetables without the use of pesticides. For example, intercropping different types of plants such as tomatoes, marigold, peppers, and basil, negates the need for pesticides, because of the protection this arrangement provides from insects. They also learned about the nutritional value of fruits and vegetables and why it is important for changes in our dietary patterns. This initiative also draws on information regarding the therapeutic properties of certain plants from previous generations dating back to Ancient Greece.

Students learned to protect the plants, to love them and water them. It's about creating something new that we care about and we are responsible for. By watching the plants grow, the children learn about the natural cycles of life. They learn about the plant growth stages -- from the growth of a seed to fruit ripening -- and about the necessity of the organisms that coexist with the plants, like insects and bees. They learn about the importance of biodiversity. This is how they learn to love life.

The children were active participants in the learning process as they turned up the soil, planted, dug, and watered the seedlings. This learning practice was also supported by the Parents Association and individual parents, who helped us during all stages so the garden could come to fruition.

In re-creating place, civic ecology practices re-create community

This civic ecology practice did not involve the local community directly in the realization of the school garden. It was noticed though, that the school administration, some teachers, and parents played a significant role in creating a gardening space for the children, which constituted a great tool for experiential learning and educational causes. All these members worked collectively towards the common good and the children's benefit. Although neighbors and community members did not participate in this endeavor, a sense of community was established.

It is encouraging to see people laughing again, cooperating and actively participating in order for a common goal to be achieved. It became evident that this school garden is the bridge between students, parents, and teachers, and could be a future bridge with the greater community. Equally important, it permits children in cities to connect with nature. Food connects people!

Civic ecology stewards draw on social-ecological memories to recreate places and communities

The school garden may constitute the core of social-ecological memories by transmitting the knowledge of growing food, using different methods for food production, and traditions followed for years to the younger generation. Through the practice of cultivation, the students learned about the seasonal fruits and vegetables, and why it is wiser to eat what is produced in season. It is also important to remember the different techniques for growing food, like intercropping, which benefit the produce through the reduction of insects and plant diseases. Also, the necessity of conserving traditional varieties, which is the epitome of creating social-ecological memory, was transmitted to the students. It is an opportunity for them to store all this knowledge and experiment by planting on their own balconies or other available spaces.

Civic ecology practices produce ecosystem services

The variety of vegetables and herbs obtained from the school garden is an example of provisioning ecosystem services. Tomatoes, peppers, lettuce, basil, dill, pumpkin and marigolds were planted, with the hope that pupils will be able to see them grow before the end of the school season.
Through planting, cooperation amongst

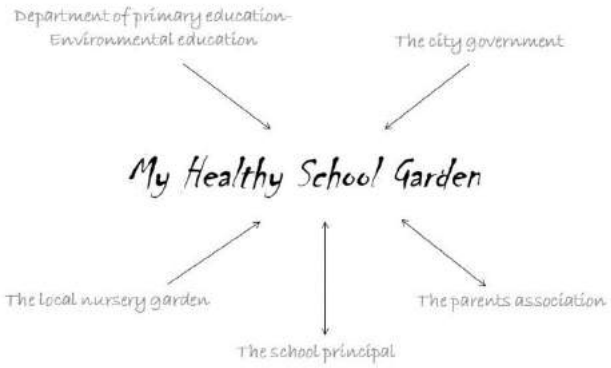
stewards, and caring about the environment, aesthetic, educational and recreational experiences were provided (cultural services). Supporting systems are not provided yet, but regulating systems such as the composting of wastes could be realized during the next school year.

Civic ecology practices foster well-being

Gardening has been linked to health benefits. Studies have shown relaxation, stress reduction, happiness, improvement of self-esteem, and increase of physical activity are among the outcomes of working with plants[6]. Spending an hour or two per week in the gardens makes a difference in physical activity[7]. School gardening is also connected with improvement of academic performance, psychological development, concentration, and anxiety reduction[8].

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

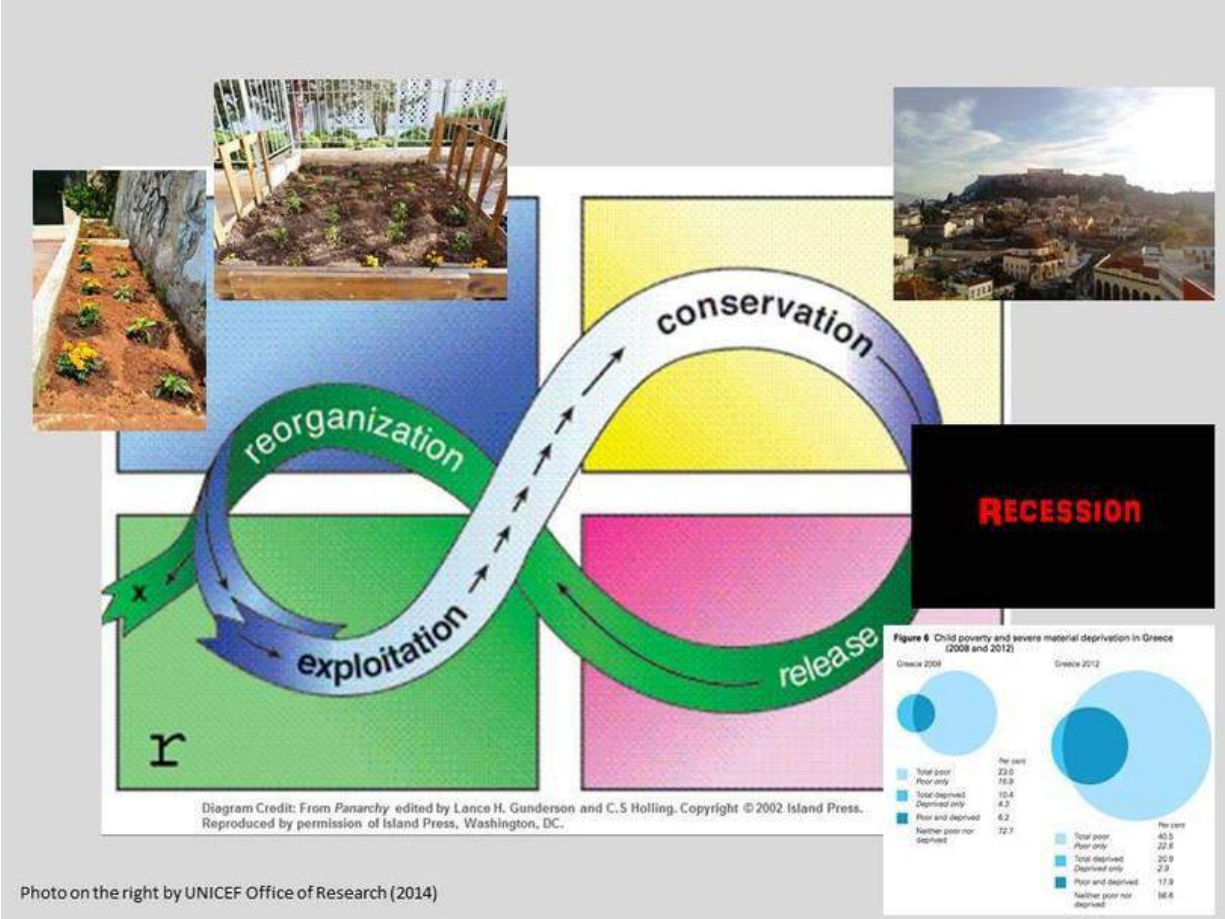
This school garden project was supported by many individuals on both small and large scales. At the local level, excellent cooperation and continuous assistance from the school principal and the Parents Association helped successfully realize this project. A local garden nursery donated the plants and the soil. On a larger scale, the city government and the Department of Primary Education Environmental Education Division provided us with materials, directives, and technical support. There are certainly many opportunities for this idea to be spread to other schools and much more can be achieved with the support of additional stakeholders.



Partnerships for My School, My Food.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

During the last six years, Athens deteriorated into a slow burn zone. It now constitutes an unsafe area, not because of natural disasters or war, but because of the economic decline. The recession affected household income and the poverty rates have increased dramatically. This creates many difficulties in accessing food. After facing this unprecedented situation, new opportunities, innovations, and new ways of thinking lead to the reorganization phase. For these reasons, this school garden project, and the adoption of similar initiatives in the broader community, could be part of the solution for building resilience in social-ecological systems.



Adaptive cycle for Athens and My School, My Food

Policy makers have a role to play in growing civic ecology practices

The purpose of this school garden was to transmit knowledge to the students and introduce them to the process of cultivating. Now that the recession goes deeper and many people are trying to produce on their own, it's an opportunity for the children not only to get initiated into a healthier way of life and learn where their food comes from, but also to store this knowledge and adopt these practices.

In the context of this civic ecology practice, the stewards did not collaborate with scientists or other organizations for further research. But the project will certainly be extended to the new school year, as the students were passionate about it. This way, new students will get to experience this process and cultivate new varieties.

It is necessary for policy makers in Greece to give greater importance to the role of school gardening in students' lives. This civic ecology practice is still in its infancy and mostly relies on private initiatives. What is most needed now is the support and direction of additional stakeholders.

Reflection

Protect the environment -- If you tell it to me, I will remember it until tonight. If you show it to me, I will remember it for a week. But if you let me do it, I will remember it forever.

This is the phrase in the students' drawing about the protection of the environment. The school garden was an activity, which was not limited just to providing knowledge or requiring students to memorize, as is common in the context of a course in Greece. Rather the school garden created experiential learning. This civic ecology practice had six main goals:

a. To reconnect the students living in the city with nature, since such a relation is important for their health and development.

b. To emphasize to the students the importance of healthy eating and the food choices we make every day.

c. For the students to learn where their food comes from, what the plants look like, and other science, and to give them an understanding of the work needed to grow food. It was an opportunity for them to touch the soil and to get their hands dirty.

d. For the children to have access to food, although the school garden was a small scale garden.

e. For the students to be active, and take responsibilities in order to protect the environment.

f. To engage students in urban agriculture and motivate them to experiment and cultivate on their own.

I was very satisfied with their energy and the interest students showed during this process.

By creating this school garden, children demonstrated enthusiasm for life and nature, which cannot be easily expressed while living in a big city. Above all, the most substantial and important thing is to inform children of healthy dietary patterns and give them access to food, which constitutes a human right. If all schools could adopt this initiative with the state or private assistance, it could be a part of the solution for the food crisis many children are facing nowadays.

Acknowledgments

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Scouts work with a mine historic site to beautify and preserve local heritage.

Planting at Atlas Coal Mine

East Coulee, Alberta, Canada

Sofie Forsström © 2015

Introduction

The Atlas Coal Mine[1] is one of many abandoned mines near East Coulee, Alberta, but it's perhaps the only that persists as a national historic site. The Atlas Coal Mine staff asked our Scout group if we would be interested in coming out for a day of planting flowers, vegetables, and herbs on site. Because citizenship, environmental stewardship, and "learning by doing" are fundamental components of the Scout Method, we thought that this would be a great opportunity to engage in community service, get our hands dirty, and learn about local history.

I was personally hoping to accomplish four things with this day:

1. Spend a pleasant day in the sunshine, doing something productive together with great people;

2. Facilitate a local community service project and hands-on outdoor learning experience for our youth;

3. Network with staff at the Atlas Coal Mine in order to develop a positive relationship between the Atlas Mine and the Scouts, so that we might collaborate on future projects; and

4. Put into practice (and reflect on) the principles of civic ecology that I had learned in the online course.

The Civic Ecology Practice

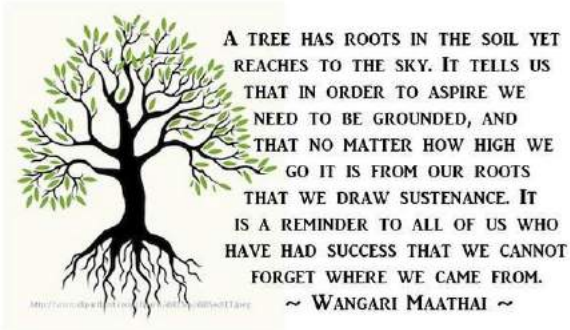
As the forecast was hot and sunny weather, we advised the Scouts to bring hats, sunscreen, and water bottles, in addition to gloves and trowels. Many wore their uniform shirt and the well-recognized Scout neckerchief.

Ready to plant

Arrival

The Scouts (ages 11-14) transplanted flowers into large planters at the entrance to the Mine Office. One youth eagerly dug a hole for a flower, and then used the trowel to extract the flower from its current pot, inadvertently severing most of the roots in the process. Fellow Scouts made corrections to the technique, and a discussion followed on the importance of roots to the plant.

Reflecting on this exchange, it occurred to me that figuratively, roots also play a strong role in human growth and well-being. It is important to remember our heritage and the community that nurtured us. I was reminded of this excerpt from *Unbowed: A Memoir* by the late Wangari Maathai:



After preparing the soil (by adding manure), the Scouts helped the Beavers (ages 5-7) and Cubs (ages 8-10) to plant herbs (including cilantro, chives, rosemary, and basil) and hardy vegetables (including cauliflower, cabbage, kale, and tomatoes) in the garden beds around the Mine Tour Office. Everyone chatted easily as we worked, with an ongoing exchange of tips and offers of help. People volunteered for various tasks (such as filling the watering can), and offered polite requests for assistance when it was required (e.g., carrying the full watering can).

Youth learned to identify assorted herbs ("That's not basil; the label says cilantro!") and discovered vegetables that were unfamiliar to them ("What's kale?"). A Cub was shown how to hold his thumb over the hose to diffuse the water into more of a gentle spray, so as not to squash the delicate little seedlings. Inevitably, a few others of the non-plant variety — myself included – were also watered ("Whoops! I don't need to grow any taller!"). But the day was hot, and it was only water, after all—no harm done!

By this point, tourists had begun arriving at the Atlas Coal Mine (luckily, none of them got 'watered'!) and they seemed pleased to see the Scouts out planting and tending to the vegetable garden.

After we finished, we all enjoyed a break and some refreshments at the picnic table. The 'Pitboss' (the mine's executive director) gathered us together to explain why we were planting things at an old coal mine, as well the significance of the types of vegetables that we planted.

Transcript: Why Planting at the Mine[2]
Pitboss: So the reason we are planting vegetables—not just because I like them, but because this is an old mine, and the miners, in the summer was a quiet time, so it wasn't a time when they got much work, because the coal—what do you think they used the coal for? What did people use coal for?
Scout: Furnaces.
Cub: To keep warm in the winter!
Pitboss: To keep warm in the winter, and to cook! So in the summer, all they had to do was cook. They didn't have to keep warm. So, not so many people needed the coal that this mine was digging out. So the miners, then, if they didn't work, they didn't get paid. This meant that they often had gardens so that at least they had food in the summer. They could have some vegetables; they'd often have chickens so they'd have some eggs, just things to keep them through the winter. So the mine, we try and tell all the story about the miners and their lives, and so we thought that we should have a garden just like the miners had. We tried to plant vegetables that they would have had. Some of them are accurate and some, it's—we have to go by what was available to buy. Cabbages and tomatoes and things like that are what the miners would have had to eat and to plant. That's all I wanted to say. I wanted to say thank you, and what we thought we'd do, as a way of saying thank you for you guys coming, is we would go and have a ride on the train.
Scouts: Yay!
*Pitboss***:** We'll get to hear a little bit about the mine and the site and some histories.


Riding the train

With that, we hopped on the old coal train. Our guide explained that in some places, the tunnel into the mine would only have been five feet high, and so miners would have had to keep low in the train. Fortunately, we could sit upright and enjoy the view. One Cub was designated the 'Brakie', and charged with the responsibility of checking to make sure the tracks were clear at any crossings. He shouldered this role seriously, getting out at each crossing and looking both ways.

We were warned to be on the lookout for a frog on the tracks, which turned out to be a type of rail crossing that allowed us to head towards the old wash house—but not without a lot of teamwork and effort to switch the tracks over!

Once we arrived at the wash house, our guide engaged us in a discussion about the working relationships that the miners had with various animals. We were told a tale about Strawberry, one of the Shetland ponies that helped the miners in the tunnels.

Transcript: Strawberry the Pit Pony[3]
Guide: Strawberry had worked here a very long time, and she was very respected by the coal miners. They always gave her their lunches at the end of the day, and that sort of thing. And one day, there was a brand-new miner who had just started working at the coal mine. He was a rookie. He was sort of nervous going underground, so he was given Strawberry. Now, since Strawberry was a veteran, and he was a bit nervous, they worked very well together. They worked together for the entire day, but then, they were heading towards a brattice cloth door, which was a cloth door that normally ponies just walk right through, but Strawberry stopped dead right at this brattice cloth door. So this rookie, he tried to get Strawberry to go through the door in every way that he could, but she wasn't going to budge. So what he did, is he called over the barn boss, which was in charge of all the ponies. And once the barn boss came over, he realized that it was Strawberry that wasn't moving no matter they tried to do, so he told everyone right away to get out of that part of the coal mine. And what do you guys think happened after they got everybody out?
Scout: There was dynamite... [*inaudible*].
Guide: Yeah, well, the whole—that's close. The whole mine collapsed in that section. So that rookie learned to always trust his pony that day, because the ponies have sort of a sixth sense for these things. They knew which part of the coal mine was going to collapse.
Parent: They knew when there was going to be danger.
Guide: Yeah, definitely.
Parent: Animals. Animals' instinct.
Guide: Yeah. They also watched for mice running towards the exit. And whenever they saw a herd of mice, they would also know to get out. Any questions?

During the train ride back to the Mine Office, we spotted another animal familiar to the site—this one with feathers instead of hooves. A turkey vulture was soaring on thermals high above the hills. It is not uncommon to see a group of turkey vultures circling here in the badlands, or gathered together to roost at night. Turkey vultures

eat carrion, and as nature's clean-up crew, they play an important ecological role that contributes to the renewal of the land.

Turkey vulture

At the end of the day, everyone went home tired, but happy. We agreed that the day's activities had been a success, and we were pleased with the new connections we had made between the Scouts and staff at the Atlas Coal Mine.

End of the line

What started out as a practice borne out of necessity — the miners had no work but needed to grow food to eat – has evolved over time to be one of restoration of a broken place. It is an opportunity for civic engagement, as well as a tribute to the history of this place.

After my experience with the Scouts at the Atlas Coal Mine, I reflected on the ten principles of civic ecology.

Civic ecology principles

Civic ecology practices emerge in broken places

In 1884, a young man named Joseph B. Tyrrell (the namesake of the Royal Tyrrell Museum of Palaeontology[4]) was working for the Geological Survey of Canada. He was charged with the task of exploring and mapping the coal seams of the Red Deer River valley. At the time, the coal he mapped was the largest deposit of that type in all of Canada. The first coal mine in the valley opened in 1911, with many more to follow. During the coal-mining heyday, 139 mines operated in the area. The Atlas Coal Mine was the last to shut down in 1979.

The area experienced a "slow burn" disturbance due to the mining activities. At first, the impacts were mainly environmental, as coal resources were exploited for economic gain. At one point in the early 20th century, the nearby town of Drumheller was hailed as the "Wonder Town of the West" due to its rapid growth, all because of coal mining. Later, as demand for coal declined, mines closed and the communities that had built up around coal mines experienced economic decline and — in some cases — abandonment.

Today, the Atlas Coal Mine is a rustic but well-tended National Historic Site. While in operation, however, mines were dark, degraded, and dangerous places. Nevertheless, for decades, mines were the lifeblood of the valley, and out of these broken places emerged communities. Life was cultivated amidst fossil fuels, in gardens and inside the tiny miner's shanties, resulting in a valley with a rich (and sometimes colorful) history.

More than 139 mines were registered in the Drumheller Valley in the early part of the twentieth century. Thousands of people — most of them recent immigrants — poured into the area. The population was overwhelmingly male, and most were bachelors. When not working, many of the men gambled, drank, bootlegged, and had fistfights for sport[5].

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

Staff and volunteers at the Atlas Coal Mine hold a deep love of the site and its stories. They eagerly share these stories with visitors, and their passion is infectious. This ***topophilia***, or love of place, motivates their stewardship of the site. They maintain the tradition of planting herbs and vegetables in the spring, continuing the story and cycle of growth. When asked for how long the staff had been doing this, the Pitboss replied that she wasn't sure. During her first spring at the mine, one of the volunteers came to her and said: "We have to plant these vegetables!" And so they did.

Topophilia is related to ***biophilia***, or love of life. First proposed by psychologist Erich Fromm, the term *biophilia* was expounded upon in great depth by E.O. Wilson, who wrote that humans have an innate affiliation or love for other living things. The care taken by all involved in planting at the Atlas Coal Mine certainly supports his hypothesis.

Respect for nature and environmental stewardship are key elements in Scouting. The founder of Scouting, Robert Baden-Powell, wrote, "Where is there a boy, or for the matter of that a grown-up man, even in these materialistic times to whom the call of the wild and the open road does not appeal?"

Civic ecology practices provide opportunities for learning

One Scout came up to me during the planting with soil-covered hands, remarking gleefully that his hands were "so dirty! Get it—*dirt*-y?!" pleased with his clever pun. At that moment, the etymology of the word *dirty* dawned on him. It was one of those light-bulb "aha!" moments when a connection is sparked.

From identifying herb species to learning how to transplant flowers without severing the roots, there were ample examples of learning as well as for gaining hands-on experience. We all learned on several, integrated levels: not only how to plant seedlings, but also about the history of the place we were in, as well as soft skills like leadership, teamwork, and communication through our interactions with each other.

In re-creating place, civic ecology practices re-create community

I enjoyed chatting with the staff at the Atlas Coal Mine, getting to know them better, and asking questions about the site. We all conversed as we worked side by side together in the soil. Older youth helped younger participants when it was required, and there was a general sense of teamwork and camaraderie as we worked together to plant a garden. When asked what everyone's favorite thing about the day's activities had been, one participant responded: "Being together." One Cub answered, "Spraying people with the hose!" which was another form of bonding, I suppose.

Through their experience, the Scouts also connected with and became invested in a part of their community's heritage.

There are a lot of similarities between Scouting and the group of staff and volunteers that maintain this historic site. Both are active and engaged. Both tend to be rather high in ***social capital***—that is," the collective value of all 'social networks' [who people know] and the inclinations that arise from these networks to do things for each other"[6].

Both organizations bring together different people, often in a volunteer capacity, and function due to trust and adherence to an accepted set of rules (in the case of Scouts, the Scout Promise and Law – one component of which is being "wise in the use of all resources")[7].

Both groups tend also to demonstrate ***collective efficacy***, or ability to take action for the good of the group. Each represents a small group of dedicated individuals who work together for the good of the group (Scouts) and a shared place (the Atlas Coal Mine).

Civic ecology stewards draw on social-ecological memories to re-create places and communities

Having the Pitboss explain why we were planting certain herbs and vegetables helped us to understand the history behind the practice we were engaging in. Mine staff have carried on the tradition of planting herbs and vegetables in the spring — a practice that harks back to the earliest days of coal mining in the valley over 100 years ago. There are positive as well as negative aspects to the social and ecological memories of this place. We engaged in and contributed to the legacy of the mine, and in so doing, created new, constructive memories for the participants and for this historic site.

Civic ecology practices produce ecosystem services

As complex systems, ecological systems provide numerous tactile and experiential benefits, or ***ecosystem services***. Spending an enjoyable few hours in the sun planting at the Atlas Mine provided us with recreational ecosystem services. Visitors will benefit from aesthetic services offered by the pots of beautiful flowers that greet them as they approach the mine office. The gardens tended by the miners would have been an important source of provisioning services, ensuring that they had the means to feed themselves during periods of little income.

After our hard work, the Pitboss suggested that perhaps we might have the opportunity to enjoy tasting the fruits of our labor at a future Beaver/Cub/Scout meeting.

Civic ecology practices foster well-being

Without exception, everyone who participated in our planting event had a good time. We all enjoyed the beautiful, sunny weather and relaxed atmosphere. Even the very active youth focused on the tasks at hand – be it gently removing the plants (with soil and roots attached!) from the plastic six-pack containers, digging a hole and lightly patting the soil around the plants, or patiently watering the garden post-planting. Everyone carefully stepped around the plants in the soil. It was obvious that everyone felt good about what we were doing.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Admittedly, our project took place on a very small and localized scale. Having shared in this experience together though, we would certainly jump at the opportunity to collaborate with staff at the mine on future projects. Encouraged by the success of this

event, the senior Scouts asked whether we might be able to also plant native milkweed species at the mine. They have become interested in Monarchs for Peace[8], an international peace project aimed at providing habitat for monarch butterflies migrating across Mexico, the United States, and Canada.

We approached the Pitboss, who was intrigued by the idea and asked whether we have monarchs in Alberta (the answer is yes!). Naturally, there were some concerns due to this being a historic site, but after consulting with the appropriate folks (and being assured that the butterflies consume nectar, while their caterpillars eat the milkweed plants and not historic wooden buildings), the Pitboss affirmed that we would be welcome to come back and plant milkweed on-site. With any luck (and a bit of planning!), we will be able to join an international network and provide habitat for this at-risk species.

We also met a staff member at the Atlas Mine who was a former Scout. He expressed the desire to volunteer as a leader with our group, reminiscing that he had greatly enjoyed being a Scout when he was younger.

Everyone present benefited from the opportunity to network and to find ways to work together to fill shared needs and meet common goals. All of this because we got together to plant a small garden!

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

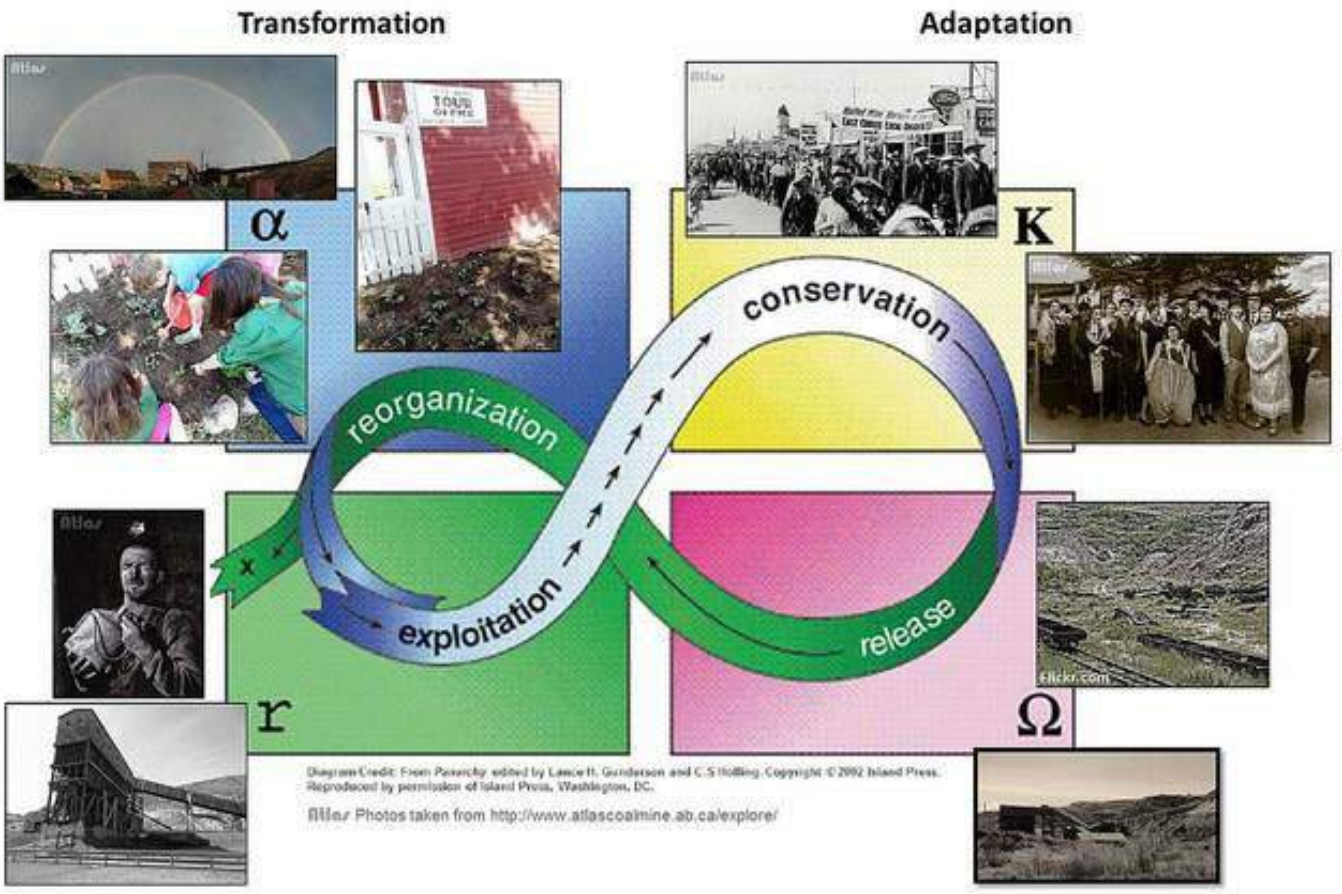
Our day of planting was just one part of the larger ongoing restoration and beautification of the mine, which is part of a larger adaptive cycle within the social-ecological system of the mining community. Here is how the practice addresses the four stages of the adaptive cycle.

r: Exploitation of the coal resources and the building of mines caused a slow burn environmental disturbance. Mining was dark, dangerous work; Drumheller became known as "Hell's hole."

K: Work conditions improved. Crude mining camps—composed of tents or shacks—slowly developed into towns. Houses were built; women joined the men and raised families; residents became involved in sports, arts, and social events; and a sense of community was fostered. "Hell's hole" became known as the "Wonder town of the West."

Ω: Demand for coal decreased and the mines closed, resulting in another slow burn of disinvestment, economic decline, and abandonment of mines/communities.

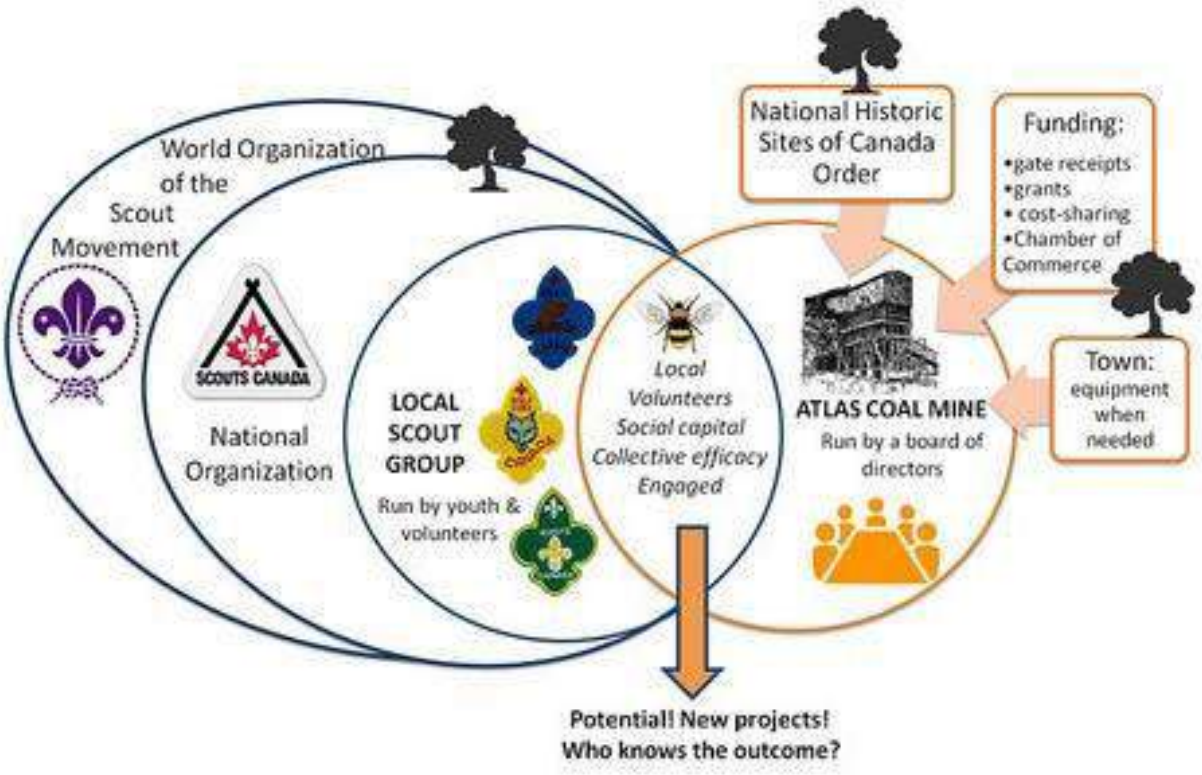
α: Reorganization into a National Historic Site, with practices that celebrate and share the history and stories of the place.



Adaptive cycle of Atlas Coal Mine National Historic Site.

Policy makers have a role to play in growing civic ecology practices

As a Scout group, we want to grow and expand our stewardship and community service activities, and develop strong local connections. Our group is part of larger Scouting organizations that value citizenship, leadership, and the environment. The Atlas Coal Mine has been terrific about reaching out laterally to local community groups — like the Scouts — and offering collaborative projects (we have participated in their "Haunted Atlas Coal Mine" for the past two Halloweens) that benefit both organizations and strengthen our relationship.



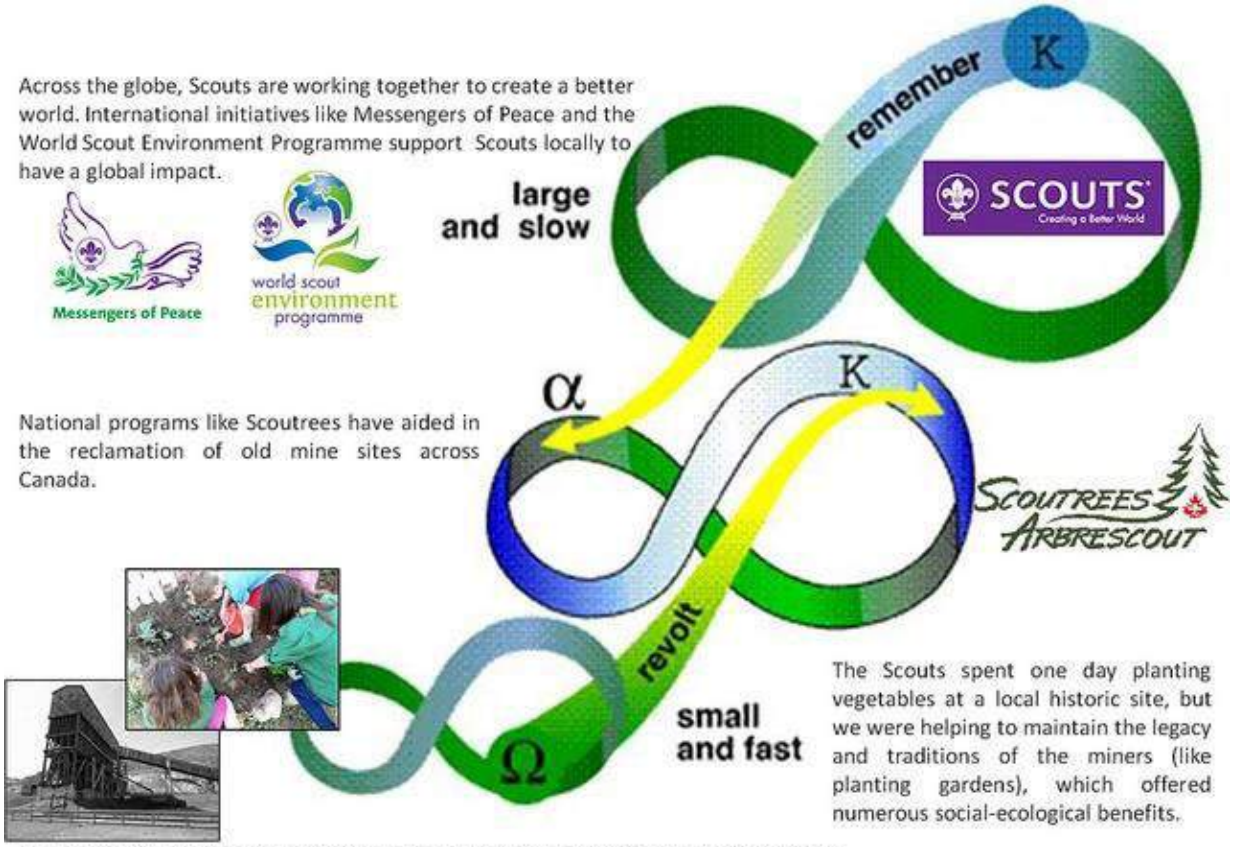


Diagram credit: From *Panarchy* edited by Lance H. Gunderson and C.S Holling. Copyright © 2002 Island Press. Reproduced by permission of Island Press, Washington, DC.

Scouts volunteering at the Atlas Coal Mine National Historic Site influence and are influenced by larger organizations in a panarchy. This might result in a larger impact for their local work.

The Atlas Coal Mine follows federal regulations laid out in the National Historic Sites of Canada Order. Staff manage the heritage resources and collections in accordance with standard best practices. The Mine is operated by a board of directors, made up of people from the local community. This board has quite a bit of autonomy, as well as responsibility to manage the site. They are eligible to apply for grant funding, but most of their operating costs are covered by gate receipts (so if you are reading this, you should definitely come for a visit—it's well worth it!). They collaborate with and gain support from larger organizations, like the Alberta Historic Foundation and the Canadian Museums Association, but ultimately, their focus is local (they are like the small, creative 'bees' while the aforementioned associations are the large-scale, resilient 'trees').

The Scouts' participation in one day of planting flowers and vegetables at the Atlas Coal Mine was a very localized and short-term practice, but it existed within a much broader movement. Whether it's planting a garden at a local heritage site, planting trees through a national program[9], or getting involved in international programs like Messengers of Peace[10] or the World Scout Environment Programme[11], Scouts are working together to create a better world.

Mining and resource extraction continue at various scales to this day, leaving in their wake broken places and the people and associations who care for them. Current local and global policies continue to favor intensive resource exploitation on a large scale. We may one day reach a point where, like the local miners, we have to find other ways to support ourselves. Today's reclamation efforts focus on regulation-mandated re-greening activities, such as tree-planting, without acknowledging or integrating the site's heritage and community. Perhaps the civic ecology practices at the Alas Coal Mine can serve as a model, or a microcosm, for the future transformation and re-creation of these broken places.

Reflection

My goals with this project were certainly met.

1. The weather was beautiful, and we spent a very enjoyable day with a great group of people.

2. Youth had a lot of fun and learned a lot through this community service project. They gained hard skills and knowledge about the work that goes into planting a garden, knowledge of local history, and soft skills like teamwork. The Scouts and Atlas staff alike were pleased with the end result: pretty flowers and a completed vegetable garden.

3. We took the opportunity to network with staff at the Atlas and brainstorm ways that we might work together in the future.

4. I was able to become personally involved in a civic ecology practice, and found that a lot of the principles of civic ecology could be applied to our local service project of planting a garden at the Atlas Coal Mine.

Despite the challenges of managing a small, rural historic site, the dedicated staff and volunteers do a great job. They have shown how it is possible to transform a broken place rooted in a history of resource exploitation and economic disinvestment so that it blossoms into a site of remembrance

that provides numerous social-ecological benefits.

