From Dismal Swamp to Smiling Farms

Classens, Michael

Published by University of British Columbia Press

Classens, Michael.
From Dismal Swamp to Smiling Farms: Food, Agriculture, and Change in the Holland Marsh.
University of British Columbia Press, 2021.
Project MUSE. muse.jhu.edu/book/98566.

For additional information about this book
https://muse.jhu.edu/book/98566

For content related to this chapter
https://muse.jhu.edu/related_content?type=book&id=3045883
Agricultural Modernization, Ecological Contradiction, and the Production of Instability, 1954–80

By the early 1950s, the vision of the original Holland Marsh boosters had seemingly come to fruition. The disparaging imagery of the “dismal swamp” had been thoroughly expunged from popular imagination, replaced by a sanitized imaginary of domesticated, albeit slightly unruly, crops. At the same time, the materiality of the landscape had similarly been tamed. The disorderly wetland had been torn apart, drained, canalized, and reassembled into orderly fields producing steady, plentiful vegetable yields. Meanwhile, hungry and profitable markets were springing up across Canada and the United States, made increasingly accessible by nascent storage and shipping technologies and providing an increase in demand for market-garden crops Marsh farmers were only too happy to meet. In short, by the 1950s, the domesticated “smiling farms” promised decades earlier had seemingly arrived.

While on the surface farming had never been better in the Holland Marsh, seeds of future challenges were being sown. From the early 1950s onward, the cultural and political clout growers had held in previous decades began to wane substantially in the context of a broader pattern of rural restructuring. Farming as something the majority of a large rural population did was about to change significantly. As the rural population declined and fewer farmers owned increasingly larger farms, a period of agricultural rationalization took hold. Following these broader national and global trends in agriculture during the era, growers in the Marsh would embrace the tenets of an aggressively productivist agriculture—the mechanized, chemical-dependent farming of the green revolution, with the promise of increased yields and the elimination of unpredictability.

The postwar agricultural system sought a “radical simplification” of farming and farmland administration in order to make it “more directly apprehended, controlled, and managed.” This system of “high-modernist agriculture,” as some have called it, was mobilized through attempts to mechanize and standardize
processes in order to produce a more uniform, predictable biophysical nature. Within this context, the trend was toward the development of more durable crops, more efficient farming practices, and flatter, more extensively drained and irrigated fields. The emergence of high-modernist agriculture would also usher in a shift in scale. While farming had been “global” in a nominal sense for centuries, the extent to which it now moved from a local to a globally integrated enterprise shifted substantially.²

The Holland Marsh, however, while subject to these broader trends in the political economy of agriculture, would remain somewhat insulated from them. The strengthening imperatives of global trade and multinational monopolistic chemical and seed companies would affect the Marsh, but that influence refracted through the specificity of the muck socioecology. The Atlanticist food order characterized by government support (public investment and enabling legislation) for mass production, mass consumption, and global trade of agricultural products constitutes only part of the broader historical development of the Marsh during the 1950s, 1960s, and 1970s. These grand trends in the political economy of agriculture applied unevenly in the Marsh, given the manifest difference in the crops grown there. Although carrots and onions would come to be globally traded commodities, in the immediate postwar years, muck crops were not nearly as integrated as grains and oil seeds.

As the Holland Marsh farmers adopted, translated, and adapted the emerging edicts of an increasingly productivist and globalized agriculture, they could not escape the associated ecological contradictions. The negative externalities and undervalued costs of chemical inputs and a reliance on a rapidly expanding network of markets would come to have alarming consequences on Marsh farmers and on the surrounding environment. The ecological contradictions of intensive, chemical-dependent agriculture would manifest themselves in ways specific to the Marsh, ultimately resulting in the imposition of new regulations and protective measures as an era of environmental politics emerged.

Celebrations heralding the beginning of a new era of agriculture wrested from the unpredictability and limits of biophysical nature belied the ecological contradictions just below the veneer. In 1953, the Lake Simcoe Conservation Club successfully petitioned the Ontario government to ban further development of the part of the Holland Marsh that extends north beyond Yonge Street (or Highway 11): “Any further development of the marsh as farmland will lead to the extinction of nesting and spawning grounds. The natural resources have decreased alarmingly. Further agricultural development will lead to the complete extinction of all fish and wildlife in the marsh.”³
This kind of conservationist sentiment had surfaced around the Holland Marsh much earlier. Dr. D.A. Bentley, head of the Department of Biology at both the University of Toronto and the Royal Ontario Museum, raised some concern that the original draining of the Marsh would result in the loss of important bird habitat. In a 1926 column in the *Toronto Daily Star*, Bentley pointed out that there had been no research (nor anything included in Baird’s engineer report) about the how draining the area would affect the resident wildlife. Ultimately, Bentley concluded: “I do not think, however, that there is any cause for alarm in Ontario yet. . . . There is still a great deal of territory where birds of these types may find a living.” In contrast to this fairly reserved expression of concern, a far-more-critical voice of the initial drainage plan emerged about a decade later.

Bride Broder, a columnist for the *Globe*, wrote a scathing condemnation of the draining of the Holland River valley in 1937, standing in stark contrast to the overwhelmingly prevalent sentiment of the time:

. . . the clearance of the Holland marshes looms as one of the great and inexcusable mistakes – to call it by no harsher name – of those who have the right to say what shall, and shall not, be done with this territory or that. The drying up of the great cisterns that nature provided for the slaking of the thirst of the country around them, has been criminally wasteful so far as the present is concerned; it has been actual theft from the future. Also – and this should have been considered – good gardeners know that bog land, while it yields an almost tropical luxuriance in the first season or two, having no substance, does not last.5

Her vivid indictment condemns the drainage project as an unmitigated environmental catastrophe, robbing future generations of the inherent benefits of the wetland. Her reaction is at least in part a result of what many others ignored (willfully or otherwise) – that muck soil degrades rapidly, becoming less productive not long after being brought into production and eventually subsiding completely.

To be sure, the ecological troubles of the kind implied by Bentley and made explicit by Brode began to surface in the early 1950s. And with the introduction of chemical-dependent farming in the Holland Marsh, “environmental” concerns moved beyond the conservationism of these critiques, becoming instead internalized matters of human health, safety, and livelihood. Yet even before these ecological externalities unaccounted for in the popular celebration of Marsh agriculture, the arrival of Hurricane Hazel served to underscore the hubris of the original boosters. This storm dramatically emphasized the point
that nature could never really be conquered – certainly not as it was widely presumed to be.

