

Comparing Nineteenth and Twenty-first Century Ecological Imaginaries at Ottawa's Central Experimental Farm

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Abstract

This article examines the dynamic relationship between national and local imaginaries in Ottawa through two treed landscapes at the Central Experimental Farm: the Dominion Arboretum and the Fletcher Wildlife Garden. Established a century apart and located side by side on the Farm's eastern edge, the Arboretum and the Wildlife Garden offer two visions of science and the place of humans in the world. Where the Arboretum was planted to support national imaginaries of settlement in the west, the Wildlife Garden supports a local geographic imaginary and restoration ethic that privileges native flora.

Keywords: Cultural landscapes, Central Experimental Farm, Imaginative Control, Restoration

Résumé

Cet article explore la dynamique entre les imaginaires locaux et nationaux qui s'exprime à travers deux paysages boisés de la Ferme expérimentale centrale à Ottawa; c'est-à-dire l'Arboretum du Dominion et le Jardin Écologique Fletcher. Situés côte à côte à l'extrémité est de la Ferme, l'Arboretum et le Jardin écologique, établis à cent ans d'intervalle, présentent deux vision de la science et de la place des humains dans le monde. Alors que l'Arboretum fut instauré dans le but de soutenir les imaginaires nationaux de colonisation dans l'Ouest, le Jardin écologique s'inscrit dans un imaginaire géographique local et une éthique de renaturalisation privilégiant la flore indigène.

Mots-clés: paysages culturels, Ferme expérimentale central, Contrôle imaginaire, restauration

Canadian Journal of Urban Research, Volume 25, Issue 1, pages 38-48.

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ISSN: 2371-0292

Introduction

The Central Experimental Farm (the Farm), located five kilometres south-west of Parliament Hill in Ottawa, Ontario, is home to a variety of agricultural landscapes not usually found in the centre of a large city. Although it remains a working scientific station, the Farm is open to the general public (1). Advocates have promoted the health benefits urban residents can experience by coming into contact with rural nature (Harris and Mueller 1997; Smith 1996). Two landscapes on the Farm's eastern edge, the Dominion Arboretum, first planted in 1889, and the Fletcher Wildlife Garden, established in 1990, provide opportunities for visitors to walk amongst trees. The Arboretum was designed by James Fletcher, Dominion Entomologist and Botanist, in an English landscape style with well-maintained open lawns and prominently placed trees. In contrast, the Wildlife Garden, named in honour of Fletcher, is characterized by narrow paths winding through a series of naturalized wooded and meadow landscapes.

Through the lens of the Arboretum and the Wildlife Garden, I examine the role of nature in the creation of national and local ecological imaginaries at two particular moments in Canadian history separated by a century. Situated on the eastern-most 34-hectare parcel of the Farm between Prince of Wales Drive and the Rideau Canal, the Arboretum and the Wildlife Garden are a study in contrast. Stately trees from around the world occupy the Arboretum's rolling lawn, whereas volunteers from the Ottawa Field-Naturalists Club (OFNC) aggressively attack invasive and non-native plants in order to support the growth of native trees and shrubs. Trees at the Arboretum are tagged and measured, while at the Wildlife Garden specialist knowledge is required to identify the hundreds of native plant species. The Arboretum's grass is regularly cut and undergrowth cleared away, while the volunteers who maintain the Wildlife Garden revel in its thick, unkempt groundcover.

As purposefully designed park-like landscapes, the two sites examined in this paper represent different ways of imagining nature. As geographers Laura Cameron and David Matless remind us, nature "is always historical and relational; it is shaped in contingent configurations of representational and social practices" (2011, 17). This is especially true in reference to parks and, as historian Sean Kheraj recently noted, "a park is an idea imposed upon the land" (2013, 5). Any imposition requires the exertion of what Jennifer Bonnell (2014) terms imaginative control. The ability to limit the imaginable futures for a place provides a curatorial power over it. In her discussion of Rouge National Park in Toronto, Catriona Sandilands argues that this power "is not simply about *ideas* of nature and nation...it is about ways in which specific *lives*...are organized in the service of particular understandings of what constitutes the social, ecological, economic and political good" (2013, 100, emphasis in original). The Arboretum and the Wildlife Garden are consciously created human landscapes but they necessarily involve interaction with other, non-human and at times unruly, lives. Similarly, plants that are deemed useful in one imaginary, such as the Manitoba maple or dog-strangling vine (DSV), are anathema in another.