By reaching out to and partnering with our local Scout group, mine staff were able to engage the next generation of citizens in a civic ecology practice that celebrates local history[12]. Overall, I would have to say that the day was a great success!

Acknowledgements

I would like to thank Dr. Marianne Krasny and the organizers of the Civic Ecology Massive Open Online Course (MOOC) for this fantastic learning opportunity. Thanks also to the participants of this course for your thoughtful discussions and for sharing your practices and stories.

Finally, a huge thank you to the Scouts and the staff at the Atlas Coal Mine for allowing me to participate in, and document their involvement in this civic ecology practice.

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Abandoned military dumps become places of renewal and innovation for University students in Madrid, Spain.

Civic ecology practices in the “waste grounds" network of Madrid

Madrid, Spain

María Auxiliadora Gálvez Pérez © 2015

Introduction

This civic ecology practice took place in the network of "waste grounds" that are connected through the M-40 ring — one of the highways surrounding the city of Madrid.

The places we are visiting are broken places for different reasons, mostly abandonment and political failures in the management of these terrains. We enhanced the practices of restorative topophilia in these places. For example, we developed several activities, like practices of perceptive awareness, landscape drawing, alternative choreographic collective movements, planting flowers, musical events made with our voices and a violinist, and walking and "strolling along them.

Through the walking, we have discovered incredible panoramas of the city unknown to most of the people, which are able to enrich these abandoned places and make us think about reclaiming the community. Now, we are trying to search which networks of civic ecology practices the nearby communities are involved with in these areas.

Civic ecology practices emerge in broken places

This story begins in one of the abandoned areas about twenty minutes walking distance from the CEU San Pablo University, where I teach a Studio Design Project in the Faculty of Architecture.

The place is a collection of around nine enclosures which were built in 1912 for munitions dumps purposes. The topographical changes destroyed the pre-existing natural area. The dumps were actively used for military purposes until 2005, when the terrains were given to the municipality and opened to the public. But all the rubble from the demolition of the buildings stayed and nearby residents were not aware of this area. Even today, it remains a "blind place" to most of the communities nearby.

But nature, little by little is conquering the area again, and we think that it is a place with a strong identity. This area is now being transformed from memories of military and civil war, into a social-ecological presence that repurposes the

place for the citizens' daily practices in connection with nature.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

I know the place thanks to a colleague, Begoña, mainly because of his son Miguel (11 years old at the time), who often plays there with other kids.

Nowadays, it is a place where more spontaneous community practices – more than in conventional and pre-fixed public spaces – begin to take place. At the University, we discovered these first actions of reclaiming the place and we decided to act as university community. We had a short workshop with volunteers (students and their friends) and we began to cultivate topophilia (love for places) and to produce actions of restorative topophilia.

We began with atmospheric perceptive awareness – trying to feel the terrain with our senses and movements, and blur the separation between the environment and us. These were actions meant to restore topophilia during different seasons of the year. In recreating a sense of place, we were also recreating community and fostering well-being.

Atmospheric perceptive awareness exercise

We planted flowers in between rubble and desolated areas to show biophilia (love for life) towards these fragile organisms, envisioning a positive future and development of rich biodiversity. We also added aromatic flowers to deal with bad-smelling areas. This was run by student volunteers Isabel, Javier, and Sebastian. These new flowers and aromatic plants provided ecosystem services, including cultural services (nonmaterial benefits people obtain from ecosystems through spiritual enrichment, learning, reflection, recreation, and aesthetic experiences).

We also did landscape drawing, to enhance engagement with place. Together with the previous experiences, this provided opportunities for learning in direct connection with the environment, experience, and observation. (See Fátima's landscape drawing.)

Landscape drawing by Fátima

We used alternative choreographic collective movements to envision what the place might become; some actions not possible in most public spaces were possible in this place. This enhanced free and spontaneous behavior connected with the environment that surrounded us. In this way, we were fostering well-being, especially for students constantly facing their computer and indoor tasks.

One of the volunteers, a choreographer named Andoni, helped us to free ourselves with our movements in this place. We fostered partnerships with others such as the Dance School in Madrid, and international volunteers from the University in Buenos Aires like Edgardo.

Rastrillaje en Linea[1]

Thanks to Gala, Juan and Luz, we found the incredible acoustic conditions of the place another way to relate to the environment through musical events made with our voices and a violinist.

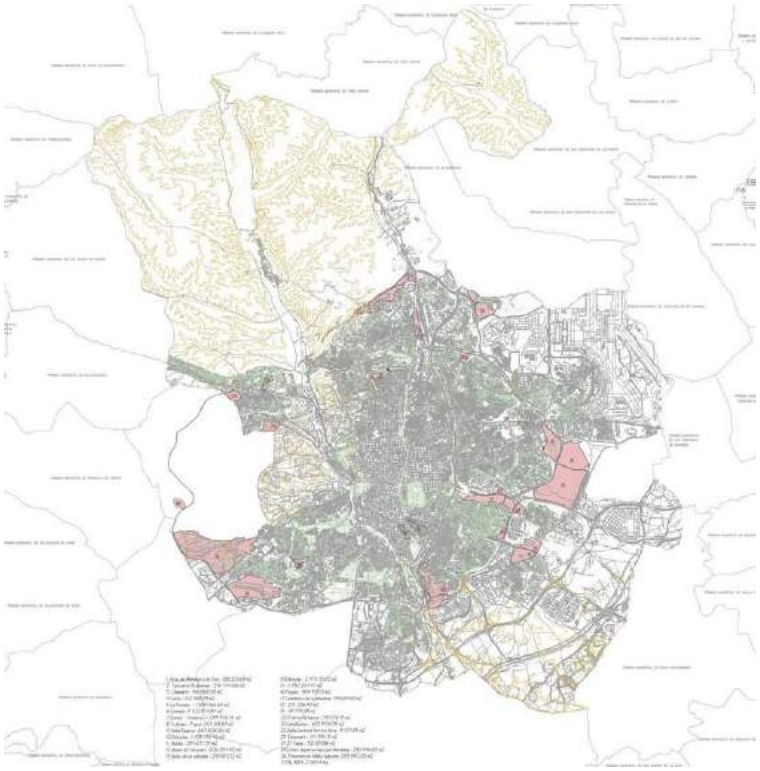
Walking and strolling along them was a great way of enhancing our bodily engagement with place.

We also increased our sense of community through shared picnics in between the actions!

In re-creating place, civic ecology practices re-create community

At this point, we began to talk with other friends, wondering which other similar spaces we had in the city. I was interested especially to see how these reservoirs of biodiversity and imagination were interconnected with citizens, what role these places played in the city, and what kind of civic ecology practices would exist there.

We used a two-fold condition to select the network of waste grounds: they should be surrounded by urban fabric (which is mainly residential) so we could see citizens' interactions, and within the M-40 highway ring. If we go outside of this ring, we already begin to find the end of the city, where there are no waste grounds, but connections with rural and agricultural land. Below is the map of our collection of broken-places:



The group of volunteers I am exploring these broken places with nowadays is multidisciplinary, coming from architecture, film-making (Víctor), sociology (Emilio), forest engineering (Oscar), and the main university community (Alejandra and Ana, but also some 4th year students). We are all Madrid citizens and our different perspectives help us learn from each other. We wanted to interact with the areas, to enhance them or to see the possibility of interlinking them in a network. To begin, we explored the eastern interlinked broken places.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

As a way to start making people aware of this network, we have begun to think about what to do to reveal it to more citizens and policy makers and what alternative possibilities we could envision to change the existing master-plans.

A first step "up" has been the Archiprix International workshop: Imaginary Pragmatics[2]. Archiprix is an international foundation related to education institutions of urban planning, landscape and architecture around the world with visibility worldwide.

I proposed to the organization that they work in this network of waste grounds. They accepted, so I was in charge of a team of nine experts (architects and landscapers) from all around the world (Mexico, New Zealand, Brazil, Greece, Italy, Netherlands and Spain). We also had the collaboration of a Forest Engineer. In the workshop, they were asked to work with radical scenarios of imagination combined with objective data. I asked them to focus these scenarios on ecosystem services, looking at this network as an opportunity to include a more radical policy for the city in relation to ecosystem concerns. The idea was also to see the "middle-out" role of experts in between the civic ecology practices of citizens and ecosystem policies.

Within the group, three scenarios were created: a waterscape, a food mountain, and a forestscape. Each of them at first glance could be seen as a utopian ideal. But when you see the objective data attached to them, and realize that you can clean the water of the whole city using natural systems of macrophytes, or fix CO_2 and produce food through community engagement, they begin to look like real scenarios to be achieved that are alternatives to the existing master-plans. The goal was to enlarge citizens' and politicians' collective imaginary – to give a place to other ways of understanding the city and to overlap real and imagined scenarios.

Contact with neighbors was established and a digital campaign has been launched.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

In all of the places we selected, there were interesting examples of how natural systems adapt to the changing conditions. Evidence of resilience is present all around. One can observe cycles of chaos and renewal throughout the landscape.

This yellow tree is the only one of its kind in this environment. It is growing in between the rubble. These flowers have begun to conquer ceramic inert waste.

In one of the waste grounds in the Moratalaz neighborhood, we found immigrants from Eastern Europe growing a garden in these terrains. They were in a hidden place because of the topographic conditions and I think that is why they were trying to grow their vegetables in that area. The garden is able to alleviate the marginal condition of their living, creating a sense of place and community and helping them obtain fresh food.

We also found that the neighbors have been using the rubble and debris in this waste ground as a beautiful gesture to protect the growing trees and mark paths.

In Coslada, one of the biggest areas, we found other practices in relation to civic ecology: horses, cows, sheep and goats. We don't know yet if they are legal or illegal practices, but the addition of horses to this area has improved the green cover of the soil and contributed to citizens' enjoyment by letting them ride horses around the waste ground. This practice both enhances the citizens' love of life and fosters well-being.

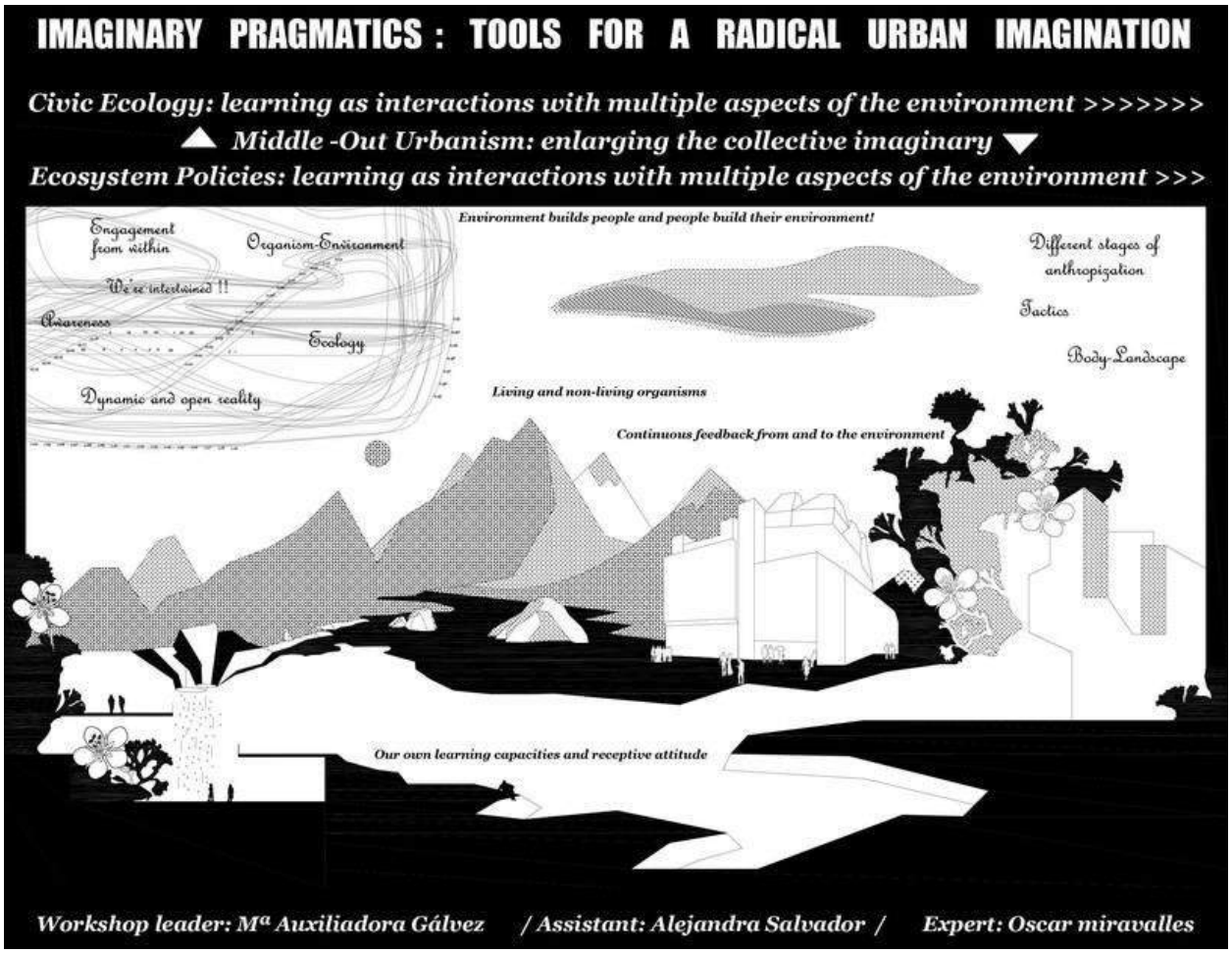
Because of the installation of these activities, we have seen special practices in relation to how citizens relate to animals in this area. You normally can't develop these relationships in the city parks or in other public spaces, but you can now in these waste grounds. We have also met a greyhound trainer and a group of goldfinch caretakers in the waste grounds.

In this sense, the waste grounds are experiencing cycles of renewal through ecosystem resilience but also through citizens' practices in the space.

These are some of the areas which are already in a cycle of renewal. In many of them, this renewal is a little further along, and in others the cycle is just beginning. What if we could preserve these places, allowing their dynamic cycles to emerge? How many years before we could have a forest that is the natural ecosystem growing here?

The problem arises in some of these places (Coslada is a good example) where there are already urban master-plans more focused on economic exploitation than in the value that these places can have as ecosystem service resources for the city and its citizens. Even Madrid has an exceeding number of empty dwellings resulting from the real estate bubble burst, yet the plan is to build more dwellings by a private company. Even if Madrid has pollution problems -- we would need around 35 times the surface of Madrid devoted to trees in order to fix the CO_2 produced by the city per year — ecosystem services are not yet on the agenda of the municipality's policy. So these areas – which could be preserved as reservoirs of biodiversity and ecosystem services — are in a very fragile situation which is unknown to most of the population of the city.

Almost all the waste grounds of the network have a plan to be urbanized and will be lost as ecologic reservoirs, even if Madrid doesn't need to grow. The crisis has given these areas an opportunity: will there be enough time to change policies about the city ecosystem and enough civic concerns about them?



Policy makers have a role to play in growing civic ecology practices

As a way to include the municipality in our way of thinking, we are sending three postcards made by the group (with the three scenarios and data about the benefits) to the new mayor of Madrid!

After this, we have decided to work on two projects. One is to continue with our explorations; walking along the places, knowing them and continuing with our civic ecology practices in these sites, including recognizing others present in these areas, and understanding the network of citizens, environments and practices. The other is to work on specific documents, such as an "Atlas of the Waste Grounds," — including landscape, biodiversity, ecosystem services and social context, as well as possible visions for the future — a Manual of Permaculture, and film documentaries. These will allow us to include a broader range of actors related to our human network. We are trying to go "bottom-up" but also establish "up-down" feedbacks among people. Ideally, as we try to go towards polycentric governance, we would implement the "middle-out" role or the civic environmentalism aims to our network (Auxi. Madrid, May 20, 2015).

Conclusion: Learning Reflections

My reflections on what I have learned from doing this civic ecology practice include:

- I have learned that through direct experience (involving the whole body-mind) and action, it is easier to learn and also much more exciting and creative. I have also noticed this in the students who were participating in practices. They were happier and better able to understand the theoretical concepts in relation to the environment embedded in the course. Creativity and sensitivity were also enhanced.

- I have learned through exchanges of different points of view. In the civic ecology practice I developed, I was together with volunteers of different disciplines and that produced a much richer way of thinking in us all. Through these interdisciplinary contacts, I have also learned about the work of different authors, and different practices and learning platforms, like the MOOC "Reclaiming Broken Places: Introduction to Civic Ecology". This helped me to integrate a lot of concerns, expand the tools to understand, and envision ways of working. I have also learned to consider the concerns of other disciplines – a huge panorama has been opened up in front of me.

- I have learned to name some of the actions, activities and practices we developed. Through these definitions and labels, now I am able to understand them better and to envision a broader collection of work to continue to develop them.

- I have learned how to integrate social-political-ecological concerns

in a specific frame and context, enhancing the ways of dealing with them in my everyday life. I have learned a lot about citizenship, but also about how to envision ways to better include these concerns in my work when I operate as an architect working with other citizens, partnerships, and institutions. I have also learned how small actions can have big consequences.

All these lessons have been possible thanks to all the participants involved with me in these practices, and to the participants and organizers of the MOOC: Reclaiming Broken Places. These experiences have opened a huge landscape about the interrelations implicit both in these practices and also in life.

In the last months we have continued with our practice. The first thing we did in June was to invite more experts to accompany us on our visits. We needed to know more. So Javier, Maren and Marga were visiting one of the places in the waste grounds network with us. Javier is a botanical expert of the Madrid area, Maren is working with Permaculture, and Marga is a landscaper. Our friend Miguel, a musician and contemporary composer, also joined us!

Thanks to these experts, especially the knowledge of Javier, we discovered rare botanic specimens in the area. There were specimens of wild pear (*Pyrus bourgeana*), which normally grows near watercourses, so we were able to see some more treasures of these broken places.

We finished the visit with a picnic and an interesting debate about possibilities for these places and citizens' needs, imaginations and actions.

We continue to visit the rest of the areas of the network, trying to identify their conditions. We hope to finish with visits by the end of this year. David joined us, going deeper into the social questions involved in these places. Now the students of the 4th year will join us in searching for civic

ecology practices in two of the areas. We are looking to establish a better understanding of how citizens see these places, and how the communities interact.

Acknowledgements

From 2015, the team working with me in this practice is the following:

- David Prieto Serrano (Sociologist)
- Oscar Miravalles (Forest Engineer)
- Víctor Moreno (Filmmaker)
- Ana Fernández Galván (Architect)
- Alejandra Salvador (Architect)
- Emilio Luque (Sociologist)

Thanks also to the San Pablo CEU University.

More information and updates in:
www.galvez-wieczorek.com and
www.pezdeplumas.org

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A small village, Zothé, Mexico receives some much-needed support from high school volunteers.

Restauración Ambiental Comunitaria (Community Environmental Restoration)

Zothé, Mexico

Karla Andrea González © 2015

Introduction

The civic ecology practice I'm going to describe is a project I was a part of in 2013. Back then, I didn't know I was being a civic ecology steward while doing so! The project, called "Restauración Ambiental Comunitaria" ("Community Environmental Restoration" in English), took place in a tiny town called Zothé, which belongs to the city of Huichapan, in the state of Hidalgo in Mexico.

I became a volunteer with the project while I was a student at Monterrey Institute of Technology and Higher Education. Previously, I had participated in the organization that designed the practice, called "Amigos de la Naturaleza" ("Friends of Nature" in English). I studied Sustainable Development Engineering, and as a person with a lot of passion for nature, I was very interested in finding out how everyday citizens can participate in the well-being of their environment. The main focus of the project was to understand the relations that the people from Zothé had with their environment, and to inform them how to become leaders of biodiversity conservation in their community.

Civic ecology practices emerge in broken places

The village of Zothé was founded by residents of surrounding communities in 1929 under the leadership of Antonio Mendoza. It was recognized as a village in 1931. In 1934, the village occupied 706 hectares.

Although today the community has electricity, water, sewer, telephone, and even the internet, this was not always so. Electricity was not introduced until 1953, and the first well of potable water opened in 1976. The sewer was introduced just a couple of years ago, the village entering the 21st century with the help of neighbors and federal support.

Zothé has not always had the support of the government to develop, as old or obsolete infrastructure exist in the community. Besides this, in the 1970s something happened that drastically changed the local ecosystem. Thanks to a national reforestation program, plants and trees from around the world were introduced around the village. This severely affected many local species and nature was lost, damaging the area.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and recreate these broken places

During the first months of 2013, a group of 15 high school students from the Zothé community participated as "Environmental Promoters" by making a diagnosis of their community on social and environmental issues. They worked hand-in-hand with students, professionals, and environmental leaders from Monterrey Tech, and together we recognized topics of interest related to the community.

The first results of diagnosis showed two important aspects:
1. The rich history of organizing in Zothé, through which it has been making improvements to the community.
2. The concerns of the participants about changes in climate and the impacts this will have on agriculture, local animals and plants, as well as the environmental conditions of the stream.

This history of organization, hard work, and knowledge of important issues shows participants' biophilia and topophilia, because regardless of their age or social position, they participated in the project.

In re-creating place, civic ecology practices re-create community

The sense of community was perhaps what made this project possible. Since its foundation, Zothé has had an organizational system that made all the infrastructure and funding possible.

Thanks to that, we had no problem convincing people to participate in the civic ecology activities that the students and promoters organized. They were also eager to have their vote and opinion regarding the installation of a community garden heard and the new responsibilities that would come from the garden.

It is also important to mention that Zothé is a really small community, so practically everybody knows everybody and therefore communication and organization is simpler. But regardless, the natural interest to make their community better was definitely a catalyst for the project.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

This is a very important principle in the Zothé community. After the introduction of many non-local species in the 1970s, any original biodiversity left is thanks to the social-ecological memories of the community to re-create their place as they once knew it.

The main ecological memories that helped the project were related to the cultivation of special and local seeds that were being introduced in the community garden, so that the restoration would begin. Social memory as well definitely helped the community get organized and work together for common well-being.

Civic ecology practices produce ecosystem services

In Zothé, just like in many other societies, the ecosystem provides lots of services. Our diagnosis led to the understanding of these:

-Cultural. Many local plants and flowers are used in local celebrations, above all the ones regarding religion and church, such as the "Fiesta Chiquita" where they honor the Virgin of Lourdes, and Día de Muertos (Day of the Dead), which is a national holiday in Mexico and uses nature to worship the people who have left us.

-Food. In Zothé there are many local farmers and ranchers who grow their own food and also sell it, which helps with local economy.
-Medicine. Tradition itself has made nature become the main pharmacy in Zothé. From making herbal teas, to actually eating some plants as remedies, this ecosystem service is of great value to the community.

Civic ecology practices foster well-being

I think the main well-being outcome that the participants received was a sense of making a difference in their community, because their results were tangible and a sense of teamwork and citizenship was reinforced.

The high school students from Telesecundaria 231 in particular felt empowered to lead future initiatives regarding their environment and community, because they saw the product of their efforts in real life through this project.

Civic ecology practices provide opportunities for learning

The whole community participated in the project, but the leaders were the Environmental Promoters — the high school students — who led the diagnosis and subsequent activities.

Our role as students from Monterrey Tech was to advise and train these Promoters through their decision-making process and show them how to strengthen their initiatives. I was a leader of a group of 4 university students and together we made a couple of activities that helped us complete the diagnosis. We interviewed the students' families about how they interact with nature and the local environment in everyday life.

We ended up with information regarding cultural practices, food, economic activities, and even their pets and farm animals!

This diagnosis led to the design of two main projects that were developed in the community: a community garden and a monthly clean up. Both were the responsibility of the whole community.

That's me in the blue jacket and red backpack, with my teammates from Telesecundaria 231 in Zothé, the others are (from right) Carmen, David, David, and Oscar

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Governance diagram from the Zothé project.

Reflection

This was honestly the best project I've had the opportunity to participate in. I am very lucky to have met this dedicated and proactive community, and been able help them lead activities that would change the course of this community for the benefit of all.

By the end of this project, I was capable of fully understanding the significance of nature in a community and in society. The environment not only provides us many services such as food, recreation, and climate regulation, but also helps us create a sense of identity and community by bringing people together.

That helps me the most as a Sustainable Development Engineering student because I realized that we need nature as well. In business and industry, we tend to think as nature as a separate environment from ourselves, that we have to conserve it but not interact with it. But in real life, nature is everywhere! When you fully get that picture, it really changes your mind. You realize that in every little action you take, nature is within! So as a graduate, I now can promote everyday ecological practices in my many social groups that make us more in touch with nature and really bring us together as a community.

All of the proposals that emerged were based on a diagnosis, which helped the community to take ownership of the project and increasingly join forces with other actors of the town. To this day, the group has emerged with new collaborators (some of them have graduated high school and moved out of town) and continues to create activities to benefit their community. The garden is still being supported by the Research Center for the Development of Sustainable Communities and has helped reincorporate many species into the local environment.

If this is what Civic Ecology is, then there is no doubt that I love it and it is my passion!

A community reclaims a river decimated by development in Atlanta, GA, USA and reconnects it to a network of natural areas.

The Confluence Trail in Atlanta

Atlanta, Georgia, USA

Becky Hunt Griffin © 2015

Introduction

I learned about the South Fork Conservancy[1] and the work they are doing through the Atlanta Science Festival. I took a guided tour of the Confluence Trail and was very impressed by the work being done to clean up the trail and waterways. The volunteers have a vision for what they want the area to look like in the future. The South Fork Conservancy is working to clean up and restore trails and waterways associated with the North Fork and South Fork creeks that come together to form Peachtree Creek in Atlanta, Georgia.

Civic ecology practices emerge in broken places

The North Fork and South Fork creeks in the Georgia piedmont were once beautiful waterways used by the Muscogee Indians for drinking water and travel. They were home to beaver, otter, and birds. After the construction of major Atlanta highways I-85 and GA400, the area changed. Since then, it has been a broken place, where invasive species like privet have taken over the creek banks, and pollution has choked the waterways. Most people living in the area didn't know there was a waterway nearby. This was a great place for civic ecology to emerge!

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

South Fork Conservancy was formed as a grassroots effort by residents who wanted to see the waterways restored and residents enjoy the area using created trails. Volunteers have spent countless hours removing invasive plant species and hauling pollution — like old tires — from the creek. These volunteers are mostly local residents who have a love of this place and want to reclaim the area through restorative topophilia.

There are now trails along the water. With the help of grant money, the Conservancy has partnered with Trees Atlanta and planted native trees along the trails. Although the project is far from complete, residents now report seeing wildlife in the area, and birding experts have led bird watching events.

Civic ecology practices provide opportunities for learning

Volunteers are proud of this project, and passionate about what they have done and their plans for the future. The project has brought together residents who would have never known each other, creating social learning situations and active learning as the volunteers work together.

Trees Atlanta volunteers share their knowledge about native species, which the volunteers pass along when they give guided walks to visitors. During bird walks, local birding experts share their knowledge of native birds.

In recreating place, civic ecology practices recreate community

Social capital is evident with this project. The creeks and trails run underneath the highways, which created an area where illegal activity was easily conducted. Residents were scared of living near these highways. Recently, residents and volunteers have opened up and transformed this area. Now families walk the trails. People enjoy walking their dogs along the waterway. Graffiti that was once thought of as an eyesore is now being thought of as urban art. Volunteers have approached graffiti artists to paint images of trees on specific pillars. The volunteers continue to show collective efficacy, as they plan to continue the project to connect these trails to other Atlanta walking trails.

Civic ecology stewards draw on social-ecological memories to recreate places and communities

At one time, native chestnuts flourished in this piedmont area of Georgia. Seven dozen experimental hybrid chestnut seeds have been planted as a side project, joining an effort to reintroduce the American Chestnut Tree after a century of extinction of native chestnut trees. This example of biological memory is a source of pride for the residents.

Civic ecology practices produce ecosystem services

The creek, along with its volunteers, provide ecosystem services. The recreation of walking the trails is a cultural service. Removal of trash from the creeks is a supporting service. By filtering out this pollution, the waterways are supported. Removing privet — an invasive plant species — from the creek banks is also a supporting service. The privet was competing with native plants for nutrients and water. Removal of the privet allows the native plant species to thrive. Results from the American Chestnut Tree project could be thought of as provisioning services. The genetic information from the experimental trees that survive can be used to eventually reforest parts of the piedmont. These resulting trees could be used as a habitat for wildlife and for building material, and the chestnuts could be used as a food source.

Civic ecology practices foster well-being

Exercise is one physical health outcome that participants of this civic ecology practice receive. The trail is over a mile long, so walking the trail is great exercise. Also, removing privet plants takes muscle! The mental health benefits to volunteers include the peace of the trail, and the pride of helping to restore the area.

Civic ecology practices start out as local, small-scale innovations and expand to encompass multiple partnerships

This civic ecology practice started out small and very local. A few volunteers loved an area, remembered what it once was, and wanted to reclaim it. The practice has grown and the South Fork Conservancy was formed. They have now partnered with

Trees Atlanta, Boy Scouts of America, Atlanta Botanical Garden, and the Audubon Society.

Policymakers have a role to play in growing civic ecology practices

The volunteers are still the 'bees' of this effort and some 'trees' have become involved. The Atlanta Beltline is a larger project that involves larger non-profit organizations and governmental agencies. These larger policy makers are working with the 'bees' to connect the Confluence Trail to the larger Atlanta Beltline.

Reflection

Using this civic ecology practice for my project was a memorable experience for me. The volunteers are excited and passionate about the project. They not only enjoy what they have already accomplished, but they have a clear vision of what the waterways could be.

My professional life involves working in community and school gardens throughout Georgia. I now understand some of the other aspects of the gardens beyond the garden itself. In my work, I see how the gardens sometimes emerge in broken places. I see vacant lots that were filled with trash in downtown Atlanta become plots of vegetables.

I see gardens producing ecosystem services as soil is improved and specific plants are used to attract pollinators and other beneficial insects. The gardens foster well-being as neighbors get to know each other and spend time in nature, tending their garden plots and enjoying the rich ecosystem that emerges. The gardens also provide opportunities for learning, as experienced gardeners share knowledge with new gardeners. Gardeners will ask me to present a lesson on a specific subject — such as how to control Mexican bean beetles or how to build healthy soil — to create social learning networks. Many gardens also host children for story times or a garden lesson.

Completing this project and the MOOC has make me conscious of the broader scope of what community gardens provide for both their gardeners and the surrounding community.

References and Additional Resources

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A community protects and preserves its coal-mining past by turning an abandoned breaker into a memorial.

Development of the Anthracite Region's Huber Miner's Memorial Park: Paying Homage to our Mining Heritage

Ashley, PA, USA

Robert Hughes © 2015

Introduction

I am using this civic ecology service learning project to showcase one of the many civic ecology practices that I am implementing in partnership with many others in the Northern Anthracite Coalfields. I am involved with this project both personally and professionally; as a volunteer and also as the Executive Director of the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR). The story will show others what I've learned in the course and how it relates to on-the-ground practices in the real world.

This service learning project about the Huber Breaker Anthracite Miner's Memorial Park[1, 2] will help the practice that we are undertaking by sharing the story of our trials and tribulations with others around the globe. We hope for others to see and understand what we have gone through and what we are currently doing to reclaim this broken place -- a former mining industrial, living, breathing, mammoth series of structures that were used to break coal down to many different sizes for various markets, and also broke the will, lives, hearts, souls, families, and bodies of the men and boys that worked in them, around them, and underground. This project will demonstrate the importance and diversity of civic ecology practices nationwide and tell a story that is distinctly unique to the Anthracite Region of the Wyoming Valley in the Northern Coalfields of Northeastern Pennsylvania.

I am happy to share my personal experiences with our global class participants and audiences from around the world about this project that is very close to my heart. Just outside my hometown of Wilkes-Barre, in Ashley, Pennsylvania, is a one-square mile mining patch. It is a place where my relatives had lived since my childhood days and the location where my father hauled coal away from the Huber Breaker in my younger years. I remember he was paid in silver dollar coins, exactly like many of the miners had been in the early 1970s.

Huber Breaker in its heyday.

The eventual sale of the Huber Breaker was due to a huge liability for the bankruptcy court that had acquired the property, and the occurrence of a lawsuit that is still in litigation. A scrap recycling company from the Philadelphia area eventually purchased the property, which led to the demolition on April 24th, 2014, of the last building standing and eventual scrapping of the entire colliery grounds and buildings. The company

An Amazing Civic Ecology Steward: Mr. Ray Clarke, Chairman and Treasurer of the Huber Breaker Preservation Society

This story brings together the passion of an 82 year old Ashley coal town elder and mentor of mine, Mr. Ray Clarke. A man of Irish descent, and a recently retired owner of an Irish Imports and Floral Store within the community for over 32 years, he has dedicated decades of his life to the Huber Breaker and advocated for its preservation as an Anthracite Region Miner's Museum. However, rather disappointingly — and with an overwhelming feeling of powerlessness — he had to change his plans following the bankruptcy of the property by a former coal operator who had made verbal commitments to donate the 8+ acres of the property to the Huber Breaker Preservation Society.

Mr. Clarke has been the grandfather that I never had. I have had the wonderful opportunity to work with him for nearly 15 years of my career and admire his honesty, integrity, pride for his culture and heritage, and his passion and commitment to seeing the park become a reality. Honestly, I look forward to each day that he comes into our office and interacts with the staff. He learns how to use a computer and the internet from us, sets goals for projects with me, seeks funding for various phases of the project, gets his hands dirty in the park, shares stories of his life, and tells me how thankful he is that I take the time to work with him for hours on end to see our shared vision become a reality.

Together, we bring all types of partners into the project: non-profit organizations, corporations, vendors, community groups, school districts, career and technology centers, tradesmen associations, iron workers, plumbers, artists, preservationists, historians, mechanical engineers, architects, and green consulting firms, making it truly a sight to see. I could never say no to this man and never will. He's more than just a colleague who shares a passion for our Anthracite History and the preservation of our region's culture. Mr. Clarke has been able to honor the men and boys of the Northern Anthracite Coal Fields through fundraising efforts that have taken years to raise enough money to bring the Huber Miner's Memorial Monument to Ashley Borough. Mr. Clarke is one of the most respected men in town for his honesty, passion, integrity, love, and pride for his community, outspoken nature and Irish temper, and for the support that he acknowledges and gives to local businesses and industries. He is a hardworking man, a great story teller, an educator, an elder within the community who everyone knows or should get to know, and is a great networker and community leader who doesn't worry about politics. He just finds ways to get things done, even if he has to do it himself. He has built the necessary partnerships, both historical and environmental, to reclaim this 3 acre abandoned mine site into a community park that is going to be a gem and a focal point in the borough, once completed.

profited from the sale of the scrap metal and other assets on the property that were liquidated.

Goals changed as the vision for the Anthracite Region Miner's Memorial Park became a reality over the last few years. Mr. Clarke and I sat down together with the Board of Huber Breaker Preservation Society[3] to come up with plans to make the park a reality that would reclaim the abandoned mine lands and make the 3 acre parcel an ecological and historical destination for the region that could still tell the story of Anthracite and its importance to our region. I have come to know Mr. Clarke personally and worked with him on nearly a weekly basis to tirelessly try to bring together the necessary partnerships and pieces to preserve the Huber Breaker, as well

as the surrounding colliery grounds, and other regional historic artifacts, grounds, and places from our historic Anthracite past. Mr. Clarke delivers flowers, wreaths, and floral arrangements to cemeteries in the area in addition to being a caretaker at many of the local cemeteries. He also spends time with his grandchildren and family. On top of all this, he has had two hip replacement surgeries and still somehow finds the time to work on the preservation of the Huber Breaker Colliery grounds in Ashley.

Mr. Clarke has worked with EPCAMR for as long as I can remember. He helps to secure grant funds, and come up with fundraiser ideas for the construction of the Huber Miner's Memorial Park, on a 3 acre parcel of former abandoned mine lands donated by the Earth Conservancy. Mr. Clarke is leading the way in developing the park.

The park has several gardens planted with native tree and shrub species. The Huber Breaker Preservation Society has allowed research projects to occur on the property in partnership with EPCAMR, Penn-State University, the Appalachian Coal Country Team, and Groassis Waterboxx: a company that came up with a unique water conservation tree planting box. Twenty of these Waterboxes are on the property, being researched by EPCAMR interns on a monthly basis for the last two years. An ongoing Paver Project — consisting of environmentally-friendly, porous pavers colored with recycled iron oxide (EnvironOxide) — leads to the Miner's Park Memorial Park containing a historic landscape replica image of the colliery buildings etched in Vermont granite. There are low impact trails throughout the area and park benches made of 100% recycled plastics. A Mine Car Restoration project in partnership with Abandoned Mine Research Inc. is ongoing at the site along with the Wilkes-Barre Area Career & Technology Center's Machine and Carpentry Shop Classes. Recently, a GiveGab fundraiser project began, hoping to bring in funds for the construction of a parking lot and multi-purpose pole building to continue providing historical and cultural programs about the Huber Breaker to the hundreds of citizens and local school districts that come to visit the site each year.

Photo by John Welsh Photography.

Emergence

This civic ecology practices happened because the Huber Breaker has remained idle since 1976 when it closed down. The mining industry of the Anthracite Region pretty much shut down during this time due to several cumulative challenges. Underground mines flooded, running up high costs of pumping the water out to clear them, and environmental laws like the Surface Mining Reclamation Act of 1977 came into play, which regulated mining operations to treat mine water and reclaim mine lands. Huber was the last coal breaker standing in the Wyoming Valley, in a small mining town that had lost its major employer and source of fuel.

The former coal owner went into bankruptcy and the property was turned over to the bankruptcy courts who soon washed their hands of the property and cared little for the idea of preservation of the site. Windows began to be broken. Youth and anarchists, as well as photographers, urban explorers, arsonists, even out of state tourists began illegally touring the Breaker grounds and stealing items and artifacts once they heard that it might come down. Graffiti became commonplace. Deviant art appeared on all floors. The buildings fell in total disrepair. Weeds grew. Litter accumulated. Bottles were smashed by unruly teens having drinking parties in the 10 story main building. Finally, a 14 year old teenage girl got hurt and a lawsuit was filed by her family.

The property was not properly closed off to the public, nor was there a fence around the majority of its perimeter. The lands became idle and ignored until the bankruptcy and eventual sale of the property for scrap metal and total demolition. The Huber Breaker Preservation Society had always wanted to see that the property was turned over to the Society to be able to secure state, federal, foundation, county, and corporate donations or grants to preserve the structures which were structurally sound, in terms of their foundations. EPCAMR supported their efforts to try and "Save the Breaker!"

Civic ecology practices emerge in broken places

The Huber Breaker was a broken place. It was a mammoth site with buildings and ancillary structures, conveyors with rotary dumps, tracks, engine houses, mine shafts, slopes, headframes, retail pockets, steam plants, steam pipes, a Dorr Thickener, pumps to bring water from Sugar Notch Run (the local tributary) to clean and float the light coal in Menzies Cones, (an engineering design unique to only the Huber Breaker). Over the years, all of these buildings fell into disrepair. The land was full of waste culm, old shovels, oil drums, contaminated soils, asbestos, front end loaders, mining cars, shovels, buckets, and thousands of tons of scrap metal.