Hurricane Hazel and Nature’s Revenge

With crops rolling off the fields as though from a well-oiled conveyor belt, farmers in the Holland Marsh could be forgiven for forgetting about the fundamental biophysical character of the geological landscape of the pre-agricultural wetland. Indeed, by the early 1950s, the Marsh had been thoroughly separated (at least discursively) from its material referent and had emerged as the quintessential example of modernist, profitable agriculture. The fortune of the muck growers was such that, just over a year before they were in desperate need of charity as a result of their own catastrophe, Dutch farmers there were doing well enough financially to send $100,000 to aid flooded farmers in the Netherlands.\(^6\)

The summer before the storm, Holland Marsh growers were being feted for their exemplary yields and innovative applications of technology. Farmers from across the province descended on the Marsh in the summer of 1954 for a tour hosted by the fledgling Ontario Soil and Crop Improvement Association. Participants observed a phantasmagoria of bursting fields and state-of-the-art packing facilities.\(^7\) Poised on the “threshold of becoming the nation’s salad bowl,” as the Globe and Mail enthused just three months before the hurricane struck the area, the bounty resulting from the Marsh farmers’ ostensible victory over biophysical nature was about to be shared across the country: “Man’s victory over limp lettuce with construction here of the first vacuum cooling plant for leafy vegetables in Canada will soon make it possible for housewives in Vancouver and Halifax to buy lettuce as fresh and crisp as the day it left the prolific market gardens of the district.”\(^8\)

In the midst of the harvest of yet another bumper crop, the storm gathered in early October 1954, as many of hurricanes do, in the Caribbean Sea. After causing significant damage to a handful of island nations and parts of the Eastern Seaboard of the United States, Hurricane Hazel arrived in southwestern and central Ontario on October 15, 1954. Initial weather reports indicated that the storm would dissipate on arrival in the province; however, the reverse was true. The storm intensified and stalled over central Ontario for the better part of two days. Winds of up to 110 kilometres an hour were recorded in the Greater Toronto Area as Hazel dropped nearly 300 millimetres of rain.

The economic toll was immense, with some estimates putting the cost of the storm damage for Ontario at over $100 million (equivalent to $1 billion
According to Ontario Ministry of Agriculture documents, Holland Marsh farmers claimed crop losses of nearly $2 million (or roughly $19 million today). Hazel’s human toll was even more brutal, leaving thousands of families across central Ontario homeless, and eighty-two people dead. In the Marsh, one person was killed, and the damage to the fields and farming infrastructure was nothing short of catastrophic.

Given the wetland geology of the area, much of nearly 300 millimetres of rain that fell from Hazel was simply absorbed into the peat, muck, and porous bedrock – at least initially. When the Holland Marsh became supersaturated and the broader Lake Simcoe watershed was unable to absorb any additional rainfall, water began to back up and furious flooding occurred. One long-time resident recounted how sudden the flooding was:

I was 15 years old. I was at home with my dad, and it had rained really hard for about two and a half days. But everything was still stable at 6:30. At 6:45 the neighbour and I were out digging trenches between the houses and the water was up to our knees already. It was instantaneous. Our cellar filled with water, almost to the top step, in half an hour. Three or four young guys, one guy had a driver’s license, we drove out to the road, and the water hadn’t really risen that high. It had risen, but . . . [w]e watched the water rise up to the 400 [the highway]. And the cars were starting to stop. And the church. The church, Springdale, floated about a mile into the bank of the 400. . . . It raised the water level so fast that farmers had only about 10 minutes to choose between to take the tractor or the truck, which was going to be more useful. It was unbelievable.

The water descended on the farmland from all directions as Lake Simcoe overflowed and backed up the Holland River toward the Marsh. The canal and its pump system were clearly outmatched, while the dykes were easily shredded by the torrent of water. A postmortem of the events found that thousands of baskets and crates of harvested vegetables acted as a kind of buckshot, propelled by the force of the water and aiding it in blasting through the dykes. Within hours, the entire Holland River lowlands had once again become a lake. As the Toronto Daily Star put it three days later, “Swollen and ugly the river rose, washed away banks and dykes, homes and machines, smashed the puny works of man’s years of toil and created a lake, bringing the valley in full cycle back to its starting point.”

As weather events typically are, Hurricane Hazel was framed as a “natural” disaster. But of course the storm was only a disaster to the extent that it damaged
“man’s puny work” – in as much as it affected human settlement – revealing the social character of the storm. The reporting in the days following, understandably angry in tone, reproduced a discursive binary between nature and society through a demonization of the former and a lionization of the latter. The discursive and material distancing of the Holland Marsh from its natural origins – a project decades in the making – had been eliminated in just hours. Interestingly, some familiar disparaging language returned to circulation with respect to the landscape. According to one observer, from the air, the Marsh “resembled nothing so much as a huge, sluggish, mud-laden pond. . . . [T]he water lies, inert and paralyzing, over the richest farmland in Canada.”

The incursion by biophysical nature – especially water here – was clearly devastating to the Marsh farmers. They had spent the better part of three decades constructing a landscape specifically designed to control water. The canal system, the bridges and overpasses, the dykes, and the intricate network of drainage ditches were all victims of the flood in their eyes. As “the muddy waters spilled over the proud highway that was once the province’s main road to the north,” more than the fields or decades of work to physically transform the landscape were being washed away – the Promethean vision of Day and the early Marsh boosters was at risk, along with the livelihoods it had come to support. As one headline put it, Hazel had turned “prosperous market gardeners [into] penniless refugees.”

Efforts to regain control over the profitable fields were swift and decisive. Vehicles, hay bales, and other detritus left in the wake of the storm were used to reinforce Highway 400 into a massive dyke, used to hold the water west of the highway at bay while the water east of it was pumped out toward Lake Simcoe. Within days of the flood, pumps were flown in from around Canada to begin the drainage work. For nearly a month and a half, an army of machines pumped out 170,000 gallons of water per minute, twenty-four hours per day. Once the fields were sufficiently drained, “operation mop up” commenced, a military-style undertaking to remove the mountains of water-logged, decaying vegetables; shattered houses and barns; and other debris. The provincial deputy minister of public works determined that this was “too onerous, odorous and unpleasant a task to be done manually,” so a fleet of heavy and high-powered equipment, along with two thousand contract workers, were brought in to clear the fields.

Redraining the Holland Marsh was heralded as an “engineering miracle.” Although millions of bushels of onions, carrots, and potatoes were lost, the entire area was drained before the water could freeze, saving the following year’s season. Indeed, some farmers even managed to salvage some crops that had been
put in storage before the storm hit. Decades-old concerns re-emerged, however, as biophysical nature in its pathogenic form (cholera and other water-borne disease) was feared to have returned after the flood through the waterlogged vegetables. Ultimately, after a mild public-health scare, the Ministry of Health ruled saleable “all vegetables which are normally cooked before eating, e.g., beets, potatoes, carrots,” while those typically eaten raw were directed to be destroyed. Both the provincial and federal governments provided rapid and abundant financial aid, temporary housing, and cleanup support. By the following spring, the vast majority of farms and farmers were prepared for the new growing season.