The creation of the Arboretum and Wildlife Garden involve the imagination and management of plant life towards different social, ecological, economic and political ends. The early proponents and curators of the Arboretum, including William Saunders and James Fletcher, were engaged in national settler colonial and state formation projects. On the other hand, advocates for the Wildlife Garden, such as Victoria Dickenson and Jeff Harrison, were concerned about dwindling local biodiversity and their work can be seen as a manifestation of the restoration ecology movement. Central to both ideological formations is a concern about the usefulness or belongingness of different plants and animals in the landscape and of improving nature towards different ecological imaginaries. The Manitoba maple and DSV were tested for their ability to survive Canada's winters and their ornamental values at the Arboretum and in the Ornamental Gardens while they're vigorously attacked as invasive intruders in today's Wildlife Garden. As these examples show, settler colonialism and restoration represent different ways of looking at the world and humanity's relationship to different forms of non-human life, and, as such, are indicative of variant forms of place making and imaginative control.

During the late nineteenth century, the Canadian project in the west was shifting from extractive to settler colonialism. Whereas extractive colonialism focused on the removal of resources, such as fur, to the metropole, settler colonialism's end was the creation of a permanent population through the acquisition of and settlement on land (Jacobs 2009, 2-4). As in the United States (see, for example, Cronon 1983; Cronon 1991; Merchant 1989), settler colonialism in Canada required the radical transformation of existing environments (Russell 2012, 12-20; Wood 2000). These ecological revolutions replaced native flora and fauna, Aboriginal peoples, and existing economies with apples, wheat, and cattle, European settlers, and an agricultural economy. European

settlement required the displacement of existing human and ecological communities.

The mandate of the Farm, embodied in the 1886 *An Act concerning Experimental Farm Stations* and explained in detail in William Saunders's "A Report on Agricultural Colleges and Experimental Stations" (1886), was to test various crops and trees to determine which could be most economically planted both in the established provinces and along the western frontier recently opened by the completion of the Canadian Pacific Railway (CPR) and the defeat of First Nations and Métis peoples during the Northwest Resistance, both in 1885. At the same time, the national experimental farm system played an important role in the formation of the Canadian state, operating alongside and at times in collaboration with other agents of the central government such as the post office, Indian agents and the Northwest Mounted Police as well as private interests such as the CPR (Saunders, 1894). As described in further detail below, in this way the experimental farms served the new political and ecological orders of the post-Confederation era.

Restoration ecology is something quite different. Generally speaking, restoration seeks to return local environments to a pre-human or pre-settlement baseline (Jørgensen, 2014; Robbins and Moore 2012). While the goal of recreating truly wild or pristine landscapes has been broadly criticized as an impossibility (Cronon 1996), some advocates support the creation of "naturalized parks" (Dickenson and Harrison, 1989) or, in the words of science journalist Emma Marris, "rambunctious gardens" (2011). Others, such as Sandilands, point out the "uncomfortable proximity between plant aliens and human ones" and warn against "overlook[ing] the relatively recent arrival of colonial settler society to North America, complete with a whole host of plant species... that clearly altered the long-term botanical history of the region (and continent)" (2013, 108). Instead of trying to define and recreate a baseline wilderness state, naturalized parks and rambunctious gardens instead focus on novel environments that embrace not only native species but also those aliens that have been successfully localized. In the words of Paul Robbins and Sarah Moore, we "live in a world crafted by people but always beyond human control" (2012, 14).

All restoration projects are necessarily based in both local conditions and specific ideas about the former state of ecological communities. This has led to a plethora of approaches to restoring landscapes. Marcus Hall (2010) identifies three main categories—re-wilding, re-gardening, and re-naturing—distinguished by the intent of the restorers to either recreate untouched landscape, reproduce conditions for primarily human ends, or create novel or better natures, respectively. Dolly Jørgensen, in her recent examination of re-wilding projects around the world (2014), identifies six subcategories within re-wilding ranging from the reintroduction of large carnivores in North America to fostering processes of productive land abandonment. As discussed in more detail below, the Fletcher Wildlife Garden can be viewed as a small-scale example of the latter, as productive land abandonment seeks "a return of land to a pre-clearance state" by focusing not on animals but "the plant communities that will be re-created with declining agricultural production" (Jørgensen 2014, 4). The recreation of ecological communities on plots previously used for agricultural experiments marks a shift in imaginative control from settler colonialism to ecological restoration and re-wilding.