Not only was the breaker representative of an industry that went into decline, so were the surrounding coalfield communities. The economy around the area is no longer booming. Businesses tend to shy away from making investments in the areas where the landscapes are mine-scarred: the streams run orange, and the potential for mine subsidence is high. Investing large sums of capital would be needed to build up the infrastructure to make business ventures viable and profitable. Once anthracite mining companies went bankrupt, the communities that depended on them for their livelihood and jobs suffered. Few small businesses thrive in Ashley Borough today. Most businesses are from the service and food service sector. Even the rail industry that dominated the scene in the heyday of mining is used very lightly to haul freight through the borough into an adjacent Industrial Park.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Because of our love for the places we were losing in the Coal Region — and having seen other areas lost to the wrecking ball — Mr. Clarke and I emerged to become two leading civic ecology stewards among many others. Together, we reclaimed, and recreated the Huber Breaker and an adjacent parcel of land next to it. Mr. Clarke and I had put together a plan for the Huber Miner's Memorial Park, and the bricolage had begun, around 2005 when we realized how difficult it was going to be to actually purchase the Huber Breaker. We lacked the capital, investors, and huge philanthropic donors that were in support of preserving our cultural heritage and relatively few large donors in the region saw the Breaker as a diamond in the rough like we did. The EPCAMR staff were integral in moving forward in small incremental successes. The Huber Board did as well. They supported all the efforts that Mr. Clarke and I put forth for consideration.

We wanted to leave a topophilic legacy of historic interpretation on the site: a memorial of the last breaker standing and what that represented to our regional heritage and culture. It was not the only site of historical significance in the region that we promoted, but it was one of the largest and a pivotal beacon of black steel on the landscape that was seen by everyone entering the Wyoming Valley. The place we loved has been torn down. Remnant building artifacts remain. Visitors will never be able to feel what we felt around the Breaker and its buildings, but they may be able to get a sense of what it was like through our interpretations and anecdotal stories, oral histories that have been handed down from generation to generation, and true first hand stories based on our experiences around the site.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

Mr. Clarke and I are drawing on social-ecological memories to recreate the sensations, feelings, and artifacts that were a part of this community in its mining heyday. We don't want the history to be lost. We don't want the land to become another parking lot or strip mall and the history of the site to be erased forever. We want to educate our youth and be able to encourage them to go back to their grandparents and ask them about the mining days. It encourages a sense of family belonging, and of pride in the work ethic that most of the mining generation still have today and would like to pass on to their grandchildren.

In recreating the space and place near where the Huber Breaker once stood, our civic ecology practice is helping to recreate community and reclaim the landscape as a public greenspace and Memorial Park space. Hundreds, if not thousands of people have begun to visit to pay homage to the miners who worked in the region and are purchasing pavers in their family's name to be a part of the park eternally. The large majority of the local community is behind our efforts.

Paver stones in the park.

The biophilic connection that we are trying to bring to the park is one where community gardens represent the cultural and ethnic diversities of the immigrant populations and

groups that worked in the breakers. Where the mines, picnic groves, and existing trees on the grounds will bring a sense of calm to the site as people visit. There wasn't much green space on the property originally. It was desolate, full of concrete pads, pipeworks, broken windows, and weeds and invasive trees sprouting from acidic soils and coal waste piles. From our first experiences with the area, biophilia was not our initial draw.

Civic ecology practices produce ecosystem services

We are reclaiming the landscape in new ways. We are planting trees and community gardens, and putting in pavers and trails to encourage outdoor recreation. We have placed picnic tables and benches within the park. We have preserved signs from the Huber Breaker and small relics that were donated to the Huber Breaker Preservation Society and EPCAMR. Our pavers are permeable and include recycled iron oxide in their coloration. We are generating jobs that are being contracted out locally and professionals are also contributing time, talents, and donations of materials, supplies, and their professional expertise to the project. If calculated in terms of the dollar value that we would have had to pay for those services, the costs of our efforts would surely be double than what they are on paper.

We are planting native plants and butterfly gardens and using green infrastructure in the design of the trails and parking lot. We have added amended soil to the waste culm piles to improve the soil conditions and alleviate acidic runoff. We have provided opportunities for community service and cleanups of the property.

Civic ecology practices foster well-being

Our efforts are bringing people to the site and making them happy to see the results. While the Breaker may be gone, the memories are living on through the stories being told by Mr. Clarke, myself and others who often visit the site. Interpretive signage is coming. A multi-media museum tent pole building is planned for the park. A mock dynamite powder house replica building is going to be constructed. A natural playground is being designed for the park that will be in the shape of the former breaker's shadow.

Civic ecology practices provide opportunities for learning

We are engaging local college students to become involved in community service projects within the park. Their help is necessary to maintain the park: keeping it clean, caring for the grounds and gardens, monitoring research locations within the park, taking pictures of the progress being made, and creating brochures to share the history of the Huber Breaker.

Not only do we involve college students in service learning, we encourage and actively solicit for community volunteers to assist us. We also solicit local businesses with specific expertise, such as iron workers, pipefitters, construction, and plumbers unions. These groups have come in and showed us how to rehabilitate the site and make the necessary improvements that will make the park safe

and secure. Each element that is added to the park allows us to create a teaching point.

Recently, a 6-ton shiftman's shanty that was along the railroad behind the Breaker had to be moved and relocated to the property using a crane. This was well beyond our expertise and the owner of a local contracting company was able to secure the services of a local crane operator to safely relocate the shanty without damaging it and leaving very little impact on the site during the hauling, delivery, and placement of the railroad artifact.

As we are adding the walking trails and the parking lot area, we're working with a private company called Greenway Pavements, which has assisted us with learning about green infrastructure and best management practices related to stormwater management to control runoff from the site. Mr. Clarke has also invested in mason bees and placed two bee boxes around the park to serve as the pollinators for all of the park gardens and wildflowers. Another small project that will soon be undertaken will be the planting of milkweed within some of the gardens to increase habitat for butterfly populations, particularly Monarch butterflies.

Finally, another thing that we are learning — and have learned very early in the process of securing funds for the future phases and development of the park — is that we have to constantly stress the importance of the site and its history to our region to all our potential funders. There are not large philanthropic foundations and endowments in our area to support our efforts, so we need to reach beyond our local communities — where our history of place is more often unfamiliar to those people who are in charge of evaluating grants, funding requests, and our reasons for why we are so passionate about reclaiming these broken places. It's an important opportunity to teach others what we know and engage them in such a way that they are encouraged to come visit the site firsthand to see what our vision and goals are all about.

We've also learned that when it comes to community volunteers, people are more willing to give time and expertise than money. The local residents and people who are the most supportive of our collective efforts also don't make a great deal of money and have to prioritize their donations and contributions to causes like ours. Therefore, we have focused our efforts on reaching out to community foundations, banks, private investors and donors, and other sources of funding at the state level to reach our goals of completing the reclamation and beautification of the Huber Miners' Memorial Park.

Civic ecology practices start out as local, small-scale innovations and expand to encompass multiple partnerships

This practice has expanded at many levels. It's not just the Huber Breaker Preservation Society and EPCAMR. We have hundreds of small financial contributors and dozens of individual memberships. We have some major donors, one of which remains anonymous. We have been supported by numerous foundations; federal, state, and

EPCAMR grants; and partnerships with local colleges and universities that provide students for service learning projects. The Ashley Borough Council is supportive of the park. Partners at all levels of government are providing some levels of support.

The organization is still a volunteer organization with EPCAMR providing professional staff support as a public service. EPCAMR has been able to secure alternative funds that allow us to continue to provide gratis services to the Huber Breaker Preservation Society and many other organizations like them to build capacity for projects like the Huber Miner's Memorial Park: reclamation projects, stream restoration projects, watershed restoration projects, historic preservation efforts, and environmental education programs.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

We are currently in a cycle of renewal. We've been through the chaos. We've watched the Breaker come down before our very eyes on April 24th, 2014. It was depressing. We were angry and disappointed and upset that others wouldn't step forward to help us in ways that we needed them to at the time it was critical to save the Breaker. While we will not get the Breaker back, we can recreate its presence even in its absence through other elements of historical interpretative design on the 3-acre parcel. The stories will be told about the Breaker. Sounds will be heard. Films will be shared. Photos will be displayed. Artifacts will be touched by the youth who visit the park. Vantage points on the landscape will point out unique locations of the former Breaker and where they once stood, detailing their significance to the colliery operations.

While we believe that policy makers have a role in growing this civic ecology practice, on a local level, their commitments are few, due to financial difficulties and operating budgets that just don't allow them to fund or participate with our efforts as much as we would like them to. On a county level, we would like to see funding allocated for historic preservation. However, our county is millions of dollars in debt and historic preservation is not a priority. On a state level, there is funding available for park creation, construction, and operation and maintenance. This is where we are today. We are actively pursuing grants through the Pennsylvania Department of Conservation and Natural Resources, and the Department of Community and Economic Development, to support moving our park into the second and third phase of construction.

Reflection

My reflection on learning from this MOOC has been eye opening and validating. Upon reading the book, reviewing the concepts, and learning from other practices around the world, I have come to the realization that I am not alone in my passion for promoting environmental restoration or civic ecology. I was honored to be a part of the MOOC as an online student and steward, as well as being one of the civic ecology stewards interviewed to be a part of the MOOC to showcase and discuss the kind of work that my non-profit environmental organization,

EPCAMR, is doing throughout the coalfields of Pennsylvania and Northern Appalachia to promote civic ecology principles in our most underserved and underrepresented communities in our region.

All photos © Robert Hughes 2015 (unless otherwise indicated)

Afterward

Robert Hughes continues to work on the EPCAMR project. Updates to this story and new projects in the Northern Anthracite Coal Fields can be found on his ***Storify page****.*

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A combined force of residence and government officials bring big changes to the capital of Ecuador.

MiCalle: A neighborhood redesigned by its residents

Quito, Ecuador

Emilia Jaramillo © 2015

As part of the team of Urban Mechanics of the Municipality of Quito, we are convinced that the best solutions for cities come from the citizens themselves, who know the most pressing needs of the city. We believe in cities for people, designed by people.

Introduction

In Boston and Philadelphia, local governments have begun new urban mechanics initiatives with the slogan: "New Urban Mechanics: A City Movement Focused on Civic Innovation." What this means is that they are a tool for transformation of the city based on civic innovation. That is precisely what the Urban Mechanics of the Municipality of Quito (MDMQ)[1] aim to do: act as a hub of urban creativity that seeks to experiment and reinvent projects that will make Quito a city where its residents like to live[2]. We do not aim to do everything alone, but rather to help build the bridges for cooperation between citizens and decision makers.

El taller de diseño urbano participativo #MICALLE en #LaFloresta fue un éxito! Gracias a todos los que participaron y creen en una ciudad para los ciudadanos!

The projects being carried out are already the getting attention of the local press because of the strong citizen participation[3].

Gracias #revistaclave por la entrevista al Mecánico Urbano @juandiegodt! Aquí está el artículo completo: http://www.clave.com.ec/index.php?idSeccion=1562

We use social media to further engage with the community.

Nueva Entrada En El Blog! 10 Ideas[4]

Nueva entrada en el blog! Sobre la importancia del espacio público[5, 6]

Civic ecology practices emerge in broken places

This project is a Placemaking[7] project that seeks to restore La Floresta, a neighborhood of Quito, Ecuador, through the ideas and actions of the community. La Floresta is a red zone on the north side of the city, created by slow decline over the years as its life-long residents move elsewhere. There is low densification, which has left a lot of places neglected. This neighborhood has more than 200 houses that have been declared as patrimony of the city, which means that they are protected and cannot be torn down. Since 2011, the neighborhood also has many building specifications including one that does not allow buildings to be higher than four floors. Although this has been good for preserving the identity of the place, it has also deterred a lot of people from moving in or establishing their businesses there. It has also caused a lot of broken places to appear: vacant lots, abandoned houses, unsafe streets, etc.

www.extension.org

Quito's Urban Mechanics saw the great potential of the area. The neighborhood was already turning into the creative district of the city, so we thought it necessary to provide the conditions for these creative encounters and ideas to grow. We did an open event for citizens where they could present their ideas to improve the neighborhood's public spaces. From this event, more than 23 citizen initiatives emerged, which were evaluated by specialists from the municipality.

edicionimpresa.elcomercio.com

1er Taller colaborativo de ideas urbanas para recuperar el espacio público #LaFloresta #MICALLE #PLACEMAKING #MDMQ #QUITO

23 propuestas ciudadanas para mejorar el espacio público! En la página de Facebook de Mecánica Urbana están detalladas.

The second event focused on participative citizen design, where the people would have the chance to generate proposals of how to create better public spaces and recover neglected ones.

Próximamente anunciaremos los detalles del taller de diseño participativo del proyecto

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

The only way that this Placemaking project can be done is with the involvement of the community; the whole project is useless if the municipality just gives the improvements to the neighborhood without involving the people who live or work there. It is indispensable for these people to have a biophilic relationship with the neighborhood. In fact, it was one of the deciding factors of why this neighborhood was chosen — these people will fight back and try to preserve this space by taking actions into their own hands.

Trees are very strong members of this community; they are as much a part of the neighborhood as its residents. That is why one of the proposals was the preservation of current trees and reforestation in places where others have been cut down.

placemakinghalifax.wordpress.com

La Floresta was and still remains a mostly residential area, with some families who have lived there for more than 50 years. The attachment to the area is the main reason why this neighborhood has such a strong and organized community. La Floresta has a very strong neighborhood board, which is constantly in contact with the municipality. They are sometimes perceived as aggressive opposers to change, but the truth is that there is so much history and attachment to every tree and every park in the neighborhood that they will protect them unconditionally.

In re-creating place, civic ecology stewards re-create community

La Floresta already had a very strong group of stewards working on initiatives to recover their neighborhood. But they actually started their civic ecology practice after we approached them and presented the project #MiCalle ("My Street").

Participants in the practice are mostly learning that small interventions on public spaces can transform a neighborhood. They have seen that sometimes it is about taking the initiatives and doing them instead of waiting for the authorities to do everything for them. Their opinions are standing out as most important when creating cities and spaces for people.

Mejorando la ciudad a través de sus ciudadanos

The people involved are recovering that sense of neighborhood, of knowing people's names and working together towards the greater good. When we were talking about removing parking spaces in order to place parklets on the street, at first many people refused and they had to find a way to talk between people who had very opposing views. So they had to learn how to effectively communicate and learn from each other. They have also had to incorporate good environmental practices that the Department of Environment of the Municipality has suggested.

One of the most important aspects of La Floresta was its large number of trees. Recently, people have been getting really upset that they have been cutting them down and have stood up to oppose this. This interaction has revealed to them the important elements of their neighborhood that they want to preserve.

Ayer en el Primer Taller de Ideas Urbanas para mejorar el espacio público, gracias a todos los participantes!

From the first event where the citizens presented their ideas, it was determined that they wanted a safer, greener, and more walkable neighborhood. Some ideas that were selected included: reforestation, parklets, speed bumps, trashcans, and street art. As residents saw that these were elements that they all wanted, they started making changes for themselves as well. They started being more conscious about waste management, preserving green spaces, taking care of the trees, etc.

"Social capital is the presence of social networks, participation, and trust and reciprocity in a community," so it definitely plays a role in our practice. As they have been working together in order to create a plan that benefits the greater good of the neighborhood, they have had trust that they are all working towards the same goal and no one is working to benefit themselves only. Social capital is certainly one of the factors facilitating the practice because placemaking and changing public spaces through citizens can only be done through participation. Also, the reciprocity between community and municipality is a key aspect for this project to be carried out successfully.

"Collective efficacy focuses on expectations for social control and willingness to intervene for the public good and thus, switches the emphasis from a "capital" or entity that people use, to how a community or neighborhood takes it upon itself to fight against crime and disorder." The practice definitely evidences collective efficacy because the whole neighborhood is willing to participate in the meetings and events we organize. Residents have been developing a greater sense of trust among themselves due to their common goal. Community leaders are willing to take it upon themselves to go door to door and ask people to fill out surveys for us to improve the project.

The main reason why we are able to carry out this placemaking and civic ecology project is a very strong sense of community in the neighborhood of La Floresta[8]. A very strong and organized neighborhood committee is actively involved in initiatives to better the conditions of their place. Since many residents have lived there for a very long time, they are all familiar with each other and with the essence of the neighborhood that they want to preserve. This arrangement creates a really strong sense of community and plays a major role in our practice. This said, it is very interesting how we have socialized with the community because usually they are so resistant to change as a defense mechanism to protect their neighborhood. Once they evidenced our willingness to work hand in hand with them and try and make their ideas a reality, their attitudes changed.

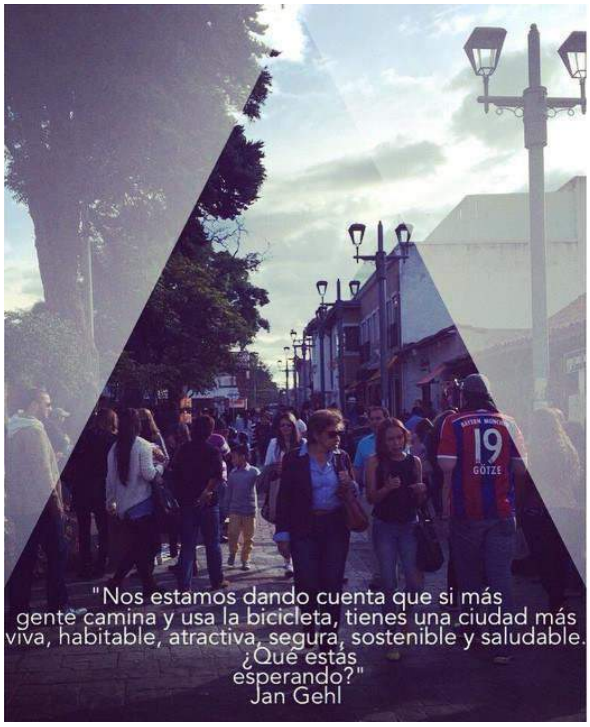
As the citizens had the opportunity to design their streets in the second event, we could

see stewards using civic ecology practices to reestablish a sense of community. Many neighbors were willing to sacrifice parking spots in order to create parks and parklets. People were thinking about the greater good of the whole community and how the pacification of the streets would bring them together again. Therefore, sense of community is a direct outcome of the practice because it has made them work together to find solutions that would benefit them all. They have had to step outside of their comfort zones both literally and figuratively as they have to leave their homes and interact amongst themselves to reach consensus.

Nueva entrada en el blog! Sostenibilidad y Jan Gehl

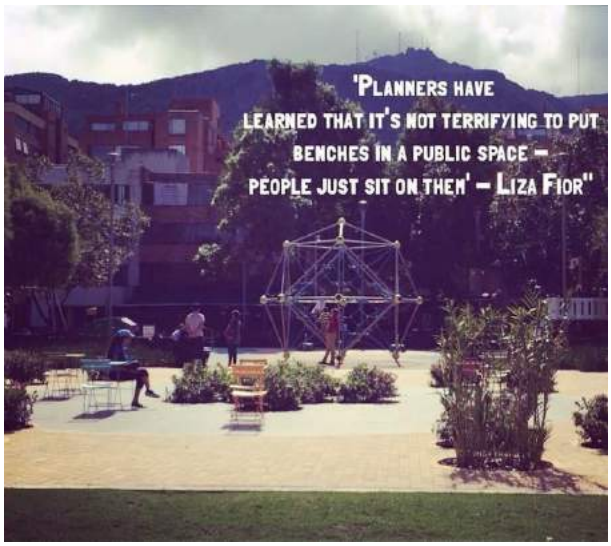
Civic ecology stewards draw on social-ecological memories to re-create places and communities

"Social memories (a community's collective memory or knowledge) are about cultivation, ecosystem or resource management practice." Social ecological memories are very important in this practice because the neighbors want to better their public spaces but also preserve and enhance the essence of La Floresta. One concrete example is a house called La Casa del Árbol, which is being used as a community center, complete with a garden where they grow and harvest vegetables. So we see how valuable this space is to the community and we make changes to the public space around it that will enhance the benefits it has to the overall context.



Totalmente cierto Sr. Gehl

twitter.com



#todossomospeatones iniciativas ciudadanas por la pacificación de las vías en Bogotá

Civic ecology practices provide ecosystem services

Provisioning service. Through community gardens, local and organic products are being produced and consumed.

Regulating service. Through planting new trees, air quality is being improved and pollution reduced. The need for cars is being diminished by making the neighborhood more walkable and bicycle friendly.

Supporting service. Through good environmental practices, the neighbors are learning how to manage their own organic waste and compost to enrich the soil of their gardens.

Cultural services. Through the various actions provided by the municipality and community (good environmental practices, artistic interventions in the public spaces, community tree planting, recovering wasted or underused public spaces, etc).

Civic ecology practices foster well-being

The people from La Floresta have already begun to feel that their well-being is being enhanced through this project. They are walking more and interacting with their neighbors. This is enhancing their sense of belonging and appropriation of public spaces. As they see their ideas materializing, they feel happier. They are definitely feeling empowered as they see that the municipality is relying on them to carry out the socialization and door-to-door conversations within the neighborhood. As the project develops, it is clear that they understand the legacy that they are leaving, not only in their neighborhood but in the way the

municipality works, how future projects are carried out, and in the relationship between citizens and decision makers. Their work has set a precedent for projects carried out by the community, which enhances the feeling of self-efficacy among the citizens.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Governance is an interesting component of this project because it is about building those bridges of collaboration between all the actors that make up a city: local government, citizens, private sector, and non-governmental organizations. This project's success depends on these effective interactions. The municipality designed and presented the project, but it has been carried out through the participation of the citizenship, private sector, and NGOs. Making them protagonists of the design of their street and having to actually work on the intervention generates a sense of empowerment and responsibility over the spaces that are part of the project. Urban Mechanics, as representatives of the municipality, have to work in-house with other municipal agencies to gather support and receive approval for the execution of the project. Since we do not have the resources, we have to rely on other municipal agencies like the Secretary of Mobility and the Agency of Public Spaces. They are vital participants in the process and are already taking care of many issues in their neighborhood. They have carried out the logistics of the artistic intervention, and organized local artists to present proposals of street art. They have also organized meetings to carry out the socialization of the project and create consensus around pending issues.

twitter.com

Reflection

Though the civil ecology practice, I learned that it is of vital importance to recover places that have been neglected or misused and transform them along with the community into public areas that serve to further the overall urban development of a city.

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The Caved-in Castle and an old European wild pear

Holešov, Czech Republic

Jana Karasová © 2015

About two kilometres along Rusava River from the town centre of Holešov in the Czech Republic, there used to stand a medieval castle. Only a hummock and two round dikes remain to this day. The castle is called "The Caved-in Castle" and an old legend says that one day it just caved in and disappeared with all its inhabitants and treasures. The truth is that the castle was left abandoned at the end of the14th century and it burned up during the Husits Wars at the beginning of 15th century. Three centuries later, a wild pear sapling started to grow on the first dike and it has been growing there ever since.

The Caved-in Castle site, called Propadeňák or Hradisko by locals, is a town-owned public property with a landscape described as an open grass area with one remarkable scenery element – a pear tree. Regular maintenance is needed in order to preserve a landscape profile and protect the local fauna and flora. In 2013, scout troops were searching for an abandoned nature site in the town which they could steward. After collaborating with local authorities, they chose the castle site.

Three stewardship events have taken place since that time: the first in November 2013, the second in October 2014, and a third in June 2015. I have been part of the scout group in our town for quite a long time. From when I was 15 to when I was 19, I was the coordinator of our scout group's charitable events to collect money for NGOs. Later, I wasn't so active, but I came back and became a cub scout leader and a part of a leadership team in 2012. Since autumn 2013, I have been a scout leader for rangers and rover scouts. These great young men and women of ages 15 to 18 were the first who were called to work at the Caved-in Castle site.

I have been involved in the practice from its early beginnings in autumn 2013. I participated in cleaning events and wrote two articles about our work for a town journal. Now, I have more knowledge about the place and the reasons for our work. When I chose this practice as my Storify project for the MOOC Reclaiming Broken Places, I set up three learning goals: to learn more about the place and the importance of our work, to identify civic ecology principles of the practice and learn what else could be done, and to share my findings, ideas, and

recommendations with other people involved in the practice.

June 6, 2015 was a beautiful sunny Saturday. I woke up at 7am, packed my bag and set out on a bike. I rode to my friend's house and borrowed a camera. Then I rode to our scout meeting room and together with a few younger boy and girl scouts, went to the Caved-in Castle. Leaders had been there already and were cutting grass with a brush-saw. The sound could be heard everywhere[1].

We took rakes and started to rake the cut grass. We tried to make a long snake-like pile, which is called "posada" in a local dialect. It was getting hotter and hotter and shortly we had to take a break and drink some water. During the break I climbed up on a hummock in the middle of the site and took a 360° shot of how the place looked before we did our maintenance work[2].

Grass was already tall. When the youngest of us — 7 year-old Bára — stepped into it, she totally disappeared in a green sea.

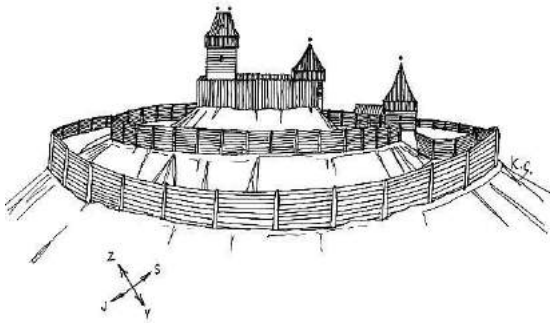
We continued raking and boys carried the grass to a fire. The site is really hard to access. There are only steep paths overgrown by bushes. When you walk up, you can feel like a prince trying to beat his way towards a Sleeping Beauty. Because of that, it is impossible to carry all the grass down and give it to farmers. We carried a few buggies down a hill and left it for rabbits owned by one of our members. But in some places where the grass is cut, some small bushes are cut too and this would not be good feed for animals. So we had to burn the grass. We are trying to figure out how we can compost the grass in the future.

The day continued with the same pace. The sounds of a brush-saw, grass being raked, fire burning[3]. The site took shape out of the grass sea. I swear that we saw a castle tower coming up from the hummock…or maybe it was only *fata morgana* (a mirage) caused by the heat. In the afternoon, a few people left and more girl scouts joined us[4]. Together, we finished the work. It was nearly 8 p.m. when we set the last pile of grass on fire.

At the end of the day, it looked like a totally different place. I took a camera and shot the same 360° shoot as in the morning[5]. But what a difference!

Sunset was near and we were a bit tired. We deserved a famous ice-cream from the nearby village of Dobrotice. We left "a fire guard" in the Castle and went down to the village. When we returned, we set up a little fire and cooked dinner. The sky was blue all day and the sunset was fabulous. It was getting dark, but the fire lit up the site. We sat around the fire and I told a story about the history of the Castle and the wild pear. Everyone was listening carefully. We all wanted to know more about the place where we had been working all day and left our blood and sweat. I had gotten all the information a few weeks before from Mrs. Pšejová who is responsible for green spaces in the town. For a bedtime story, I read an old legend about the name of the Castle.

A rich and powerful Lord lived in the Castle. However he was also bad, unkind and greedy. He had one daughter. One day in a winter, when the weather was so bad that everyone stayed in, someone knocked on the castle gate. When a gatekeeper opened, an old beggar stood there. The Lord heard the knocking too, went out and screamed: "Get out, you dirty beggar!" The daughter watched the scene from a distance and she stepped in and said: "Please, daddy, let the man come in and eat with us." But the Lord got mad even more, evicted his daughter together with the beggar and let loose dogs to follow them. When the girl and the beggar were about 100 meters from the Castle, the beggar tamed the dogs and said: "I curse this Castle and all its inhabitants full of ire, grave and hate!" And at this moment the Castle caved into the ground. Centuries passed and locals were afraid to come closer the Castle, until the time when three brave men were born in a nearby village. One of them – a shoemaker's son -- found in books how to get in the lost Castle. On a Good Friday, they stood in front of a hummock. The shoemaker's son said an abracadabra and a hillside opened. All three stepped underground. They found three barrels there. The first one was full of silver coins and on the top sat a large black cat, the second was full of gold jewellery and was protected by a big dog, and the third was full of diamonds and in front of it stood a knight in armour. The boys were not afraid and they were clever. One of them, a miller's son, took a sweet cake out of his pocket and gave it to the cat; after that he took up a salty roll and gave it to the dog. The first two barrels were free. But the knight did not allow them to enter the third one. So the blacksmith's son who was not afraid of fire stepped in and punched the knight. The two others joined him and they beat the knight. The armour disappeared and the man walked out. Then the boys heard a voice: "Thank you, boys! You saved me and my servants. You beat me as my parents should have beaten me when they saw how bad a boy was I!"



When I finished reading, some girls were already lying in their sleeping bags and falling asleep. We watched stars. The sky was beautifully clear and we observed Cassiopeia, Ursa Mayor and Ursa Minor, and more constellations. We were really sorry for the light pollution that we could see all around the horizon. Then we took a guitar and played a few lullabies. When I got into my "hay bed," the moon was just rising. And this is what I could observe lying in my sleeping bag:

Civic ecology principles

The sky was peaceful and full of stars. They create a wonderful image together and they remind me of different components – principles of the civic ecology which give a wonderful description of the caring relationship between humans and nature.

Civic ecology practices emerge in broken places

The regular maintenance is first and foremost about cutting grass every year. However, when scout leaders and a town officer inspected the site at the beginning of the collaboration, they found out that the habitat needs more work — especially clearing invasive bushes. It wasn't expected, but the Caved-in Castle had been a broken place. Unfortunately a part of the dikes was ploughed away and changed into fields years ago. In spite of that, the hummock and the old wild pear tree have remained. A report about the wild pear from 2000 recommends: "...it is necessary to remove an invasive bush and do this radically with roots and repetitively." The invasive bush has destroyed the terrain shape and slowly changed a site from meadow, open grass area into a forest grass area with trees[6]. It is a slow-burn broken place. We succeeded in preventing the burn from continuing. This year, the leader of our scout group mentioned that he could see the difference in the quality of grass and the quantity of flowers growing there.

The place is broken also in terms of memories — people have forgotten why they call the site -- Caved-in Castle.

In the context of the Czech Republic, there are some interesting facts related to broken places. The poverty rate in the Czech Republic is among the lowest in all EU states and the risk of poverty is the lowest out of all of them. By contrast, Czech youth are first among their EU peers in smoking cigarettes, doing marihuana, and drinking alcohol. Charles University in Prague notes that 14% of young people aged 14 to 15 are regularly smoking and 11% are regularly drinking. Research at Palacky University in Olomouc highlights the fact that young people smoke and drink in their free time as a kind of leisure activity. To be engaged in some community activity seems to be a way to prevent a social slow-burn and health risks[7].

The quality of the environment in the Czech Republic is improving after severe damages during the Communism Era from 1948 to 1989. However, there are still some serious concerns and negative trends. A 2013 report on the Czech Republic environment points out the fact that 35.9 % of soil used for agriculture is endangered by water erosion and 18.4% by wind erosion. Pesticides like DDT, DDD and DDE persist in the soil. Cargo transport is increasing and is one of the main environmental burdens. The castle site lies on the border of agricultural fields and a village with a main road with traffic. These transitional zones in between slow burning sites such as traffic corridors and monocultural agriculture are important for the ecosystem services that they provide.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

Two types of topophilia can be observed at this site. First is the topophilia of local inhabitants from the town and nearby village. They could plough away the site and use it for agriculture. However, because they

feel some kind of attachment and mystery to the place, they leave it almost as it was. Second, local scouts want to invest their time and energy into a local place because of their love towards the town (topophilia) and because of love towards nature (biophilia). The motivation was to have a nice nature site near the town that is a little bit wild and less organized than parks in the town. And the Caved-in Castle site is truly beautiful.

In re-creating place, civic ecology stewards re-create community

This project started as a community project. We intended to work together as a scout community in Holešov. Even though it may seem that there is no need to re-create community within a movement such as scouting, the reality is that each unit — divided by age and gender — works quite independently during the year and they only meet and collaborate rarely, and often just for a few hours. So the Caved-in Castle project is a great opportunity to meet and work together for a longer time. However, there is a danger in dividing responsibilities within the practice so that one time one unit would take care, and the other time the other unit. In this case community would not be created at all.

We also re-create broader community and attachment to the place by sharing information about our work, the site, and the importance of regular maintenance with the public in a town journal, on Facebook, and on our website. We invite people to visit the site. In the future we will probably also invite them to come and help with the maintenance.

We also wrote articles about the second and the third maintenance events, but unfortunately these weren't published in the town periodical.

Scouts cleaned Caved-in Castle and slept over at the site

On Saturday 6th June, boy scouts and girl scouts were falling sleep under a sky full of stars in the Caved-in Castle where they were working hard the whole day to make the place ready for the summer season. They have looked after the place for three years. There also grows a 300 year-old wild pear. Castle dikes were overgrown by an invasive bush when scouts came there for a first time in autumn 2013. This year, there was significantly less of the invasive plants and flowers were blooming on the dikes. The main task for the hot Saturday in June was cutting and raking high-grown grass. However, the flowers were left untouched, so anyone who would walk a narrow path starting behind a sports ground in Dobrotice can admire them. After a few minutes, you should come to the old pear, which will surprise you by the width of its trunk and wide-branched top, and then you should see the remains of a Medieval settlement.

Even the youngest members of Holešov scout group took part in Saturday's maintenance. For example, 7 year-old Barča was half the size of a rake she was using to rake cut grass into "a long snail." Regular grass cutting is necessary in order to keep the meadow flowers growing and to preserve a specific terrain – two dikes and a mound where the wooden Castle guards a trade road from Holešov to Bystřice pod Hostýnem. Scouts will continue with the maintenance in future years. They plan to cut the invasive bush under the treetop of the wild pear and to clean an access road.

They all agree that it is worthwhile to do it. The Caved-in Castle is a beautiful place full of legends — as those who had decided to pass the night there could experience. While sitting around a fire, they heard about a history of the place and also a legend about a bad castle lord, his nice daughter, a beggar and three brave boys from Dobrotice. They fell asleep being confident that a castle tower had appeared on top of the mound once just for that evening. If you also have a bit of fantasy you can see it too during your visit. There is one advantage of the Caved-in Castle in comparison to other sites -- 24/7 opening hours.

The article about a first maintenance in 2013 published in a town periodical.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

The site is not just an encyclopaedia of knowledge, it is also a chronicle of time. The ages went through it and memories can be found there just like stories in a book. It is because of these memories that we take care of the place and in so doing, we discover more and more memories. The memories are the engine of our work. I have identified two main memories that the site carries on. The first one is the historical social memory including the style of living, building materials, social structure, and trading. We can use archaeological findings to learn about life in the Middle Ages in our region, but we can also reconstruct how nature looked at that time. For example, we can apprise which trees grew in past from the types of wood found as building material of the Castle. The archaeological research has found oak and pine logs. These memories are incentives for learning.

The second memory is biological: the genotype of the old wild pear. The pear is unique because it has not bred with any cultivated species. There are reports saying that the tree could help to improve the local genetic variability of this species. The open grass ecosystem also carries an ecological and biological memory in the form of the specific plants and animals living there.

When I was searching for historical memories that could be presented to the children and youngsters helping with the maintenance, one of the leaders told me: "I think our scouts would only be interested in history if you find something related to a war…" It took me two months, but I found it! The memory related to a war and to the place is one poem called "Home" from the Czech soldier Bohuslav Závada who was executed in a German prison in 1942. He wrote: "River Rusava is buzzing, Hradisko (the place) is inviting me under a mighty shadow of an old pear." Mr. Závada was legendary during WWI and he maintained his allegiance to Czechoslovakia during WWII. He is truly an inspirational person who grew nearby our homes and studied at a local high school. The same high school that some of us attend or used to attend. There is a memorial stone in the village Dobrotice. The poem, which was written in prison, shows that the place is a memory itself!

The stone commemorating Mr. Závada in the village Dobrotice

Civic ecology practices produce ecosystem services

I feel that I don't know the place and the ecosystem well enough to be able to describe all the ecosystem services it provides. Further research and consultation with scientists could help to describe provisioning and supporting services. However, I have identified several regulating services. One of them is pollination: trees and flowers on the site attract a number of insects, including bees, hoverflies, butterflies, and other pollinators. That is also happening on surrounding fields with the difference that various plants bloom in the Caved-in Castle site in different months so the pollination can last the whole production season. The site is natural brushwood in a treeless countryside. This brushwood provides the following functions: a wind barrier preventing wind erosion, the creation of microclimate, and the filtration of water. It can also act as a barrier preventing crop disease from spreading.

Furthermore, it is clear that the site provides multiple cultural services. The place is a space for recreation as well as education. We encourage local people to use the place this way. After our summer maintenance, we published the following post on our Facebook page: *The Caved-in Castle is ready for a summer season thanks to our intervention yesterday! You can get there along Rusava River from Holešov and then take a path nearby a play field in Dobrotice [map link]. You can admire a 300 year-old wild pear and even older dikes surrounding the medieval castle, which secured a trade route from Holešov to Bystrice. Opening hours – 24/7, during night you can attend a special program "the night sky".*

Civic ecology practices foster well-being

The majority of stewards are children and they can benefit from being outdoors. The work develops their mental state, as well as physical and motor skills. Some of the children have

been diagnosed with ADHD and these children especially can benefit from being in a green environment. The practice is a great application of the Scout method – an informal educational system used by scouts. Its aim is to help young people to become "healthy, happy, helpful citizens" (by Robert Baden Powell, Scouting for Boys). The method includes, among other elements: team work, learning by doing, community service (which is stressed especially by girl scouts and guides), and being in nature, which is a learning space, fosters love of the outdoors, and helps scouts realize the complexity and beauty of creation.

Seeing and doing green, physical work (which is quite heavy there) or active movement can be mentioned among other benefits for health. We try to encourage other people to benefit from the site. It could be used for camping or as "a finish line" for jogging or walking in nature.

Civic ecology practices provide opportunities for learning

There are plenty of opportunities for learning at the Caved-in Castle. As I described above, we learned about the history of the site that evening when we finished our work. But we not only learned about this one Castle, we actually learned more about the Medieval Ages, including ordinary life and nature at that time. We talked about wood and stone as the main materials used to build the Castle, and we explained why these materials are not so common in our towns any more. We also mentioned advantages and disadvantages of wood as building material and talked a little bit about ecological houses. And we talked about pottery which was found at the site during archaeological research in the ‘20s and ‘60s. We have decided that we will ask local museum archives to show us their findings.

