BiodiverCity

Final Report

Improving pollinator access to Vancouver, one plant at a time

April 12, 2013

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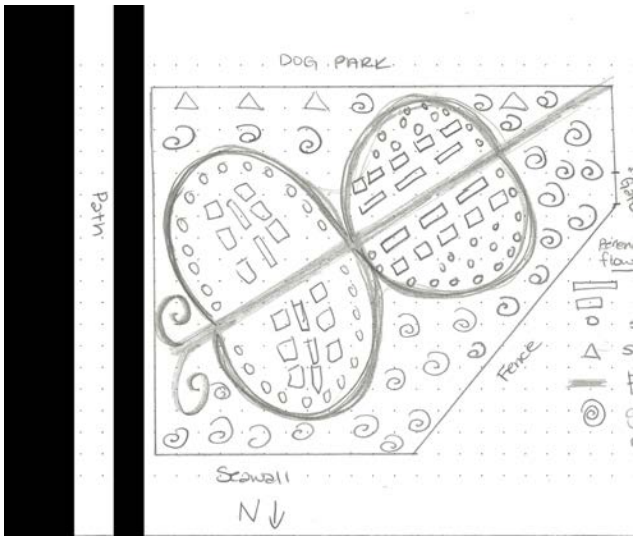

PRESS RELEASE

IMPROVING NATIVE BEE ACCESS TO VANCOUVER ONE PLANT AT A TIME

April 5, 2013

Vancouver, B.C. - As part of the CityStudio Orphaned Spaces project, Team BiodiverCity is working to make it easier for native birds, bees, and other insects to thrive in Vancouver by planting a habitat garden and constructing planter boxes filled with native plants. The team is giving one of their boxes away in a contest at the CityStudio Engagement Expo on Saturday, April 6th at The Museum of Vancouver (MOV), and another will be placed on a boulevard in the 2400 block of East 28th Ave in Vancouver.

When asked about the inspiration behind their project, Grayson Barke, a member of the team explained, "humans rely on birds, bees, and other insects to pollinate most of our food plants. In fact, during our research, we learned that bees are responsible for one in three bites of food. The western bumblebee, for example, is an excellent pollinator of many of BC's commercial crops like cranberries, blueberries, cherries, and apples. Unfortunately, many of British Columbia's native bee populations are struggling due to habitat loss and pesticide use. We want to help these important animals".

Grayson Barke, Jen Malone, and Lois Weir, the three students that make up Team BiodiverCity, have designed a bee habitat and learning garden that can be planted on an orphaned space, and also constructed portable planter boxes that will be placed around the city.

Jen Malone emphasized, "the key to both of our projects is plant selection. Bees that are native to British Columbia have co-evolved alongside BC's native plants and many rely on specific native plants for their food, shelter, and reproduction. To help native bees, we need the right native plants. For example, Mason Bees can use hollow salmonberry stalks as homes, and their flowers for food." The team of students discussed native plants, pollinators, and habitat design with Dr. Mark Winston and Dr. Elizabeth Elle at SFU and City of Vancouver biologist Nick Page to ensure their garden and planters have the right plants.

Team BiodiverCity's projects contribute to Vancouver's Greenest City 2020 Action Plan, specifically to the Access to Nature and Local Food goals. Lois Weir said "there is a lot of momentum behind the goal of increasing the amount of green-space in Vancouver, but we wanted to challenge the very notion of green-space. Manicured lawns are nice to look at and fun to play on, but they do little to address the needs of the animals that pollinate our crops, community gardens, and urban orchards. If every green-space in the city had a few more bee-friendly plants we would have a healthy native bee population and more productive local food plants".

CityStudio Vancouver is an energetic hub of learning and leadership where students design and implement Greenest City projects. CityStudio is co-led by Duane Elverum (Emily Carr University of Art and Design) and Dr. Janet Moore (Simon Fraser University – Centre for Dialogue). The project is a collaboration of the City of Vancouver, Vancouver Economic Commission, British Columbia Institute of Technology, Emily Carr University of Art and Design, Langara College, Simon Fraser University, University of British Columbia, and Vancouver Community College. The project is supported by Vancouver's Campus City Collaborative (C3).