In the aftermath of the flood, the provincial government established the Carswell-Shaw Commission to appraise the overall damage from Hurricane Hazel and to make recommendations to avoid similar levels of devastation in the future from other (inevitable) storms and floods. The commission made a number of recommendations that demonstrated an appreciation for the socio-natural character of the disaster, including putting a moratorium on building in flood plains and establishing green-belt areas in the Humber River and Etobicoke Creek valleys. It further recommended that the main dyke in the Holland Marsh be raised forty-five centimetres and widened enough to allow the farmers’ houses to be rebuilt on top, not in the low fields where they had been originally.

The surprisingly activist recommendations from the Carswell-Shaw Commission can be understood, in part, as a function of the remarkable extent of the damage left in the wake of the hurricane. Hazel was a powerful storm that caused significant damage throughout the Caribbean, the United States, and Canada. Its severity gave political leaders, policymakers, and farmers cause to reexamine human-environment relations. But the recommendations of the report are also part of a broader context of conservationist thought percolating throughout Ontario during the late 1940s and early 1950s, foreshadowing farmland-preservation policies to come.

The Ontario Conservation and Reforestation Association, founded in 1936, had been instrumental in successfully lobbying the provincial government for the first conservation legislation in the province. In the early 1940s, the Conservative government, cleaving to the left in response to growing popular support for the social-democratic Co-operative Commonwealth Federation, established the centralized Department of Planning and Development, which included the Conservation Branch. Later, in 1946, the Conservation Authorities Act was drafted to provide guidance and funding for municipalities to create local conservation authorities based on watershed geographies. This led, in 1951, to the formation of the Upper Holland Valley Conservation Authority – the precursor
to the current Lake Simcoe Region Conservation Authority – with jurisdiction over the Holland Marsh.

Despite the catastrophic damage from the hurricane, the commission’s recommendations, the institutional presence of the conservation authority, and the conservationist sentiment of the era, very little changed in terms of farming practice in the Holland Marsh. Within a year of the storm, human habitations in the Marsh – not situated on the embankments, as the commission had recommended – had returned, perhaps even grown. Very little dyke work, save for the most necessary repairs, was completed. The thought of abandoning farming in the Holland River valley was all but unthinkable. Indeed, by 1955, the Marsh had become the exemplar of Ontario agriculture once again, held up as a template for wetland development from the shores of Lake Huron to the bogs of northern Ontario. Just five months after the catastrophic flooding in the Marsh, a Conservative Party member from Temiskaming, A.R. Herbert, regaled the Ontario legislature with his Promethean vision for northern Ontario, “a large area of some hundred square miles where black muck of the type originally found at Bradford await but draining and clearing to become productive of the same type of vegetables grown so profusely at the Holland Marsh.”

The crops emerging from the muck fields had simply become too prolific and profitable to consider interventions detrimental to their production. At the same time, the speed and determination of the Marsh farmers to clean up the damage from Hurricane Hazel seemed to add to the lore of the area. The Marsh emerged from this event solidified as a reference point for archetypal muck-crop farming, finally a mythical equal to Celeryville or Kalamazoo. The lessons available from Hazel, however, were not part of the conversation. A group of “industrious new Canadians from Holland and Belgium,” for example, were busy converting a “waste land” of a duck-hunting preserve near Lake Huron “into rich market garden plots” just a year after the devastating flooding, death, and destruction wrought by the hurricane in the Marsh.

An editorial in the Toronto Daily Star just a few years later gushed excitedly about the “black gold rush” occurring in the Marsh. This celebratory piece put a fine point on the pace of the Marsh’s transformation, while speculatively gesturing at the frontiers of muck-crop farming:

Thirty years ago you could shoot wild ducks in the heart of the Holland Marsh, south of Bradford, and nobody would hear your shots. Twenty years ago you could buy land in the newly drained wilderness at a few dollars an acre and build a shack far from your nearest neighbour. Today you have to
pay over $1,000 for that acre and chances are you’ll live in a streamlined house as modern as Metro Toronto, complete with TV, maybe a couple of sleek new cars, and friendly neighbours all over the place. Tomorrow, if you want to join the black gold rush, you may have to buy land at the bottom of what is now Lake Simcoe.27

In the end, Hurricane Hazel – the anniversary of which still inspires a handful of romantic news stories mourning the death and destruction it caused and heralding the ultimate triumph of humans over nature – only served to reinforce the perspective that the landscape could be controlled. More than this, the storm fortified the view that the landscape should be productive and profitable above all else. Perhaps Hazel’s gravest sin was to reintroduce an unpredictable “nature” back into the Holland Marsh – a trespass the farmers, with ample support from the state, worked diligently to rectify. The fields emerged post-Hazel as more thoroughly expunged of their natural origins as farmers redoubled their efforts to sculpt the landscape into something somehow outside of nature. By the late 1950s, the smiling farms imaginary was as strong as ever, with the fields emerging as a thoroughly technologized landscape, replete with fancy cars and colour TVs “as modern as Metro Toronto.” The clear message was that, despite Hazel’s unwelcome incursion – or in part perhaps because of it – the Holland Marsh was a sanitized, safe, and modern site of food production – a Ford-like factory in the fields.28

Post-Hazel Renewal and the Triumph of Specialization

The timing of the Holland Marsh’s emergence as a highly productive agricultural landscape, while perhaps coincidental, was not incidental. In many ways, farmers there were following the conventional lead in an era of productivist agriculture in full swing by the mid-1950s – a capital-intensive approach to agriculture-cum-celebration of science and technology in the pursuit of stability, intensification, and increased yields. While profits and yields soared as a result, chemical, technology, and machine-dependent farming also ushered in the productivist treadmill – a reliance on capital-intensive inputs begat a further reliance on capital-intensive inputs.

The introduction of new technologies during this era was a strategy for overcoming the “cost-prize squeeze,” a situation in which the combined costs of production outpace increases in farm income.29 Growers confronted with this typically have two options, either lower production costs or increase yields. Many farmers choose to employ both tactics. As agricultural scholar Anthony Winson
observes, the typical strategy for escaping from the cost-price squeeze results in a further reliance on machines and chemicals:

For the most part, the forces pushing net farm income down were met by attempts to increase the volume of production on the farm with the “tractorization” of agriculture and a dramatic increase in the use of chemical sprays, it becomes possible, at least for some, to work much more farm land without raising the input of increasingly expensive farm labour. The incorporation of ever greater volumes of chemical fertilizers and other inputs, such as hybrid seed varieties, helped boost yields per acre.30

Within the Holland Marsh, these pressures took on a greater acuity, given the intensive (rather than extensive) character of cultivation. At least part of what makes muck farming so profitable is the scarcity of available land. The number of muck-soil hectares under tillage at any given point is a fraction of those of mineral soil under production across Ontario. This point was not lost on the Marsh farmers of the late 1950s. Postwar suburban expansion coupled with a rural landscape already largely under production served to compel would-be farmers and agricultural speculators to set their sights on new conquests for drainage. Given an increasingly crowded southern and central Ontario, the frontiers of agriculture were seen to lie at the bottom of untouched swamps and lakes.