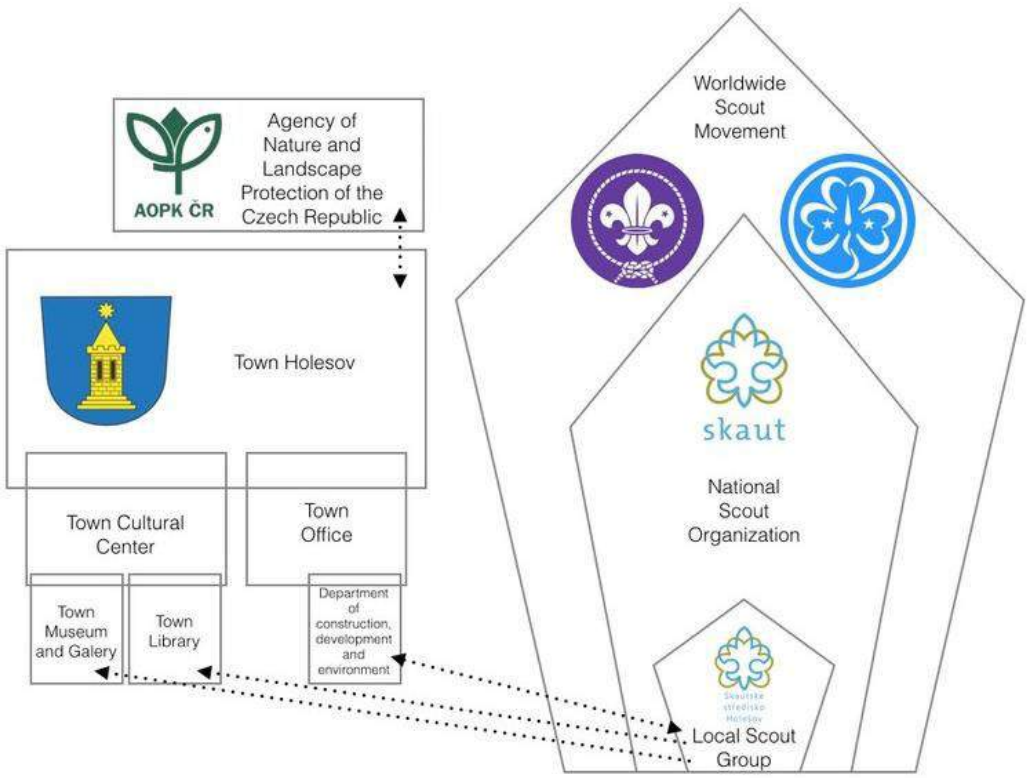
During the work day, I walked around the site with a camera and captured pictures of flowers. It is a great opportunity to learn more about the flora of open grass areas and meadows. It is really helpful in order to understand ecosystem services that the site provides. Even though we cut grass, a few flower islands remained, so any one can come and see them alive.

The practical skills that children and youngsters gain during the maintenance should not be forgotten. For example, the older ones learned how to operate a brush-saw. Smaller children tried to rake for the first time, in spite of the fact that raking was an ordinary child duty in villages less than a century ago. In some cases it still remains, however town children often do not have the opportunity to do it.

Every time we do the maintenance, we learn a little bit more about the history and the nature of the site. We would like to expand the educational and learning impact on more people by installing an informational panel so any visitor could get information about the place and the practice.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Our practice is now just a small local innovation. However, I have found an opportunity for multiple partnerships by discussing the practice. Currently, not a lot of players are involved in the practice. The main partners are our local scout group and the Department of Construction, Development and Environment of the town of Holešov. Lately, a local library and museum have helped us to collect information about the site. Indirectly, more organizations are playing a role in the practice, such as the national scout organization or Czech Agency of Natural and Landscape Protection. All current actors of the practice are depicted in the diagram below. It would be worthwhile to include more scientists in the practice. We are also trying to engage local community members from nearby villages and towns. We publish posts about the site on our Facebook page and we write articles for a town magazine about the site and our activities there. However, we have struggled with editorial policy of the magazine, because only one of three articles we have written was published. We have an idea that we may start spreading the information by inviting parents of our members to some special event at the Caved-in Castle.

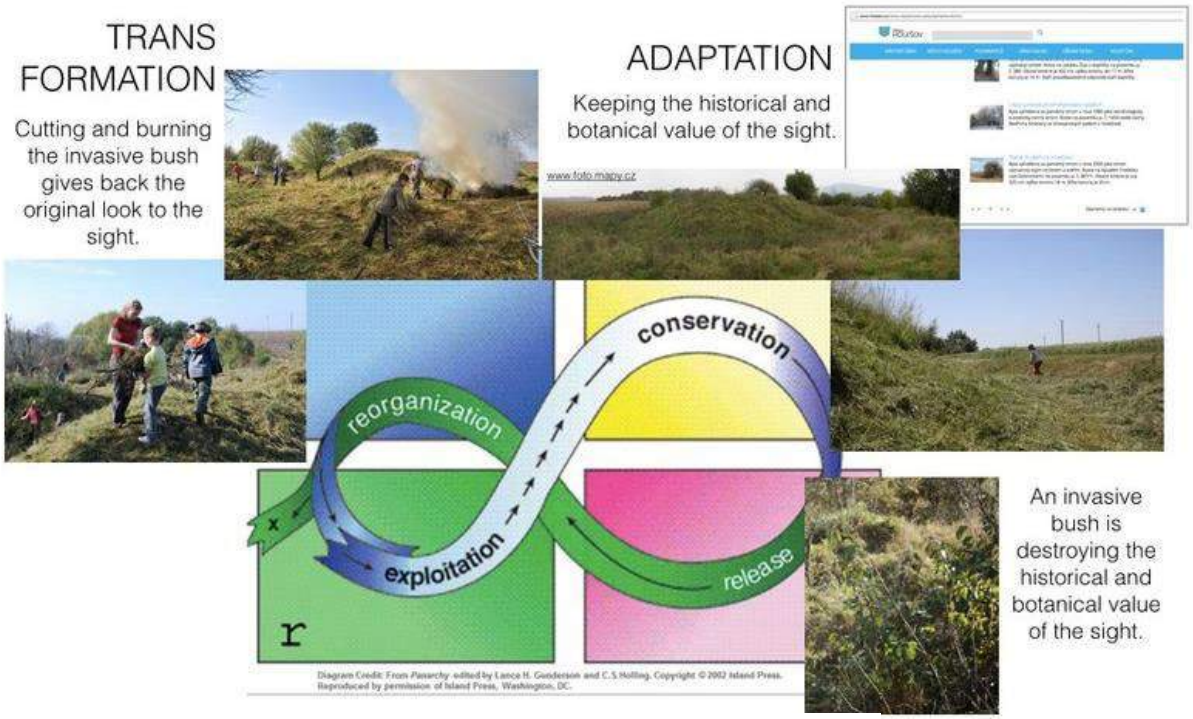


Partnerships for the Caved-in Castle project

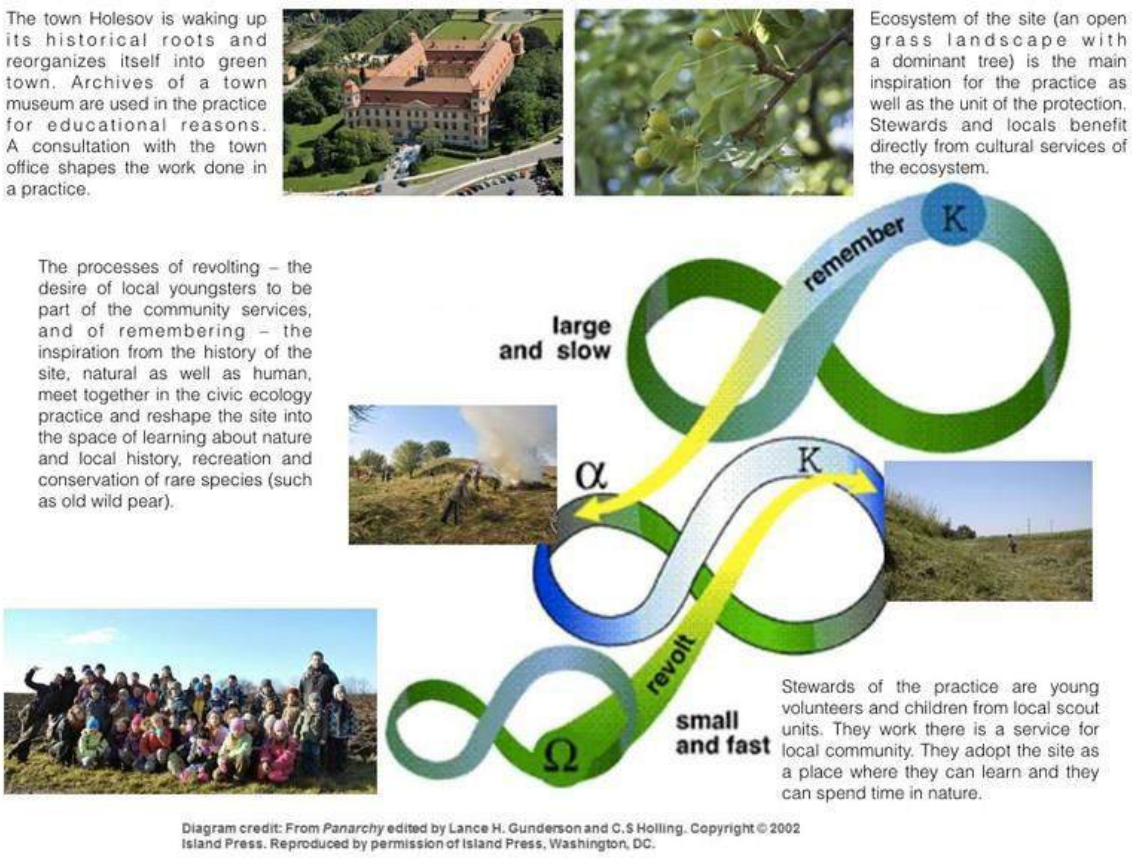
Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

The long history of the place allows us to observe several cycles of chaos and renewal. In the past, we can recognize a phase of strong exploitation at the time when the Castle was built. In contrast, the fire and destruction of the Castle is clearly a chaos phase followed by reorganization, including when the wild pear started to grow. Another cycle of chaos and reorganization, came with destroying part of the outer dike and changing it into the field.

In our civic ecology practice, the regular maintenance such as cutting grass is part of the conservation phase and adaptation process in which we keep the site more or less the same and adapt it to current recreational and educational use. Activities by a town office — such as adding the old wild pear to the remarkable trees list and sharing information about the site on the internet — are also activities included in the conservation stage. A release could come with increasing invasive bushes around the old wild pear and on the dikes, which threaten the landscape structure and constrain proper growth of the pear. The invasive bush changes the site so it enters the release stage. It becomes a kind of a call for action and reorganization. By removing and burning the invasive bush and cleaning the site, we have transformed it back into an open grass area with one dominant tree, supporting herb species conservation and ecosystem services like pollination and education. By contrast, we have limited the ability of the site to be a wind breaker. These are not major changes, but I think that they are large enough in the scale of the site to be considered a reorganization process. The diagrams below show how these processes of chaos and renewal are part of a panarchy.



Adaptive cycle for the Caved-in Castle project



Panarchy diagram for the Caved-in Castle project

Policy makers have a role to play in growing civic ecology practices

At the beginning of the practice, we consulted with town officers to ask them to evaluate our work. This was important in shaping what we did. However, the participation in the Civic Ecology MOOC and writing this story can be considered one of the first deeper interactions with scientists and policy makers of our civic ecology practice. It fosters an advanced understanding of the practice, further investigation about the biological and historical value of the site, and creation of contacts with other policy makers, such as museum officers. While researching the story, I have gathered a number of written documents relating to the site which also can be considered putting scientists and policy makers into the practice. Some of them can speak to us only from the documents they wrote.

Based on the knowledge, experience, and new information gained during the MOOC, I have identified which tasks should be done during our next maintenance. These are the clearing an invasive bush in the area surrounding the old wild pear — important for preserving the iconic tree itself — and the clearing of a path leading to the site, which will make the Caved-in Castle more accessible for locals and tourists.

Even though this interaction with the MOOC and town officers helps to develop the practice, there is still space for future collaboration, for example with a university department of botany, ecology, or environmental studies. Scientists could research the genotype of the old wild pear, or measure the outcomes of the practice and recommend how to continue with the care of the landscape. It might be

challenging to cooperate with some university or college, however, because there is none in the town of Holešov. But why couldn't we try asking elsewhere?

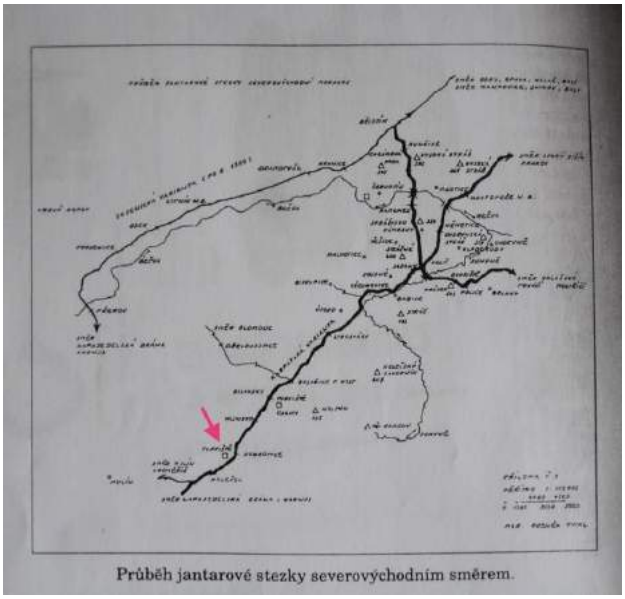
Reflection

When we were leaving the site, I looked behind me and I saw more than eyes can see. I had learnt more about the place, its history and presence, and the importance of our work. I like this kind of detective work -- collecting information, asking people, and observing the place.

At the beginning, I had just a brief idea about the place, so I asked our town office for more information. The officer was really nice to me and helpful. She made a copy of all documents she had available about the site. It was quite surprising to read about all the new things. I am looking forward the day when the regular maintenance is done and I really enjoy the hard work in full sun with all the great hardworking people around me[8].

An activity of a local scout group on the Caved-in Castle site is mainly about cleaning the invasive bush in order to secure the growth of the remarkable tree — the 300 year-old wild pear — and about cutting grass in order to preserve the open grass area transition zone in between agricultural fields and the village.

Additionally, we use the site as space for learning about history, botany and ecosystem services. I found it interesting that the Castle was built to defend traders on one of the branches of the Amber Road (see map below). I believe that it would be an interesting topic for further investigation for boy scouts and girl scouts. I already have an adventurous, strategic game about a trade route in mind, which would take place right at the hummock of the Caved-in Castle.



A map of the Amber Road forks; the pink arrow shows a location of the Caved-in Castle

Just as there is one remarkable tree at the site, there is also one remarkable fact in the practice — a lot of the work was done by children and youth. There is a good reason why we should continue with this form of practice. Quoting one of our scout leaders: "We try to teach children that it is not possible to play games all the time. We focus on acts of good which can barely be seen in society today. We experience a kind of happiness when we observe that children work with the same enthusiasm as they have when they play games. They not only learn useful skills, but also a positive attitude towards work itself."

There is also a piece of social memory in that fact. In the '20s, archaeological research was conducted on the site and children from the local secondary school helped out. So these days, our children and young people continue with the work, but with different goals. Our activity is not only about work, but also about nature and being outdoors. When we were walking back to town after the night spent under the

stars, one girl told me: "We should sleep like that more!"

While I was applying the civic ecology principles to the practice — which was one of my learning goals — I always had two thoughts in my mind. The first one was about reality, the second one about the future and opportunities. In some cases, it was really challenging to apply the civic ecology principles to the practice. I have realized how important history of the site is in the practice. The practice is partly about nature and partly about the history of former settlement and human actions. This understanding has helped me to see more possibilities of the practice and to encourage my co-stewards to do more next time, which was another of my learning goals. I have stressed the importance of cleaning invasive brush from the area surrounding the wild pear. Next time, it is going to be a main goal of the maintenance. My final learning goal was to learn more about the place and the importance of our work. I have learned more than I would ever have expected from such a small area hidden in the middle of the country. And it was not just me who has learned more. The idea to create the information panel came from one of the stewards after my short talk about the history of the place and the wild pear. Accomplishing all of my learning goals satisfies me, but I am happier still about the work that was done on the site. And even though the site is slowly changing, the poem from Mr. Zavada remains true: *"Rusava River is buzzing, the Caved-in Castle is inviting me under a mighty shadow of an old pear."*

Acknowledgements

I would like to thank Dr. Marianne Krasny, Ms. Samar Deen, and Dr. Keith Tidball for guiding me through the learning process. Thanks also to Mrs. Pšejová and all other officers of the town council, museum and library who were extremely helpful in searching for historic references, to participants of the MOOC for sharing their thoughts and stories, and especially a huge thanks to the boy scouts and girl scouts from Holešov who have done a great job preserving the Caved-in Castle site and protecting the old wild pear.

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Green spaces foster sense of community in Kyiv, Ukraine.

Samosad

Kyiv, Ukraine

Olexiy Logvinov © 2015

Introduction

I believe *Samosad* is one of the first examples of community gardening here in Kyiv. At least, I have not heard about other civic ecology practices in Ukraine before[1].

My name is Olexiy, I live in Kyiv, Ukraine and I am a self-employed web programmer. *Introduction to Civic Ecology* was my first non-IT MOOC. I think that one of the main reasons why I decided to take this course was that I was very disappointed with the dull and dusty look of my new neighborhood in the early spring. Every time I looked down from my window, I asked myself: "Why is there so much litter all around? What can I do to make this place cleaner, less ugly? What if I clean up this place myself and the next day people start throwing their beer bottles and plastic bags again?" When I read a short description of the MOOC, I thought that it might help me answer those questions.

Civic ecology practices are not as common in Ukraine as they seem to be in Western Europe and USA, so I had a hard time trying to find something that would look like a civic ecology practice. Then, on Monday May 18, 2015, I just skimmed through the news stream and saw a headline "Samosad - a DIY park". It was a TV report[2] about a community gardening initiative in Kyiv.

I decided to join this practice, even though the *Samosad* was placed in a different district of the city and it would take me about 50 minutes to get there by bicycle. This was not my community and I just volunteered as part of the course. It looked too exciting to miss the opportunity.

How it started

The steward of this practice, Olha Zakrevska, initiated a discussion in a social media group that united the residents of Podil district. She wrote about her concerns regarding their neighborhood and received many supporting comments from people who felt the same. It turned out that there were many people who were not happy with the decline and were ready to act to make their neighborhood a better place. Then they discussed what could be done and someone proposed the idea of a community garden (borrowed from pop-up gardens in Berlin). Everyone seemed to like the idea of creating a green place on a vacant lot in Podil district.

On Sunday, May 17, they gathered together in that broken place and started their work. People brought many flowers and wooden pallets. The pallets were used as basic building blocks on which the plants were installed. The idea was that the garden should be mobile. They call that concept a 'pop up garden'[3] — a garden that can be easily transformed or even moved to a different place if necessary.

The word ‘Samosad’ is an informal term for self-grown herbs, but in this case it is a play on words. ‘Sam’ means 'self' and ‘sad’ means 'garden'. Combined together as 'samosad,' they mean something like a 'self-grown garden' or 'DIY garden'.

Civic ecology practices emerge in broken places

The vacant lot is located near the crossing of Spaska and Voloska streets in Podil district - one of the old parts of the city. It is a good

example of a slow burn red zone. The place was not completely broken, but still it had unpleasant look. It was dusty and dull as a result of slow economic decline and neglect. It was an eyesore. Nobody would let their children play there.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

There are many similar broken places in Kyiv, but I think that this particular place was chosen because Podil is a popular district for weekend walks, and it is a historical part of the city. The place is also very close to a campus of one of the oldest and the most prestigious Ukrainian universities — Kyiv-Mohyla Academy. Most students and graduates of the university as well as residents of Podil definitely love that district and feel attached to it. At least one of the active members of the group, Pavlo Bondarenko, is a graduate of the Academy.

Civic ecology practices provide opportunities for learning

Working in the garden lets people learn how to care about plants and use tools. For example, when building flowerbeds, benches or a stage for music performances, more experienced participants can teach their less experienced colleagues how to use an electric fret saw, or a drill.

I joined the group on May 23, 2015 and we were building a stage for live performances, or video projection. One of the active participants of the group, Alexander, showed us some cool tricks in using a drill, and even using a hammer with a crowbar! I did not expect that someone could show me new ways to use a hammer. I mean, every man is sure that he knows everything about such simple instruments as hammers and crowbars, but I was really surprised and learned new technical tricks.

In the evening, when the stage was almost finished, two boys of around 10-12 years of age came with their mother and told us that they would like to do some work. Well, they were given two hammers, and a pack of nails. The boys were happy to do something important and we were happy to give them instructions and supervise their work. Our guru of the hammer, Alexander, was joking with them, saying: "hey guys, be careful! Mind your fingers. You came here with ten fingers and you should have ten fingers when you return back home."

In re-creating place, civic ecology practices recreate communities

I think this garden was founded by people who already had some sense of community in their group. Some of them studied in one university, some of them used to patrol the neighborhood in times of Euromaidan[4].

When that initially small group came together on a vacant lot and started their work, the sense of community and social capital began to grow.

1. Trust and social connections: people who were online friends and never met offline had an opportunity to shake each other's hands and work together.
2. More social connections: when media spread the news about the garden, more people, including me, joined the group to work in the garden.

As we worked, passersby stopped and asked us about what we were doing and why. Some of them, when the idea of the garden was explained, looked very delighted and promised to bring more plants and then come to water the plants.

Civic ecology practices foster well-being

The most obvious positive mental health outcomes that I have been experiencing myself (and I think that is also true for other participants) are feelings of happiness and increasing self-efficacy as a result of *working outdoors* together with *good people*, finding *new friends* and witnessing how the impossible becomes possible, how a broken place turns into a beautiful garden or park.

As for physical health outcomes, it would take at least several months and experienced researchers to evaluate those outcomes objectively. Nevertheless, I think 6 or 7 hours of physical exercise outdoors in a good company must be better for both mental and physical health than sitting on a chair in a flat and staring at a laptop screen.

Reflection

The activities that make up this civic ecology practice included cleaning up the vacant lot, installing wooden beds for flowers and other plants, gardening, installing waste receptacles, and building benches and a stage for live performances. I engaged in *Samosad* after watching a TV report about their initiative and then reading a message on their social media page that asked for help in building the stage.

This story is based on my own experience of participation in the practice, communication with other participants and reading reports and interviews in the media.

The most important thing that I learned is that the best way to initiate a positive change in your environment (city, neighborhood) is to start doing something — cleaning up the litter, planting a tree. Even if you start alone, more people will inevitably join you sooner or later. After some time you will have a group with a strong sense of community and collective efficacy.

I think that the experience of participation in this practice gave me a good example of how a broken place can be transformed into a beautiful garden and that transformation is sparked by the enthusiasm of just a couple of active citizens. This example may help me start a new civic ecology practice in my neighborhood.

A few weeks after I started volunteering in *Samosad* pop-up garden and writing this story, I discovered another civic ecology practice — the Heavenly Hundred Square[5]. Its story, its scale, and its stewards are truly amazing. I hope that one day I will also write a story about that mini park, or maybe another student will write about it in the next iteration of the Civic Ecology MOOC.

In the following weeks and months, there were even more new initiatives and civic ecology practices appearing in the media. I think that positive examples of *Samosad* and the *Heavenly Hundred Square* inspired many people to be more active in caring for their neighborhoods, parks, and lakes, to be more open for participation and collaboration.

I think that the main reason for such a boost in activism and number of civic ecology practices was Euromaidan. It showed people that the impossible was possible. It taught us that even one man can start a process that will result in huge changes.

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A community garden helps uniquely-abled young adults to build their capacity and engage in community planning.

Community and Ecological Resilience through Civic Ecology

Redlands, California, USA

Zia Meadows © 2015

Introduction

This project emerged out of a concern to help uniquely-abled students build their capacity to contribute in community decision-making. The project has used a community service learning garden as a means to prepare these young adults. The garden has become the foundation of my dissertation research. I wanted to provide the space to engage vulnerable populations in community planning; however, I was concerned that lack of qualified input, communication obstacles, and other factors would make community engagement difficult. Thus, the community service learning project became the conduit to assist this population to build capacity such that they have a better understanding of working and contributing to a community. Within this community, they may develop substantive input and be able to communicate what they believe they would like to see for the future of their community.

This study comes from personal experience, involving my son, my undergraduate students, my son's friend, and the many individuals who come to work in the garden. This exploratory study began in early January 2015 and ended on May 11, 2015.

From my journal, dated January 26, 2015: *"Today, was the first day of Paul's garden experience. The weather was cold and rainy. A rather uncomfortable day to begin something new. But, since we said we would be there, we went. It should be noted that I have students who are the same age as Paul, working in the garden as well. The experience is new to each of them. Will Ryan, the Community Service Learning Coordinator and Garden Manager, was open to the idea of our being there and working in the garden. Students at the University are required to participate in community service learning. So, the garden is set up to accommodate this method of learning. Paul walked on to the garden complaining that he wanted to "hurry up and get this done." This was his first experience, so the unknown is a bit uncomfortable for him. Will had us work in the shed to keep us out of the rain. Paul helped organize potato seeds and get them into the greenhouse with another student. Other undergraduate students prepared the seeds. The experience was an amazing learning opportunity for Paul. He watched other students working and chatting with each other. He is definitely paying attention to what is going around him.*


Seeds
Hand Tools

In re-creating place, civic ecology practices re-create community

Recreating community is creating a sense of community for a population who struggles to find their place in community. This emergent project brings individuals who are not generally there — in fact, not expected to be there — into a community service learning garden. The garden that we participated in is on the campus of a private liberal arts university. The two high school students were afforded the opportunity to meet new friends at a location that was different than what they were used to. They had to acclimate themselves to a new environment while the university students had to decide how they wanted to engage in this unusual experience. All of the students took to each other much like any of us do when we embark on a new course or find ourselves in a new situation: they were cautious, yet friendly. Gardening can be awkward for anyone who has never done it before. There were a lot of firsts happening in our emergent project. Needless to say, the community that was created was amazingly accommodating and kind. These two high school students experienced a quasi-university experience. They were given an opportunity that most high school students don't get. The connections that each of us made through this experience have been life changing. Skills have been taught and learned. Friendships were made and confidence built.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

One of the happiest moments that I get to share within this experience is hearing Paul and his friend talk about the garden. They have conversations almost daily about it, even now when they aren't working in the garden. A lot of their conversation is teasing each other but I often hear them talking about going back to the garden and what they are going to be doing. They speak about specific gardening skills, like working on the drip line or eating all of the strawberries right after they pick them. They also talk about the friends they met and what they will say to them when they see them again.

The experience was life changing for all of the students, but especially so for our differently-abled young adults. One special memory was when a bird, a killdeer (*Charadrius vociferus*), decided to lay her egg right in the strawberry field. We were all working in other parts of the garden and we kept hearing a bird screech loudly. Finally, I asked why the bird was yelling like that. As it turned out, she had laid her egg in between two strawberry plants, right next to the path where people were walking. Paul and his friend Cade were quite tickled to see the bird and watch how she protected her egg. They laughed when they saw her feign injury as a way to protect her egg, to draw attention to herself. She was silly-looking when she pretended to be hurt. Everyone in the garden that day was caught up in the bird and her egg. The bird brought about lots of conversations, such as giving her space to let her know we would not hurt her egg. Unfortunately, her egg did not make it. We learned a lot about the garden ecology and we were pleased a small bird thought that our garden was a fabulous place to start her family.

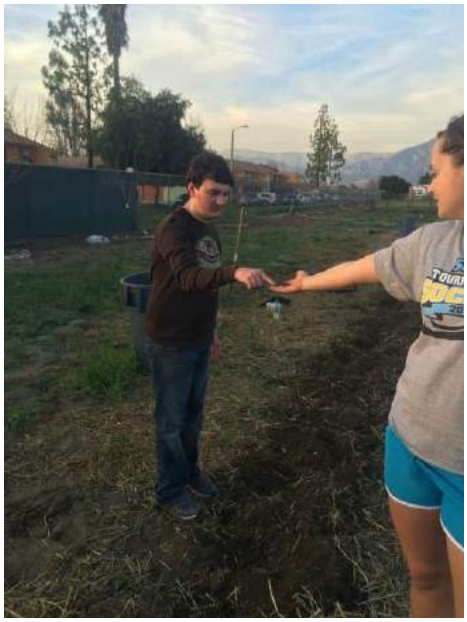
Civic ecology practices produce ecosystem services

From Paul's Journal, dated March 30, 2015: *"Today, my mom, Cade and me worked at the Redlands Family Services Garden (plot). We pulled the weeds. We used a hula hoe. We worked at the strawberry field. We pulled the bad strawberries for the worm bin. Shayla was upset with me because I did not work very hard. Next time."*

I include this entry here specifically due to the worm bin. Our garden has a vermiculture bin, which is relatively new. We are feeding worms, which are creating some beautiful new soil for the garden — providing us a valuable ecosystem service.

There are many valuable ecosystem services in our garden. One such service is what the garden is not — an asphalt parking lot. The garden reduces the urban heat island effect, which keeps local temperatures in the city just a bit cooler than if the community had more parking lots. The garden also acts as a carbon sequestration field where the plants and the soil do a marvelous job of cycling carbon, a great contrast to the alternative I

spoke of previously. Here, we are not using extracted oil in the form of asphalt for a parking lot, we are using the space wisely to cool the community; grow food for the poor, homeless, and college students, and individuals who use the garden; as well as feed the worms who generously contribute to the entire process.



Civic ecology practices foster well-being

Participants in the garden show signs of belonging and making a difference. The participants have gained valuable life skills that can provide them with the capacity to grow their own food. This can foster a sense of pride and self-worth, and indeed, this was evidenced on several occasions. I can recall a moment when the young men were so excited that they were going to be able to take some of the produce that they had grown home to their families.

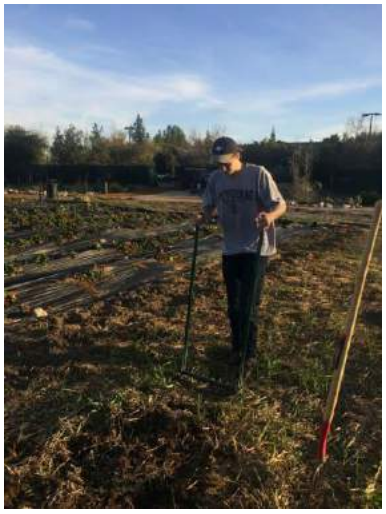
They are also making emotional connections. Something of significance that I observed in Paul over the course of the ten weeks was how his overall mood changed from the first day of his experience to the last day. On the first day, he said he wanted to "hurry up and get this done." During the second week, he was looking at the clock on his phone and counting down the time. When his friend joined us in the garden, he really never worried about the time again. He actually increased his work efforts to show his friend what he could do, thus showing a bit of personal pride and satisfaction with his new skills. When Mark, the chef from the University came by the garden to see what produce was available to incorporate into the menu, Paul introduced himself to him and they became friends. Soon after this meeting, Paul went to the kitchen for a personal tour given by Chef Mark.

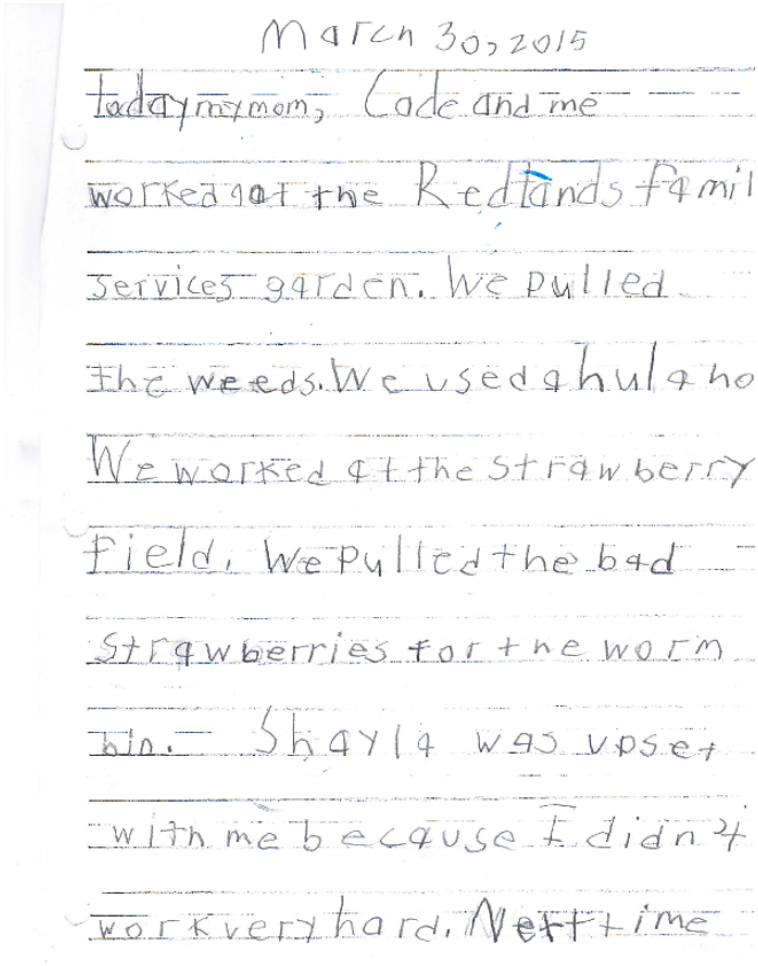
Civic ecology practices provide opportunities for learning

The students in the garden were challenged to engage in a new way of learning. All of the students in this emerging project were new to gardening. Throughout this process, you could see an increase in self-confidence and self-esteem. In one example, my son Paul was watching Michael, one of my students, use the broad fork. Paul walked up beside him and he too gave the broad fork a try. This was a very special moment, as I had not seen Paul initiate doing something so physical previously. He was encouraged by a peer mentor who was a gentle teacher. It was as if Paul was letting go of any anxiety he may have had about physical work and expressing a sense of control, perhaps something he never really had an opportunity to show or share before.

Throughout the entire process, Paul kept a journal about his experience. This ongoing-self assessment shows a level of growth in connecting activities while gaining interest and accepting more responsibility for the outcomes of his work in the garden. One of the challenges that the differently-abled students had versus the college students was staying on task for a particular length of time. While the high school students might have been able to endure five minutes of work on a particular activity, the college

students could complete a given task without more direction or a break. However as the semester wore on, the high school students increased their level of attention to up to thirty minutes or more. This increase in attentional capacity contributes to the overall goal of my study, in that I am hoping to provide an educational outlet that allows individuals to build capacity to a point where they can apply meaning to what they are doing and be able to share what that means to them and their community. Other learning opportunities in the garden project included increased cognitive function, improved concentration, and stimulated memory. They still talk about specific experiences.





March 30, 2015

Today my mom, Cade and me worked at the Redlands family services garden. We pulled the weeds. We used a hula ho. We worked at the strawberry field. We pulled the bad strawberries for the worm bin. Shayla was upset with me because I didn't work very hard. Next time

Reflection

This course provided me with an opportunity to take a lived experience and consider its meaning and purpose towards creating an environment where civic engagement meets natural learning and healing. The project was quite successful overall. In fact, I am expanding the project to include the entire high school class in the fall, where uniquely-abled students will not only work in the greater parts of the garden, but they will also manage two small plots to grow food for their "Hunger No More Cafe," where they serve lunch to the community once a month.

This project provided me the insight and confidence that I can develop a dissertation project using participatory action research that will provide communities with information to help foster well-being, independence, and resilience among all of its citizens. The high school students in this project not only built their own confidence by learning new skills that are valuable to their future success, they also gave back to their community. I can't recall an instance where I personally read about or witnessed a vulnerable population of moderate to severely differently-abled students doing something special for yet another vulnerable population. This was a compelling experience that provides many opportunities for encouraging engagement among all the citizens in a community.

Farmers fight the most serious threat to the conservation of grasslands in South Africa.

The Fight against the Pompom

Broederstroom, South Africa

Talana Meiklejohn © 2015

> "Be the change you want to see in the world." Gandhi

Pompom weed in our grassland

Civic ecology practices emerge in broken places

In the Farmlands of Broederstroom, people own various sizes of plots or farms, ranging from 10 to 1000 ha. Some people farm their land, but most people live here because of their love of nature and the environment.

About 5 years ago, we woke up one morning to discover the field disturbed with a new invasive plant — the pompom weed[1].

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

The local Community Policing Forum (established because of increased farm murders and attacks) got together with the group Work for Water[2] to begin the fight against this extremely invasive weed.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

When we moved to Broederstroom some 30 years ago, I was inspired by the works of Vincent Carruthers and attended his talks on the Magaliesberg Biosphere. In his video[3], you can clearly identify his passion for the ecological memory, as well as for the protection, of this special place in South Africa.

Vincent Carruthers not only inspired us with his talks, but his book is a resource for most of us living in Broederstroom, and indeed the whole area. The establishment of the Magaliesberg Biosphere[4] in June of 2015 furthers the idea of social-ecological memories to be restored for future generations.

Civic ecology practices provide ecosystem services

Providing ecosystem services is what my husband and I can do on our piece of land. We care for our water sources by removing invasive species. Our alien invasive species play a huge role in the loss of fresh water. "It is estimated that up 7% of all water run-offs is lost to invasive alien plants which use 3.3 billion cubic meters of water in excess of that used by indigenous vegetation, every year."[5]

Our grasslands are important biospheres, hosting a huge diversity of wild flowers and smaller fauna.

One of the many species of grasses

Indigenous to our area -- the Blood lily

Indigenous to our area -- the Day lily

Impenetrable thorn barrier formed by pompom

Allan burning the offensive weed

Civic ecology practices foster well-being

Growing our own vegetables and fruit provides us with the most fulfilling notion of a good life: knowing where our food comes from, that the water is clean, and that it was not produced by using harmful chemicals or GMO products. Walking through the veld and discovering new or hidden veld flowers is a joy and a wonder.

Civic ecology practices provide opportunities for learning

Not only did farmers and other landowners learn that the Pompon, despite its pretty flower, is extremely invasive and very bad for the environment, we all learnt about other invasive and alien plants such as the shrub *Lantana camara*[6].

Landowners are now not only learning about this weed, but also teaching their neighbors, friends, and family as well as workers, many from neighboring countries, to identify and eradicate pompom. All are responsible for the clearing of invasive alien plants — as it is the law in South Africa to contain or eradicate alien plant invasions. In the quest to formulate the project, I also learned about methods and research done by both private and public institutions. What an amazing wealth of information!

Sadly, not everyone in our community participates — we are waiting for the Government to join. The involvement of people seems to be lopsided when it comes to the "common good." If something is not dangerous, people think no action needed such as when this weed blows from my neighbor's land to our farm.