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CityStudio

CityStudio is an innovative collaboration between the City of Vancouver (CoV) and the city's six post-secondary institutions (BCIT, ECUAD, Langara, SFU, UBC, VCC), developed in conjunction with Mayor Gregor Robertson's ambitious 10-point plan for Vancouver to become the greenest city in the world by 2020. In the last 2 years, CityStudio has become an energetic hub of learning and leadership where students and faculty have contributed more than 30,000 hours of research, learning, and action towards putting projects on the ground to support Vancouver's Greenest City Action Plan. The project is co-directed by Duane Elverum (Emily Carr University) and Dr. Janet Moore (SFU Centre for Dialogue).

The Team

Lois Weir Jen Malone Grayson Barke

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Project Summary

Project Title - BiodiverCity
Project Description – Improving pollinator access to Vancouver one plant at a time.
City Staff Advisor/Community Contact – Nick Page, biologist with the Parks Department, CoV.
Project Team – Grayson Barke, SFU; Jen Malone, SFU; Lois Weir, SFU.
Greenest City Goal – Access to Nature, Local Food
Project Summary

This project began as a garden installation project. The original goal was to sow a pollinator garden on an orphaned space along the Seawall and to educate people about plants and pollinators that are native to this area of BC. The project was to directly impact the Access to Nature and Local Food goals of the Vancouver 2020 Greenest City Action Plan. We sought to address the quality of green space in the city rather than the amount of green space as it is understood in the Access to Nature goal. Due to unforeseen and ultimately insurmountable barriers, we had to scale our project down. The nature of plants and gardens makes this a relatively easy task to achieve, and so scaling up again in the future should also be quite easy.

The project evolved into Project 'BeeBox'. Two planter boxes, one made of reclaimed wood, and one made of commercial wood, were built to serve as miniature habitats for native plants and pollinators. There is heather, nodding onion, grape hyacinth, tiger lily and other plants that attract bees, and other pollinators. The reclaimed wood garden was raffled off at the CityStudio Engagement Expo and is being taken care of by the winner as part of the stewardship plan of the project.

This project was overseen by Nick Page, biologist with the Parks Board and City of Vancouver and led by Grayson, Jen and Lois of CityStudio with the help and guidance of Duane Elverum, Janet Moore, Sean Blenkinsop and Lena Soots.

Project Details

Methodology

Early in the semester, our cohort had the privilege of sitting in on a Greenest City Steering Committee meeting where we heard Nick Page talk about the importance of incorporating the principles of biodiversity into the Greenest City 2020 Action plan under the Access to Nature goal. We were excited and inspired by the opportunity to support Vancouver's urban ecosystems with an orphaned space project that could be beautiful, functional, and educational. We researched various interventions like seed-bombing and re-wilding parks and other green spaces and we toyed with the idea of creating a biodiversity box or kit, or creating a comprehensive report on the biodiversity interventions already underway in the city. After exploring each of these ideas in the context of the orphan spaces project, and discussing our desire to make a meaningful difference to nature with Janet, Duane, and Mark Winston, we settled on the idea of creating a habitat and learning garden that would support Vancouver's pollinator species and educate Vancouverites about the importance and plight of these creatures.

Once we settled on the idea of creating a pollinator habitat and learning garden, we needed to become experts on local pollinators and their food and habitat requirements. When we met with Dr. Mark Winston, one of the worlds leading experts on bees and pollination, he recommended a couple of key papers and previous projects (Tomasi et al, Once Upon a Bee project) and emphasized the importance of including a public education component in our project. After meeting Dr. Winston, we made a matrix of all the requirements our garden would need and scoured the city for a suitable orphaned space. Next, we met with Nick Page, the City of Vancouver's biology consultant and discussed our plan to create a pollinator habitat in False Creek. He was very supportive of the idea, agreed to be our City contact, and revealed that he was working with the Environmental Youth Alliance on a very similar project. He helped us choose a spot on the False Creek Seawall, just east of CityStudio that met our light, soil, and public visibility requirements. We met with Erin Udal of the Environmental Youth Alliance (EYA) to discuss opportunities for collaboration between our two groups and the specifics of habitat design.