Yet muck-crop speculators eager to start the pumps were confronted with a shifting ecological paradigm, one in which the Conservation Authorities Act made it difficult, indeed largely impossible, to turn wetlands into new fields. Increasingly, the state was intervening in unfamiliar ways by placing limits on how and where farmers could operate. A shift in the character of conservationism was providing a counterpoint to farming as an activity of land stewardship. While Day and the early Marsh boosters were seen to be “improving” the land with underdrainage – providing a service by bringing the land into production through cultivation – by the late 1950s and early 1960s, there was a change to the contours of “environmentalism.” Partly as a result, the era of muck-crop farming as a kind of extensive agriculture in Ontario had come to a close. No longer could new land, whether just down the road or at the bottom of a swamp, be easily had in Ontario, meaning that farmers were forced to focus on intensive farming – getting the most out of the land they did have.

With so few opportunities for investing in the creation of more land, Marsh farmers, for the most part, turned toward investing in their existing land as a way of increasing production and profits. Investments in intensification were made in various ways in the Holland Marsh, but the driving force behind the
pursuit of profits was crop specialization. The form that biophysical nature took (crops) and the social configurations of agriculture in the Marsh began to shift to accommodate this specialization. Put differently, what was grown and how it was grown began to shift fundamentally in the mid-1950s. Indeed, a novel field of plant breeding – phytoengineering – emerged in the 1950s, the explicit intention of which was to design more uniform and durable produce. As two exponents of phytoengineering noted: “Machines are not made to harvest crops... In reality, crops must be designed to be harvested by machine.”

Figure 4.2 illustrates the extent to which the crop base in the Holland Marsh has changed since the 1950s. The dramatic shift in lettuce production provides a vivid example. While in 1954, more land in the Marsh was dedicated to lettuce than any other crop, very little of it is grown there today. What little lettuce production that does remain is not the robust iceberg variety popular in the 1950s and 1960s, but rather mixed greens and mesclun mix, a lettuce with a much different sociocultural and political-economic profile.

As lettuce production migrated from the Holland Marsh, almost all of it landed in Quebec. It is not clear why farmers there (or the provincial government,

**FIGURE 4.2.** Shifting nature and composition of crop cover, 1954–2009.

through supportive subsidies and legislation) seemed to pursue this market to the extent it did – a fact that reinforces the need for far more scholarly work on the histories of various agricultures across Canada. But it is clear that Quebec did actively pursue this specialization and quickly became by far the most prolific lettuce-growing province in Canada. In 2011, as an example, Quebec produced 70 percent of the greenhouse-grown lettuce in Canada.\(^{33}\)

For a time, however, the Holland Marsh was a lettuce juggernaut, shipping produce across Canada and throughout the United States. Some of the older farmers there remember the transition away from lettuce and point specifically to provincial legislation as the driving force behind the change:

We all used to do lettuce and celery. When I married Tony [Bake], we grew lettuce and celery too. But slowly, there’s only about 2 or 3 farmers out here now, because Quebec kills us, because the province of Quebec understands the importance of feeding people, and they subsidize their Quebec farmers. So they can push it into our markets cheaper because they’re gonna get subsidized.\(^{34}\)

Others point to ostensible qualities of the relatively fresher muck soil in Quebec compared to the longer-farmed Holland Marsh muck:

Quebec had much newer soil than we did, and so they had better quality. But for some reasons we had better celery quality than they did, but I don’t know the reason for that and I don’t think they do either. So we tend to have better celery than they do, but they have better lettuce. There used to be 2,000 acres of lettuce grown here at one time.\(^{35}\)

While crop specialization has increased over time, cultivation in the Holland Marsh was in some ways an exercise in specialization from the very beginning. The original boosters did not drain the land with the intention of growing grain or tomatoes or with the thought of raising cattle or sheep. The Marsh was always intended for growing primarily carrots, onions, and, to a lesser extent, celery. This is due, in part, because Day and the early boosters learned from muck croppers in Michigan and Ohio that these crops leveraged the biophysical and biochemical attributes of the soil and temperate climate to a greater extent than did others. The soft, peaty dirt is much gentler on carrots and onions during harvest. The tighter-packed, granular mineral soil tends to be more abrasive than muck soil, causing microscratches on these subterranean vegetables as they are pulled from the earth and resulting in shorter storage life. Beyond this, there are a number of reasons that make carrots and onions not only particularly well
suited to muck soil but also productive crops to grow together. One long-time muck-crops researcher has noted:

Onions and carrots actually are almost perfect rotation crops. It would be hard to pick ones that are better. One’s a monocot, one’s a dicot; the root structures are different; the chemicals, the insecticides, the insects and diseases are completely different; the herbicides you use on them are almost entirely different. But, you’re rotating, you know; one year it’s onions, one year it’s carrots.\textsuperscript{36}

The so-called natural advantages of the Holland Marsh and the extent to which specializing in carrots and onions seems like an obvious choice is predicated, however, on the productivist assumptions of capitalist agriculture. Specialization is, after all, first and foremost an accumulation strategy.\textsuperscript{37} It typically makes sense, within the logic of capitalist agriculture, to concentrate production on a particular crop in as much as it is a way of rationalizing production and therefore maximizing profits. In other words, there is nothing inevitable about the produce grown in the Holland Marsh, but rather it is the result of social and natural processes. Muck soil can support a wide variety of other crops, but none fit both the biophysical and biochemical conditions of the soil and climate and the social constraints of profit quite so well as carrots and onions.

It was this socionatural confluence that caused an acceleration and intensification of crop specialization toward these two crops in the Holland Marsh from the 1950s through the 1970s. It was a decisive shift facilitated by a move toward a more industrial form of agriculture at a time when a fledgling agro-industrialism was beginning to have a profound influence on how food was grown, processed, sold, transported, and consumed. Science, technology, and capital were deployed in the fields and beyond in order to rationalize production, reduce risk, and increase sales. The speed and magnitude with which biophysical nature was being transformed in the Marsh increased considerably under the escalating demands of profit. The production of nature there was about to become far more intensive than it had ever been.