In re-creating place, civic ecology practices re-create community

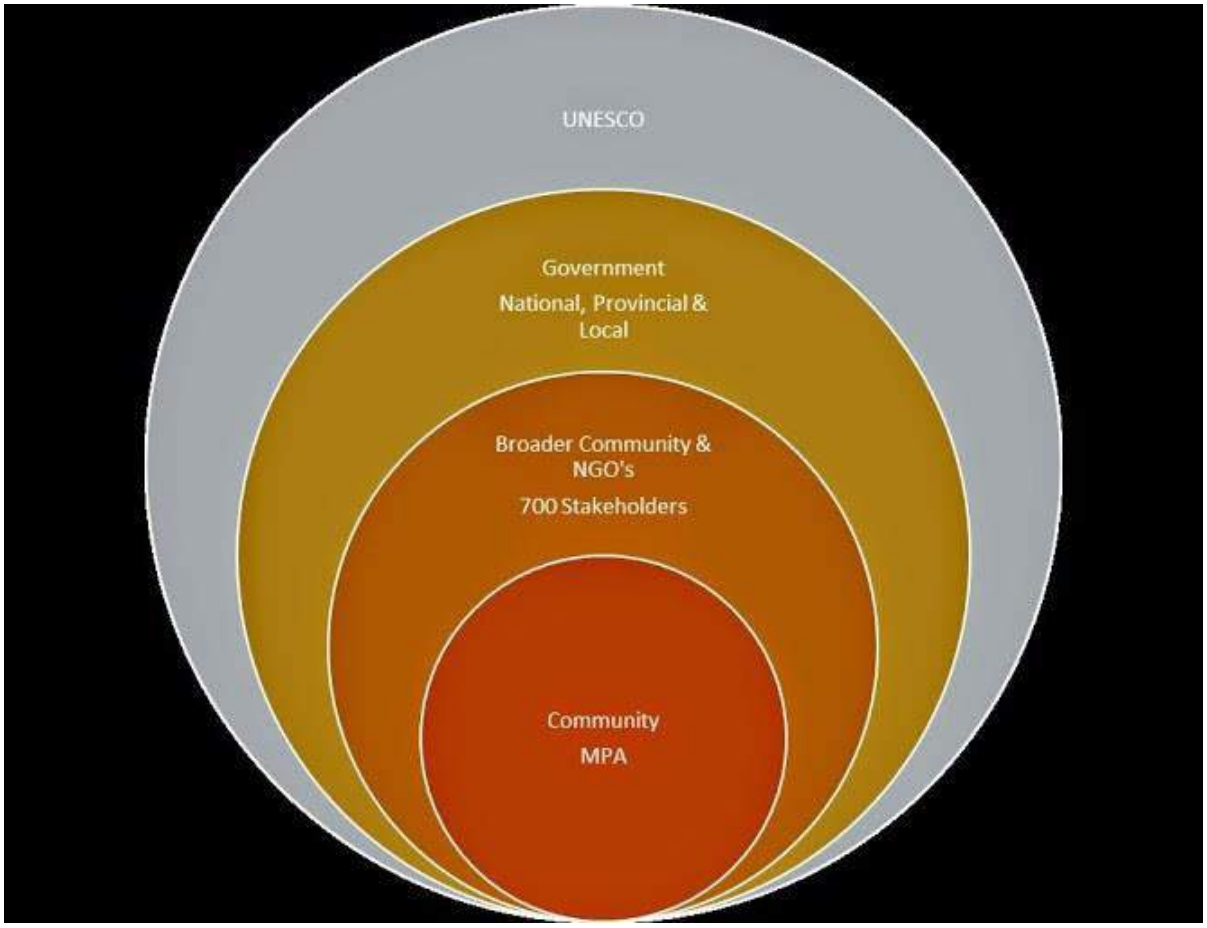
Sense of community developed slowly as the problem was so large. The weed covered hectares and the flower heads have to be cut one by one, and then herbicide applied. It is indeed daunting. People who moved from the city to our rural community were not ready for this at first. But once they saw how each year the blanket of weeds diminished, they were prepared to participate — with lots of assistance and encouragement of course.

We cleared and applied herbicides to the very impenetrable Lantana camara -- *blood dripping off our fingers and all.*

Because of the threat of violent attacks and murders, the community had to pull together. We formed a strong safety network, working together to support and protect each other. Other issues such as noise from quad-bikes and light pollution also get addressed on an informal basis. Trust is essential in a Community Police force environment, and once it was established, all other projects — including pompom removal — were relatively easy to start and maintain, as they are beneficial to all who live here. Level of education is also essential to the buy in for the common good. There is a definite discourse between the educated and the less educated — not necessarily poor versus wealthy. The stubborn unwillingness to learn or change is an essential ingredient of non-collaboration.

It will always be easier to convince like-minded people or neighbors, so the collective power of annually participating in mass clearing had its successes.

The process of applying for UNESCO Biosphere status



Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Our region falls within the UNESCO World Heritage Site named the "Cradle of Humankind", and also borders with the proposed UNESCO Magaliesberg Biosphere. We also share a border with the community-based Renosterspruit Conservancy, and we are located within the proposed Kalkheuwel Conservancy in Broederstroom.

The Cradle of Humankind[7] is about 50 kilometres northwest of Johannesburg, South Africa in the Gauteng province. It is a World Heritage Site[8], first named by UNESCO in 1999. This site currently occupies 47,000 hectares (180 sq mi).

It contains a complex of limestone caves, including the Sterkfontein Caves[9], where the 2.3-million-year-old fossil *Australopithecus africanus*[10] (nicknamed "Mrs. Ples") was found in 1947 by Dr. Robert Broom and John T. Robinson. The find helped corroborate the 1924 discovery of the juvenile *Australopithecus africanus* skull, "Taung Child"[11], by Raymond Dart, at Taung in the North West Province of South Africa, where excavations still continue.

The name "Cradle of Humankind" reflects the fact that the site has produced a large number of — as well as some of the oldest — hominid fossils ever found, some dating back as far as 3.5 million years ago. Sterkfontein alone has produced more than a third of early hominid fossils ever found prior to 2010. Haasgat[12] is one of the fossil

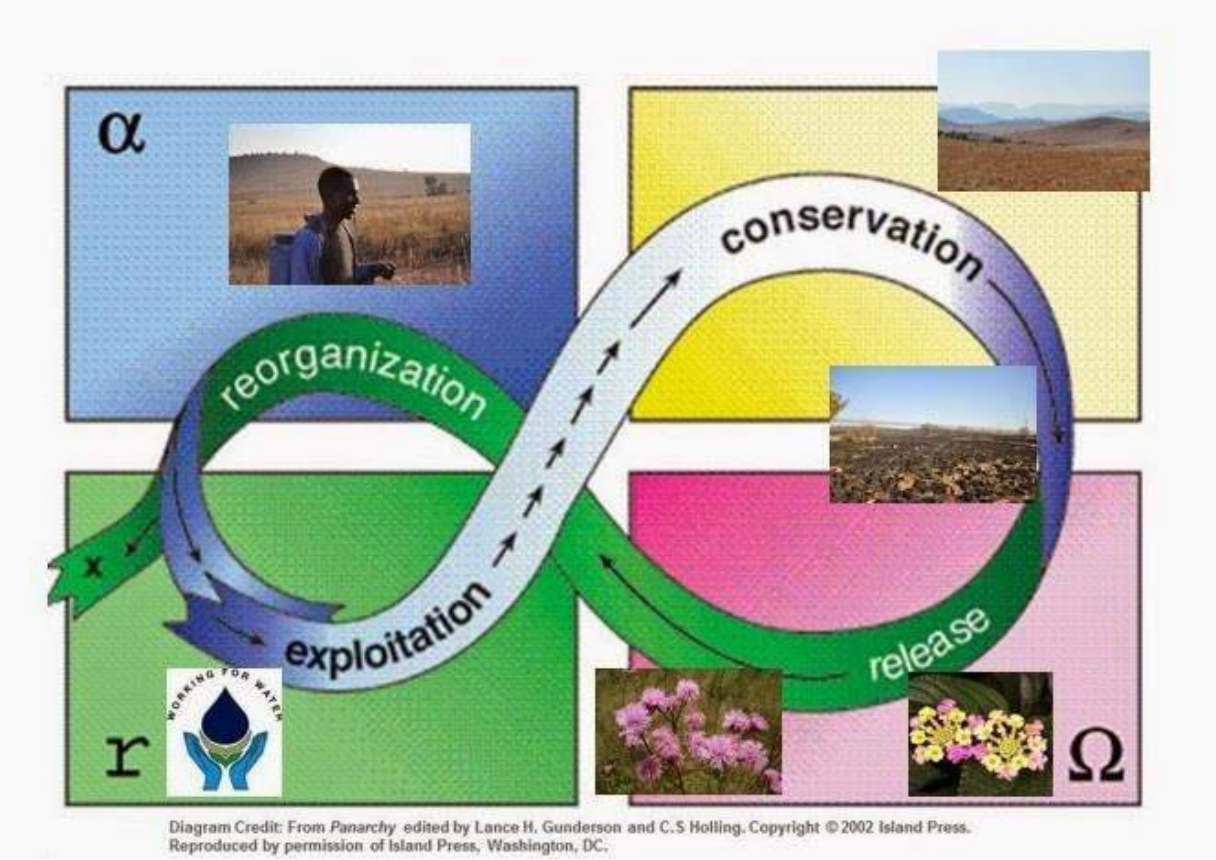
bearing caves that is on the property right next to us.

Above is a relationship model for the process of the application to UNESCO, showing the layered relationships of the Magaliesberg Protection Association[13].

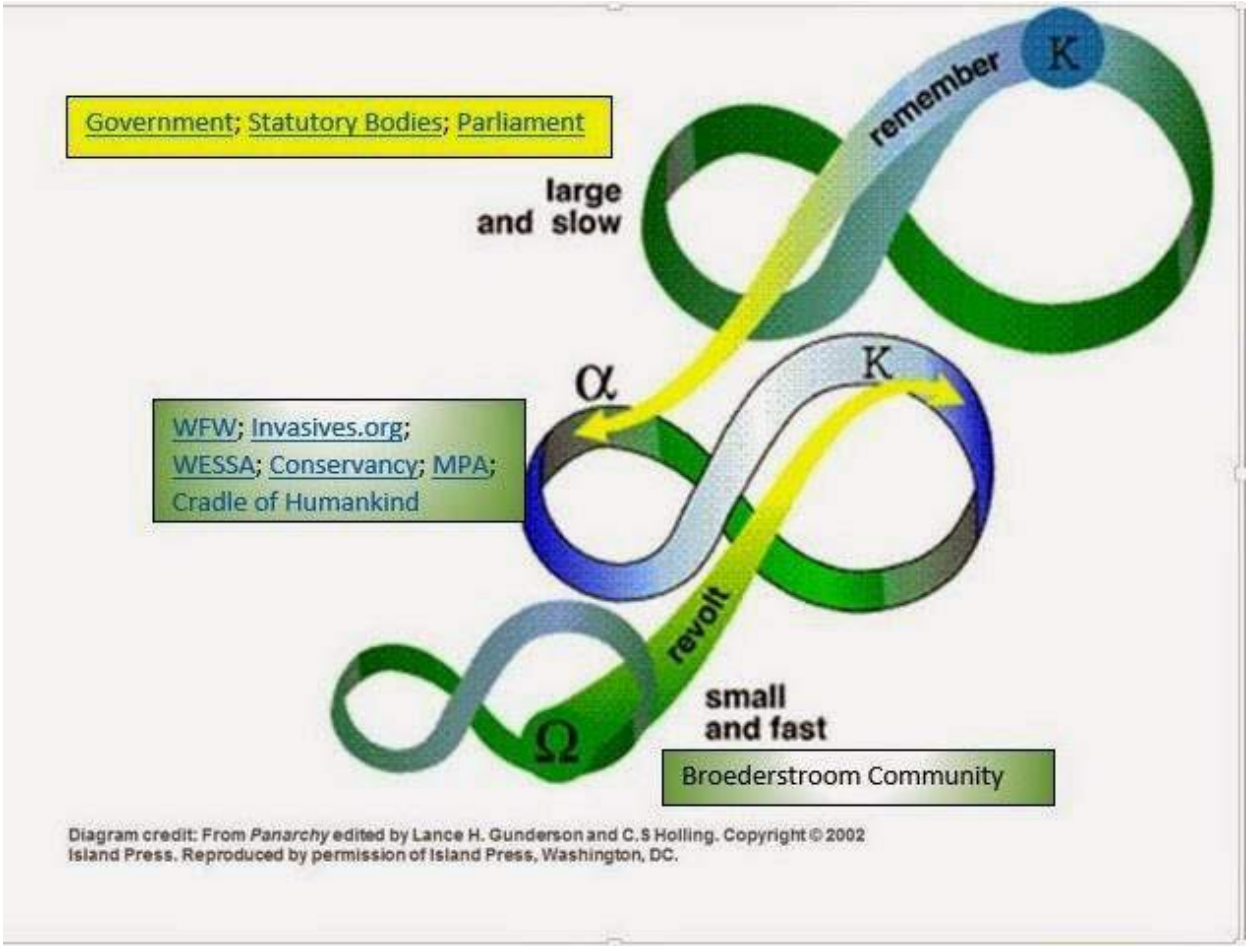
Broader community stakeholders and collaborating partners include the Rhenosterspruit Nature Conservancy, Wildlife and Environment Society of South Africa, BirdLife South Africa, and the Waterberg Biosphere Reserve.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

A devastating fire disturbed the period of "stagnation" or "conservation" that, I suspect, brought on the chaotic spread of pompom and lantana invasive weeds. Because the problem is not just the removal of the weeds, we had to get expert assistance from the Working for Water team, an agency within the Department of Environmental Affairs. They provided the herbicide so we could start getting rid of the weeds. The neighbors however, are not participating. We are unable to establish the reason but I suspect it may have to do with a land claim on the whole of Broederstroom, excluding only Kalkheuwel. So we are in a sort of rigidity trap, where our virtuous cycle of transformation is hampered by a land claim instituted in 2004, and to date remains unresolved. Because of this land claim, landowners do not wish to invest in conservation as nobody is sure how it all will pan out.



Adaptive cycle for the Cradle of Humankind.



Panarchy Diagram of the Cradle of Humankind.

Policy makers have a role to play in growing civic ecology practices

The biggest resource for information on pompom and its eradication[14] is undoubtedly the internet. Additionally, statutory bodies such as the South African National Biodiversity Institute [15] and the Agricultural Research Council — which collaborate on the project — both provide information.

Conclusion

I learnt that once again, whatever challenges there are, they can be overcome by interventions, either from within, or inspired from the outside. The key is "internal dialogues."

Healthy internal dialogue will inspire recovery and resilience to new challenges while poor internal dialogue will set the trap of rigidity. I believe that in many parts of the world, such poor dialogue (including unresponsive governments), may be the cause of communities unable to move out of these traps.

I do not belong to a group or a practice, but I practice civic ecology through my effort to live mindfully and responsibly, taking care of my immediate environment. I hope to inspire others through my actions and conversations so that they will follow my example.

Acknowledgments

It is important to note here the Civic Ecology Course presented by edX and Cornell University provided me with a renewed affirmation and context. Thank you.

All photos © Talana Meiklejohn, 2015

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Residents and government agencies join forces to rebuild a community gathering space in British Columbia.

From Brownfield to Green Space: Brolly Square

Terrace, British Columbia, Canada

Valerie Parr © 2015

Introduction

The Greater Terrace Beautification Society (GTBS) is a small, wholly volunteer group which has been active in the community of Terrace, B.C. for thirty years. We began in 1985, when fast food restaurants switched to take-out containers and litter became a problem. A group of concerned citizens organized a "garbathon" to clean up the trash. The support and enthusiasm generated by this event led to further efforts to deal with unsightly and neglected spaces in our boom/bust resource town. The GTBS does everything from maintaining flower beds and parks, to putting up seasonal light displays to brighten our gloomy winter months, to organizing noxious weed pulls within our public lands. Thirty years on, the garbathon continues to be a well attended, and also — unfortunately — a highly needed event.

Of the many projects we have undertaken to make a difference in our community, I was most involved in the creation of "Brolly Square," located at the very center of our town's downtown core. Our town is about a hundred years old and historically tied to the logging industry. The main employer back then was the Little, Haugland and Kerr sawmill. The land on which Brolly Square sits was originally a blacksmith shop, which later became a mechanic's shop, then a garage, and finally from the 1950s to the 1990s, a gas station.

In the late 1990s, it was determined that the fuel tanks of the gas station were leaking into the ground and soon after the tanks, pumps and buildings were removed from the site. Test wells were installed, along with a layer of gravel and a high chain link fence. The article *Dirty Dirt: the legacy of contaminated sites* — written in part about our project — details the history and fate of the tens of thousands of brownfield sites such as this across our country.[1].

About ten years ago, GTBS became concerned with the condition of this downtown brownfield site in our community. Little was being done to keep down weeds, or deal with litter or the condition of the fence. We set out with a simple goal: to find a way to work with the property owner to make the property reflect well on our town instead of detracting from it. What happened in the end was the largest project our group had ever undertaken; our project saw the large neglected, weed strewn lot in our community's downtown transformed into a planter-filled greenspace dubbed Brolly Square.

Civic ecology practices emerge in broken places

In the winter of 2007, two local businessmen came to our monthly planning meeting to ask for our assistance to address the sad state of the former gas station property. Their idea was to ask Imperial Oil`s property manager if privacy slats could be woven through the chain links and art panels installed to block the view of the site. I remember the silence after their presentation feeling like a Mexican standoff. The first one to break would be the one to shoulder the responsibility for this problem. Unfortunately, the one to break the silence was me, and by the end of the meeting, our group had taken on the challenge of changing the condition of the property.

Our group was well aware of the condition of the site, and we knew that the artwork idea wouldn't work because of the poor state of the fence. That meeting prompted us to start a letter writing campaign with the property manager, slowly but steadily forwarding our case to see positive change happen on the site, working against their solid resistance that anything needed to be done. With persistence, we finally succeeded in them allowing us to replace the existing broken pavement and fencing — creating a public greenspace in its place. Early in 2008 — almost a year after the initial appeal by our community members — enough progress had been made to establish a tentative agreement for our use of the site.

The agreement was as follows:

Devon Estates/Imperial Oil will allow the Greater Terrace Beautification Society to:
- remove the chain link fence (discard or store it for future use by Devon Estates)
- remove portions of the black top
- place top soil on portions of the site and seed with grass or other ground cover
- install attractive barriers to vehicle and parking access where necessary
- place some non-permanent planters on the site
- install a path diagonally across the site

The Greater Terrace Beautification Society undertakes to:

· take out $2 Million liability insurance on the proposed site with Devon Estates/Imperial Oil as the 2nd insured party—with Imperial Esso Limited retaining any contamination liability
· cover all costs for any agreed changes to the site
· provide Devon Estates with a detailed site plan prior to any changes to the site
· allow Devon Estates' staff and agents free and complete access to the site
· not in any way impede access to the test well locations
· not place any trees or permanent structure on the site
· assume all maintenance of the site for the period of this lease agreement

It is further understood that Devon Estates/Imperial Oil Limited will continue to maintain responsibility for all taxes and all aspects of the environmental testing and ongoing remediation of the site. It is requested that Devon Estates provide a map detailing the locations of all test well sites and any other services, etc. and will prepare a binding agreement or lease based on the final agreement between the Greater Terrace Beautification Society and Devon Estates/Imperial Oil Limited.

It is understood that the binding agreement may be cancelled by Devon Estates/Imperial Oil Limited at any time with reasonable notice.

This project was undertaken because a very prominent property in our community became broken. Because of the short length of time from when the site had been a thriving, well-maintained business to a neglected, trash-strewn lot, the community had a strong sense that the current condition was unacceptable. The lot's location along our main thoroughfare in the middle of our shopping district was definitely a factor in the dedication to see change as well.

Civic ecology practices produce ecosystem services

Since Brolly Square was completed in 2012, a number of ecosystem services have become apparent. Some of the funds used to develop the project came from the national Walmart-Evergreen Green Grants program — which supports urban environmental stewardship projects — since we met the requirement of planting native trees and shrubs. It was a challenge in our small, isolated town to find a variety of native plant material in local nurseries, but a side benefit was that we planted a large number of fruiting shrubs such as blueberries, Oregon grape, currants, and Saskatoon bush. The ripe fruit has been enjoyed by passersby as well as an influx of native birds which feast on the fruit. This indicates a provisioning benefit. The ecology of this site has been ever evolving since its installation, as we discover which plants can thrive and which struggle. This year has seen the removal of willow trees that outgrew their planter, and blueberry bushes which were suffering in their dry and shaded location. Many of the planters are overflowing with vegetation in the three years since they have been established.

As part of our redevelopment of the site, we removed a considerable amount of asphalt. In some places it was almost a foot deep, indicating the lengthy amount of time the site had been used as a gas station and the number of times the pump lanes had been maintained. It would take scientific analysis to prove, but I suspect that opening the ground to better exposure of air and rainwater flow could accelerate the process of passive remediation currently being applied to the subsurface of the site. Less asphalt would also allow better absorption of rainwater by the ground, another example of a supporting ecosystem service.

The completed project has proved to provide cultural ecosystem services as well. With its location on the main street, Brolly Square has become a popular rallying point or destination for community activities[2].

Since the square opened, our local member of parliament (MP) had held a yearly community barbeque on the site, and we encourage other like-minded activities. When we were planning the elements of the square, the city of Terrace approached us about including a way-finding kiosk on the site. The kiosk is located prominently at the front of the project and provides visitors with a large scale map of the community, as well as a community events calendar promoting local events. We requested the use of the back pane of the kiosk to install a board describing the history of the downtown, the changes that have occurred since the site`s original use, and an explanation of the continuing brownfield remediation process on the site.

Unfortunately, we also struggle on a day-to-day basis with an unwanted cultural ecosystem service provided by this site — it has become a favorite spot for local drug dealers. There is a small liquor store right across the street and we and the police constantly struggle with people drinking in small or large groups in the back corner of

the lot. Last year, at an evening "workbee" at the site, I pulled a large blister pack of prescription medications and a large Ziploc bag of a mass of funky smelling fiber from an on-site trashcan. Apparently, a drug dealer had taken to using the garbage can as a distribution point. In fact the square, which was originally named for the umbrella sculptures we installed ("brolly" is English slang for umbrella), has been given the nickname "Brawly Square" by those less impressed by our accomplishments. Over this past winter, we requested a "Crime Prevention through Environmental Design" assessment from our local Royal Canadian Mounted Police detachment. We just received their completed report and will be working to make changes to encourage more appropriate use of the square.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

When we first set out to see improvements on the neglected, broken lot that would become Brolly Square, we had little idea of what challenges we would face. I, for one, did not even know what a "brownfield" was, or its ramifications. We soon learned that the regulation of contaminated sites by our various levels of government was still in its infancy and that if we wanted to see change, we would have to forge our own path. To do this, we worked closely with our town`s planning and administration department to ensure that we understood all the restrictions a site like ours possessed, as well as municipal bylaws and regulations. At the direction of the property owners, we worked with the environmental consultants of Golder Associates to locate and protect the 15 test wells scattered across the property. We ensured that all materials brought on site were tested by Golder to ensure there was no further contamination of the site.

As word of our project spread in the community, we found support in a couple of unlikely places. The majority of the funding for the project was donated by local private citizens and groups, including one family whose patriarch continues to volunteer with us at 80 years old. Employees of B.C. Brownfield Renewal, a government task force involved in establishing provincial protocols on brownfield sites, supported us with information and resources. They even included us in their report: *A Community Resource Guide for Brownfields Redevelopment: Case Studies*[3]. Recently, I encountered one of the Ministry of Agriculture employees who was a part of this initiative and was surprised to hear that she remembered us well, and that we had often been cited by their working group as an example to other communities throughout the province of what could be done at the grassroots level. Unfortunately, she also told me that the task force had become defunct as members left for other opportunities or retirement and no one had replaced them.

Our partnerships for this project continue to expand. From the beginning, we have had the support of the local small business community and this support continues to grow as they organize themselves into their own civic ecology movement: the Terrace Downtown Improvement Area Society. The Royal Canadian Mounted Police have been an uneasy partnership, as we had to work towards an understanding that they could not drive on the square in order to gain easier access to perpetrators, or just as easy parking! Last year we installed large boulders along the perimeter of the square, which has eliminated this issue.

Reflection

This course has made me better understand what our group accomplished with the creation of Brolly Square. It wasn't just

about fixing an eyesore. It was about providing additional green space to our downtown. It was about fostering increased understanding of the problem of brownfields and the impact they have on community development. And it was about building a sense of community and improved ecosystem services as well. Being involved in the creation of this project was a challenge like no other for me. Understanding the principles of civic ecology has helped me see that, while not perfect, we created a good thing in our community.

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Civic led mass movements provide opportunities for citizens to improve their communities by cleaning up pollution

Clean up Bulgaria for One Day

Sofia, Bulgaria

Delyana Petkova © 2015

Introduction

For my service learning project in the Massive Open Online Course (MOOC) *Reclaiming Broken Places*, I had to create a story about a civic ecology practice. I chose to write about one that I've been taking part in for four years now.

"Clean up Bulgaria for One Day", also known as "Let's Clean Bulgaria," is part of the Let's Do It! World[1] civic led mass movement. Every year, thousands of people gather for 24 hours to clean up polluted places across the entire country. The aim is to ensure a cleaner future for Bulgaria.

This initiative began in the spring of 2011, organized by the biggest national TV station in Bulgaria: bTV Media Group. More than 41,000 volunteers took part in the pilot campaign in Sofia, the nation's capital. That was just the beginning. In the 2014 campaign, the number of the people involved from all regional administrations was 326,000.

Photo courtesy of grasya.org

Civic ecology practices emerge in broken places

Bulgaria is a slow burn red zone. After years of senselessly throwing rubbish away and neglecting to properly dispose of it, my country has become severely polluted. There is trash lying on the ground in the cities, forests, parks, and rivers. The environmental degradation has even led to destruction of ecosystems and extinction of wildlife. Fortunately, the "Clean up Bulgaria for One Day" campaign started changing things for the better. In fact, last year 600 illegal dumping sites were cleaned — totaling about1,321,534 tons of garbage removed.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

The love of life (biophilia) and love of place (topophilia) people express are the main reasons why they participate in this practice. Today, Bulgarians feel a strong love towards their country. Throughout history, Bulgaria has been conquered many times and only because of the peoples' biophilia and topophilia has the country now found liberty. So it is not a surprise that even nowadays we have preserved the love. Because of this love, when we see the places where we used to play as children or where we used to spend our holidays polluted, we feel the need to take action. The same reaction is seen when we see the trees we used to climb being cut down and the animals we used to admire becoming extinct. And that's why every year, so many people — old and young — are motivated to participate in the campaign, to see the country they love clean again.

Civic ecology practices provide opportunities for learning

Through interacting with the environment and with other people, participants can learn how to respect nature, how to work in a team, and how to take responsibility. While being outdoors, one learns a lot about the surrounding environment. For example, while cleaning a forest, people get to interact with its fauna and flora. But the main thing — the main purpose of "Let's Clean Bulgaria" — is to show citizens how important it is to take care of nature every day of the year by simply picking up litter in the street or recycling because they can make a real difference.

Photo courtesy of phys.org

In re-creating place, civic ecology practices re-create community

The volunteers in this practice are all kinds of people: they work in different spheres, and are of all ages. Through working together, they not only learn from each other, but also build long-lasting friendships, create memories, and build a sense of community. The participants establish new connections and trust among each other as they have the same goal — to clean the polluted places in Bulgaria. They are working together for the welfare of the whole nation. Thus, they re-establish community relations.

Civic ecology practices foster well-being

When spending time outdoors, participants benefit the environment, as well as themselves. While they are walking through and climbing polluted hills and forests, lifting rubbish bags, they also exercise. Additionally, because of the beautiful nature in Bulgaria, volunteers can observe the wildlife, bringing them mental equilibrium and reducing their stress.

Reflection

When I first decided to participate in the campaign, I did it to spend some time outdoors with my friends. Then, when I helped with the cleaning and met all kinds of people with all kinds of different stories, I realized what a great impact it was leaving on both the people and the environment. After participating in this MOOC and learning about the principles of Civic Ecology and many practices similar to this one around the world, I could understand the real meaning of preserving nature. I'm so glad that there are people out there who truly care about the environment, and I believe that with such civic ecology practices, we can ensure not only a cleaner future for Bulgaria but a future un-polluted world.

Acknowledgements

I would like to acknowledge the civic ecology stewards in Bulgaria, as well as Cornell University, and the lecturers in the MOOC: Marianne Krasny, Keith Tidball, and Samar Deen.

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Residents of dense urban areas find creative ways to help sparrows using what little space they have.

Micro-habitats on Urban Balconies

New Delhi, India

Marisha Sharma © 2015

Introduction

Living in the urban jungle means that there is no greenery around. Here is a look at our colony:

No space to plant a tree or a shrub. The only spaces we can use to improve the quality of the environment we live in are balconies and roofs. Some of the low-rise houses create their greenery in front of the house as a garden. So, why not take inspiration and green our own spaces — our balconies?

I write this story to introduce civic ecology practices that have sprouted and spread in urban areas in India: building micro-habitats on urban balconies through the interlinked practices of growing plants, making compost from household waste, and providing support to sparrows to encourage population growth. Households in dense cities are creating micro-habitats for multiple members of our urban community.

This practice is spreading across the country and hopefully one day will be adopted by every household in all cities and towns. Currently, we are doing this on our balcony and have spread the practice to our relatives' balconies across the city. Like-minded families are doing the same across India. This may not be a conventional civic ecology practice — where people converge on common land — but it is a practice that is becoming common across the country through the endeavors of the common people supported by organizations and the government.

Bringing back the sparrows

This initiative involves provisioning food (bird seed), water and water baths (temperatures here rise to more than 45 degrees Celsius in summers), and bird houses (since traditional nesting grounds have been decimated by humans) for the sparrows and other city birds. Interestingly, we found that since the sparrows fed their young ones on insects, so having plants on the balcony helped. The sparrows would find a caterpillar, spider, or fly in the pots, roots, leaves, and flowers. When it was time to raise a brood, the sparrows would pluck out dry twigs from the plants and make a nest in the bird house. The baby birds, when they hop out of their nests, find safety amidst the plants and pots, which give them

plenty of space to hide until they become adept at flying.

We became engaged in this practice due to various reasons:

(1) There was time, ten years ago, when peacocks and peahens used to visit our roof and literally "demand" food, loudly calling out to us till we gave them their breakfast (usually a roti, made of wheat flour) in the morning. Over the years, they have disappeared and the least we can do is help the remaining little winged ones who still visit us in the "urban jungle."

(2) Sparrow was declared the State bird in 2012 by the State Government to support conservation and growth of the species.

(3) Sparrows are considered good indicators of ecosystem health. When the ecosystem degrades, the sparrows disappear. In the last couple years, the sparrows have been rapidly disappearing, not just from our colony but from most cities across the country. Some blame their rapid decline on the cell phone towers that have come up in urban areas; others blame it on paving over their habit to house humans. The least we can do is support these otherwise disappearing birds.

(4) The know-how, material, and information provided by the State Government as well as a non-governmental organization gave the impetus to start the practice.

Composting

Biodegradable waste from the kitchen is fed directly to compost bins, and the compost is used to keep the plants on the balcony healthy. We got involved in this practice for two simple reasons: "Practice what you preach" and "charity begins at home". As an environmental consultant and teacher, I am constantly telling my clients about waste minimization (recycling, composting, etc) while I teach my students environmental cost of dumping wastes. So to set the right example, I began composting right at home and helped reduce the burden on the city's landfills, which are already overflowing.

Civic ecology practices emerge in broken places

Composting waste and the nurturing of birds are not new ideas. Yet, they are civic ecology practices for the following reasons:

(1) The practices exist in broken places that decline slowly. The concept of a balcony in an urban household being a broken place is difficult to conceptualize unless you are living in a developing nation, in a high-density area where the infrastructure is barely sustaining the population. Within a household or a flat, where one ought to have fresh air and open areas, due to dearth of space within, one tends to use the balconies as "dumps".

Example of a dumped balcony. Photo by Schwarzwald Traveller via www.tripadvisor.co.uk

Of course, how one keeps one's balcony depends on the individual. For those who like to keep their balcony beautiful, they can go a step beyond: reclaim the space for the sparrows — whose habitat we humans have broken — and reduce the volume of garbage going to the city landfill.

A green balcony. Photo by EvelynHill via Flickr https://creativecommons.org/licenses/by/2.0/

(2) The practice involves engagement with the natural environment such as planting (albeit in pots), cleaning (biodegradable solid waste), and creating habitat (to bring back the sparrows).

(3) The practice involves voluntary participation by members of the community. Currently, our family is one along with thousands of others across the city and country.

(4) The practice emerged locally as a community response to a broken place, not today, but hundreds of years ago. Read more about this in Principle 2 in the subsequent section.

The high density, low infrastructure urban areas with little green space are broken places with slow-burn decline. One day, we can expect complete disappearance of other members of the ecosystem, such as the birds, if we don't take action.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Ahmedabad in Gujarat was built in 1411 A.D. The construction of houses meant the cutting of trees. Birds and squirrels were no longer seen. People wanted them back, so they took initiative as a community.

Due considerations and allowances were made in the urban concrete to accommodate acclimatized birds and animals within the cityscape. Deliberate holes and apertures carved into the outer facade created nesting possibilities for squirrels and birds such as sparrows and parrots. Peacocks and civets scurried and pattered on awnings and crannies nooking in sloped rooftops in acrobatic manifestations of adaptability. Central courtyards of 'pol' had aesthetically ornamental bird feeders in carved wood and stone with communal granaries attached offering grains.[1]

Our ancestors started the practice of recreating memories through a civic ecology practice, when the terms had not even been envisioned. The same desires of the love of chirping birds and greenery drives us through our current civic ecology practice.

I mentioned there was a time, ten years ago, when peacocks and peahens used to visit our roof and "demand" food. Over the years they

have disappeared and helping the sparrows is the least we can do.

As children, there were so many sparrows around that we used to get annoyed with their chirping in the morning when we were desperately trying to stay asleep. They were all over the house (with their young ones at times) and since we primarily used fans to keep ourselves cool, we used to be worried that a sparrow might hit the fan and die. So we were always on the lookout. But twenty years hence, there is naught a pair of sparrows to be found nesting in twenty score houses!! That is why we began to participate in this life-supporting endeavor to create a space which is not only "green" for the inhabitants of the house, but also a place where the other members of our ecosystem can find shelter and food.

In re-creating place, civic ecology practices re-create community

Sense of community: In a city where more than half the population are immigrants from neighboring states, and the majority are from rural or semi-urban/ semi-rural places, the recreating of green spaces and hosting the birds is reminiscent of "home". Delhi pre-dominantly has people who have emigrated here from small cities, semi-urban and rural areas, where sparrows and other birds are still abundant today. They are used to a sparrow's incessant chattering in the morning. Their absence and the accompanying silence is not something one can easily overlook. In cities, sparrows are disappearing and most people believe that the cellphone towers are at fault. So people are trying to contribute in whatever way to bring not just sparrows, but all the birds back that are an integral part of the landscape these people originally come from
Social capital: Social capital is available but the practice is still too nascent to assess whether it is leading to building trust. But it has definitely formed connections with agencies and stewards hitherto unknown to us.

Collective efficacy: This, in fact, is the intentional actions of individuals for the good of the community since both sparrows and compost are initiatives to recreate a component of the ecosystem or clean up the city.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

As described under Principle 2 (section 2.2), the civic ecology stewards are drawing on the socio-ecological memories of having birds living around them in times before urbanization broke their habitat.

Civic ecology practices produce ecosystem services

Although balconies are not technically "broken places," if one was to compare an urban area with a pre-urban scenario, then the very act of construction breaks down the continuity of nature. Hence, creating gardens in one's home and inspiring and encouraging neighbors to do the same in high-density vertical developments gives a semblance of restoration of nature. Planting flowers, herbs, vegetables and even small trees in the balcony have the following advantages in terms of ecosystem services:

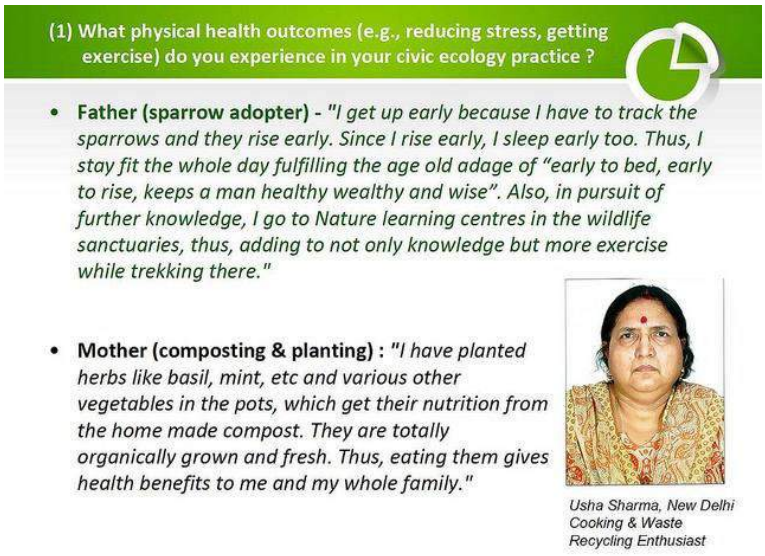
(i) ***Provisioning Services:*** we get fresh vegetables and flowers for the table. Amidst the plants and pots live various insects, which are food for baby sparrows.

(ii) ***Regulating Services:*** The incoming air, when flowing through a shaded and planted balcony is relatively cooler and cleaner when it enters the house

than if the balcony had been bare. The balcony itself heats up in absence of plants, something I've experienced in the balcony outside my room. Greenery is a well-known temperature pacifier and pollution sink.
Solid waste generation and management is one of the biggest urban challenges today. Our balcony composting practice contributes to management by reducing the amount of waste being sent to the landfill site by our household. Our daily input into the compost bin is approximately 2 kg average, which is almost half of our domestic waste. From a sparrow's perspective, the bird houses hung in balconies are a regulated area where they can be safe from dogs, cats, and birds of prey.

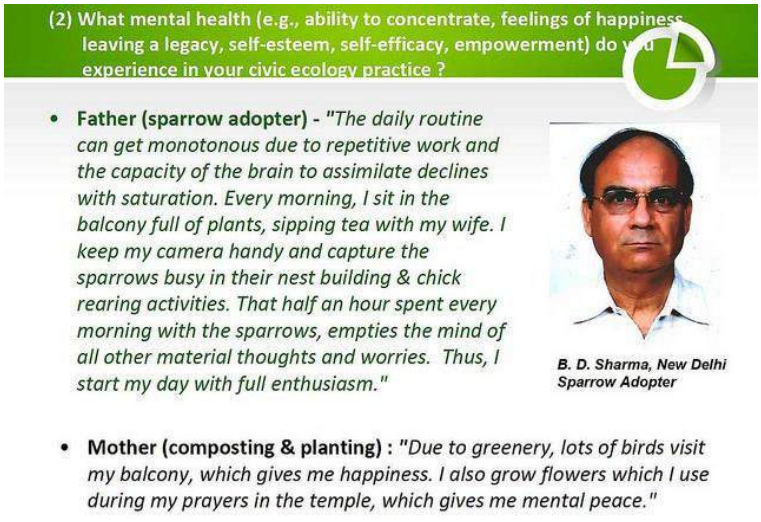
(iii) ***Cultural Services***: Sitting in the balcony in the early morning for a cup of tea or coffee is more enjoyable with the chirping of the birds around. You forget you live in a congested urban area. The aesthetics of the beautiful plants and flowers, along with the joy of spending recreation time tending to the garden and birds is a cultural service.

(iv) ***Supporting Services:*** Our balcony garden has a compost drum, the compost from which goes to the pots and plants, enriching the soil. We also have bird feeders and a bird house, where the first brood of sparrows is growing. The sparrows find caterpillars, spiders, or flies in the pots, roots, leaves, flowers, etc. When it is time to raise a brood, the sparrows pluck out dry twigs from plants and make a "nest" in the bird house. These are long term services which do not benefit humans directly.



Civic ecology practices foster well-being

The most active participant in the civic ecology practice are my parents; one having adopted the sparrow propagation programme and the other adopting the compost bin with the plants.
I posed the following questions to them and here are their responses:



At the end of the interview, my father shared a video of the sparrows he has compiled from his daily observations.