Although there is no evidence of conflict between the Fletcher Wildlife Garden and the Dominion Arboretum, the story of Henry and Vera Jones, homeowners in an exurban community in the city of Ottawa's rural ward, emphasizes the degree to which landscape choices are ideological infused imaginaries that can be the source of controversy and conflict between those holding different views. During the summer of 2009 the Joneses were served with an order to mow their lawn by the city arguing that they were in violation of by-law 2005-208, which requires landowners to maintain orderly lawns (Dare 2009). With support of the OFNC and relying on the lessons of the Wildlife Garden, the Joneses decided to turn their lawn into a meadow, inviting wildflowers, insects, small mammals, and birds into their yard to the protest of their neighbours. As journalist Leonard Stern put it, "the central irony of suburbia is that we give streets names like Meadow Grove and Orchard Drive while ensuring that all traces of meadows and orchards are erased. The appearance of an actual meadow is an act of rebellion" (2009).

The well ordered lawn serves as a proxy for settler colonialism while the small meadow represents the re-wilding movement. The struggle between neighbours is also a struggle between different ecological imaginaries. On the one hand, the lawn is, as Paul Robbins has argued (2007), an intensively humanized landscape: plants are chosen strictly for their appearance, grass is kept uniformly short, and weeds are often chemically controlled. Rooted in colonial history (Robbins 2007), the lawn has evolved in North America from a productive landscape into a one defined by close-cropped grass and leisure activities (Jackson, 1994). The recreated meadow is ordered

for not just human pleasure, but it also seeks to support communities of insects, birds and native plants. Letting grasses and flowers grow on their own accord brings a seemingly wild nature into human dominated space. In the end, and with the support of the University of Ottawa's EcoJustice Environmental Law Clinic, the Joneses won out. Lawyer Will Amos, channelling Pierre Trudeau, declared "there's no place for the state in the gardens of the nation" (EcoJustice Environmental Law Clinic 2009).

The example of the Joneses struggle with their neighbours and the city reinforces the political nature of implementing different ecological imaginaries. Returning to Robbins and Moore, "scientific concepts and practices can never exist wholly beyond the political desires and entanglements in which they emerge" (2012, 14). The imposition of these desires and entanglements in particular places, such as the Arboretum and the Wildlife Garden, are not passive processes of an abstract nature, but rather active projects of imaginative control led by humans. These landscapes are examples of crafted nature, of ideas imposed on the land. Arguably, these projects require the replacement of one social and ecological order with another. Where the Arboretum and Wildlife Garden differ most radically is in their ends: expanded settlement in the west and the restoration of local flora in Ottawa.

Improving nature at the Dominion Arboretum

Creating the Dominion Arboretum required a number of transformations. First, land had to be acquired by the federal government. Next the land had to be reworked to fulfill its new purpose: dominion economic botany and entomology in the name of a growing settler colonial state. Finally, the Arboretum had to be opened to the people of Ottawa, including the working and middle classes. The development of the Arboretum demonstrates the multiple ways the early Canadian state's national imaginary relied upon the manipulation of plants through scientific and technological research to expand settlement across the country. Where plants originated was of less importance than how well they could serve the goals of the colonial state.

Prior to the establishment of the Farm in 1886, the land that was to become the Arboretum was a successful stock farm. Despite this, opposition parliamentarians, many farmers themselves, lamented its poor quality. In particular Sydney Fisher, Liberal member for Brome in southern Québec, visited the Farm on June 6, 1887, after a vigorous debate on the quality and price of land during the Committee of Supply on June 2nd (Canada 1887a, 720-728). Fisher spent half a day walking the Farm and concluded "a very large portion of the back part can never be used successfully for agricultural experiments." When challenged by Minister Sir John Carling on his observations, Fisher continued that "a very large portion of the back of it you are not able to walk over dry shod, for it is absolutely in a state of swamp" (Canada 1887c, 983). Although he presented strong support of the quality of the land immediately after its purchase (for example, OFNC 1887, 61-62), even William Saunders, the Farm's first director, later lamented that "this land was liberally sprinkled with stumps and stones, and encumbered with 130 acres of second-growth forest and 40 acres of swamp" (Saunders 1897, 10). The swampland in question covered the lower portion of the future site of the Arboretum.