After this consultation phase, we moved quickly to source the plants, tools, and other materials we would need to create a beautiful, functional, and educational pollinator habitat. We asked local garden stores for donations, Jen learned about sheet mulching and drew several garden designs that would work in our space. We looked through children's gardening books and at the websites of similar projects for ideas on how to incorporate educational material. We moved from our original, City owned space, to Park's Board space where Nick hoped that our garden could become a permanent feature of the ecologically designed Hinge Park. We put a call out for an 'interpretive component' (art) that would draw attention to our garden. We attended a "Planning for Pollinators" lecture hosted by Nick and another of our experts Dr. Elisabeth Elle, and got a lot of positive feedback on our project from the other attendees.

Throughout this time, we were waiting patiently, perhaps too patiently, for final approval from the City to begin planting our garden.

We submitted a detailed five-page plan to Nick that he could discuss with the relevant City managers and we began to think of alternative projects in case we did not receive permission.

Ultimately, we were told that we could not plant on either of the two sites we had chosen, and did not have enough time to find another site and design another garden. Instead, we scaled our project down, and applied our knowledge of plants and pollinators towards the creation of two planter boxes. We built a 4ft^2 box from wood-waste and filled it with plants that local pollinators love (foxgloves, nodding onion, sedum, wild strawberries, grape hyacinths). We documented the process and created a blog to share our plant list, planter instructions, costs, and Vancouver's boulevard usage regulations, so that others could build pollinator-friendly planters. We raffled off our first planter at our Engagement Expo and printed postcards that explained the importance of pollinators and provided a plant list on the back. We also held a mason bee-house building workshop during the Expo –15 people showed up and worked together to build a mason bee house that we will donate to a community garden.

Outcomes

With our presentations, community conversations, use of social media, planter giveaway and mason bee workshop we generated a considerable amount of interest in pollinators throughout the term. We also identified the key barriers that are preventing citizens from using public land to support pollinators. Thanks to our project, the City is becoming aware of the fact that there are people who are willing to donate their time, plants, tools, and expertise to help these animals, but union regulations surrounding volunteer workers in Park space currently make it impossible for them to do so. The City is also aware of the need and desire for more 'permissive space' within the city; space where gardens like ours can be planted and maintained by volunteers that are free from bureaucratic entanglement and confusion.

Our project can easily be scaled up. We were able to build two for just under $100 and could build more for community gardens, apartment buildings, private businesses, and public buildings. During our ideation phase, Nick Page, shared his research on biodiversity corridors that could be established in Vancouver. Our pollinator garden was designed to be a part of this corridor system. We envisioned our garden on the False Creek seawall as a link in a chain connecting Stanley Park to the UBC endowment lands. We intended our garden and its implementation process to become a template for the creation of a multitude of pollinator micro-habitats throughout Vancouver that would bridge the gaps between larger green spaces and allow pollinators to travel between them.

We realized early on that our project and our desire to help pollinators connected us to a worldwide effort aimed at stemming the decline of these important animals. Around the world, cities, communities, and agricultural businesses are waking up to the necessity of healthy pollinator populations for crop production and garden maintenance. If Vancouverites were to make a meaningful effort to help these animals, it would add legitimacy to Vancouver's claim of being 'the greenest city in the world' in the eyes of the international community.

Key Challenges

Our initial challenge was one of ignorance- we knew very little about how best to address the issue of biodiversity. So we did some research and talked to experts. We spent the rest of the semester immersing ourselves in all things pollinators and as a result are all quite well versed in the topic. One of us would bring a new and interesting fact to the group on a near daily basis. However, one of the greatest challenges we faced as a group was in the procurement of a space in which to implement our project. While we got off to a strong start with plenty of support from our team, being shuffled from site to site was frustrating and made it difficult at times to stay upbeat and driven. While the uncertainty was hard for each of us, we were able to support one another. Our ability to provide quality support to each other was made possible thanks to some of the tools that were shared with us during studio workshops with Janet and Duane. Personal check-ins, POP's, meeting someone where they are at, and deep listening are all tools we put into practice to build a strong and cohesive team. As such, we were able to weather the many ups and downs of working on this project together and come out stronger, better people. Relationships matter.