Research, Markets, and Marketing in the Making of Muck Crops
The Experimental Station for Organic Soils was established in the Holland Marsh in 1946. Now called the Muck Crops Research Station, the facility has run essentially as an extension program of the Department of Horticulture at
the University of Guelph since it began, save for the few years it operated under the auspices of the Ontario Ministry of Agriculture and Food.\textsuperscript{38}

The station extended and formalized the presence of the University of Guelph as established by Professor Day in the very earliest days of the Holland Marsh. The nearly continual presence of formalized research there is unique for agricultural areas in Canada. There are a handful of other research stations across the country, and most provincial governments do have some form of research-based agricultural-extension programs. None of these, however, are dedicated in quite the same way to such a specific, niche form of production targeting such a relatively small geographical area.\textsuperscript{39}

The station’s work ramped up in the late 1950s and early 1960s, and focused largely on plant pathology, pest management, and cultivar trials.\textsuperscript{40} Although its research has always been primarily applied work, meant to be manifest in the fields of the Holland Marsh, it has rarely been directly commercial. Within the broader political economy of global agriculture, the Marsh is of negligible value. So while the station does do some fee-for-service research for seed, fertilizer, and pesticide companies, the results are only very narrowly applicable in an applied sense (that is, only to other muck soils) and thus largely valueless within the logic of global agribusiness.

Yet within the Holland Marsh, the work of the station has been significant on a number of fronts, the most important of which is through the cultivar-trials program, which began in the early 1960s. Although commercial interest in plant germplasm dates to at least the late nineteenth century, the biotechnology revolution in agriculture arrived much later.\textsuperscript{41} Famously, in 1951, James Watson and Francis Crick succeeded in identifying and isolating deoxyribonucleic acid, DNA, the crucial genetic material that, among other things, transmits genetic information responsible for inherited traits. In the millennia previous to Watson and Crick, agriculturalists slowly adapted crops (either intentionally or not) through the selection of seed from plants with desirable qualities – high yielding, robust to cold, resistant to drought, and so forth. With the discovery of DNA and the subsequent development of techniques to manipulate it, scientists could begin creating changes in seed germplasm by direct manipulation at the molecular level.

While the station does not conduct genetic modification onsite, their cultivar trials are designed to test genetically modified seeds on behalf of various companies. Every spring it will typically grow dozens of different kinds of carrots and onions to test which ones perform best. The seeds, supplied by various companies that pay to have the station run these cultivar trials are designed to express
various profitable traits. Both time and form are particularly important in this respect. As farmers in the Marsh were swapping out lettuce for carrots and onions in the late 1950s and early 1960s, the fledgling cultivar trials were facilitating a further specialization within this narrower crop selection. Not only were fewer kinds of vegetables being grown but also fewer varieties of each vegetable. As demanded by an increasingly commercialized, industrialized agriculture of the 1960s, desirable traits in cultivars moved away from taste toward uniformity, colour, resistance to pests, durability in storage and shipping, and rapid growing time. One long-time, multigenerational farmer candidly admitted:

One of the things [about] . . . a carrot grown in the muck, peat, mostly muck peat type soil, [it] is a lot tastier than anything else you get out there. If you grow the right variety. Unfortunately, we’re growing varieties that you could drop on the floor and the carrot won’t break, because we mechanically harvest and all that. It looks nice, but it doesn’t taste all that great sometimes. Most of our carrots, some of our carrots, I wouldn’t even eat them. It’s just got that . . . . [T]hey look great, but they don’t have the taste. Then other varieties that we grow, man, I can’t stop eating them. But you grow them because that’s what the store [buys] . . . . [T]hey like a nice looking carrot right?

The station does not formally endorse any particular cultivar, though grades are assigned for discrete qualities (uniformity of shape, colour, overall appearance) as well as overall performance (storability, durability) for each. In addition, qualitative descriptions of the mature vegetable are provided for each trial. The evaluation notes for the trial of a brand of carrot seed called Achieve included these comments: “Good length & width, Good smoothness, Good weight, Tapered & full tips, Good appearance, Uniformity of shape a little uneven, Fair exterior colour but a little uneven, Extra-large core size, Cavity spot slightly noticeable, Poor to average interior blending, Red ring around core (40–80%), Translucency throughout the core (20–80%).”

The results of the cultivar trials are presented at the annual Muck Vegetable Growers Conference and are also compiled into a hefty annual report published by the University of Guelph. The farmers’ process for deciding which seeds to grow from year to year is based on a variety of calculations, with great weight given to the results of the station’s cultivar trials. It is very unlikely that a farmer would use seed that had not been through this process and equally as unlikely that a manufacturer would attempt to introduce a new variety of seed into the Marsh without having it tested first. In this respect, the station can be
The presence of the station is in many ways the embodiment of the productivist ethic gathering during the late 1950s and early 1960s. It functioned (and continues to function) as a site of translation between the global imperatives of commercial, industrialized agriculture and the in situ specificity of muck-crop farming. In addition to the cultivar trials, the station also conducts “minor use” testing on chemical fertilizers and pesticides. With funding from Agriculture and Agri-Food Canada, it examines the applicability and efficacy of various pest and nutrient treatments – chemicals originally designed for use on larger-scale cash crops, such as corn or soybeans – on muck crops. There is no financial incentive for the manufacturers of agrochemicals to go through the lengthy process of registering a product for use on a crop of niche production, so the state facilitates this by paying research stations to do the work. In this respect – through minor-use testing on carrots and onions – the Muck Crops Research Station has made a significant contribution to the attempts to build stability not only in the Holland Marsh but also beyond to other muck-crop areas in Ontario, Quebec, and elsewhere.

Consumer Tastes and the Postwar Diet

Attempts to optimize nature in the Holland Marsh also emerged, at least in part, beyond the fields. The postwar years brought a significant shift – qualitatively and quantitatively – in consumer demand. At the dinner table, this was expressed as a demand for an idealized form of prepackaged freshness and convenience. As nature’s biophysical form was manipulated into uniformity through phytoengineering, it was also increasingly sculpted to meet consumer expectations of freshness, nutrition, and authenticity, characteristics easily discursively fused onto the carrots, onions, and celery grown in the Marsh.

Increasingly, consumer expectations were mediated through the emergence of retail grocery chains and mass-market advertising. In the case of the food from the Holland Marsh, large chain stores invoked science in advertisements as a way of adding gravitas and authority to their claims of freshness. An ad typical of the era, from the grocery chain Dominion, reads: “Science assures you quality-controlled freshness. . . . Through scientific quality-control aided by ‘round the clock refrigeration’. . . . Dominion is able to maintain the exclusive standard of freshness your family deserves!” Ads like these had the effect of semiotically reinforcing the notion that the Marsh had transcended its murky origins to emerge as a domesticated and sanitized site of scientific food production.
More than this even, the implication is that freshness, while perhaps a characteristic inherent to vegetables, exists insufficiently in nature. Only through the application of science and technology can its full potential be realized.