Beyond simple partisan argumentativeness—indeed, Fisher's view on the quality of land underwent a radical transformation after Wilfred Laurier appointed him Minister of Agriculture in 1896 (see, for example, Canada 1897, 2115)—Fisher's perspective was shaped in part by his expectations. As David Wood (2000) demonstrates, agriculture in Central and Western Canada during the nineteenth century was very much focused on wheat as the key economic crop in the country. Stock raising was viewed as an inferior practice best suited for marginal lands and one parliamentarian lamented that the Conservative government's National Policy was making Canada "a vast pasture for cows" and that "the farmer will soon stop growing grain altogether" (Canada 1887b, 726). This passage suggests that self-respecting farmers would favour raising plants over animals and the ways an agricultural imaginary rooted in cereal crops might overlook the usefulness of different land for different purposes. Indeed, Ottawa was closely linked to the timber industry active on the Ottawa and Gatineau Rivers north of the city. Rather than being a marginal pursuit, cattle farmers profited by supplying the lumber camps with meat and dairy products (Russell 2012, 98; Wood 2000, 99). While the land may not have been suitable for grain crops, it could still serve for raising cattle and, after draining the swamp, growing trees.

Trees played an important role in expanding settlement on the prairies, but individual farmers could not afford to support the long-term experiments necessary to identify which trees, exactly, would survive, let alone thrive, in the harsh climate. The scientific mission of the Arboretum was to test the hardiness of trees collected from across Canada and botanic stations around the world. Hardiness was defined as trees that "have passed

through one or more winters uninjured” and contrasted with half hardy trees that have “been killed back one fourth to one half [of] its growth” and tender plants, which died off to the snowline (Saunders and Macoun 1899). Detailed notes were kept on not only hardiness, but also dates of leafing, blooming, fruiting, and abscission. While the climate in Ottawa was (and is) different than that in the west, initial determinations could be made on the suitability of trees by ensuring the plants sent west could survive the shorter growing seasons. Seeds and saplings from trees deemed hardy were sent to branch stations at Brandon, Manitoba, and Indian Head, Northwest Territories (present day Saskatchewan), for further observation.

To grow trees the land had to be changed. The swamp around Dow’s Lake was drained, second growth forests were cut, and stumps were removed with dynamite (Fletcher and Saunders 1887, 8-9). The transformation from an economic to scientific landscape deemed unplanned and unkempt native growth to be undesirable and to be replaced by well-tended test plots. While early plans would have organized trees by provincial and national origin (Saunders 1886), ultimately they were grouped together by genus when the Arboretum was first planted in 1889 (Saunders and Macoun 1899), a practice that continues to the present day (Douglas 2005). Identifying trees by genus and species as opposed to by origin marks the Arboretum’s important scientific role. Where trees originated was less important than how well they survived Ottawa’s long cold winters; organizing trees by type allowed scientists to quickly compare similar species from different parts of the world.

It is important to remember that research undertaken at the Arboretum was not esoteric. It had concrete application in the Canadian project to settle the western prairies. With this in mind, James Fletcher’s self-described specialty in “economic entomology” (Fletcher 1886) is important. Honorary Dominion Entomologist to the Minister of Agriculture since 1879, Fletcher was appointed Chief of the Botany Division and Curator of the Arboretum when he joined the Farm’s staff in 1887. Fletcher’s interests paralleled those of Albert Howard, a contemporary imperial economic botanist in India. For both Fletcher and Howard, science was market oriented (Gieryn 1999, 279-283). Fletcher’s entomological and botanic work focused not only on the identification and control of weeds and agriculturally harmful insects, but also in developing economically useful plants in support of the expanding nation state. To this end, the Dominion Arboretum was his laboratory.