Finally, learning how to use Photoshop to produce a beautiful and effective poster in a period of 2 weeks was a major, yet surmountable challenge.

Current Project Status

Phase one of Project BeeBox is complete: we fabricated and filled one planter and it was adopted by the Louie family in East Vancouver. Phase two of Project BeeBox, building and installing a 12 square foot pollinator garden on 28th Ave at Nanaimo St will occur next week. The habitat and learning garden project is on hold indefinitely, but we are actively exploring ways to plant a garden on private land or in another area of Metro Vancouver.

During our Expo, several people expressed interest in having planters built for their gardens and apartment balconies and we plan to keep building them throughout the summer. We are also searching for a community garden to adopt our mason bee house and we are potentially working with the community gardeners in Hinge Park to add some pollinator plants to their garden. There were also several people who could not make it to our workshop who would like us to hold another one. We will keep track of our continuing activities on our blog.

Stewardship Plan

The first BeeBox has been adopted by the Louie family who will take care of it and send us updates as it grows. Our website includes all of our building tips, plant lists, and pollinator species info, and links to sites with similar information so that anyone with access to the internet can use our knowledge to help pollinators in their own communities.

Website: http://pollinatorgardens.myth-peddlers.com/PollinatorGardens

Budget

Item:	Quantity:	Cost:
Workshop Food	20 people	$48.27
Plants	14	$48.77
Soil	170 litres	$22.38
Planter Materials	14ft Cedar, Screws	$22.77
		Total: $142.19

BiodiverCity

POLLINATOR HABITAT GARDENS IN VANCOUVER

Larry Butterfly

Butterflies have long tongues to pollinate flowers. Butterflies are losing habitat in BC and Canada, many are on the species-at-risk list. Butterflies require special plants to lay their eggs on, which vary according to species.

Billy Bee

Bees are responsible for 1 in 3 bites of food that you eat. There are over 450 kinds of bees in BC. It might surprise you to know that 350 species of these bees, are solitary, ground-nesting bees. Honey bees are not native to Canada, but originated in Europe.

Holly Hummingbird

Hummingbirds rely on their specialized beaks to get at nectar from flowers with long bell shapes. They are so light weight that they can hover in midair, allowing them to visit multiple flowers on a single plant.

Why

This team has set out to challenge the City's notion that green space equates nature. A patch of grass is not productive nor does it support an ecosystem. A pollinator garden was chosen to demonstrate that the City's Access to Nature goal can encompass biodiversity. In supporting native, solitary bees via pollinator gardens, the public will be able to learn more about and understand the importance of bees, birds and butterflies in our everyday lives.
1 in 3 bites of food is thanks to a bee.

Activities

BiodiverCity has met with and discussed plants, pollinators and container garden designs with numerous community experts. We have formulated a robust and varied plant list and garden design that incorporates plenty of pollinator habitats.

Stewardship

The winner of the BeeBox agrees to become their neighbourhood "amBEEssador". In this role, they agree to promote and foster pollinator habitat throughout their community. To raise awareness about this project, there is a factsheet with garden design diagrams available at:
http://pollinatorgardens.myth-peddlers.com/PollinatorGardens/.

All relevant information can be found on the Pollinator Gardens WordPress site.

As part of the CityStudio Orphaned Spaces project, team BiodiverCity is increasing pollinator access to the Seawall and Vancouver in two ways:

Garden Project

The original project involves planting a garden on the Seawall that is both useful to pollinators for habitat and food, accessible, and informative to passers-by. Educational signage will inform people about pollinators, the kinds of plants that they enjoy and why they are important.