Civic ecology practices provide opportunities for learning

When we began the practice of propagating sparrows, we had no clue how to go about it but we had the aid of various websites, materials from the government, and information provided by non-governmental organizations[2]. We learned about the life cycle of sparrows, what they eat, where they like to live, where they like to nest, when they breed, what the babies eat, and how many broods they can have in a breeding season among other things. In addition to that, once we got started, we learned several things by watching; like how the male sparrow would gather thick threads from our waste to use for nest building, so we started to leave out threads to make his job easier. The male checks on an empty bird house several times a day so we realized that we should not move the bird house lest we spook him. The adults like to eat bird seed and then drink water so we kept small water bowls available. Since sparrows face stiff competition from species like the Indian Myna, crows, and pigeons, we learned how to protect the bird feeder from invasion by pigeons, which are at least ten times larger than the sparrows.

Similarly, although we did not know much about composting when we started, our task was made easier by a short training from a landscape architect I knew. I had met Mr. Akshar Kaul at a client's office and the discussion veered towards composting. He mentioned about composting bins he had made which can be set up in small balconies and we immediately procured a compost bin for ourselves.

The participants in our learning practice are all families (including ours) who are undertaking the endeavor of composting at home and propagating the sparrows.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

The lowest level of implementation is at the household level. Households cluster to form blocks, thereafter colonies, and eventually whole towns and cities.

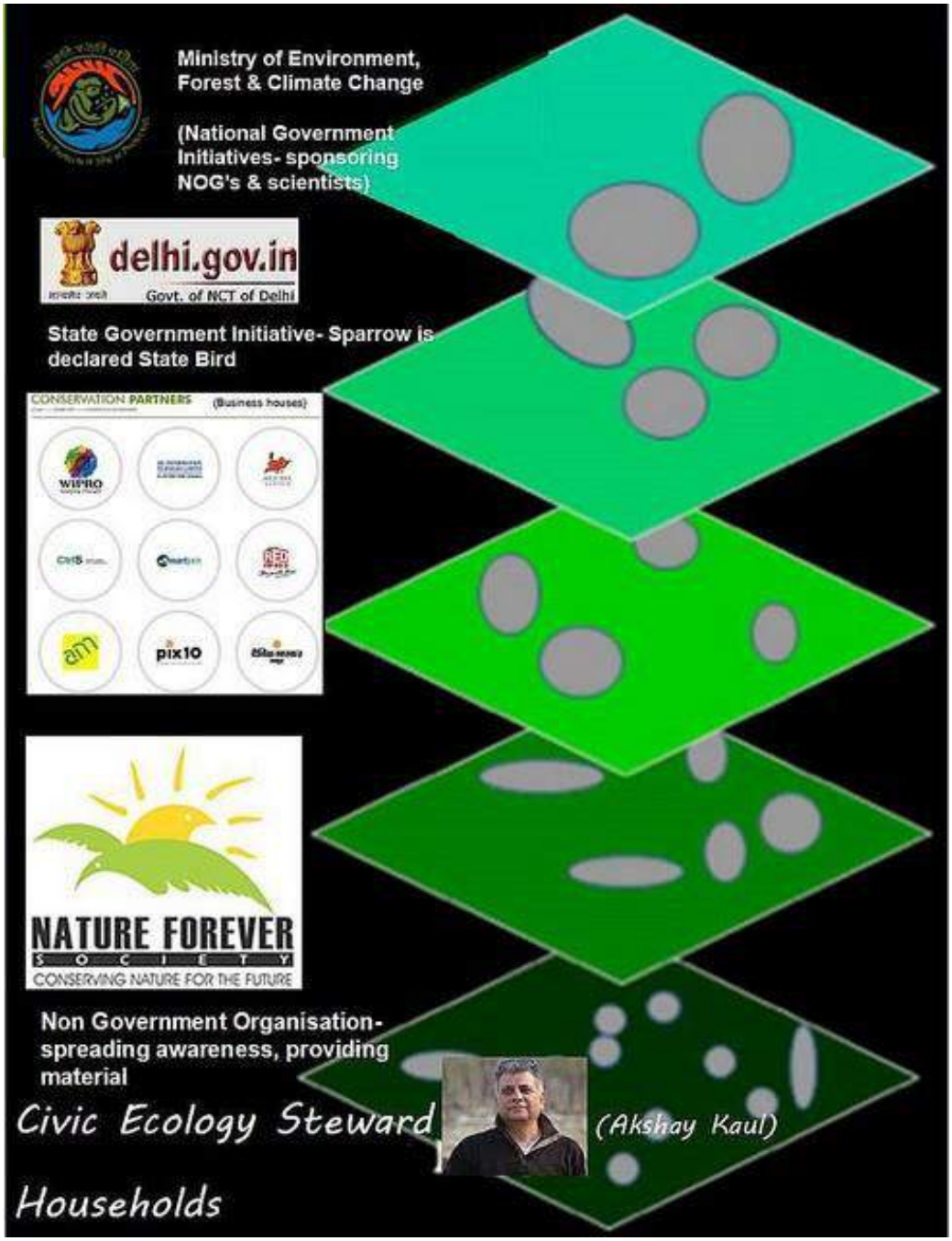
We have environmental stewards such as Mr. Akshay Kaul, who formed his organization in 1995 with the aim of addressing environmental concerns, culture, and aesthetics through ecological planning and landscape design in India. He inspires people he comes in contact with to participate in his endeavor[3,4]. The compost bin standing in our balcony has been designed and manufactured by him.

The inputs to households in terms of awareness, knowledge and material is provided by non-governmental organizations (NGOs) like the "Nature Forever Society"[5], who promote sparrow conservation. Their mission is to involve every citizen in the conservation movement.

Such NGOs have conservation partners in the form of business houses (individual or group of organizations involved in industrial, commercial, or professional profit-making operations) who lend their name to projects as well as sponsor activities. Nature Forever Society proposed the Delhi Government to declare the house sparrow the State Bird of Delhi. After efforts stretching over a year and a half, on August 14, 2012, the sparrow was declared the State Bird of Delhi at the launch of Rise for the Sparrow Campaign by the Nature Forever Society[6].

The State Government also recognized the need for conservation and it became an important link in the chain. The overall matters of environment and wildlife conservation are overseen by the "Ministry of Environment, Forest and Climate Change" at the national level, providing technical and financial support to NGOs, conservationists, and scientists and enacting legislation to mandate conservation.

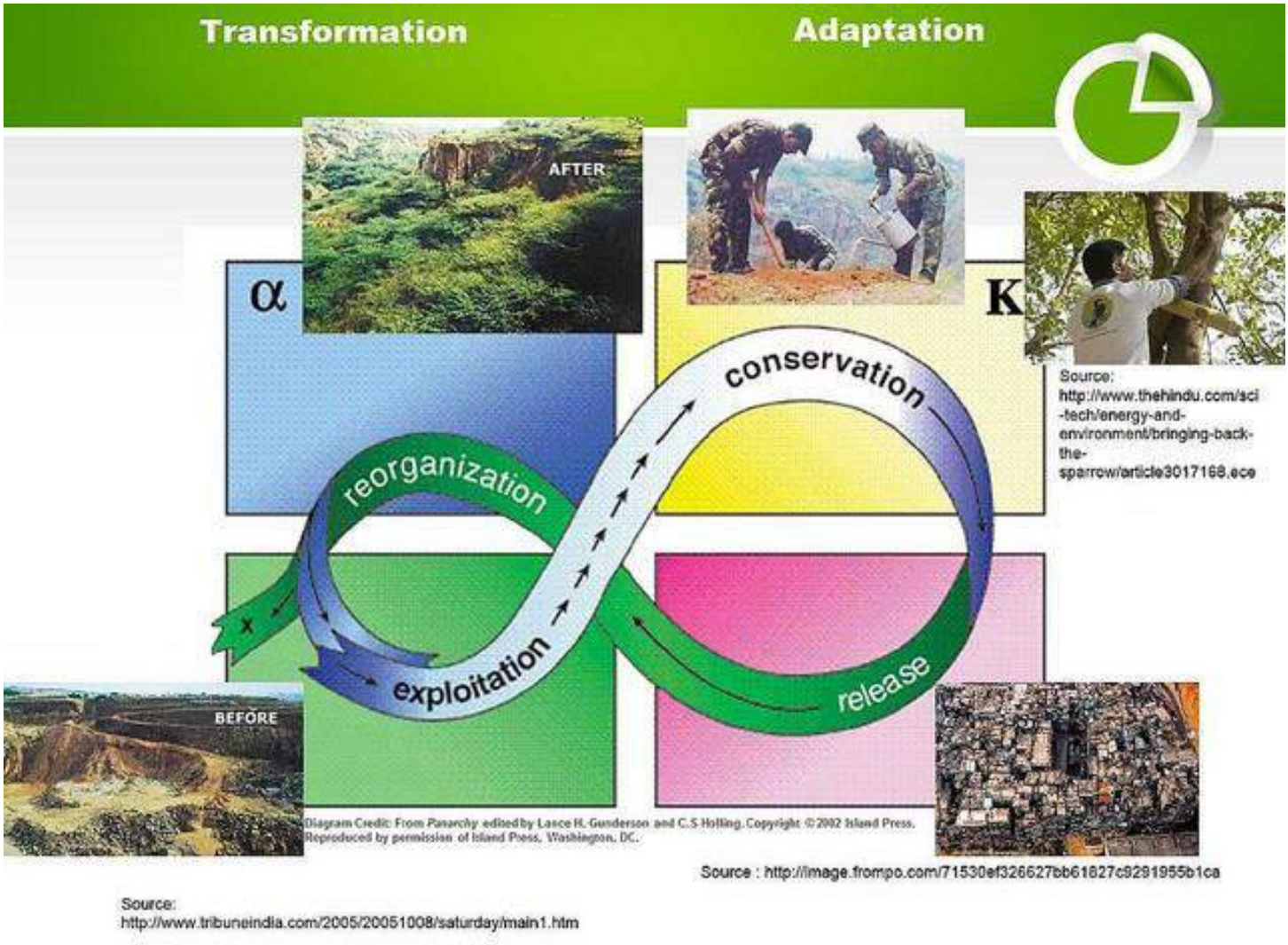
The partners in the chain can be seen in the image below:



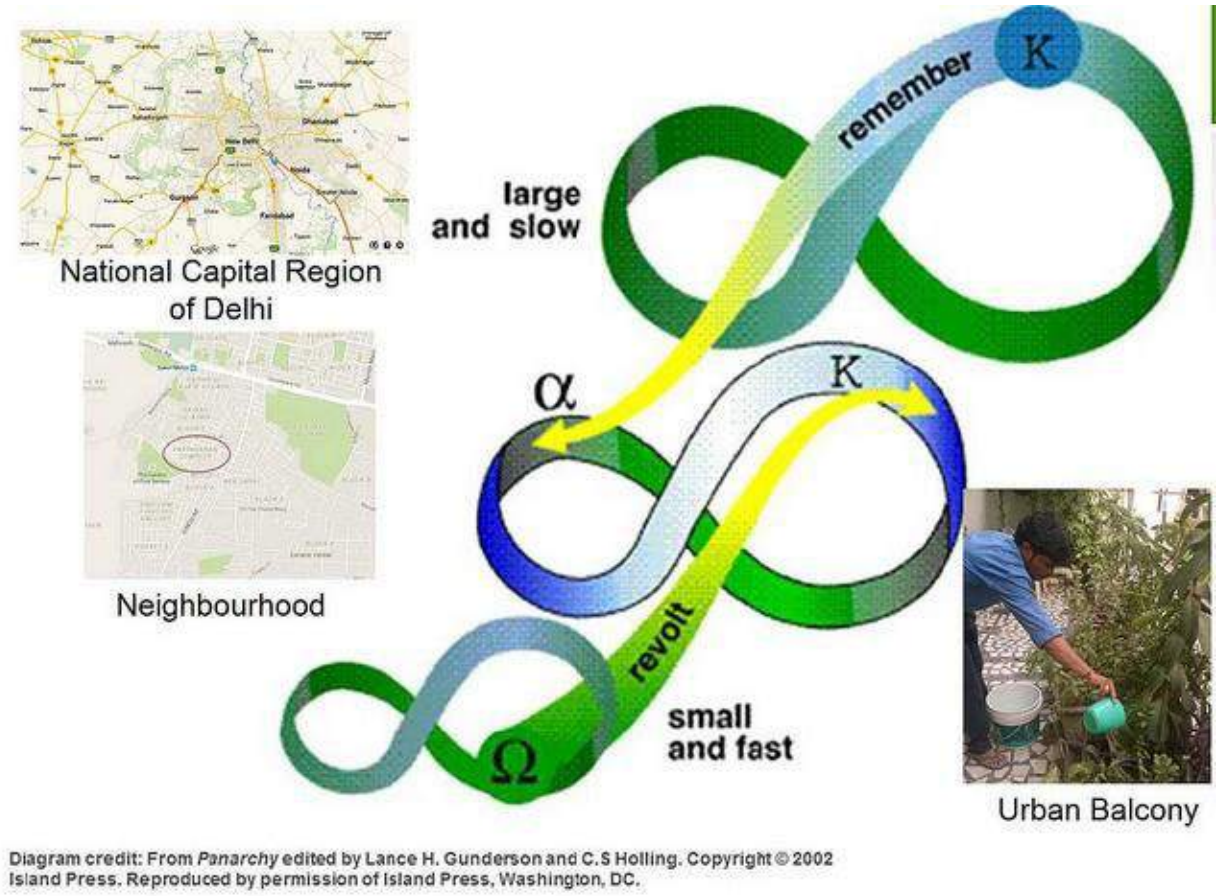
Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

The adaptive cycle for the conservation of sparrows that shows change in the social-ecological system over time is given below.

The creation of micro habitats at the lowest levels in urban balconies is the small and fast component of the panarchy. This infiltrates upwards to the neighborhood level and eventually to the city level, providing various improvements such as increases in sparrow population, reduction in solid waste dumped at city level, healthier living of citizens, lower heat island effect, etc.



Adaptive cycles for micro-habitats in urban balconies



Panarchy diagram for micro-habitats in urban balconies

"revolt" effect – the decline in sparrow populations has to be reversed. Houses are offering opportunities for bird feeding, water baths and sparrow house in their lawns, and balconies. This gives the sparrows the opportunity to have multiple broods in one breeding season, augmenting the natural growth rate.

"remember"- the government's intention to protect the sparrow was declared when they announced it as the State Bird. Widespread awareness was generated through campaigns in newspapers, social media and hearings. Ecologists provided information to residents on the necessary steps to promote sparrow population growth. NGOs provided the requisite material such as sparrow houses, bird feeders etc. so that a layman can implement the "bigger plan" at the household level.

constraints - lack of funding, loss of political will due to changes in elected government officials, pollution, and unsanctioned encroachment into leftover natural habitats in the city.

Policy makers have a role to play in growing civic ecology practices

There are various scientific studies going on to determine more efficient and quicker ways for composting. House hold composting itself has emerged as not just as a science but also an art. The variety of methods for composting at the household level is dazzling.

Similarly, the array of bird feeders and bird houses available is staggering.

All of these varieties have been developed by stewards, over time based on

experiences. We at the household level, also make adaptations based on our observations.

Stewards interact with other organizations and their practice grows through their collaborations. They are working with the government and larger non-profit or business sector organizations and are able to expand the same spirit, commitment, and enthusiasm that provided the initial impetus for the practice.

The government is also promoting and supporting the practice. The central and State Government are providing funds to NGOs to help them spread awareness, build bird feeders and bird houses at subsidized rates, run campaigns, run breeding programs in allotted areas, and support similar initiatives. The Ministry of Environment, Forests and Climate Change holds exhibitions where innovators and stewards exhibit their ideas and equipment and share their success stories. The Cultural Ministry hosts handicrafts fairs in which NGOs promoting bird conservation are allotted stalls to sell and promote the requisite material. The Delhi State Government has also raised large-scale awareness by choosing the sparrow as the State bird.

Measurement of outcomes is relatively simple in either of the civic ecology practices discussed:

1. For sparrows, the simplest measurement can be in terms of (a) the number of broods born and brought up in sparrow houses and (b) the number of sparrows visiting bird feeders.

2. For compost, the measurements can be in terms of (a) the reduction in the volume of waste going to landfills, (b) the quantity of compost generated, (c) the area serviced through the nutrients of generated compost and (d) increases in the production of vegetables, crops, and flowers after compost use versus when compost was not being used

Reflection

This service learning project is about building micro-habitats in urban balconies through the interlinked civic ecology practices of growing plants in urban balconies, and making compost from household waste. These projects serve multiple purposes, including waste reduction, providing nutrients for the growth of plants, and providing support to sparrows to encourage their population growth.

Interaction with civic ecology stewards and NGOs, compounded by increased awareness of issues of concern led us to join this citizen movement of conservation and reclamation.

The information in this story has been collected from my neighborhood, by talking to practitioners, and through the websites of environmental stewards and NGOs. The photographs have been self-taken or sourced from the internet and credited to the photographer.

The most important thing that I learned was that every individual can make a difference. It is when the individuals combine that the magnitude of the difference becomes significant enough to change an entire society or ecosystem. But the change has to begin with us!

I am still participating in this civic ecology practice and still learning. Perhaps one day, when I am better equipped with materials and knowledge, I will join the stewards and graduate from being a mere participant to become a leader.

All photos © Marisha Sharma, 2015 (unless otherwise indicated)

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Volunteers and university faculty and students collaborate to steward water resources in South Bend, IN, USA.

Reclaiming Bowman Creek

South Bend, IN, USA

RJ Sutton © 2015

Introduction

In signing up for this online course, I was at a point of transition in both my personal life and my career. It intrigued me because while I had been involved in many environmental and social projects, I had never analyzed the steps or components that make them effective and lasting. I felt this course would help me further learn and grow. It would help me develop my leadership skills and effectiveness, so I wanted to learn all I could and apply it to connect and build my community, and make the environment safer and healthier.

After more than 30 years out of state, I had recently moved back to Indiana. I was starting over and caring for my aging mother. I brought with me a background that includes 17 years of social and environmental programming experience: working with courts, law enforcement, mental health, social services, schools, churches, parks, the state, and business and community organizations in the coordination and supervision of court ordered alternative sentencing community service programs for juveniles. My work was conducted outside, in public places, and included overseeing many projects. Among these were such experiences as building handicap accessible trails, water erosion control, landscaping, and cleaning up unauthorized dumping. I also brought 17 years of experience in volunteering and volunteer management with organizations such as the Girl Scouts, the local Youth and Family Council, and the Future Leaders Exchange (which is a special foreign exchange initiative of the United States Department of State designed to train future world leaders by teaching them how not-for-profits and volunteers work with businesses and the government to fill the gaps in a democracy). Through all of this, I had experience serving on boards, including serving on my city's planning commission, writing and working with grants, developing and implementing programs, coordinating events, making presentations, and marketing.

As a new resident in South Bend, Indiana, I was looking for a good way to meet people, learn about my new community, and become a contributing member. To do this, I began attending the South Side Neighborhood Association meeting. There, I heard a presentation by Gary Gilot, from the Board of Public Works, regarding a long-term vision for the Bowman Creek area. Following the meeting, I approached Mr. Gilot, and I asked him how I could volunteer. He asked me to send him a few paragraphs about my experience via email to help him fill the right volunteer position.

We began with Back the Bend – a city-wide college and university volunteer service day. He invited me to help supervise a trash pickup along Bowman Creek.

Civic ecology practices emerge in broken places

Bowman Creek runs through the city of South Bend, Indiana until it joins the St. Joseph River. This creek was redirected into underground pipes to accommodate James Whitcomb Riley High School and other area businesses. It resurfaces just behind a school parking area and continues its flow through a neighborhood that has been long neglected. In the following block, it runs

next to an alley, and though separated by a six-foot tall chain link fence, this has proven to be an invitation for dumping.

At the turn of the 20th century, this creek had beautiful bridges and walk ways, with steps leading down to the water's edge. Chunks of broken concrete and portions of those structures remain in Ravina Park and the Studebaker Golf Course that border the creek. The above ground creek banks near Riley High School are covered in gabion baskets from the fence to the water's edge. Some trees have grown between the chunks of rock and wire. Much of the creek has been redirected into pipes below the ground. The area near Riley High School became my first initiative for a trash pickup with Back the Bend, followed by a church trash pickup day throughout the entire area. In 8 hours, between both efforts, several large dumpsters of trash were cleaned up.

Many residents of this neighborhood are not aware a creek flows beneath the surface. I believe it was this act of industrialization that was the starting point for decline, and it has slowly festered and grown to encompass a whole area and blinded residents to its existence and real value.
The majority of homes in this area were originally those of factory workers in progressive companies such as Studebaker. With the closing and relocation of major manufacturers, South Bend took several hard economic hits, contributing to the present condition. Today, the city is working on a future development of a number of vacant and abandoned houses within this area[1].

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and recreate these broken places

I believe the love of life is the primary motivator in this project, closely followed by a love of community. Notre Dame has an excellent College of Engineering, and this group has become both very active in ecology and interested in Bowman Creek.

Many leaders from Notre Dame are participating in a community group focusing on the creek. Several were present during Back the Bend when a group of 17 students spent a day filling a large dumpster, cleaning a one-block area of the creek. They removed everything from a mattress, a reclining chair, and old tires, to broken televisions and cement blocks. A volunteer water tester also

joined us and noted the creek does have life. She worked with some of the students to show them how to test the water and to encourage them to consider training to do this as well. Her work is motivated by biophilia, and the connection between humans and other living beings. This entire effort was coordinated with the city. One neighboring family did join in, and the father spoke of his love of the creek — as a child catching tadpoles — and how sad he was to see it this way. This is an example of topophilia, or the love of place.

This principle is the *why* behind each person's involvement in the environment. For me, having just moved, it was the love of life, and belief in being a good steward of this wonderful creation, our Earth. The more I become involved, the more I also begin to love this place. I don't see it as broken so much as I see a place with opportunity for improvement.

In recreating place, civic ecology practices recreate community

On May 2nd, we held a neighborhood community event: "Explore Bowman Creek." This day was designed to introduce the community to the creek. The person who really embodies a sense of community is Stephanie Rizk. She works at LangLab, an innovative location — in a repurposed Pepsi bottling plant — that houses new business startups, provides meeting spaces for education and community volunteer endeavors, coordinates entertainment events, and more[2]. When she learned that Bowman Creek ran under LangLab, she became very involved. She chaired the planning for this event. The event was hosted at LangLab, with a walking tour to Ravina Park[3]. It also included free food, free annual flowers, free music, an educational demonstration of water testing by Jennifer Krauser, and a short presentation of our vision. This was a first step in helping to rebuild sense of community, which is vital to maintain any environment.

Social Capital

Social capital was an important part of "Explore Bowman Creek." The annual flowers were donated by Lowes. I donated charcoal. Riley High School Music Department provided music entertainment, as did faculty and students from Notre Dame.

The community of South Bend, Indiana is blessed to have many caring and involved citizens. Those who are leading the Bowman Creek Project have invested a lifetime in developing a reputation of integrity, and building relationships. They have learned who to go to, and how to get results. Trust is the foundation we must protect to succeed in a project of this scope.

Collective Efficacy

Our biggest challenge is to encourage buy-in among the residents. This also takes trust building. At present, we have social trust, interracial trust, diversity of friendship network, civic leadership, neighborhood association involvement, faith-based social engagement, informal socialization, volunteering, giving and donations, and conventional politics participation. We are still working on better equality and representation of all. What we are trying to do hasn't required protest political participation.

As we are in the beginning stages of the Bowman Creek Project, we will work to build collective efficacy over time. I believe we have the potential to develop materials, products, and systems that can be used effectively around the world.

In protecting the ecosystem of Bowman Creek, we are using the experience and wisdom of city engineers, university faculty, and students. We are designing tools to monitor and maintain water levels to work with collected rain water.

Later, several members of the Notre Dame community gathered for a summer pilot project: Alisa Zornig Gura, Science and Engineering Academic Community Engagement Program Manager, and Northern Indiana Regional Science and Engineering Fair Executive Director, Center for Social Concerns; Dr. Jay Brockman, Associate Dean for the College of Engineering for Community Engagement; and Gary Gilot, Director of Engineering Leadership and Community Engagement in the College of Engineering. They worked with area universities and student interns in a group initiative known as the Bowman Creek Educational Ecosystems. Over the summer, they developed rain gardens in the Bowman Creek area, and created a 3-D model of Riley High School grounds to determine where the creek might be redirected above ground. The purpose was four-fold: (1) to help reduce pollution, and ease the burden of water runoff, (2) to educate residents on the benefits of having a rain garden, (3) to beautify public areas, and (4) to give interns hands-on experience in areas such as developing community support, designing and building rain gardens, and learning to lead.

Two rain gardens were designed and installed. One is right beside the creek, and a neighbor has volunteered to maintain it. The other is by St. Mathew's Parish and we are working to arrange volunteers to help maintain it. I was invited to advise and mentor in this project, and we are working on plans to expand with educational signage, children's books, and additional locations and materials.

Civic ecology stewards draw on social-ecological memories to recreate places and communities

As part of our ongoing effort, the Bowman Creek Team is working to include Conrad Damien — a local historian and long-time neighborhood resident, teacher, and volunteer. He has presented the history of the community to volunteers. In addition, Andrew Mach, a University of Notre Dame graduate student of History, is working on a public history of the area. We are also gathering community memories. For example, a resident living next to Bowman Creek and Ravina Park remembered seeing salmon in the creek in his childhood. These stories help us connect to what has happened. The Bowman Creek project is really looking to make a new beginning rather than return to the original state. We are drawing on the experience of our members and connecting with all valid resources and projects. The social-ecological memories of local nurseries is leading the care and planting of native species.

Sense of Community

For me particularly, involvement in the Bowman Creek Project has led to meeting some remarkable people in this community. It has given me a sense of value and belonging as I contribute. I believe that each project is improving the environment by enhancing the natural beauty. Each activity we did — picking up trash, having a block party, building rain gardens — generated interest and local residents stopped to ask questions about what we were doing and why.

Civic ecology practices produce ecosystem services

Working to protect our water supply with the Bowman Creek project is providing a regulating service. We are doing this by creating and encouraging the building of rain gardens to reduce runoff, which overburdens our sewer system and pollutes the creek and river. We are also developing regulating ecosystem services by working on ways to monitor and control the level of the creek. I am not aware of any supporting services at present that we are creating, although we are using compost and mulch from the city site. The beauty of the rain gardens provides cultural services.

Civic ecology practices foster well-being

From the very beginning of the Bowman Creek Project, well-being was the real purpose. From picking up garbage, to testing and protecting the water by reducing runoff, it all comes back to the health of all life in the community. Having natural places is vital to our mental and emotional well-being.

To this point, the whole process has been pretty physical. Walking, picking up trash, digging, and planting have definitely offered lots of aerobic exercise for the students and leaders of these portions of the Bowman Creek Project. As we move forward with the long-term vision, this project should also offer a great place to experience nature and walk.

Working on this project offers each participant the opportunity to contribute to meaningful quality of life issues and is empowering, fulfilling, and fosters happiness. We understand that this can leave a true legacy as it builds future leaders and engages them in this community.

Civic ecology practices provide opportunities for learning

As we began this project, the leadership sought to educate local community associations about the vision, and the team about ways to address the problem. We are still learning many things: who might be a stakeholder, who holds this passion, what funding might be available, what skill sets are in our community, what tools and technologies are available, and what the vision can be. This learning is evolving as we meet — through email and through contact with community groups that can expand on our vision. The water testing is an interaction with the environment, as was the clean-up day.

To bring community awareness and engage the community further in this vision, we held a neighborhood gathering — Explore Bowman Creek — on May 2, 2015. This included a walking tour and presentation, free food, music by high school and university students, free plants, and activities.

As interested volunteers began to explore how to improve the quality of life in the Bowman Creek area, it became apparent that the school is a link to connect with families, and that working to teach the change we want to see was an effective approach. A great place to start was with the school that sits on top of the underground creek. We decided to use it for environmental study because of this fact. This effort began in the spring of 2012, with Notre Dame Assistant Professor of Aerospace and Mechanical Engineering Arezoo Ardekani and a university student. They hosted a tour with high school students focused on STEM (science, technology, engineering, and math) learning. This effort was expanded in 2013 to include a spring program offering hands-on experiments and projects measuring *E.*

coli concentrations in different seasons in Bowman Creek. Three graduate students assisted with the program. In 2013, a hands-on fall program was also offered.

We partner with government agencies, such as the Indiana Department of Environmental Management, to train our volunteers to test the water[4]. We learn how fish are counted from observing Daragh Deegan with Aquatic Biology[5] of Elkhart Indiana, who reports to the Indiana Department of Natural Resources[6]. We are also working to use the seeds from our first rain gardens to propagate new plants.

Personally, I have taken the volunteer water tester training through IDEM, and I am retaking the Purdue Master Gardener training[7] this fall. I took the Civic Ecology MOOC to draw on the experience of experts.

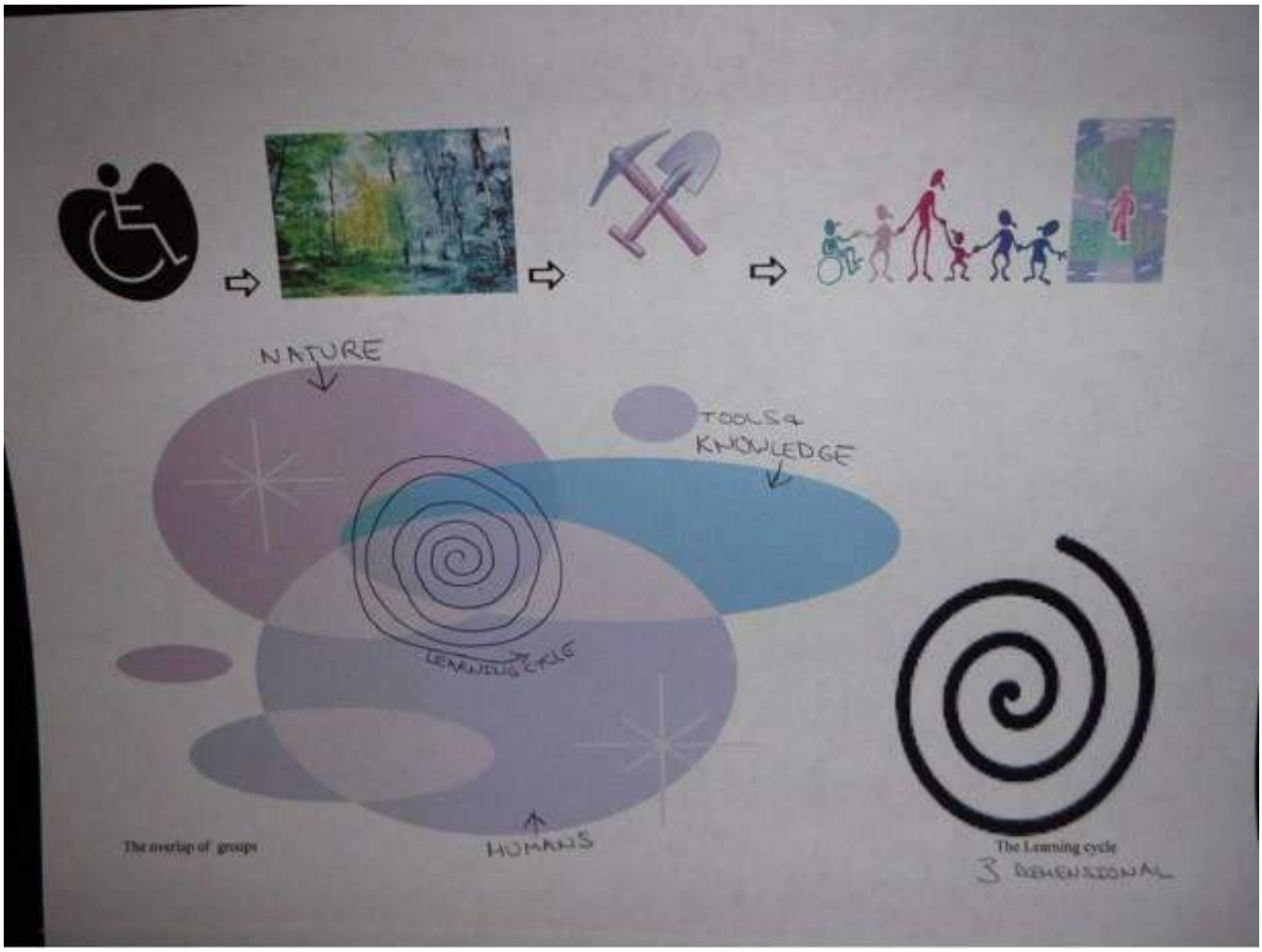
Following the summer internship program, and throughout each step of this project, we work to document the whole experience as we continue to build on our learning. The interns developed a blog, and we are sharing with our groups as we learn. We are studying the rain gardens to see how effective each design is.

We are presently developing school kits and programs to teach about the water cycle, the benefits of rain gardens, and about native plants. One of our student interns, Colleen O'Rourke, is publishing a children's book as a companion resource. We envision students planting the seeds and growing the plants, as well as helping plant and care for rain gardens. We are designing materials for children to take home to encourage home rain gardens too. The idea is to use the seeds produced by our present rain gardens to expand our resources.

At present, we have a faculty representative, from Riley High School[8] working with the Bowman Creek Team to develop programs and initiatives. James Whitecomb Riley High School is becoming *the* high school of science and engineering. The community vision is to undo some of the underground piping of the creek to enhance the environmental science experience and add green space. We are envisioning adding handicapped accessible trails around the high school as well.

In addition to high schools, South Bend, Indiana[9] is the home and neighbor of many great institutions of higher learning, including Notre Dame, Indiana University, St. Mary's, Holy Cross, Ivy Tech, Bethel College, and Brown Mackie College. Because the Bowman Creek Project is long-term, it provides ongoing internships and service learning in many areas including engineering, design, education, marketing, environmental studies, civic engagement, and sociology.

During 2013 and 2014, the Notre Dame Engineering Service Learning Pilot Project began. In collaboration with the City of South Bend[10], Dr. Liz Kerr included projects from local sites in her curriculum. Leo McWilliams and Victoria Goodrich included a project with first-year students to use graphical user interface application of rain barrels as a way to reduce run off. Students working with Mike Schafer, Notre Dame Electrical Design Senior Engineering Professor, developed sensors for bar screen monitoring, to proactively warn and mobilize clean-ups with closed circuit robotic televising.



Ecology of learning diagram. I chose to illustrate the decision to make handicap accessible trails, which I have supervised in the past. Trails like these could allow all students access to nature and opportunities to learn.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

The Bowman Creek project began with one man and a walk. Gary Gilot was the Public Works Director and an involved member of his community. One day, he took a walk down the street near where he attended religious services. It was a walk with a purpose. He had been informed that Bowman Creek was the most impaired tributary of the Saint Joseph River, which passes directly through the city and is one of the celebrated focal points. In several samplings of the creek, no fish or signs of healthy macroinvertebrates could be found. These tiny creatures are a necessary part of the food chain. Mr. Gilot, a practicing civil and environmental engineer, had worked with successful teams to transform dumping sites into environmental education parks, and sludge farms to nature preserves. He had worked with environmental restoration projects such as brownfield reclamation, to restore blighted land to productive use. His projects included Elkhart Environmental Center[11]; Boot Lake Nature Preserve[12]; Fredrickson Park[13]; Erskine Village[14]; Erskine Commons; Eddy Commons[15]; and the Studebaker Oliver Corridor[16].

With decades of experience, Gary Gilot was not deterred by what he saw. He was moved to action. From that day, his work has grown

to include a monthly team meeting, community outreach efforts, college internships, and collaborations with Riley High School, local elementary schools, area businesses, and neighborhood volunteers. Even the mayor is supportive. We are also beginning to work with the Elkhart Aquatic Biology Program and other state organizations on the development of outdoor classrooms[17] and on training in procedures such as fish counts. Collective efficacy takes time.

The work we are doing was designed to include opportunities to mentor, to intern, and to educate the whole community. We are working with people of all ages in this effort to build skills that can be used for civic engagement[18]. From encouraging a high school graduate to write books, to reading to kindergarten students; from adding educational signage, to building rain gardens; from teaching an engineering student to lead fellow interns, to recruiting a high school student to develop an online presence; from making presentations for media and public officials, to meeting with community groups to provide updates on progress -- all of these activities lead to learning, growth, and opportunities for future leadership.

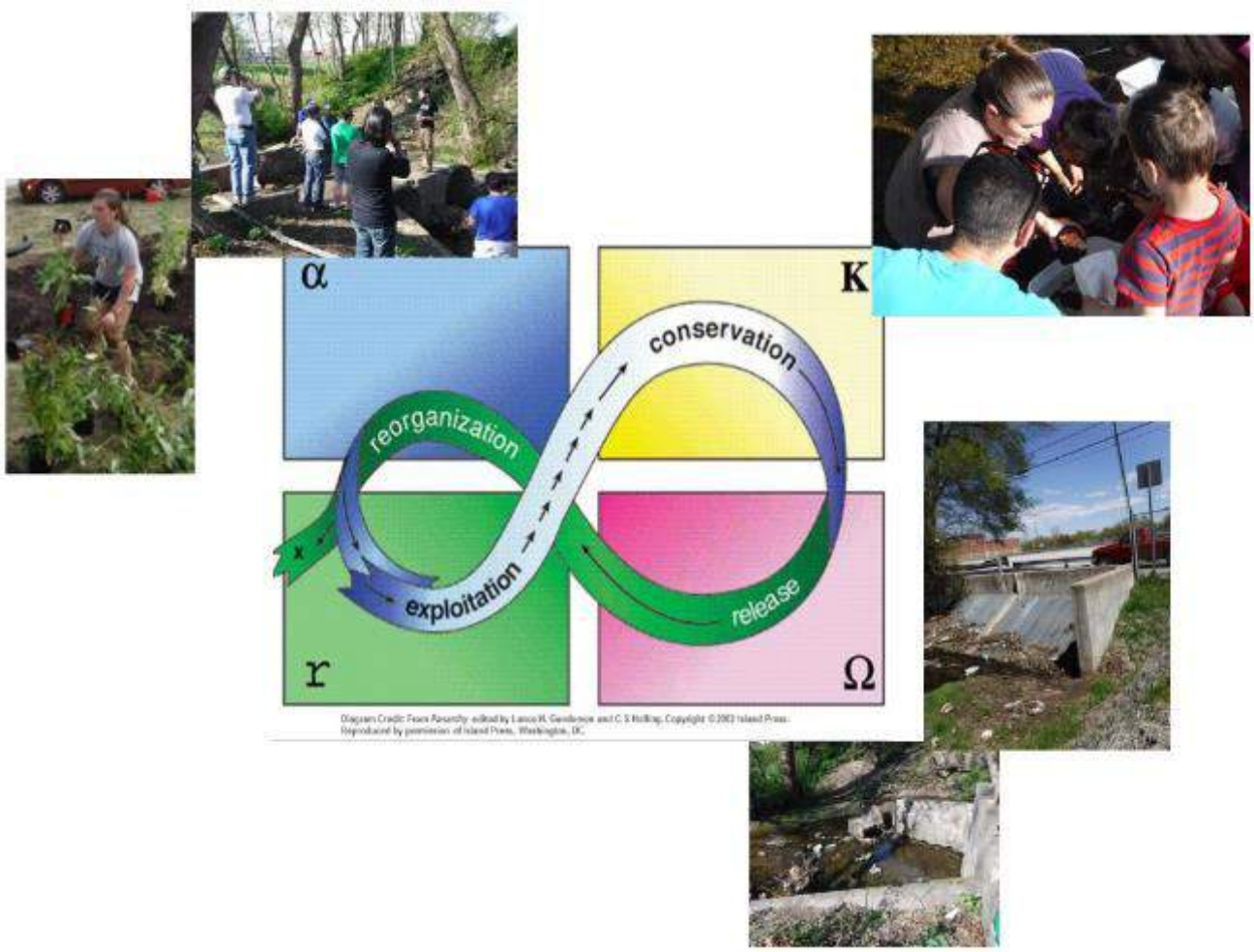
Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

There was a time when Bowman Creek was very beautiful. Then as industry rose, the need for parking, roads, and buildings with hard surfaces grew. Housing and driveways were added, and people parked on lawns, compacting the earth. The creek used surface space and was seen as an inconvenience. So it was straightened, channeled, and hidden underground in pipes to allow use of the surface space. It was neglected and forgotten. Often, when it rained, with less green space to absorb the rain, the runoff overflowed the sewers and contaminated the creek and river.