To support dominion economic botany and entomology, Saunders and Fletcher initiated a program of distributing seeds and saplings of trees deemed hardy to the branch experimental farms at Indian Head and Brandon. Further, Northwest Mounted Police outposts, CPR test gardens, and Indian agents received seeds and saplings for local testing (Saunders 1891). Trees were of central concern to the colonization project for two reasons: first they were believed to influence local climatic conditions and, second, they served as an advertisement of the desirability of a district, especially in the prairies after the completion of the transcontinental railroad, to potential colonists. Saunders was an early proponent of protecting and spreading treed landscapes. In a 1882 speech to the Royal Society of Canada he stated that while trees are often seen as obstacles to early settlers, they should be viewed as key assets by “providing shelter against storms, equalizing temperature and moisture, and purifying the atmosphere” (35). Fletcher lamented that trees were more important to economic farming than most farmers believed not only for the provision of cooking and heating fuel, but also for shelter belts around fields and potash fertilizer that can be created from ashes (Fletcher and Saunders 1887, 15). Farmers on the treeless prairies would benefit from planting with a better climate and less reliance on the market for fuel and fertilizer.

Fruit trees were considered especially valuable in this project as they provided both economic and symbolic benefits to farmers and the state. In Saunders’ words, “fruit trees are generally taken by strangers and visitors as an indication of the character of the climate prevailing in the district” (Fletcher and Saunders, 1887, 9). Canada was often viewed as having a harsh climate unsuitable for growing fruit, a view that could direct the flow of settlers from Europe south to the United States. In order to remedy this view, scientists at the Farm looked to Russia for appropriate plants. In particular, they hoped by crossing “the hardiest wild crabs of Siberia with some of the hardier forms of apples” (Saunders and Dupuis 1900, 17) that even settlers on the western prairies would be able to enjoy fruit as part of their diet and at the same time dispel any notions that Canada was too cold for settlement. Fruit growing in colonial Canada was both an inward and outward facing practice. Canada’s representatives at the great international exhibitions of the late nineteenth and early twentieth centuries made sure to bring samples of domestic fruit with them. Fruit displays at the World’s Columbian Exhibition at Chicago had the explicit goal to “dispel the erroneous ideas” that Canada was a frigid wasteland (Saunders 1892, 13). To further emphasize the work of the Farm and the quality of the country, Saunders sent over 200 trees

and shrubs in large pots to Chicago in order to demonstrate the range of economic species that grew in Canada.

Just as the trees grown at the Arboretum were outward facing, the dominion scientists also looked inward at the population of the city of Ottawa. James Fletcher echoed the beliefs of contemporary nature study advocates in arguing that small gardens could benefit the habits and morals of children (Kohlstedt 1997), so too could botanic gardens be “an efficient instrument for refining the taste, increasing [the] knowledge and augmenting in a very high degree the amount of rational and elevating pleasure available” to the working classes of Ottawa (Fletcher 1891, 108-109). The Farm proved popular and Saunders commented in 1897 that the orchard plantations were so popular in the fall that in order to maintain their scientific value “it has been found necessary to fence this inclosure [sic] and keep it closed to the public during the fruiting season” (Saunders 1897, 12). Similarly, a bilingual sign on the horticulture building warned visitors against picking fruit and flowers.

The changes wrought by Saunders and Fletcher were nothing short of revolutionary. While still an agricultural landscape, the Arboretum expressed a different ecological imaginary in the same way that growing wheat required a different quality of land than raising stock. Instead of ordering the land with an eye to making profit, the dominion scientists sought to create an environment where trees and other plants could be tested for their ‘hardiness’ while at the same time advertising Canada’s climate and providing a pleasurable retreat for residents of the nearby city. The Arboretum played an important and locally visible role in the Canadian colonial project. By providing a testing bed for the hardiness of trees, dominion scientists were able to improve the conditions faced by settlers on the western prairies. This localized ecological revolution reverberated across the country as seeds and saplings were sent to agents of the central government operating in the west, helping to reorder and reimagine ecological communities on the prairies towards settler ends.