Project 'BeeBox'

This project involves the activation of orphaned space in the City where portable pollinator gardens will be placed temporarily. One garden will be raffled off at the CityStudio Engagement Expo. A second will be located on a boulevard in East Vancouver.

Action Plan Goal

This project addresses Vancouver's Greenest City 2020 Action Plan Access To Nature goal. This goal dictates that every resident lives within 5 minutes walking distance of a park or a green space. Our project adds green space while also challenging the current notion of nature while providing habitat to pollinators.

Status

Project 'BeeBox' is in the planter building stage, and the Garden Project is currently waiting space approval.

CityStudio is an innovative collaboration between the City of Vancouver (CoV) and the city's six post-secondary institutions (BCIT, ECUAD, Langara, SFU, UBC, VCC), developed in conjunction with Mayor Gregor Robertson's ambitious 10-point plan for Vancouver to become the greenest city in the world by 2020. In the last 2 years, CityStudio has become an energetic hub of learning and leadership where students and faculty have contributed more than 30,000 hours of research, learning, and action towards putting projects on the ground to support Vancouver's Greenest City Action Plan. The project is co-directed by Duane Elverum (Emily Carr University) and Dr. Janet Moore (SFU Centre for Dialogue).

The Orphaned Spaces project is the current focus of CityStudio's Spring 2013 cohort. There are five project groups, all working on orphaned spaces in the City of Vancouver in order to bring about student led action on the Greenest City 2020 Goals. This semester has included action on the Green Transportation, Access to Nature, Local Food, Lighter Footprint and Zero-Waste goals.

Any questions? Please contact: Lena Soots
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Team BiodiverCity

Grayson Barke, Jen Malone and Lois Weir make up team BiodiverCity. We are all SFU students in the Spring 2013 Semester in Dialogue at CityStudio. We come from diverse educational backgrounds and share a strong desire to promote and educate about pollinators and their importance to the world.

Special Thanks

We owe special thanks to our City contact, biologist Nick Page; Mark Winston, bee specialist and creator of the Dialogue program at SFU; Dr. Elizabeth Elle, biologist teaching at SFU; Erin Udal, Environmental Youth Alliance; Jesse Frank, container garden specialist; Chris Gordon, support wizard; and Janet Moore, Duane Elverum, Sean Blenkinsop and Lena Soots.

LOIS WEIR JEN MALONE GRAYSON BARKE

Bee Concerned

All pollinators face challenges related to habitat loss, pesticide use and risk from invasive species, but bees suffer some very individualized risks. Honey bees are not native to North America, and yet we rely on them to do the majority of our food pollination. Honey bees are not the best pollinator choice for many plants including blueberries. Native bumblebees are much better equipped to pollinate the flowers on the blueberry plant, but require more hives to accomplish the same yield as Honey bees.

Honey bees are in trouble due to a syndrome termed Colony Collapse Disorder. This is so far an unexplained phenomenon where a hive loses the majority of adult worker bees and the rest of the colony becomes susceptible to a host of new problems including parasites. This is an issue for bees and people as it compromises our food security.

Acknowledgements

We would like to give our most heartfelt thanks to all of the wonderful people who have helped us along the way. These people are the reason we continued despite the roadblocks and the reason that we continued on with Project 'BeeBox' and the Pollinator blog.

Nick Page

Dr. Mark Winston

Dr. Elizabeth Elle

Erin Udal and the EYA

Duane Elverum

Janet Moore

Sean Blenkinsop

Lena Soots

Chris Gordon

Jesse Frank

Lauren Johnstone

Gabriel Munger

Carl Munger

Figaro's Garden

Nelson Watson

Everyone at CityStudio

THANK YOU

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Organizations

Environmental Youth Alliance, Pollinator's Paradise Project - http://www.eya.ca/pollinators-paradise.html

Hives for Humanity - http://hivesforhumanity.com/

Native Buzz, University of Florida Citizen Science Project - http://entomology.ifas.ufl.edu/ellis/nativebuzz/default.aspx

The Xerces Society for the Conservation of Invertebrates - http://www.xerces.org/