Today, we have a better understanding of the connections between land use and development practices necessary to build and maintain healthy ecosystems. It is that understanding that forms the foundation of all we are doing to restore Bowman Creek by building rain gardens and educating residents about their value and purpose. That understanding also drives us to bring Bowman Creek back to the surface, with a design that allows it to meander in daylight and aerate the water. The present ecosystem will be interrupted while we work to renew a healthier one.

Policy makers have a role to play in growing civic ecology practices

The policy makers and governance organizations included in this project are the Indiana Department of Natural Resources, US Environmental Protection Agency, US Department of State, Indiana Department of Environmental Management (which focuses on water quality), National Association of Conservation Districts, Aquatic Biology, the City of South Bend (including Administration, Parks Department and Recreation, which oversees the management of the park and all activities), Indiana Department of Education, local colleges and universities, and South Bend Community Schools (Riley High School Science Department). The practice is repurposing the Bowman Creek corridor — including Ravina Park — to bring awareness to Bowman creek and the Team Vision for its future use to protect our water and environment.



Adaptive cycle applied to Bowman Creek decline and restoration.

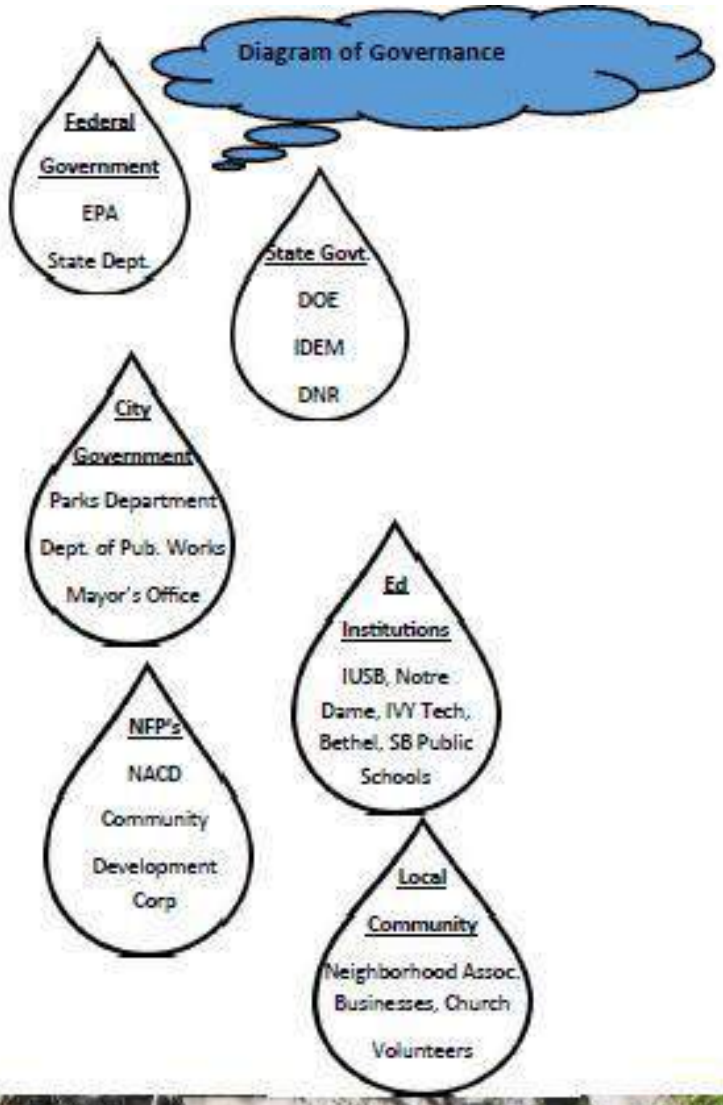
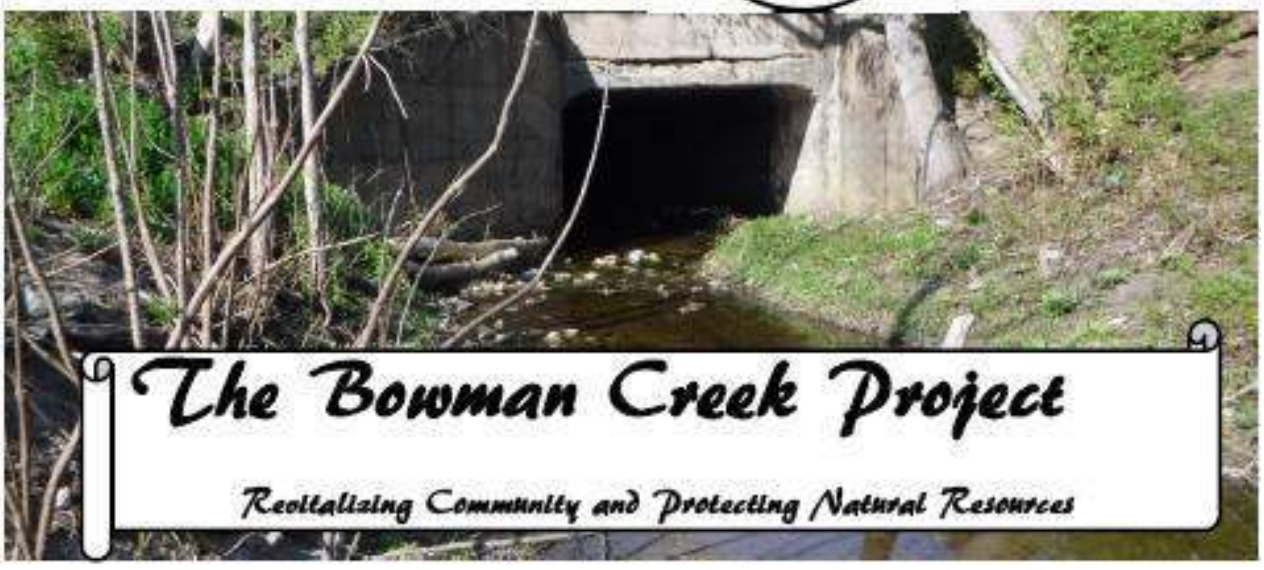


Diagram of Governance
Federal Government
EPA
State Dept.
State Govt.
DOE
IDEM
DNR
City Government
Parks Department
Dept. of Pub. Works
Mayor's Office
Ed Institutions
IUSB, Notre Dame, IVY Tech, Bethel, SB Public Schools
NFP's
NACD
Community Development Corp
Local Community
Neighborhood Assoc.
Businesses, Church
Volunteers


The Bowman Creek Project
Revitalizing Community and Protecting Natural Resources

The present state of Bowman Creek and the surrounding community is the result of several decades of disinvestment and concentrated poverty. Many residents left, contributing to the blight. We need to bring active community members back.

Restoring this creek is creating larger impacts — what I like to refer to as a demand generator. The restoration efforts have played a role in other demand generators. Hands-on service learning at Riley High School — an outstanding magnet Step school — is a demand generator. Mayor Pete Buttigieg's 1000 homes initiative to remove and restore vacant and abandoned houses, plant trees, and develop community gardens is a demand generator. Planting rain gardens and including smart green infrastructure is a demand generator. Forming an active community development corporation is a demand generator. The reclaimed Studebaker Oliver corridor that is growing the jobs of the future — from turbo machinery, to data centers including big data analytics, and other new technologies growing from Notre Dame's commercialization of research — is a demand generator. Developing active and effective neighborhood associations and developing local leadership to give residents a voice and sense of community is a demand generator. We need to build on these.

Demand generators bring people back to fill the homes and revitalize the economy. Mr. Gilot says that learning to leverage private equity's return on investments "is the art and science of community development."

Additional actions taken by policymakers include: implementing community asset mapping to identify community strengths, holding two community meetings for residents and developers at Ivy Tech to select the most important big idea projects,

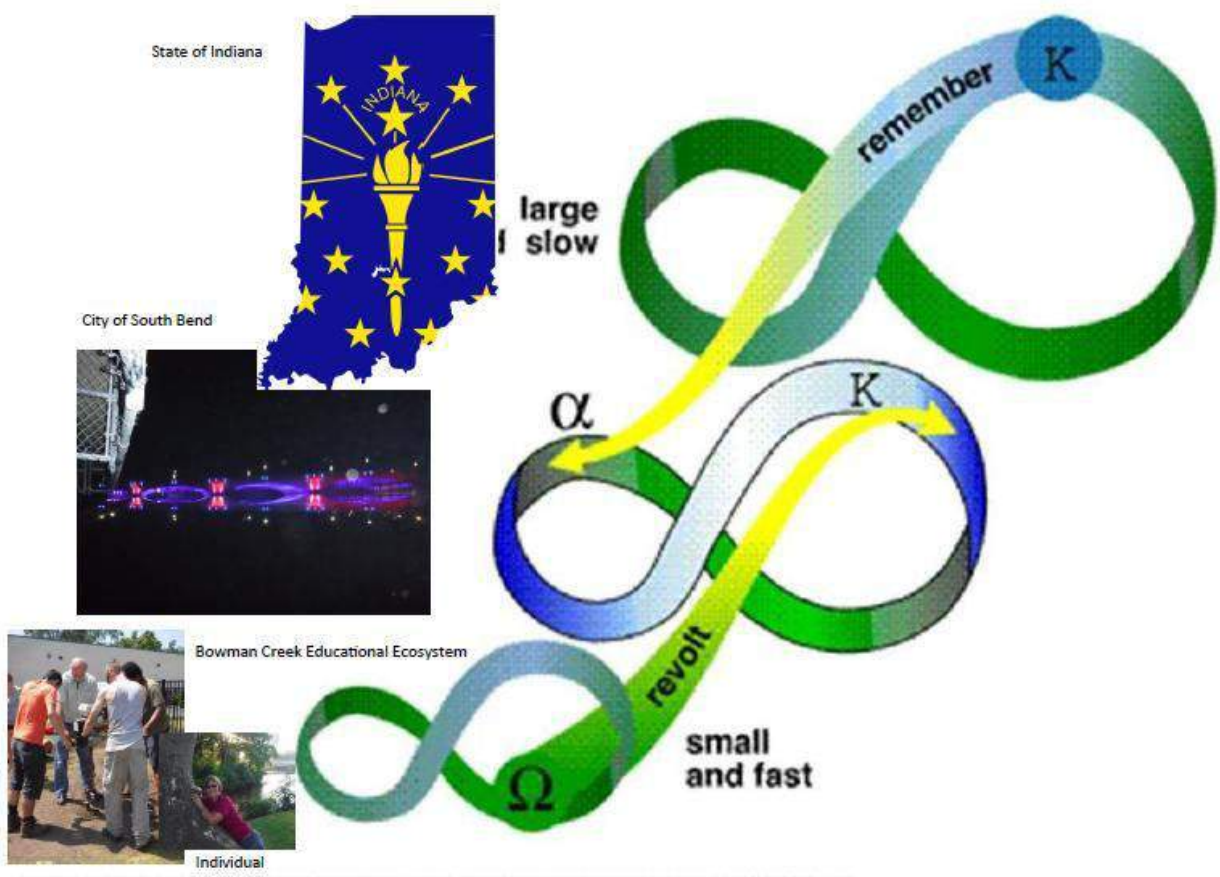


Diagram credit: From *Panarchy* edited by Lance H. Gunderson and C.S Holling. Copyright © 2002 Island Press. Reproduced by permission of Island Press, Washington, DC.

Bowman Creek panarchy showing how small practices might build to larger processes and how larger processes may impact small practices.

updating the area master plan[19], leveraging other people's money, and creating opportunities to invest in building business and infrastructure.

As I am new to the community, I am still learning about the other participants and what they bring to this whole process. As for myself, I draw on high school biology, and 18 years of experience supervising youth crews working with Parks in various capacities. I am also retaking the Master Gardener class, and I took the Volunteer Water Tester training. I have begun my education with John Maxwell Leadership Training. My real passion and experience has been in collaboration, developing volunteers, building community, public relations, marketing, program development and implementation, and event planning and coordination. I believe I have been an asset in this effort so far and will continue to be.

At present, Aquatic Biology of Elkhart measures the creek for fish counts once a year and we have an Indiana Department of Environmental Management volunteer water tester trained and committed to test water quality four times a year. We are monitoring the rain garden project for the next two years to make any required adaptations and changes based on our observations. We are developing collaborative programs with Riley High School to monitor and improve the area of the creek near the high school, and we are working with engineering students on the development of plans for the replacement of the walking bridge at Ravina Park.

As we are still at the beginning of this long-term project, we are just starting to interact with other organizations, primarily through meetings and presentations. With seasoned leaders, these connections are being carefully selected and developed with integrity to build lasting foundations as we work together. As we connect and collaborate, it greatly expands the effectiveness and ability to succeed.

Working with bureaucracy always slows down the ability to act. Having experienced leaders who have already discovered the pitfalls helps to navigate large organizations and challenging personalities.

Conclusion

I have learned the Bowman Creek Project is much bigger than just a trash pickup. We are actually working to rebuild community in an entire section of the city using the creek as the focal point. The activities began with a report, a conscientious public employee, an educational institution that chooses to give back to its community, and teachers willing to go the extra mile to bring real life experience to the classroom. It grew through meetings to develop a plan. This resulted in a student day of service picking up trash and conducting water testing as a way to "Back the Bend", followed by area church members picking up trash on the streets of the surrounding community. Both of these activities had city workers participating.

Next came Explore Bowman Creek at LangLab with a tour of Ravina Park and water testing to engage and educate the residents, followed by a few volunteers picking up trash in Ravina Park and planting flowers. The next step was the summer internship program — Bowman Creek Educational Ecosystem This involved the research, design, and planting of two rain gardens, the creation of a 3-D plan for opening up Bowman Creek around Riley High School, and a children's book about the water cycle. We are now at a point of evaluation and further planning.

My personal participation included attending planning meetings, preparing for and supervising the student trash pickup, and volunteering to pick up trash within the community with Living Stones Church[20].

I also volunteered during the block party, and I cared for the remaining annual plants until we were ready to use them to fill in the rain gardens and the flower bed at Ravina Park. I also assisted community volunteer Jennae Gee with weeding the flower bed. Then, in the summer, I assisted with mentoring the student interns for the rain garden project, and I reported back to the Bowman Creek Team on what I had learned in taking the Civic Ecology MOOC.

I plan to remain active in this and other community projects. At a grassroots level, we are working to develop the neighborhood associations and the leadership in each. We are examining ways to increase community involvement and keep everyone informed. Meetings to begin the development of the community surrounding the creek are being planned for this fall. We anticipate this will be a long-term project — perhaps as long as 20 years.

I collected the information for this story by doing on-line research, by serving at most of the events, and by visiting the creek and park on my own with my camera. I also signed up and took the State Volunteer Water Tester training. This story has been a collaborative effort. Gary Gilot and Alisa Zorig Gura both contributed perspectives, suggestions, and additional details for accuracy.

I think the most important thing I learned is that I can trust the people working on this project to be people of integrity, and to have the best interests of the community and the team at heart. They inspire me to be my best self. I also learned that I am glad to be a part of my new community. Rain gardens are important for the rejuvenation of this area, and I want to work to encourage the entire city to build them, and to contribute to building a better community. In taking this course, I learned to dissect the whole process to identify the individual ingredients necessary for sustainable change. I think that will prove to be a great tool for my future effectiveness.

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After deadly earthquake in Nishinomiya, Japan, civic ecology stewards transform a landslide into a beautiful memorial garden.

Flowering Yurino Garden

Nishinomiya, Japan

Momoka Tamura © 2015

Yurino Garden (http://nishinomiya-style.jp/blog/2013/04/09/7655)

In locating a civic ecology practice, I first looked at the activities in my country, especially those related to post-earthquake restoration practices. On March 11th 2011, my country experienced the Great East Japan Earthquake. It was a big disaster, but at the same time, it spurred a lot of community-led reconstruction and other supportive activities.

But the civic ecology practice that I chose here is not the one coming from the 2011 earthquake. In my story, I will tell you a local practice in my city, Nishinomiya, in Hyogo prefecture, which was shaken by a big earthquake 20 years ago[1].

The Hanshin-Awaji Great Earthquake came to our region in the early morning of January 17th, 1995. I was too little to remember what and how it was, but I know that my beautiful city today is built on the forgettable past.

I will look at a local volunteer group, called "Yurino kai" group, and will focus on their activities to grow flowers, which started several years after the earthquake. I chose this local practice because I thought I might have a chance to visit the place and the community in the near future, and to know more about the experience of my city. Fortunately, I had a chance to join their activities twice: once in the early July, and again in late July, 2015. There, I was able to talk directly with the members of the group. Also, they kindly let me in the group. Although I cannot regularly participate due to my studying abroad, I would definitely like to rejoin when I return to Japan.

Studying Civic Ecology Practices

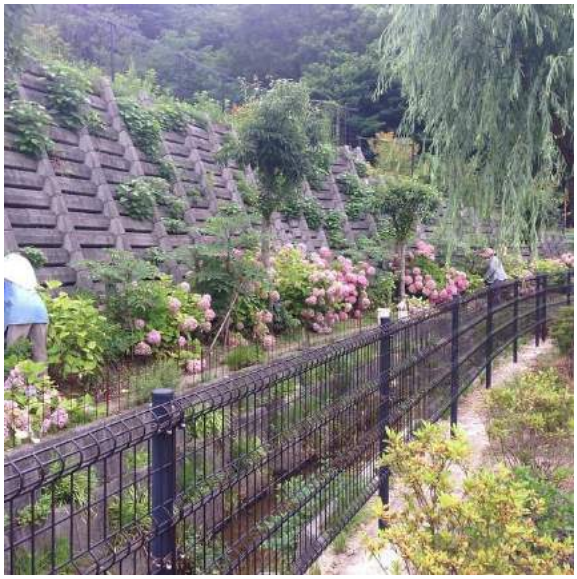
By applying the civic ecology principles to the local Yurino Garden practice, I will explore the emergence of civic ecology practices, pieces of civic ecology practices, a systems perspective of civic ecology practices, and policy-making aspects of civic ecology practices.

Civic ecology practices emerge in broken places

The Yurino Garden is located in Nigawa-Yurino cho/town, in Nishinomiya city, Japan. More specifically, the garden is just beside the Nigawa-Yurino cho Landslide Memorial Library[2], which reopened last January.

With the reopening, the information on landslides is exhibited in interactive panels, and the text has an English version available. These are designed for wider audiences — both cross-generational and international.

This place is where a tragic landslide occurred after the Great Earthquake 20 years ago. It is reported that 34 people became victims of the landslide, which carried away the neighboring houses. Gardening activities emerged as part of the community's response to the sudden disturbance and ties community members to the ecosystem. The slope where today's garden is located is the exact place where houses once stood.



Today, the pink ground flower that stewards started to grow in 2004 is attracting a lot of people every spring.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim, and re-create these broken places

After the devastation of the land and the environment caused by the Great Earthquake, many reconstruction projects and activities have dealt with reclaiming the lost landscape of nature. Above all, green nature was seen as having important value for people and communities affected by the earthquake.

Planting flowers on the slope beside the Nigawa-Yurino Landslide Memorial Library also corresponds to the perception that connections to nature are important for human lives and that re-greening and re-flowering practices are part of society's recovery and revitalization.

The Yurino volunteer group started to cultivate the garden after the natural disaster in response to the build-up of concrete structures constructed to prevent future landslide. A local person found such a concrete site a desolated scene, and wanted to have more alternative green space in the area. So this practice reflects people's biophilia, or love of life and nature.

It also shows their topophilia, or love of place. Even after the devastating earthquake and landslide, and the flushing away of their houses, local people tried to recover their lives in their local area as much as possible. Their activities reflect such a strong attachment to the place, and show that their particular place has a particular meaning to their lives.

A former representative of the Yurino group expresses her love for place, saying that it is the best hope for her to get more people to love "this place" by seeing the flowers that they grow. There is love of place held by the local people, but the nature of the space is inclusive and is open for everyone who comes to appreciate the blossom of flowers.

In re-creating place, civic ecology practices re-create community

The members of the Yurino group gather together six times a month to care for the garden. One purpose of their gardening activities is to create a place where everyone can connect to each other by engaging in caring for flowers. In the past few years, the local volunteer members are also joined by people from neighboring cities.

The former representative of the Yurino group says that he hopes to create bonds in the local community through this gardening, and build resilience in the face of future natural disasters. The lesson from the earthquake -- that having a local community tie was so important in face of the natural disaster -- is the main story that the older generations are trying to hand down to younger generations.

The community gardening practice seems to be strengthening the ties of members and fostering trust among local people, which was of crucial importance when recovering from and overcoming the earthquake.

Besides the gardening activities, the Yurino group holds concerts at the site, which provide an opportunity for local people to gather together and share a common experience at the site. While the group is now faced with the problem of aging members, the activities are creating an inter-generational community, reaching out to younger generations.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

One member of the Yurino group says, "I would like to let people know that there was a huge landslide in this place, and to transmit the lessons of the natural disaster to young generations, so I hope many people will come and see our flowers in this area." To provide a resting place for the souls of the 34 victims, and to not let the lessons learned from the earthquake fade away, are the main motivations for the group to grow flowers at the site. What are their shared memories? What are the lessons that they have learned and want to transmit?

The earthquake brought a landslide in the area, but it also brought a fire. The experience of cooperation among local people enabled them to survive the disaster, and mutual support helped them to overcome the loss of the loved ones.

But in understanding the lessons learned, their memory seems not to start just from the day of the earthquake 20 years ago. Going back to the pre-war period, the Nigawa-Yurino area was once a pine forest. After the end of war and in the industrialization process, there was a need for a larger water supply for the increasing population. So, a water purification plant was constructed in the nearby mountain starting in the 1950s. The improper disposal of the soil derived from the construction ended up causing the

tragic landslide over the lower residential area when the earthquake struck. In this way, the tragedy was remembered not only as a natural disaster, but also partially as a manmade disaster. One lesson is that we should always know the ways of nature and that the development of the human society should be in co-existence with nature all the time.

When the earthquake occurred, the region was filled with the smell of gas. The former representative of the Yurino group still has a fresh memory of that time, as every local resident came for a bucket relay to use the water from the local corporate apartment to stop the fire. This is one basis of their community engagement.

Civic ecology practices produce ecosystem services

Since the Hanshin-Awaji Earthquake, people, communities, and the government have engaged in activities for preserving and revitalizing nature. A regional green network was established and different greening projects of the affected area were spread across the region.

In Nigawa-Yurino town, where the landslide occurred, the gardening started with planting cosmos to revitalize the land overgrown with weeds beside the concrete reinforcement. Then in 2004, 940 pink ground flowers were planted by the Yurino group, and the flowers spread to more than 10,000 in number. Today, you can also see other varieties of flowers, such as lotus flower, sunflower, hydrangea and narcissus.

Black dragonfly[3].

The gardening activities provide ecosystem services, supporting the healthy soil and air, directly and indirectly benefiting human health. What is more visible is that the gardening practice produces a cultural ecosystem service, that is therapeutic experiences for the survivors of the natural disaster, as well as space for educational, recreational, or relaxing activities for participants and visitors. A wild duck flew over to the water when we were finishing our work[4]. In summer, you can also see fireflies along the river. The water is very clear.

The second time that I participated in the gardening activity, I also found watermelon and pumpkins growing beside flowers. Crops made from the soil, the sunlight, and water in Yurino Garden also feed human beings.

Civic ecology practices foster well-being

The Yurino gardening activities play a part in therapy for the garden members and local people. The activities also provide an opportunity for the participants to feel meaning in their lives. Transforming the desolated place to be more attractive brings happiness to the members and the region, and most importantly, the active engagement of the stewards brings back the beautiful scenery and lots of smiles.

As many group members are elderly, such practices that make them feel that life is meaningful seem particularly relevant for their well-being. Two or three registered members are more than 80 years old. Some volunteer members come from far away, driving a few hours by car. They find this gardening activity refreshing. By engaging in community and interacting with people, they can have a healthier life and remain vital.

http://nishinomiya-style.jp/blog/2013/04/09/7655

Civic ecology practice provides opportunities for learning

Sharing their experiences and knowledge makes the practice a learning process for everyone. Members of the Yurino group, as well as a wider society impacted by their activities, have learning opportunities on different occasions. Such lessons include historical memories that local members have, and also, newly acquired gardening skills.

I became one of the learners in the community gardening practice. The existence of the group and their activities made it possible for me to learn the history of the area and the group's restoration activities. The openness of the group attracts people from various backgrounds, so that there are great opportunities for social learning in the community. I have learned how and why to cut flowers from members of the group when I first joined in the activities. What I am learning is not only the gardening skills, but also the history and meaning of the place. Interactions with the people, even during just two hours of work time, gave me such meaningful information that I could not have gained through surfing the Internet to research the activities.

Since last year, the group is also cooperating with a local junior high school as part of the school's disaster-related study. For example, several students are invited to join in the gardening for a special week set in the school curriculum, and experience the work together with the members of the Yurino group. Today's school children do not know the natural disaster that happened in the past in this area. Through this cooperation, the group transmits their memory to the next generation.

Civic ecology practices start out as local, small-scale innovations and expand to encompass multiple partnerships

It is difficult to map the networks of various groups, business partners, non-governmental organizations, and public agencies that the Yurino group is involved with, but I can offer a few observations.

The network started when the local person engaged community members to create a garden on the site of the tragic landslide. Here, one can find the social entrepreneur of the civic ecology practice, who tried to find a way to restore the community and rebuild the place and the ecosystem that were broken. Such a small social-ecological innovation grounded in the local environment had great potential to widen its impact through networking with various other people and organizations.

Recently, the Yurino group started a partnership with the local public junior high school by engaging in the disaster-related study for pupils. I think this is part of the process that expands their local activities to a wider society.

A branch manager and employees of a local bank have also participated in the gardening activities. Another new member came from a local university, where the Yurino group has invited student participation.

Another interesting connection is with the water purification plant just above the garden. The water purification plant provides free water for the Yurino garden; this water comes from comes from water that the plant uses in the water inspection every day before providing it to general water users. I think that the water purification plant and the garden have a dynamic and positive relationship.

There is another connection with a private organization. This year, the Yurino group's activity was selected as one of the civil society group projects which can receive private funding. The grant is by a local company called "Dream and Town Fund", and the Yurino group's gardening activity was recognized under the category of regional vitalization.

Yurino garden started with a small, local practice. But by expanding the network and spreading the practice to the wider community while keeping its locally fostered mutual trust and connections among people, Yurino is becoming empowered to make impacts on the broader society. As the place is visited by people from other parts of Japan and the world, the network has the potential to expand to other post-disaster communities by sharing their experiences and their innovative practices.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological system

Hyogo Prefecture, The Past Record of Landslide Disasters in 1995, Disaster Prevention Education[5]. gakusyu.hazardmap.pref.hyogo.jp

Looking at the practice of the Yurino group as part of an adaptive cycle, it might be possible to locate their activities in the conservation stage. The Great Earthquake in 1995 would represent the stage of release, which radically transformed the landscape and ecosystem of the region, as well as the community. Right after the earthquake, the reconstruction of infrastructure and normalization of people's lives can be seen as part of the stage of reorganization, followed by the exploitation stage. While knowing that more careful research is necessary to demonstrate these cycle stages, my interpretation is that today's local practice by the Yurino group reflects adaptation to small continuous changes in the social-ecological system, with certain expectations and preparations for another disaster in the future. As the gardening started in the early 2000s, the practice seems to be in a relatively stable phase. Since the observation with respect to the exploitation stage is insufficient, one can also analyze the practice as part of the reorganization/ recovery stage, perhaps considering the change in the course of the gardening practice since the early 2000s.

The picture above is a model in the Geolama Nigawa-Yurino Landslide Memorial Library. It shows the system of checking the sediment condition, which was set after the reconstruction of the area. The automatic computer system for checking ended last January due to the settled condition 20 years after the landslide.

Moreover, in depicting the multiple levels of interactions in a wider nested system, or panarchy, it can be assumed that individual members are interacting with the community organization, the community is interacting with the policy-level organizations, and so on.

Policymakers have a role to play in growing civic ecology practices

The local practices of the Yurino group have created connections to governmental institutions and policies. To understand how the Yurino group practice and policymaking interact, I will follow the steps of labeling, strengthening, and expanding, which enable the local practice to generate policy innovation.

Their social-ecological innovation, or a local practice of planting flowers on the slope area, is seen as greening activities, which is part of green restoration projects promoted in the post-disaster period. The Yurino garden activity has been recognized as a regional greening project promoted by the prefectural government. Additionally, in 2010, the Yurino group was awarded a prize by the prefectural government under the category of green and flower community development. This recognition of greening activities makes the Yurino group activity part of a larger policy project.

The next step is to strengthen the practice through adaptive co-management. Specific partnerships with scientists is not certain, but it is important to note that after the Great Earthquake, 'green space' was widely reported as bringing feelings of peace, security, and healing to those affected by the disaster. The Japanese Institute of Landscape Architecture conducted urgent research on the role of green spaces after the earthquake, and submitted an expert report. Those findings include the important role of the natural environment for disaster prevention and its impact on healing the affected people. The expert report was endorsed by policymakers, and reflected in the "Hyogo Biotope Plan", which was issued a few months after the earthquake. It notes the value of the natural environment -- such as green plants -- which bring richness and space for humans.

The third step is expanding the practice. One important actor for this development is the local government. Policy-makers can potentially provide a positive environment for a civic ecology practice to further grow in society, and such cooperation would also contribute to better environmental management. How does such collaboration occur?

Let me explain the case of Yurino Garden with regards to the cooperation between the government and the Yurino group. The flower garden was first started in private land located on the slope opposite the present Yurigo Garden. In the beginning, the Yurino group grew cosmos and sunflowers on that land just by themselves. A change came when the Yurino group was required to return the private land to the landowner. In that timing, the prefectural government made an offer to the Yurino group to use the land owned by the prefectural government for the continuation of the gardening activities. Thus, the land of the current Yurino Garden is under public ownership.

In accordance with the application for the usage of the land for the gardening activities on that site, the prefectural government financed the construction of the garden and planting. The Yurino group was required to submit a report in spring 2015 -- five years since completion of the construction work. Now, consultation is underway to replace the soil to provide better conditions for the flowers. Since the garden is relatively large, the cost of renovation is an issue for all parties. For the Yurino group, waste collecting activities have been their source of financing for the gardening. They collect waste goods from more than 380 local households, but the expenses for renovations and large-scale maintenance are difficult to come by.

Although the city government has no direct relationship with the ownership and management of the land, these partnerships seem to be growing. After making sure there were spaces for planting more flowers, the Yurino group was offered 350 young plants by the city government in spring and fall. This spring, students in the local junior high school helped plant the flowers.

The wider restoration project and networks developed after the Hanshin-Awaji Earthquake are also connected to the efforts to recover from the Great East Japan Earthquake in 2011. Further study can be done to understand the expansion of these practices at the global scale as well.

Reflection

Conducting research guided by the online course was an interesting opportunity for me to apply the civic ecology study to actual local practice and thus to develop a deeper understanding of civic ecology. I have used online materials to collect the data such as news media and local blog sites. I think the best way to collect information to tell a story is have direct communication with those who are involved in the activities.

Translation..."Today's activity -- Pruning of Hydrangea -- We will do our work on the slope. Please be careful not to forget your food while working. Let's hydrate frequently and prevent heatstroke."-29 July, 2015

After joining in, I gained a chance to visit the garden, and started to participate in the gardening activity. The main work in July was the cutting of hydrangea[6]. I had no knowledge about this work, but the members of the Yurino group kindly taught me how to do this. Through the two-hour activities, I have become a member of the community, and started to have a special connection to the place. I think this is a place that I can learn a lot from, and also a place that I can help become more resilient. After all, this has become OUR civic ecology practice from that day.

Since the membership of the group consists of relatively older generations, I think I can play some role in attracting young people to join in the activities and expand the network of people beyond generations. The use of social media and other communication tools would be a good way to communicate the attractiveness of this civic ecology activity and to share our experiences. Then we can also connect to the people working on civic ecology practices around the world and learn from each other to make our society better.

After two hours of gardening activity, people get together to have some rest. Wiping the sweat away, we all share the feeling that we have done today's work. Such a time makes us feel a sense of community and well-being. There was a surprise on that day... fresh and cold watermelon after the activity! The watermelon is, of course, from the Yurino garden. We ate together by the side of the garden. It was so juicy and delicious; I thought it was the best choice on such a hot day. Eating each piece of watermelon, I thought I would come back to this community again in the near future!

Special thanks to Nishinomiya-Style (http://nishinomiya-style.jp/), for all their support in helping me complete this report from Norway.

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A community builds a garden in their local park in Cheltenham, UK.

Annecy Gardens

Cheltenham, UK

Michelle Thomasson © 2015

Annecy Gardens sign

How did Annecy Edible Gardens begin?

About four years ago, the Transition Town Food and Growing Group[1] held monthly bring-and-share-a-meal meetings. The purpose was to discuss bringing the ideas of sustainable food to the attention of the public. At that time, most Cheltenham group members were already committed organic growers at home or on an allotment. One member of the group, Malcolm Allison, was enthused with ideas about community gardening, horticulture and agriculture as a result of discussions with an agroecology group in the House of Commons in London.

One evening early in 2012, after six months of getting together, the group came up with the idea of approaching the local borough council to ask if there was any suitable space for edible growing in a public park. Group member and landscape designer Lorraine Du Feu duly wrote to the parks department within the borough council. At the time, the group did not have great expectations, but were delighted when they were offered Annecy Gardens, where the council had previously experimented with traditional vegetable growing. But even though it was a popular initiative, it was discontinued due to lack of funds[2].

Happily, in the case of Transition Town, the parks department was able to help. They donated two areas of lawn at the entrance to Sandford Park, known as Annecy Gardens, just off High Street. Beds in the lawn were prepared and passed on to the volunteers in the Transition group. After a successful first season, the parks department cleared an additional area of shrubbery to provide more bedding space, a composting area, and space for fruit bushes. The edible garden community project was going to survive.

A blooming award

It was not long before Annecy Gardens won two awards: one from Cheltenham in Bloom and the other from Cheltenham Allotments because the garden provided a practice ground for people to learn to grow their own food.

Today, volunteers still tend and care for the area on a weekly basis. They bring their enthusiasm for the community garden, share seeds, and discuss planting ideas, taking delight in seeing local people from all walks of life freely partake of the harvest[3]. They also appreciate that many who walk by are

actually on their way to the local hospital and are greeted by such a positive community project.

Principles of Civic Ecology

Annecy Gardens in Sandford Park, Cheltenham, is a community, organic edible garden created and nurtured over the last four years by a group of volunteers who hold a common interest in a local and sustainable food system. The volunteers wanted to reach out in a public space to show how easy it is to grow beautiful and healthy edible plants. The community that has blossomed around this uplifting garden has been an added bonus during the last four years.

Civic ecology practices emerge in broken places

This project did not spring from a physical broken place, but it did develop at a time when news about our environment, sustainable food resources and the economy painted a bleak picture. Spirits, however, were not broken. People wanted to create a thriving, wildlife friendly garden, full of edible food that could be shared with the community in an accessible public space.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and re-create these broken places

Many group members were already committed organic growers with invaluable skills. The bring-and-share-a-meal meetings provided a place for these people to come together and share their passions. This was where the idea for Annecy Gardens originated.

Gardener Naomi Mulligan described her experience in the garden:

I suppose I'm not a conventional twenty-something in a lot of ways. I like radio six, dream analysis and Countryfile. I get a lot from being outside and among 'green things,' possibly a lot more than is considered normal – whatever that means.

I'd spent five years wanting a garden and making do with a windowsill. Luckily the wishing and the looking came good and I have a perfect little bit of space where I live to let the things of my predilection grow and flourish. So far the tomatoes and the roses are waning and the cherry tree has stopped growing because it's in a pot that's too small, like a fat man on a clown bicycle. The poppies may or may not grow (and poppies grow by train lines). The strongest and most vivacious bloomers are weeds which I'll happily allow to bring the green ratio up, as long as they look nice. So when my friend pointed out the notice board in Sandford Park talking about the community of volunteer gardeners, I thought a loud and booming, 'yes.'

I was wandering around the edible beds like Charlie in Willy Wonka's chocolate factory. I thought how nice it'd be to help something grow and learn stuff. Plus, there was mention of being able to take away a bit of produce and I'm young and poor. I'd happily do a bit of work for a bit of veg.

As well as laying my hands on some free greens to line my pot and stomach, I also wanted somewhere to go after a day at work, which is often a murky headache of customers and bureaucracy. 'Work stuff" just isn't real, whereas there is nothing more real than Earth. The molehills that our work day culture makes into Everests shrink down to their actual size, as if seen from above, from outer space.

Working with others, in tandem, is good. My garden is blessed because we collectively work like bees, tending and caring for the Earth. Relationships form and bonds are made and then problems might be shared. Perhaps one sounds them out on the corn initially (plants can't pass judgment) and then moves on to human ears.

Now on a Monday evening, usually rushing from work, I immerse myself in botanical endeavors. With or without gloves, I cut and primp and water, feeling deliciously like Edward Scissorhands, setting about to improve my surroundings and to learn from seasoned gardeners. Generally I don't talk a lot. Sometimes it's just a silent collaboration between me and the secateurs as we conspire to deadhead, getting lost in the repetitiveness. I think I'm being mindful and trying to ascertain what it's all really about. The smells, the textures and the sounds are all salving to a life-weary body, although physically, it's demanding. Housework is boring and it doesn't always show, whereas you will reap all kinds of goodness from the garden. What grows blossoms and then you can look at it and breathe in its beauty, or eat it.

The animals are direct in their appreciation. They make their livelihoods within the garden and they reside within it. People are different. Most people really, really look. That's all that physically happens. But we are curious by nature. We are curious about nature. It is in our nature. Reservation is learned and grows around us like thorns around a castle. I aspire to be my own savior and hack it down. With thanks to all the volunteers and contributors: Malcolm Allison, Rowena Barnes, Lorraine De Feu, Cath Holloway, and Anne Vine.

In re-creating place, civic ecology practices re-create community

Although I have only been involved since April this year (2015), personally, I feel one of the main ingredients that supports the project is a sense of community — shared ideals of well-being towards others and a love of nature as a garden space. These factors have sustained and facilitated the project's growth. Comments from others in the group all highlight a welcome shared sense of community.