Constructing nature at the Fletcher Wildlife Garden

Nearly a century after the establishment of the Dominion Arboretum and inspired by the Wildlife ’87 centenary celebrations in honour of the Last Mountain Lake Bird Sanctuary, the Ottawa Field-Naturalists’ Club began to establish a new kind of landscape at the Central Experimental Farm (Hanrahan 2003). Thinking about global environment concerns and focused on acting in a local context, the OFNC imagined a different relationship between humanity and nature. Rather than a well-ordered field of stately trees, they hoped to improve nature by inviting the wild back into the city through the cultivation of a wildlife garden, echoing the anti-modernism of the contemporary movement away from industrial agriculture towards local food sources described by Anne Vileisis (2008). Three years later, in 1990, the group received a long-term lease of an 8-hectare parcel immediately south of the Arboretum and they began to transform the former experimental cropland into something new (FWG 2013a).

The construction of the Fletcher Wildlife Garden marks a shift in thinking from settler colonialism to restoration ecology. At the same time, the selection of the site for a wildlife garden and its continuous development since 1990 demonstrate the active role played by human actors in maintaining a “wild” environment in the heart of the city. The evocative intervention required to build the amphibian pond and the ongoing questions regarding the butterfly meadow serve as examples of the constant human action required to create landscapes for small animals and native plants, rather than strictly to support human economies. Further, the struggle against non-native and invasive plants, particularly dog-strangling vine, is illustrative of the inherently tended nature of the Wildlife Garden’s wildlife. Alongside collecting and sharing data from multiple experiments to control DSV, volunteers at the Wildlife Garden participate in regional plant, insect and bird counting projects (FWG 2011). In this way citizen scientists, as opposed to dominion scientists, played a key role throughout these projects.

The volunteers who constructed the Wildlife Garden transformed the landscape by applying a different ecological imaginary. Just as the Arboretum required dominion scientists to reform a cattle farm and swamp to grow trees, so too did the OFNC have to mould experimental plots into a wildlife garden. The Wildlife Garden’s mission “is to encourage as many people as possible to create or restore natural landscapes on their urban or rural property... to show how anyone can transform their own garden into one that is wildlife friendly” (FWG 2013a). Through a model backyard garden, pamphlets, and strategically located signage, volunteers strive to share their knowledge with the wider public. In contrast with the settler colonial concerns of early dominion scientists who worked to replace the ecological order on the western prairies with something new, volunteer citizen scientists at the Wildlife Garden engage in a re-wilding project concerned with fostering both native flora and local biodiversity, and restoring the land to an imagined previous ecological order. Rather than identifying themselves

with a project to erase and rebuild nature for economic ends, they hoped to, at least locally, reverse the effects of agricultural and urban development on the environment by developing new habitats (FWG 2012b).

The story of two habitats, the amphibian pond and the butterfly meadow, are illustrative of the OFNC's approach to re-wilding. Rather than focusing, as other rewilding initiatives have done, on restoring charismatic mega-fauna requiring a large land base such as wolves to areas where they have been extirpated (see Marris 2011, 156-158), volunteers aim to reconstruct fragments of habitats lost to agriculture and urbanization by focusing on the growth of native plants through a form of productive land abandonment. Volunteers at the Wildlife Garden are concerned with protecting plants where they originate (Dickenson and Harrison 1995a), not the naturalization and hybridization of plants for economic and colonial ends. Writing in their *Ottawa Citizen* column "The Urban Naturalist," which ran from 1988 until 1996, OFNC volunteers Victoria Dickenson and Jeff Harrison described the Wildlife Garden's goal as focusing on restoring natural communities: "as these communities develop, they provide cover and food for all forms of wildlife—a sort of natural Field of Dreams: If you plant it, they will come" (1995b).