For farmers in the Holland Marsh, there was some limited truth to this productivist narrative. As growers began shipping to markets farther away in order to avoid glutting local markets and driving down prices, time (particularly in the beginning) was not on their side. Unlike cash crops that hold value with relative stability over time – grains and oil seeds that can be easily stored for long periods of time – the fresh produce rolling off the Marsh fields has a much shorter shelf life and is much heavier and trickier to ship, all of which makes its transport more expensive. Time as a characteristic of biophysical nature – how long it takes a given piece of produce to lose freshness – became a serious concern for Marsh farmers within the context of shifting consumer expectations in the postwar years.

Through a combination of cultivar trials, which sought to breed traits that would extend a vegetable’s shelf life and make it more resistant to damage during harvest and transport, and improvements in packing, shipping, and storage technologies, growers were able to manipulate their crops to be more resistant to time and space. These interventions ensured, or at least increased the chances, that the carrots, onions, and celery emerging from the Marsh met the expectations of consumers in an increasingly competitive marketplace. Indeed, long before the contemporary Holland Marsh Gold branding scheme had been conceived, “Holland Marsh” was a term very often leveraged as a competitive advantage. Invoking the Marsh was a way of semiotically fusing idealized notions of a sanitized, modernized nature to vegetables through advertising. Carrots became “Holland Marsh carrots” and onions “Holland Marsh onions” in order to capitalize on the natural imaginary of the area – very carefully crafted and purged of the invocation of wetlands, swamps, mosquitoes, and the like. During this era of high-productivism, consumers wanted their nature with a dose of sterilizing modernism.

As farmers organized production around meeting commercially mediated imaginaries of what various crops ought to look like, they were altering the composition of biophysical nature within the Marsh. And as they sought to do so in as efficient and profitable way possible, they also transformed their own material practices.

Modernization and Mechanization in the Holland Marsh

Emerging high-tech crops and shifting consumer expectations in the immediate postwar period created changes to the material practices of farming in the
Holland Marsh. Since the very beginning, the materiality of the muck landscape had demanded customized applications of technology. Mass-manufactured equipment tended to be too large and heavy for the boggy fields of the Marsh. The typical tractor was unfit for a variety of reasons – the chassis was too heavy, the axles were too narrow, and the tires were too thin, among others – all of which would result in it sinking into the muck, which happened many times in the earliest years of farming in the Marsh. As a result, many of the machines used there, from spraying equipment to onion harvesters, were often heavily modified by Marsh farmers. The specific mechanical demands of the muck soil have even spawned a cottage industry of sorts, with at least two light-equipment modifiers operating within the boundary of the canal.

Previous to the era of high productivism, however, agriculture in the Holland Marsh was largely a low-tech, stoop-labour family affair. Many made do working two- or five-hectare parcels of land, by hand, and selling their produce to packers in the Marsh or to grocers in Toronto. But as demand increased, costs rose, and growers looked to produce a more efficient, uniform biophysical nature, farming changed significantly in the Marsh. Two companies, in particular, were responsible for ushering in the productivist paradigm to farming in the Marsh in the early 1960s – Federal Farms Limited and Hardee Farms.

Perhaps unsurprisingly, nonfarmers from Toronto founded both companies. Philip and Morris Latchman formed Federal Farms Limited in 1948, while Abraham Dees, a “farm-born city slicker,” founded Hardee Farms Limited in 1954. In 1970, Federal Farms would restructure in an attempt to deal with cash-flow issues and emerge as Federal Diversiplex Limited. Later that decade, in 1978, Federal Diversiplex and Hardee would merge, creating COBI Food Services Incorporated, a food manufacturing and distribution company still in operation, though with no discernable presence in the Holland Marsh. While their tenure was short, Hardee Farms and Federal Farms had a significant and lasting effect on the Marsh.

Both Dees and the Latchman brothers were considered “collar and tie” farmers, more businessmen than agriculturalists, feted in the popular and industry press for bringing “sophistication” to farming and making the “muck bloom” through “super-mechanization.” The Latchmans’ bona fides came from their background as middlemen – buying low in and around the Holland Marsh and selling high in Toronto. They were disciples of the new freshness and marketing paradigms and wanted to turn the Marsh into a climate-controlled conveyor belt of picture-perfect carrots, onions, and celery. In an address to a group of financiers and financial analysts in New York City in 1962, Morris assured the
crowd, “please remember that we are not farmers in the business of farming. We are merchandisers in the business of farming. We were experienced in product movement, marketing and distribution in the vegetable industry long before we planted our first stalk of celery.”

Both Hardee and Federal poured vast amounts of capital into farming in the Holland Marsh in an effort to rationalize and modernize production to the greatest extent possible. Indeed, overextending cash flows and alienating themselves from potential investors would ultimately undo both companies. In the early 1960s, however, both were flush with capital. Hardee Farms owned over $5 million worth of muck fields, spread throughout the Marsh, southern Quebec, and parts of Florida. They also owned state-of-the-art processing facilities in both Canada and the United States. Foreshadowing the financialization of agriculture to come, Hardee raised the capital required for such prolific holdings by becoming, in 1960, the first farm business in Canada to be publicly traded on the Toronto Stock Exchange.

Federal Farms, meanwhile, owned about 450 hectares in the Holland Marsh, a significant landholding given that most farmers operated on five-to-ten-hectare plots in the 1960s. Even today, many families there make due with forty-to-eighty-hectare tracts of land. Federal also processed roughly half of the produce grown in the Marsh, as well as vegetables from around North America at their facility there, then shipped to supermarkets throughout Canada and the United States. Indeed, in the early 1960s, Federal’s main business was to supply supermarket chains with “a constant, day in day out source of fresh vegetables for their shelves, in enormous quantities.” In an audacious media stunt meant to display its agricultural mastery, Federal Farms became the first company to ship Marsh produce overseas, sending two thousand cases of celery to Britain in 1963.

Both companies aggressively sought to transform the Holland Marsh through research and development and the introduction of emerging technologies. Hardee’s activities in this respect were largely centred on water management in muck soil through the development of a hydrological system that could allegedly “keep one step ahead of alternating floods and droughts.” The operation was designed with the ability to oscillate between drainage and irrigation, able to meet both demands with a single system. The company also developed techniques to manipulate water levels to warm the muck soil when there was risk of frost or unseasonably cold weather.

Federal’s innovations, arguably more significant and lasting, resulted in some fundamental changes in the ways in which produce in the Holland Marsh is processed, distributed, and sold. Three in particular have left an indelible mark
Bushel baskets (A) were supplanted by the now omnipresent pallet box (B). A, courtesy of the Bradford West Gwillimbury Public Library; B, by the author.
on muck-crop farming in the Marsh. First, one of the most enduring contributions of Federal was its adoption of the pallet box, which Latchman argued “revolutionized production” in the Marsh and “made high-speed, efficient production line operation possible.” Although the pallet box is now omnipresent on the Marsh landscape, previous to 1960 all produce there was stored in either bushel baskets or light wooden crates (see Figure 4.3). Before the pallet box, vegetables were handpicked and dropped into these baskets and crates. These were then picked up, again by hand, and carried over and lifted on to a flatbed trailer. The baskets would then be brought to either a processing or storage facility. For storage, they would be lined up in rows or sometimes very carefully stacked, though this was risky, given the flimsy materials with which they were made. In the processing facility, they would be moved around and emptied by hand, then sent back into the fields to be refilled. This was all done manually because neither the bushel baskets nor the crates were conducive to mechanization, for a tractor or forklift could not pick up and move a bushel basket without crushing it – besides, using a piece of heavy machinery to pick up a bushel basket of onions is overkill when a worker can easily do it manually. In short, the baskets and light crates were incongruent with mechanization.