I only got to know the volunteer team in April 2015, but I have observed a thriving community network with social capital, and that has built trust between local government employees, the volunteers, and townsfolk. The collective efficacy of the group is also developing. The coordination between the council staff and volunteers keeps the area thriving with ever changing plants and local residents who return for a chat about herbs and salads. The Annecy group has also been able to freely share their experiences and knowledge with local NGOs and has

managed to enthusiastically maintain the project while other Transition initiatives have stalled.

Without social capital and the trusted connections between the people in the Cheltenham Transition group, the project would not have emerged, nor would the local council have responded so positively to the group.

Volunteers want to freely share their skills and love of horticulture and nature but with a purpose that works to counteract the dominant neoliberal ideology which drives consumerism and environmental degradation. They show people that growing food organically is not difficult. It can be uplifting, and food can grow well in a shared public space. The social cohesion and trust have in fact been built on a community of shared values, which motivate the volunteers to intervene for the public good.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

Anne Vine mentioned that the site was used in the past by the borough council as a vegetable plot, but the area required too much upkeep and so the council decided to return it to grass. Anne suggested that this may partly explain why they were so open to the edible garden project.

The volunteers often contribute from their own plant stock. For example, Anne brought two plants to the site which she had been growing from saved seeds for at least 15 years (Broad Ripple yellow currant tomatoes and *Phacelia* green manure). Malcolm Allison has often contributed plants such as red-flowered broad beans, and he recently acquired some hazel rods from Brian Williamson; a local artisan who is skilled in various wood crafts including traditional coppicing techniques. Michelle brought heritage Swiss chard and mustard seeds, some from national heritage stock.

From observation and experience a general awareness is growing that it is better to work with nature rather than dominate it. Anne, who has been with the project since the outset, noticed how the garden appeared to have taken on a life of its own, allowing the plants to spread and find their own place. Hence, the gardeners are learning to intervene less and now let the plants "do their own thing" (up to a point!).

Civic ecology practices produce ecosystem services

Annecy Gardens provides many ecosystem services:

Provisioning services: food, including fruit trees, herbs and vegetables.

Regulating services: A number of plants are grown to support bees and other pollinating insects.

Supporting services: creating compost for soil enhancement and the use of green manures.

Cultural services: inspirational use of a community garden by community members, enhancing trust and social capital, building a sense of place, educating others about organic food, supporting and drawing upon the organic gardening knowledge system, sharing new information about plants and food including old craft wood-work

techniques (coppiced hazel rods), physical exercise, and a connection to nature and the wider community.

Civic ecology practices foster well-being

Most of the volunteers are able to reach the park on foot or bicycle so they benefit from extra exercise before they even arrive at the gardens. Anne Vine admittedly finds that "weeding and grass edging can cause a few aching muscles sometimes." Rowna Barnes, who has experienced the healing benefit of gardening and plants in her own life and has been helping at Annecy Gardens over the last three years, says that she finds "a sense of healing, energy, [and] inclusiveness there."

Everyone also feels that fresh, organically grown food is beneficial. For myself, I can't help but smile every time I go past the garden. And upon entering, I always feel uplifted knowing that plants and people have been nurtured and encouraged in the garden.

Anne Vine commented:
Although the garden is close to a noisy and busy road, there is always a feeling of relief as you go through the gates into what feels like a green refuge. It's good to know that we are providing benefits to a variety of people – chatting with the elderly who can no longer garden themselves, or to younger folk who have had no experience of growing their own but hopefully will be inspired by our example. It gives us satisfaction to feel that almost all the plants have been provided for free, mainly by us, and that the money we have raised by our yearly Plant Sale has enabled us to buy essentials like plant labels.

Although I have only been associated with the project over the last four months, I whole-heartedly agree with this comment. Everyone generally feels uplifted after a visit tending the garden.

Civic ecology practices provide opportunities for learning

The gardeners learned about the plants, sharing this knowledge with other volunteers and the public. They have also applied their growing skills to their own gardens and they post updates on their plans via a notice board at the entrance to the park.

In regularly caring for the plots, gardeners build practical growing skills by applying existing knowledge and trial and error. As a group they have learnt about the local soil conditions and the plants that can cope with the public freely picking from them. They have also partnered with the borough council, which maintains the lawns around their allotment beds.

Gardeners regularly exchange information about seeds, plant growth cycles, the natural conditions, and the use of plants when harvested. The network of volunteers is open to all, so topics of conversation vary widely, not only among the gardeners but between the gardeners and the public. Such interaction with a diverse community amplifies social skills and the ability to demonstrate collective efficacy. From the outset, borough council community parks officer Malcolm Walls supported the project. Due to cuts in public funds, the park is no longer locked in the evenings, and fewer council staff are able to tend the area. The Annecy Gardens volunteer team brings extra hands to park maintenance. At the time of this writing, the area has not suffered from any serious vandalism.

Some volunteers have invaluable skills. Malcolm, for example has studied botany and knows a great deal about the culinary use of plants. Cath Holloway has studied

garden design and is also a member of Butterfly Conservation; she helps with the butterfly garden at Prinknash Abbey not far from Cheltenham. Rowena Barnes, who has helped the edible team for the last three years and has volunteered in the grounds of Pitville Park and a local hospice, is very aware of the healing potential of gardening and plants,[4] and appreciates the inclusiveness and healing she has experienced at Annecy Gardens. Anne Vine is another valuable team member who knows how to grow food incorporating techniques from permaculture. These volunteers have all learnt more about the plants, sharing this knowledge with other volunteers and the public, who regularly chat with them.

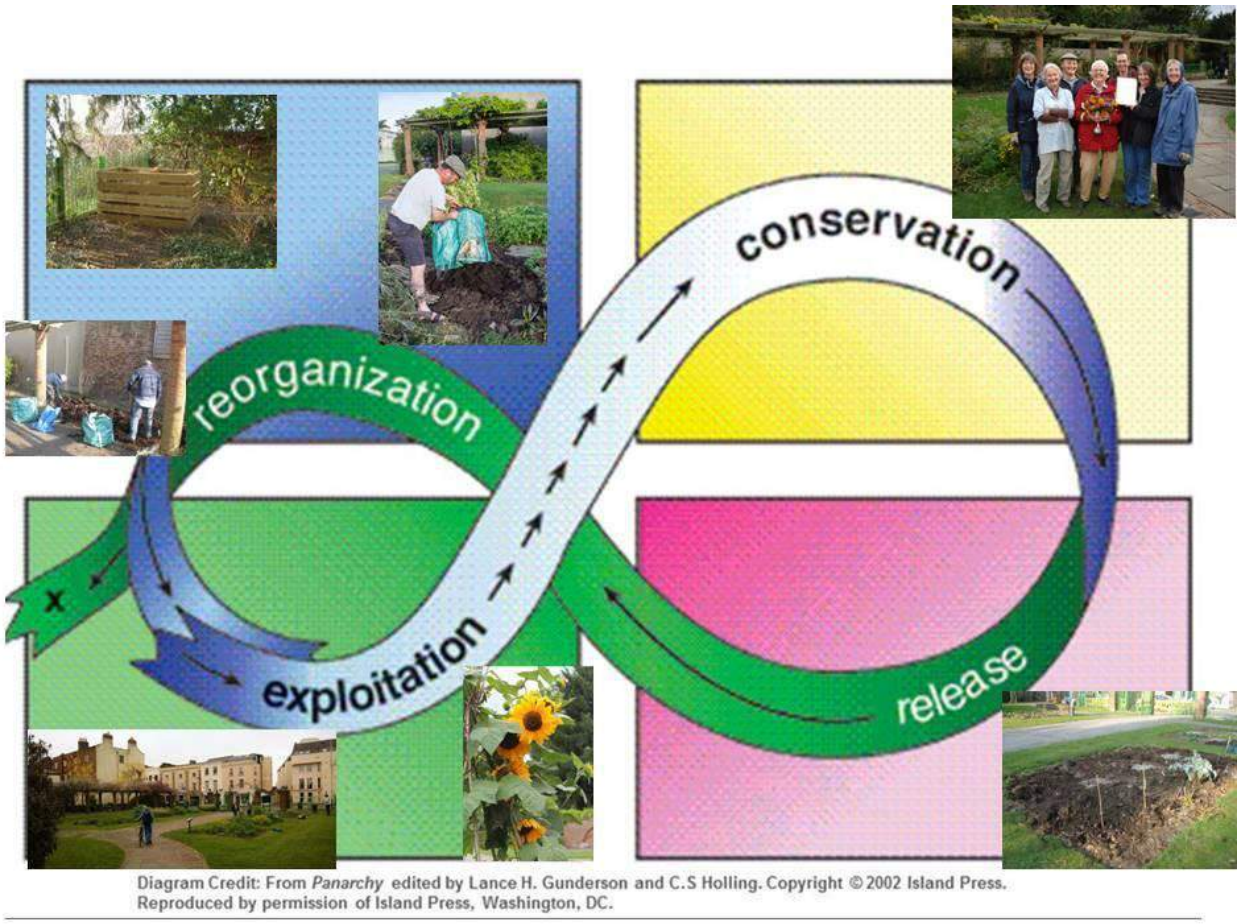
They also are open to anyone helping out if they wish to do so. Other nationalities, such as Spanish, Polish, and American, have all been involved. Over the years the weeding time has even given young visiting missionaries to the town — who were far away from home and had little to do with the Transition movement — some welcome social contact as they gardened.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

The Cheltenham Borough Council and parks department are both partners of Annecy Garden, although the national Transition Town Movement initially brought the group together. The group and garden would not exist without the Transition Town initiative as a starting point.

Others interested in community gardens and a small delegation of Swedes linked to the Transition Town movement have visited and been keen to learn about the practices that enabled our community to reduce fossil fuel use. Annecy Gardens has won awards from both Cheltenham in Bloom and Cheltenham Allotments because the garden provides a practice ground for people to learn to grow their own food. Two volunteers also have links with the local Green Party and are therefore well placed to share civic participation skills with others.

Photo by Catherine Holloway



Adaptive cycle for Annecy Gardens

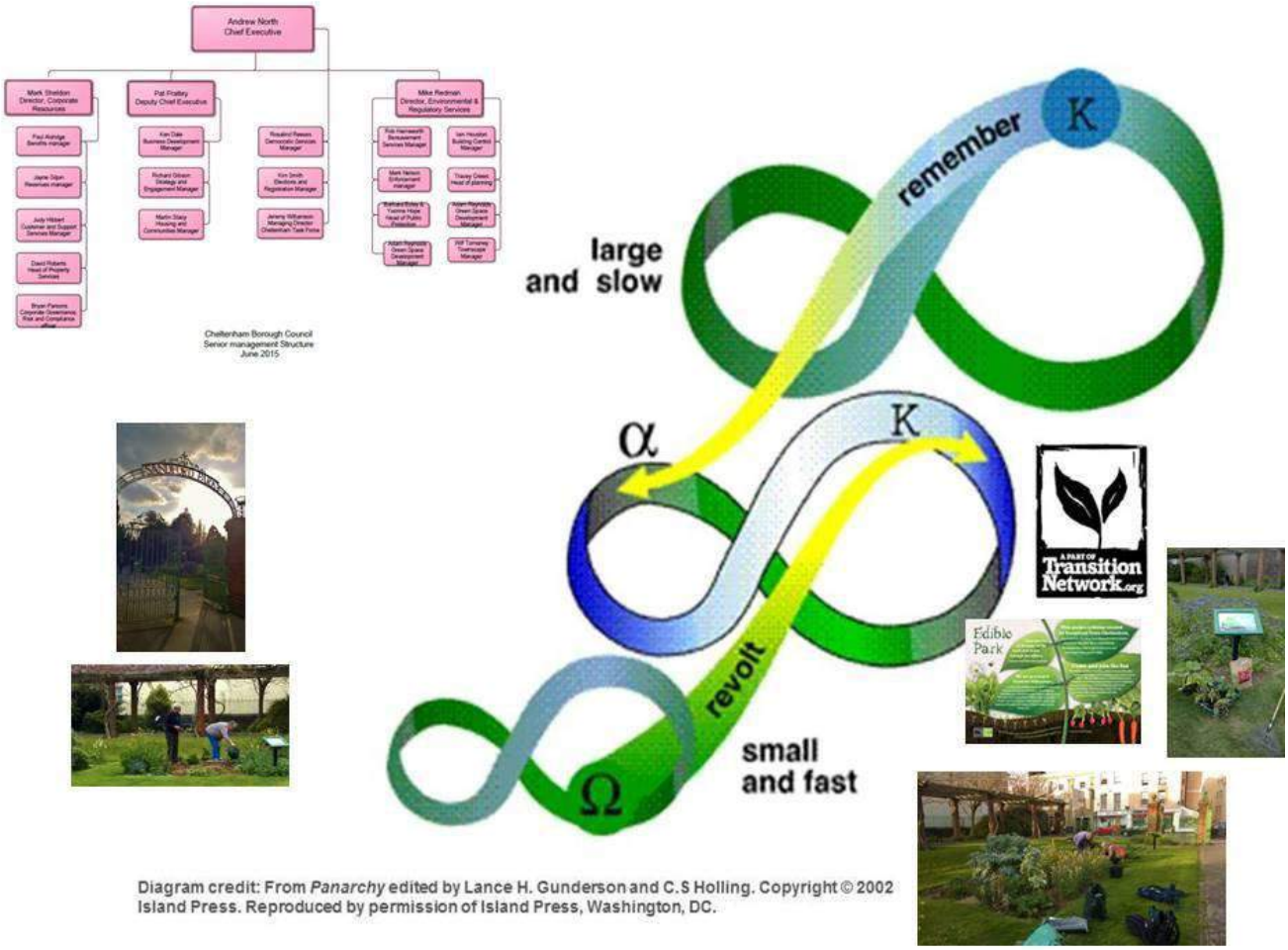
Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

The budget restraints incurred by the parks department as a result of the 2008 recession, led to what one might call a 'collapse' of the park social-ecological system, as evidenced by the parks department grassing over flower beds and no longer locking gates. The subsequent garden can be considered part of the renewal or reorganization phase.

Policy makers have a role to play in growing civic ecology practices

There are no direct links with active research on the outcomes of the Annecy Edible Gardens project. Information and advice is shared between members and the local allotment growing community, as well as with other Transition groups and related local and global organizations concerned with sustainable living (e.g., Cheltenham Green Doors[5] and Gloucestershire Community Energy[6]).

The garden bedding area expanded after the first year but since then the plot size has remained the same. However, the enthusiasm and commitment is as strong as ever and the community of volunteers continues to expand.



Panarchy diagram of Annecy Gardens showing its role in larger Cheltenham social-ecological system.

Acknowledgments

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A family in Seneca Falls, NY revitalizes their damaged land and creates a thriving ecosystem.

Rebuilding From the Ground/Soil Up

Seneca Falls, NY, USA

Victoria Tidball © 2015

This story is about the cries of the soil[1]. Through pesticides, other chemicals, and erosion, soil can become depleted of its nutrients. This is what happened on my farm before my family bought it. Because of this, we began the process of fixing this damaged place -- our front field.

Civic ecology practices emerge in broken places

The first principle of civic ecology is that it occurs in a damaged place. The ecosystem in our front field was damaged through intensive farming before we bought the land. Not only was the soil affected, but also entire populations of organisms that lived in and around the soil. Despite the fact that the previous farmer was using no-till practices, other factors such as erosion, soil types, and intensive chemical use conspired to destroy the balance of soil microbes.

Pothole sketch of Canoga Creek Farm before restoration. The circles and lines drawn on the photo represent places for future ponds, and diversion ditches for water. Photo by William Hecht.

Because of their love for life and love for the places they have lost, civic ecology stewards defy, reclaim and recreate these broken places

Love for life and place is what drove us to do something about the ecosystem. The thought that this land once was fertile and full of life pushed us to return it to that state. Who wants to look out their window and see sterile soil, corn stubble, and erosion rills? We wanted to see a flourishing habitat with soils full of nutrients and lots of wildlife. We wanted to hear crickets, frogs and toads. A love for nature planted the seed in our brains to change the land. Though we didn't start out with an attachment to the place, we were attached to similar places and wanted — through our love of life — to create a place that we truly did love.

Eroding gully before restoration

Gully during restoration


Gully after restoration

You might ask: how exactly did we fix our front field? To say the least, it took a long time. Today, thirteen years after purchasing our farm, we are still working on perfecting the field. But so far, we have taken many steps towards recreating it, and I would say the wounds are almost fully healed.

Even though we have restored our land, other farms nearby have not, so there is still a plume of sediment at the mouth of the creek.


Photo by William Hecht.

In re-creating place, civic ecology practices re-create community

Now that this lovely place is recreated, the community is recreated too. Native animals and plants live together coherently and support each other. As for our family, we are now able to use the fields for horseback riding, and hunting in the fall. In the summer, we enjoy the lake in our boat. Not just our family enjoys the field, many family members and friends come and participate in these activities with us.

This is a great example of other animals living happily in the same area my family and I do. The ducks love our ponds and the lake to sleep on and eat out of.

Civic ecology practices produce ecosystem services

Many ecosystem services were created by fixing the field. Regulating services were created by making ponds and increasing the cleanliness of the lake water by controlling nitrogen runoff. The whole project is a supportive service because it is allowing natural nutrient cycling to occur and better soil formation. Also, cultural ecosystem services are being created. Now, the field is a nice place to walk or run with trails winding throughout the grasses and lots of wildlife to see and hear. It also has a beautiful view!

Civic ecology practices provide opportunities for learning

In order to do any of this, my family and I had to learn quite a lot. We learned about native grasses and the natural wildlife that should be in our field. We also learned through the science experiment conducted on our land. None of this learning would have been possible if not for our civic ecology practice. This is a great example of a civic ecology principle: civic ecology practices provide opportunities for learning. Even today, now that the bulk of the learning is done, my parents are still teaching my sister and me little facts about our land and the ecosystem that lives in and on it.

My dad inspecting a mallard nest box that we put up.

Equipment for the science project.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Obviously, it is very helpful to have partnerships when trying to fix just about anything. When trying to restore our front field, we asked the US Department of Agriculture to get involved. With their help, we were able to get seeds from native grasses to plant. The US Department of Agriculture also helped engineer and construct natural water-flow systems on our land. We created several ponds in our field as well, and even got involved in a science project that watches how the flow of water into the lake changes depending on the use of fertilizers. This is an example of civic ecology principle number 8: creating partnerships to create a larger impact. The help from the US Department of Agriculture made healing the field much easier.

Habitat restoration sign near the lake

If you look under the word "Project" on the sign, you see the words "Completed in Partnership with…" There several of the organizations that helped us are listed, including *Ducks Unlimited* and the *Natural Resources Conservation Service*, in addition to the *US Department of Agriculture*, and others.

Reflection

Through writing this story about our front field, I learned many new things. I learned all kinds of new information about the field I enjoy all year round, and through participating in the civic ecology MOOC, I learned many things about civic ecology and the principles of civic ecology. I didn't even know there were principles of civic ecology. Life is full of so much to learn about, things you never even thought twice about, like how my field transformed from sad farm soil into the beautiful community it is now.

Canoga Marsh. Photo by William Hecht.

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A small farm helps college students give back to their community.

Texas A&M Howdy Farm: Where Local Food Production Meets Environmental Education

College Station, Texas, USA

Jace Vela © 2015

Introduction

For my service learning project, I chose to visit the Texas A&M Howdy Farm. During my visit, I was able to learn more about the Farm, as well as engage in some of the educational and recreational activities offered there. My intent for this project was to explore how Howdy Farm impacted the surrounding communities and local residents, as well as examine the role of community gardening as a public resource and educational tool. Having studied horticulture and urban planning, I am interested in understanding people's relationships and interactions with their urban and natural environments. Recently, I've become interested in the subjects of environmental citizenship and education, both of which encompass many of the same concepts and principles of civic ecology. I eventually hope to become an environmental educator and I hope that by participating in this project, I am able to gain a better understanding of civic ecology practices and their application in a variety of settings.

Howdy Farm is located on the western side of the Texas A&M University campus in College Station, TX. It is a student-led community garden that specializes in organic and sustainable agriculture[1]. According to Corey Wahl, Howdy Farm's current manager, the original Farm got its start back in 2009 and was originally located on a larger plot of land, but was moved due to the construction of a new campus facility. Its new location was once the home of the Texas A&M Holistic Garden, which, at the time, was headed by Dr. Joseph Novak and served as a place where people of all ages, backgrounds, and abilities could learn about gardening and nature[2].

After moving to their new location in the fall of 2013, members of Howdy Farm, both old and new, continued to work diligently to provide opportunities for community members to learn about sustainable, organic, and local agriculture through hands-on experiences and public workshops. The farm has also played a role in providing people with access to affordable and healthy foods, which they accomplish by selling their produce straight from the farm or by participating in local farmers markets in the Bryan-College Station area[3].

Civic ecology practices emerge in broken places

Both Bryan and College Station, TX face a similar issue regarding lack of accessible, healthy, and affordable food. For many, a trip to the grocery store can mean a long commute via car or transit, as well as an expensive bill. This is particularly true if people wish to eat a healthier diet consisting of fresh meats and produce versus heavily processed food. Howdy Farm helps to address part of the problem by providing locally grown organic and sustainable produce at affordable rates when compared to other options. In addition to selling produce on site, members of Howdy Farm also participate in weekly farmers markets, allowing them to expand their clientele.

In this regard, one might say that the Bryan-College Station area is an example of a broken place and Howdy Farm is the entity that helped resolve the issue of food deserts. However, Howdy Farm also helped to address another broken place – the unused field on which it was originally established. Recognizing a need for introducing local agriculture to the Bryan-College Station area, students from various departments at Texas A&M proceeded to acquire the unused land in order to use it for growing food crops that could be sold at local farmers markets.

Due to a proposal that the land be used to accommodate new student housing, Howdy Farm had to be relocated in the fall of 2013. Around the same time, the Holistic Garden, which had been located behind the Texas A&M Horticulture and Forestry Sciences Building, was in the process of being revamped following the departure of its former manager, Dr. Joseph Novak. The Holistic Garden had once served as an educational experience for garden enthusiasts of all ages, abilities, and backgrounds. In a way, Howdy Farm now serves as a continuation of its legacy and honors the hard work and dedication that had been placed into the Garden by previous generations of students and faculty members, thus making it the third and final broken place to benefit from the Farm's establishment.

In re-creating place, civic ecology practices recreate community

Howdy Farm not only attracts students from Texas A&M University; it also attracts members from the local community. In doing so, it provides an opportunity for students and residents to interact with one another and share their knowledge about gardening and other horticultural practices with each other. This builds trust among the two groups and can help foster lasting social ties in a welcoming environment regardless of social and cultural backgrounds, age, gender, etc.

Civic ecology stewards draw on social-ecological memories to re-create places and communities

As our world continues to grow and develop, the issue of feeding the global population becomes challenging. Industrialized agriculture and food production are often the norm in many developed nations around the world, which can affect the quality of diets for the people

living there. More importantly, I have personally witnessed that as people's dependence on manufactured food products increases, their familiarity with traditional methods of food production tends to falter. Therefore, they may not be as familiar with the concept of growing their own fruits and vegetables or making their meals from scratch. Howdy Farm set out to remedy this situation by drawing on traditional horticultural methods and reintroducing the concept of locally-grown food to the residents of Bryan and College Station. By providing a place where people can learn about growing and harvesting food crops, Howdy Farm is reminding people of what is missing in their daily modern lives.

Civic ecology practices produce ecosystem services

Howdy Farm offers provisioning ecosystem services through the production, harvesting, and selling of locally-grown food to members of the Bryan-College Station community. As a resident of this community, I also benefit from these services because I am able to purchase wholesome produce at a fraction of the cost that I would pay at a grocery store.

Howdy Farm also offers supporting ecosystem services through the composting of organic waste that they produce. Members are more than willing to compost waste that volunteers and community members bring from home, providing that they follow a set of guidelines. This is a great service due to strict regulations that prevent homeowners from composting in their own yards.

Civic ecology practices foster well-being

Several studies have found that "simply experiencing nature and the outdoors can be good for one's mental health and can lead to less stress...healthier lives, and fewer hospital visits" (Frumkin, 2001). Natural environments can also "elicit positive feelings, reduce fear, and even help block stressful thoughts" (Kuo, 2004). While

engaging in some of the activities at Howdy Farm, I could feel a sense of satisfaction that I could not really explain. Somehow, being outside in the sun and surrounded by plants and nature made me feel alive. This feeling made me remember my days as a horticulture student. During this time in my life, I was stress-free and fairly happy. It was not until I started my graduate studies and stopped participating in horticultural activities that I began to notice a change in my mental health.

Now that I am finished with school, I am making efforts to go outside more often and I have even started gardening again. Based on my personal experiences, I would say that Howdy Farm could serve as a place for physical and mental restoration. It would not necessarily have to do with the environment alone, but also with the activities involved. In fact, many of the activities offered at Howdy Farm could easily be considered forms of horticulture therapy, which combines environmental and programmatic approaches to treatment of the human body, mind, and spirit (Frumkin & Fox,2011).

Civic ecology practices provide opportunities for learning

In addition to providing locally grown produce to Bryan and College Station, Howdy Farm also offers opportunities for students and citizens to learn about sustainable agriculture through hands-on experiences and educational workshops. While engaging in these learning opportunities, participants can learn about composting, sustainable gardening techniques, harvesting food crops, and so forth. Howdy Farm also offers undergraduate students at Texas A&M internships at the farm. This opportunity helps to prepare them for a wide range of horticultural and environmental careers.

Civic ecology practices start out as local innovations and expand to encompass multiple partnerships

Howdy Farm is currently supported through many partnerships and organizations from within Texas A&M University and the Bryan-College Station community[4]. Among these are the Brazos Valley Farmers' Market, the Brazos Valley Food Bank, Aggie Green Fund, Texas A&M Horticulture, and many others. These partnerships make many of the activities on the Farm possible and give members an opportunity to interact with various professionals and community leaders. This

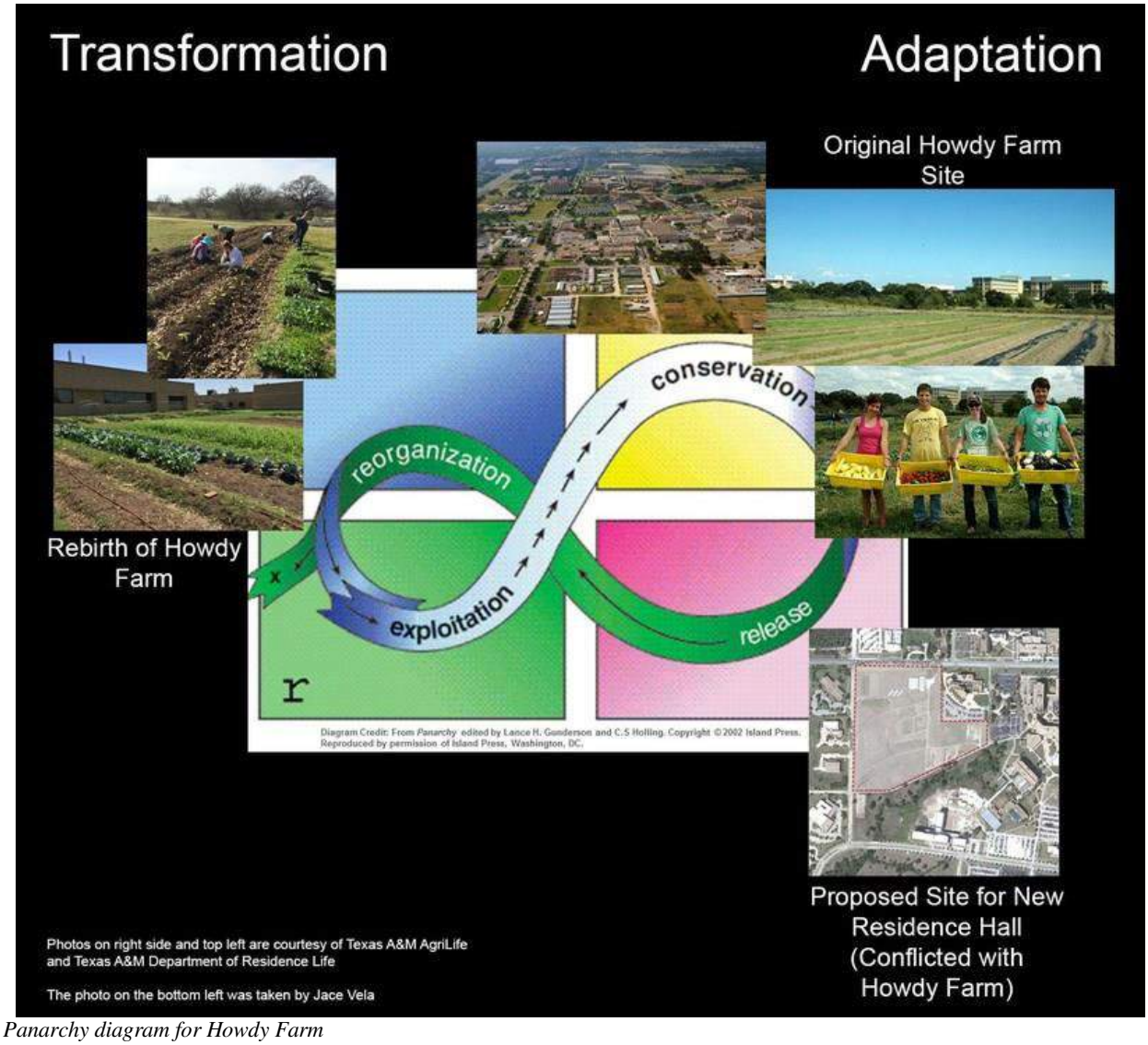
also allows members to raise awareness about local food production and to promote the Farm.

Civic ecology practices are embedded in cycles of chaos and renewal, which in turn are nested in social-ecological systems

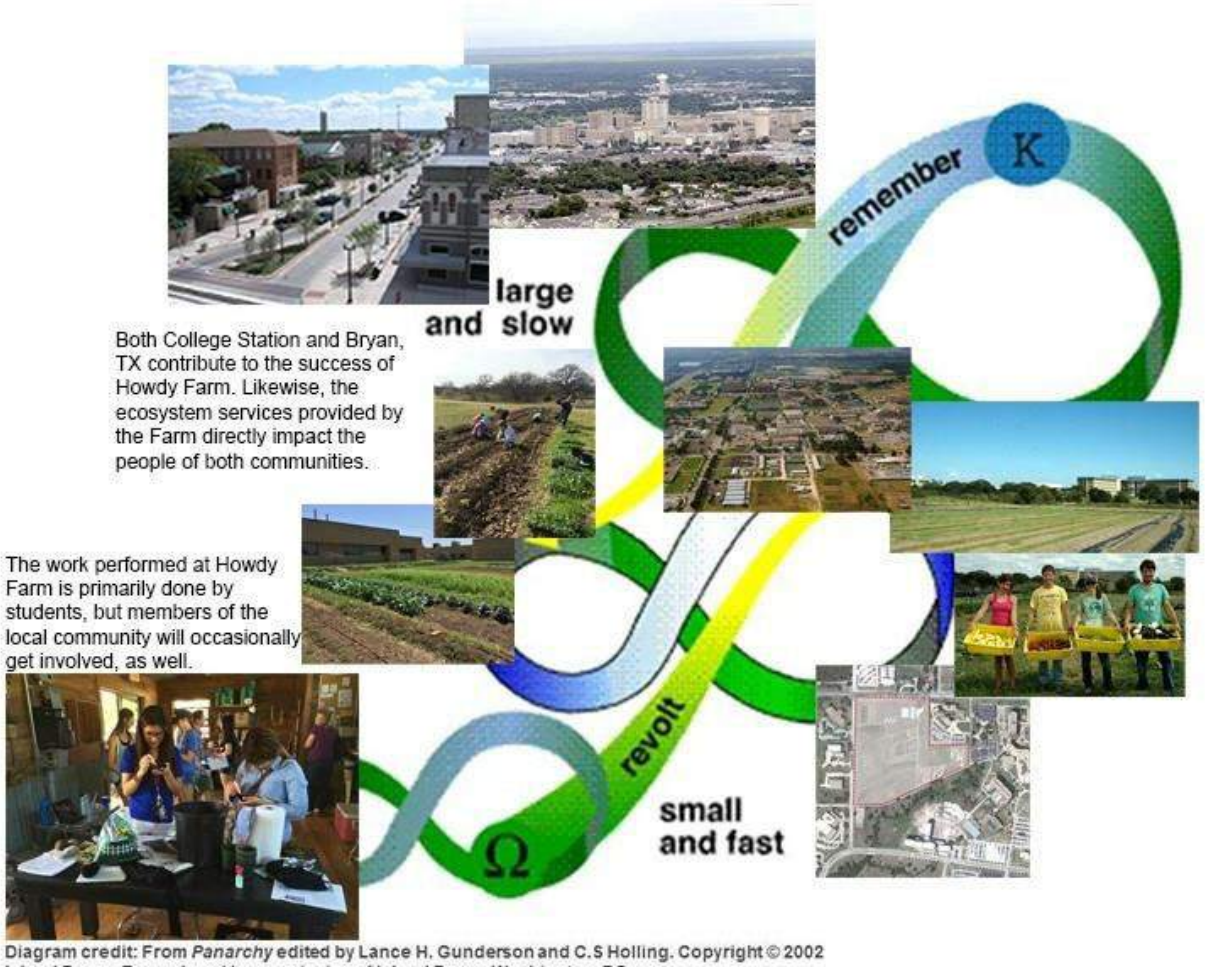
The following figures explain the cycles of chaos and renewal as they apply to Howdy Farm. Although the Farm has faced many challenges and hardships along the way, the commitment of participating members — most of whom are students — has helped in prolonging its existence for the benefit of the community.

Policy makers have a role to play in growing civic ecology practices

Texas A&M University serves as the governing body of Howdy Farm. Therefore, any decisions that could potentially impact the Farm would likely come from university officials and administrators. However, Mr. Wahl also stated that the Horticulture Department has played a major role in supporting the Farm by providing the land and allowing him and other members to use the greenhouse facilities. When relocating, the Horticulture Department[5] allowed



Panarchy diagram for Howdy Farm



Adaptive cycle for Howdy Farm

members of Howdy Farm to take over the gardens behind the Horticulture and Forestry Sciences Building so that they could continue with their mission of supplying the community with sustainable and organic food crops. Howdy Farm has also received support in the form of grants from the Aggie Green Fund, which are supplied by the Texas A&M Office of Sustainability[6].

Reflection

During my visit of Howdy Farm, I was able to participate in one of their workshops, which featured a demonstration on how to properly compost organic matter. Participants at the workshop were given a tour of the Farm, offered homemade snacks, and were given the opportunity to harvest and purchase produce onsite. I had actually visited Howdy Farm many times while I was studying horticulture, but this was the first

time that I got to participate in any of their activities.

While I was a student, I got to witness the establishment of the original Farm, as well as the relocation to its current site. Much of the information stated here is based on personal recollections, but that is not to say that my recent visit was uninformative. In fact, it was during my recent visit that I got to learn more about Howdy Farm's impact on the local communities. The members present during my visit were very helpful and happily answered my questions.

In keeping with my intent for this project, I learned that Howdy Farm serves an important role in the community by providing local residents with access to sustainable and organic produce at a fraction of the cost that is paid in grocery stores. Considering the issue of food deserts in both Bryan and College Station, this service is a blessing for many students and residents who may otherwise lack the ability to purchase healthy foods for themselves and their families. By partnering with local farmers markets, members of Howdy Farm are also able to distribute their food crops to a wider audience, thus allowing them to establish a much larger presence in the community.

More importantly, Howdy Farm provides a place where students and residents alike can learn about sustainable and organic agriculture through community workshops and hands-on activities. Some of these activities include planting and harvesting food crops, composting, and volunteering at farmers markets. By offering numerous volunteering and internship opportunities, Howdy Farm has the potential to foster our next generation of environmental stewards. As a matter of fact, I recently chose to pursue a career in environmental education because of my experiences at the Farm. I had been reaching that realization through my academic experiences in horticulture and urban planning, as well as my increasing curiosity for nature and all of its wonders. In a way, Howdy Farm is what inspired me to make the best of my diverse backgrounds and apply them to a greater cause. One might even say it was a wake-up call, but it is one that I will always be grateful for.

Based on what I observed and learned at Howdy Farm, I can honestly say that it is a unique place that serves the Bryan-College Station community well. By recognizing and addressing a growing need in the community, members of Howdy Farm took a bold step toward remedying a situation that currently affects many communities across the country and the world. As our global population continues to rise, it is very likely that our ability to feed all humans on Earth, while inducing minimal impacts on the environment, will become increasingly challenging in the years to come.

Overall, Howdy Farm is a place where people can go and directly interact with nature and its many wonders. It is a place where people from all walks of life can share their knowledge about gardening with others, while gaining useful information and helpful tips in return. Since its inception, Howdy Farm has served as a beacon of hope for local action through its teachings in sustainable horticulture, environmental citizenship, and community-based agriculture. Students, faculty members, residents, local organizations, and businesses alike have contributed to the success of Howdy Farm over the years. Its popularity and significance among these various entities are essentially what keep the Farm going and so long as this trend persists, it will continue to flourish for generations to come.

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Civic Ecology: Stories about love of life, love of place

Marianne E Krasny and Kimberly Snyder, editors

In spring 2015, Keith Tidball, Samar Deen, and I taught our first Massive Open Online Course — or MOOC. Our Civic Ecology MOOC was about how and why people in cities and after disasters reclaim and steward "broken places" — like trashed out vacant lots, polluted rivers, or landslides caused by earthquakes. Little did I know that students in the MOOC, from Kyiv Ukraine to Nishinomiya Japan, from Damascus Syria to Zhangzhou China, and from New Delhi to Holešov in the Czech Republic and beyond, would write so many moving stories. These are stories about how our students, alongside their friends, families and neighbors, are creating green oases on apartment balconies, in residences for juveniles with mental illness, on landslides caused by earthquakes, or simply along a forgotten stream in their neighborhood. I am humbled and inspired by the work of these civic ecology stewards from around the world. Marianne E Krasny, Professor and Director of Civic Ecology Lab, Cornell University

"These cases studies in Civic Ecology not only describe hopeful vignettes of local environmental stewardship, but collectively they provide a roadmap for navigating our way towards a sustainable Anthropocene." –Dr. Lance Gunderson, Professor of Environmental Sciences, Emory University, and Chairman, Resilience Alliance

"From San Francisco to Damascus to Zhangzhou and beyond—A marvelous and invaluable collection of examples of civic ecology practice from around the world. We need more publications like this to demonstrate the intellectual richness and geographic breadth of this movement." —Dr. David Maddox, *Executive Director,* The Nature of Cities

"In times of climate change and other manifestations of the dysfunctional relationship with the Earth that Homo sapiens seems to cultivate, it is easy to feel overwhelmed and to get bogged down. This book represents a rich tapestry of stories from around the world showing that humans are very capable of living well within planetary boundaries. When it all seems to be too much then this is the book to read: a source of hope, energy and inspiration." –Dr. Arjen Wals, UNESCO Chair and Professor of Transformative Learning for Socio-ecological Sustainability, Wageningen University / University of Gothenburg

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