While some of the new habitats, such as the ash woodlot, require minimal intervention, others require heavy machinery. In 1990 the site of a proposed amphibian pond was a stretch of neatly trimmed lawn. Initially the site was to be developed as a sedge meadow; however, once volunteers constructed a dam across a dip in the lawn during the fall of 1991 it quickly began to fill with run off from neighbouring experimental plots on the Farm. As a result volunteers changed their plans and embraced the growing pond. Once the pond filled, the water flowed down a ravine into the Arboretum and then into the Rideau Canal (FWG 2012a). Even after the dam was constructed, volunteers continued to manipulate the environment by sowing native species and removing not only invasive plants but also native plants, such as duckweed, that risk covering the surface of the pond. By assisting the establishment of select native plants, humans supported the creation of new food chains. Insects come to eat the plants, amphibians the insects, and birds the amphibians. To support the growing community of fauna, volunteers increased the depth of the pond at one end, providing conditions conducive to overwintering by turtles and frogs and a hibernaculum was constructed nearby to house insects during the winter. The diversity of native flora and small fauna was tracked, allowing citizen scientists to demonstrate the benefits of their techniques (FWG 2012a).

The butterfly meadow provides another example of human interaction with nature to promote certain species over others. By supporting the growth of native wildflowers, volunteers from the OFNC hoped to attract butterflies to visit the Wildlife Garden and to promote local biodiversity. Under the leadership of Gillian Boyd, who transformed her own front lawn into an attractive meadow, a group of volunteers established a successful test plot in 1992 (Dickenson and Harrison 1993). As with the amphibian pond, the creation of a butterfly meadow required more than simply stepping back and letting nature do its work. Faced with thick layers of grass that limited the ability of wildflowers to take root, the OFNC tested two techniques: ploughing over the grasses and removing the sod entirely. These approaches fostered the growth of different plant communities as the underlying soil and drainage conditions differed depending on the experimental work conducted on the land prior to the construction of the Wildlife Garden. (FWG 2013c).

Once the wildflowers were established they began to attract butterflies, creating what was hoped to be a continuous virtuous cycle. Unfortunately as soon as the volunteers stopped intervening in the lifecycle of the meadow a number of problems arose. First, some flowers began to outcompete others and the number species plummeted from over 200 to 50 by 1998. Further, woody plants such as the locally invasive Manitoba maple initiated the process of succession from meadow to woodland (FWG 2013c). To combat invasive species, especially dog-strangling vine, and prevent succession volunteers removed woody plants and DSV by hand and then regularly rototilled the lot, sifting the soil to remove undesirable root materials that might propagate resurgent invasive populations (Hanrahan 2006).

Dog-strangling vine, *Vincetoxicum/Cynanchum rossicum* also known as pale swallowwort, is one of the targets of the OFNC's Tuesday Invasive Species Group at the Wildlife Garden (Cottam 2012; FWG 2013b; Invasive Species Working Group 2011). First described in Canada by John Macoun in 1885 and grown at the Farm as an ornamental plant as early as 1905 (DiTommaso, Lawlor, and Darbyshire 2005), DSV is now the target of aggressive campaigns to limit its spread as it can "hinder recreational activities, choke out native species, and negatively impact managed woodlots" (Anderson 2012). A close relative of milkweed, DSV attracts egg-laying monarch butterflies as it aggressively expands its territory. Laboratory tests show a high mortality rate for

monarch caterpillars hatched on DSV (Casagrande and Dacey 2007), leading authorities in Ontario to link the spread of DSV with declining monarch butterfly populations (Anderson 2012). Sandilands notes that the struggle against DSV is “clearly ethical as well as biopolitical” (2013, 113). The continued use of the name ‘dog-strangling vine’ rather than a more neutral ‘pale swallow-wort’ “sets up an emotional cascade of antagonisms in which any given human-introduced species cannot help but be caught, and which obscures the more complex relations between and among particular species in socially/ecologically specific contexts” (Sandilands 2013, 113). Cultivated and observed in the early twentieth century for its value as an ornamental plant, today DSV is out of place, subject to militaristic language and aggressive attempts to control its spread.