On the other hand, the pallet box was custom designed for the era of mechanization. Its adoption considerably sped up the process of harvesting, and transportation and storage became far more efficient. Importantly, the boxes also enabled mechanical harvesting. Once Federal brought the pallet box to the Marsh, onions and carrots could be mechanically harvested directly into the container, which was already loaded onto a flatbed trailer. With a holding capacity of roughly a tonne, each pallet box can be offloaded with a forklift and whisked away to either a storage facility or a processing line. In storage, they can be vertically stacked without damaging any produce and in such a way as to take advantage of nearly every square metre of storage space.

The most important consequence of using the pallet box, however, was the effect it had on the speed of production. The laborious process of filling, moving, and packing bushel baskets and light crates by hand was eliminated. Suddenly, a tonne of onions could by swept away by a machine, moved around with ease, processed, stacked in cold storage, or loaded onto a truck with the pull of a lever. As Morris Latchman proudly put it, “For the layman, the best analogy I can draw is this: the pallet box has been to Federal Farms, what the airplane has been to travel.”

The second important innovation Federal introduced to the Holland Marsh was vacuum cooling. The company did not invent the technology, but it was the
majority owner of Brad-Vac Cooling Company Limited, the first vacuum-cooling plant of its kind in Canada. Through this subsidiary, Federal was also the Canadian patent-rights holder for a cooling technique used primarily on lettuce and celery. All vegetables begin to degrade the moment they are harvested. Once the “field heat” is removed, however, the degrading process slows considerably. The quicker a vegetable can be cooled, the less it will degrade. Brad-Vac initially had the capacity to chill eight thousand heads of lettuce in twenty minutes in the early 1960s, in the process extending their shelf life from two to three days to five to seven days. This represented an enormous competitive advantage for the farmers who could afford to use the facility.

For lettuce, in particular, this was a revolutionary technology. A fickle, delicate, and labour-intensive crop was made far more robust by the advent of rapid cooling. Indeed the Brad-Vac plant made it possible for Marsh farmers to seek markets for their produce far beyond the Greater Toronto Area. By the early 1960s, Federal was shipping lettuce across a wide swath of North America, from the Rocky Mountains to Newfoundland and Labrador and throughout the eastern and midwestern United States. As Morris Latchman estimated in a speech to Wall Street financiers, “With Brad-Vac, our market has expanded from two million people to 100 million.” 55

A third technology that fundamentally changed farming in the Holland Marsh was polyethylene. Similar to the vacuum-cooling process, food-grade plastic wrap helps prolong the freshness in vegetables. By the late 1950s, many Marsh farmers and businesses were wrapping everything from lettuce to carrots and onions in polyethylene. As with the pallet box and rapid cooling, Federal Farms did not invent food-grade polyethylene, though they did have the capital to become an early adopter of the technology and certainly served to popularize its use throughout the Marsh. Using plastic wrap to prepackage vegetables was primarily a way for farmers to appeal to discerning postwar consumers and the ascendant grocery chains looking for freshness (or at least the appearance of it). The plastic packages were convenient for the chain stores to purchase and display and attractive to customers in an era of modern, sanitized consumerism, giving a sense of uniformity, predictability, and freshness. Polyethylene helped expunge just a little more of the feral “nature” from the produce of the Marsh. As Morris Latchman put it, “our idea was that packaged vegetables should be of consistent quality year-round – just like a can of soup is consistent, no matter what season.” 56

Each of these interventions, in their own way, was ultimately meant to produce a “better” nature – a fresher, more durable, more attractive, and ultimately
more standardized and predictable consumer product. Although they may not have understood it as such, Dees and the Latchman brothers were dealing in the complexity of the production of socionatures. The innovations they introduced to the Holland Marsh were meant to transcend the limitations of biophysical nature and conventional farmland while trading on an imaginary of modernized crops in an effort to shape and appease postwar consumer demands for sanitized freshness.

By the time Federal Farms and Hardee Farms merged in the late 1970s, the Holland Marsh had been transformed into an industrial-agricultural landscape, a highly mechanized and rationalized space producing increasingly homogenous crops. But transformations of this kind are rarely benign. Instead, capital and technology-heavy investments tend to be accompanied by an inherent contradiction – the so-called negative externalities of production. As the first industrialists of the Marsh were ostensibly modernizing the fields, they were also inadvertently accelerating the degradation of the very conditions they required for production.

The Gathering Contradictions of Agricultural Modernization

If business was good on the Holland Marsh previous to Hurricane Hazel, it was spectacular a decade after the storm. Weather persisted as a minor irritant from time to time and had some minor effects on seasonal yields and price, but the many technological, capital-intensive investments made were managing to control the biophysical nature of the fields enough to allow for widespread profits. But if these were the halcyon days of the Marsh, the peace and profit belied the growing contradictions of productivist, chemical-heavy, and intensive agriculture.

Indeed, by the mid-1960s, social and ecological relations in the Holland Marsh were showing signs of stress. Shifting labour demands there, as a result of mechanization and the associated proliferation of packinghouses, eliminated jobs in the fields but created them in the factory. Federal Farms and other companies, including River Gardens and United Farms, engaged in a noteworthy and very public battle with unionized employees striking for better conditions and wages. The increasingly powerful companies attempted to invoke a still-existent clause in labour law that denied farm labourers the right to collectively organize and bargain. The Ontario Labour Relations Board ruled against them, however, determining that packinghouse employees were not farm workers since they did not actually work on farms. Its decision in the original case filed by Federal Farms read, in part, “With respect to its plant operations the Board finds that
the respondent is not engaged in agriculture or horticulture but rather that the respondent is engaged in a commercial enterprise of preparing vegetable produce for market. In other words, the employees who worked in the processing facilities and packing plants were factory workers and thus had the right to organize their labour and collectively bargain with the employer. This victory, while important, was ultimately temporary. Within years of the ruling, the imperatives of global agriculture would result in the consolidation and elimination of many processing and packing facilities in the Marsh and throughout Ontario. The recent closure, then partial reopening of the tomato processing plant in Leamington, Ontario, puts a fine point on the continued instability of Ontario-based vegetable processing in an era of global, industrialized agriculture.