Volunteers at the Wildlife Garden are engaged in a number of DSV control experiments using a variety of different techniques. Beyond the mechanical tilling and sifting of root materials, other techniques include suffocating the vine through mulching, mowing patches of plants before they begin to form buds, hand cutting buds and flowers, and introducing moths whose larvae feeds on DSV. Each approach has its own advantages and disadvantages. For example, mowing and rototilling before seed pods are formed will slow the spread of DSV, but volunteers have to avoid harming burrowing mammals and birds as well as the roots of small trees in neighbouring habitats. Interestingly while chemical treatments are strongly discouraged by the OFNC, they support bio-control (the introduction of new species), as “the best hope for managing widespread invasions” (FWG 2013b). Invasive species such as DSV stretch the limited resources of the OFNC and at times seem to threaten the project as the butterfly meadow, old field, and ash woodlot (itself recently clear cut due to an infestation by the emerald ash borer) habitats are quickly being overrun. Volunteers often express frustration and even anger at DSV. Ted Farnworth (2013), a volunteer struggling to remove DSV from the ravine, declared the plant to be his main enemy and Barry Cottam (2011), upon encountering the plant for the first time, declared it to be “hate at first sight.” Despite their goal to remove all invasive plants in order to promote local biodiversity (OFNC 2011), volunteers at the OFNC are “not attempting to eradicate DSV, which is impossible, but rather to contain the spread of as many seeds as [they] can” (Hanrahan 2009).

The visceral reaction of human volunteers towards an out of control floral interloper in their midst points to some of the tensions inherent in the re-wilding movement. Imagining a resurgence of native fauna requires an active determination of which plants are out of place. While the mission of the Wildlife Garden is to improve nature by promoting local species and biodiversity, volunteers quickly relearned lessons acquired by early twentieth century ecologists at places like Wicken Fen in England (Cameron 2013)—they had to intervene in their project to ensure favourable results. Certain plants and animals are fostered while others, like DSV, are vigorously attacked. The pond is deepened, and a hibernaculum was built to promote the life cycles of amphibians and insects. Rather than creating an imagined oasis of pristine nature, the Wildlife Garden is an example of a tended yet rambunctious garden.

Conclusion

The Dominion Arboretum and Fletcher Wildlife Garden offer two approaches to understanding humanity’s relationship with nature focusing on national and local ecological imaginaries. While the Arboretum employed dominion scientists in order to enlist trees in the western settler colonial project, the Wildlife Garden embraces local species in an attempt to protect dwindling biodiversity. Located side by side on the easternmost parcel of the Central Experimental Farm, these sites are illustrative of the ways humans change the world to different ends, and how maintaining these goals requires constant intervention. The proponents of both the Arboretum and the Wildlife Garden see humans as active participants in the natural world. Nonetheless, the proponents of these projects imagined their place in the world in very different ways. While Saunders and Fletcher were seeking to improve nature for economic and colonial ends, volunteers with the OFNC hope to improve their wildlife garden by preserving native species, at least in a few small places, for future generations. The way these individuals answered questions about the relationship between humans and nature becomes embodied in the small, localized landscapes they created. Through the exercise of imaginative control and physical replacement of one set of plants with another, scientists at the Arboretum and volunteers at the Wildlife Garden created two distinct landscapes at the Central Experimental Farm.

The different ways the relationship between humans and nature is defined influence what landscapes are created and how different people react to the imposition of particular ideas about nature in different places. Although there is no evidence of conflict between the Arboretum and Wildlife Garden, in some cases different

imaginings result in controversy, as the Jones' case clearly illustrates. The naming of the Fletcher Wildlife Garden poses additional questions. Citing James Fletcher's role as a founder of the Ottawa Field-Naturalists' Club in 1879, Victoria Dickenson and Jeff Harrison assert that the OFNC has created a landscape at the Wildlife Garden that Fletcher himself would be proud of (Dickenson and Harrison 1992). However, given Fletcher's self-identification as an economic entomologist and botanist, as well as his role in fostering the Arboretum's settler colonial mission, it is unclear what he would have thought of the wildlife garden bearing his name.

Acknowledgements

Brian S. Osborne and Laura J. Cameron commented on earlier versions of this paper and I am grateful for feedback from the Canadian Journal of Urban Research's anonymous reviewers. Part of this research was presented at the 2014 Annual Meeting of the Canadian Historical Association where Joanna Dean, the panel chair, provided valuable observations. Laurence Simard-Gagnon kindly translated the abstract. The research and preparation of this paper was supported by an Ontario Graduate Scholarship (2013-2014) and a Joseph-Armand Bombardier Canada Graduate Scholarship (Doctoral level – 2014-2017).

Notes

Only the Canadian Museum of Agriculture and Food requires an admission fee and, of course, the office buildings and laboratories are restricted to staff and their visitors.

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