In addition to labour strife, other socioecological issues emerged in the 1960s. For the first time in the history of the Holland Marsh, there was concern for the muck soil itself. There had been fleeting anxiety subsequent to Hurricane Hazel (and other minor flood events) over the fact that the soil was carried from the western part of the marsh toward the eastern end as the water drained, creating an unequal distribution of wealth, as it were. These concerns were quickly allayed as the piles of muck were evenly distributed with trucks and tractors. By the mid-1960s, however, the fears were more systemic, related to the longer-term sustainability of the soil. In 1966, the Ontario Agricultural College (OAC) at the University of Guelph found that the muck was subsiding at a rate of 3.3 centimetres per year, “a high rate of subsidence,” especially given that the ground was frozen solid five months a year. The authors emphasized that this rate equaled around 30 centimetres every ten years, “a substantial and serious loss of organic soils whose average depth is 3ft [nearly 92 centimetres] or less.” Researchers posited that a well-designed water-management program could reduce the rate of soil loss and extend the productive life of the Marsh. In 1967 (after yet another significant flood), a special committee was struck, headed by a coauthor of the subsidence study, Dr. Ross Irwin. It was charged with the task of studying “all aspects of the drainage of the Holland Marsh, notably, (i) pumping facilities, (2) interior centre drainage (Holland River), (3) interior main drainage network, (4) use of drainage and irrigation water, (5) dykes, (6) soil depletion, [and] (7) flood control.” It is unclear what, if anything, ever materialized from this or the proposed study. It is telling however that the special committee, which was assembled specifically to investigate the problem of subsidence in the Marsh, was not instructed to investigate the role of farming and cultivation activities. Subsidence is, after all, a distinctly socionatural phenomena – the product of water and wind erosion and the natural decay of organic matter in the muck soil,
though hastened significantly by the human activities of intensive cultivation. The committee members clearly prioritized farming preservation over farmland or landscape preservation.

Other ecological contradictions were beginning to be exposed by the late 1960s and early 1970s as well. Following growing concern regarding the use of chemical pesticides inspired by Rachel Carson’s ground-breaking 1962 monograph, *Silent Spring*, the use of DDT was severely restricted in Canada on January 1, 1970. Biologists were debating the extent to which the bioaccumulation of DDT in fish in Lake Simcoe was cause for concern, but researchers were having trouble securing funding from the provincial or federal governments to study the actual Holland Marsh soil for signs and implications of harmful pesticides. A lifetime resident of Bradford offered a powerful anecdote about pesticide use on the Marsh during this era:

Well, it requires a tremendous amount of fungicides and a tremendous amount of insecticides to grow the crops they do. Me, personally, two friends of mine I went to high school with . . . were at a place out near the 400. And for that time in the 1950s they really were paying well. I was too young, I couldn’t get a job. And I’m glad I didn’t. If I did, I would be dead now, I think. Because they carried the weed killer in the sprayer on their back. And they never wore a shirt. And their bodies took on the liquids. One guy died in his 40s and the other guy died when he was 55. Both died of liver failure, you know. And they used open tractors and sprayers. Even now we walk on one of the canals, my wife and I. And if you see a tractor two miles away or a mile away, you can smell that stuff.

Although the Marsh was initially given special permission by the provincial government to continue using DDT after the onset of the January 1970 ban, eventually, the chemical was disallowed everywhere. Regardless, a variety of other sources of contamination were already beginning to be highlighted as problematic in and around the Marsh. From health risks associated with parathion, a chemical used to replace DDT, through to nitrogen and phosphorus runoff causing algal bloom outbreaks on Cook’s Bay and Lake Simcoe, the ecological contradictions of muck-crop farming were becoming increasingly apparent.

Not to be overlooked, issues related to the discursive and material expansion of the Greater Toronto Area began to appear in the Holland Marsh in the 1970s. Real-estate ads from the growing town of Bradford boasted of newly built homes “only minutes from Hwys 400 and 85. Situated on a 2-acre lot with a magnificent view of Holland Marsh.” Toronto, meanwhile, were urged to
explore the “other Yonge Street” – the section that grazes the northern end of the Marsh – in the weekend section of the Toronto Star. These physical corridors linking the city with the Marsh – Yonge Street and Highway 400 – so often used to move produce, were increasingly used to facilitate a growing leisure economy of day-tripping Torontonians. Idealized, bourgeois conceptions of pastoral agriculture bumped up against the reality of an urbanizing countryside – one day-tripper noted in a letter to the editor their “shock and dismay” at seeing a billboard erected on the side of Highway 400 in the Marsh, which imposed a “disastrous effect [on the] beautiful landscape.”

These emerging conflicts at the intersection of peri-urban agriculture and suburban expansion compelled the province, for the first time, to hire researchers to investigate land-use planning and agricultural acreage. The growing realization that suburban expansion was bumping up against farmland, with urban residents using the countryside as a recreational amenity, by the late 1970s, led the province to begin taking the issue of farmland preservation seriously for the first time.

Conclusion

Beginning in the mid-1950s, the contradictions of the attempts to fully rationalize, standardize, and sanitize production in the Holland Marsh began to manifest in and around the fields. The dramatic events of Hurricane Hazel provided an opportunity for a recalibration of agriculture there, though instead efforts to tame the landscape were redoubled, and the techniques of modernist, productivist agriculture were intensified. At the same time, a nascent environmentalism was emerging, leading the provincial and federal governments to begin understanding wetlands as places to conserve, not drain and farm, while also directing more scrutiny at the practice of industrialized, chemical-intensive agriculture.

Without the option of simply making more farmland – one available in decades previous – farmers sought to get more out of existing land, to make nature work “harder, faster, and better.” Innovations introduced to the Holland Marsh by Dees and the Latchman brothers sought to harness biophysical nature in order to intensify production, increase control, and ultimately maximize profits. At the same time, commercially mediated imaginaries of nature played into the material changes in the fields as farmers responded to an emerging postwar food aesthetic.

By the 1970s, the contradictions of capitalist agriculture began to manifest in earnest. As growers intensified production, they also deepened the extent to
which they were drawing on the conditions of production – the soil was subsiding, the water was contaminated, and the health of the human and nonhuman ecologies were beginning to decline. In sum, the emerging socionatural, political, and economic challenges the Holland Marsh was facing heading into the 1980s were symptoms of the gathering contradictions of an unsustainable, capitalist agriculture coupled with the ascendant pressures of an urbanizing countryside. Productivist farming had resulted in more profit on the Marsh, but it also created an agriculture that was more dependent on capital, chemicals, and proprietary research and technology. Any recollections of the Marsh as a wetland or lessons from Hurricane Hazel were, by the late 1970s, distant memories. Production continued to increase unabated, though the socioecological contradictions kept piling up.