

**Framing the Forest:
Restoring Nova Scotia's Hidden Landscapes of Extraction**

by

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Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

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Abstract

Nova Scotia is home to vast areas of ecologically unique and sensitive Acadian forest, almost all of which has been cut down and regrown several times, damaging its integrity as habitat for wildlife and as economic and cultural asset. This landscape is now neither human nor wild—a latent, withering wasteland hiding in the hinterlands of the province.

This thesis argues that architecture might actively contribute to the recovery of this ecosystem while providing for a program of forest recovery and public understanding. The project proposes surrogate habitat for endangered organisms, programming for the multiple agents at work in recovery, and the provision for public experience of the forest renewal process. Using narrative to represent several exemplary human and other-than-human agents, this thesis proposes a prototypical architecture of care shaped by the interdependence and overlapping perspectives of the people and organisms who inhabit the recovering clear cut.

Acknowledgements

No journey through architecture school is traveled alone. Standing behind this document is a small army of supporters. I hope they might find my thanks in these acknowledgements.

I have worked with two cohorts of talented classmates, whose encouragement and companionship have propelled us through the highest highs and lowest lows. Thank you to everyone who fueled our collective efforts, and congratulations on surviving.

Without the grounded perspectives and sage advice of my colleagues at Fathom Studio, this thesis year might have felt like a bigger deal than it already was.

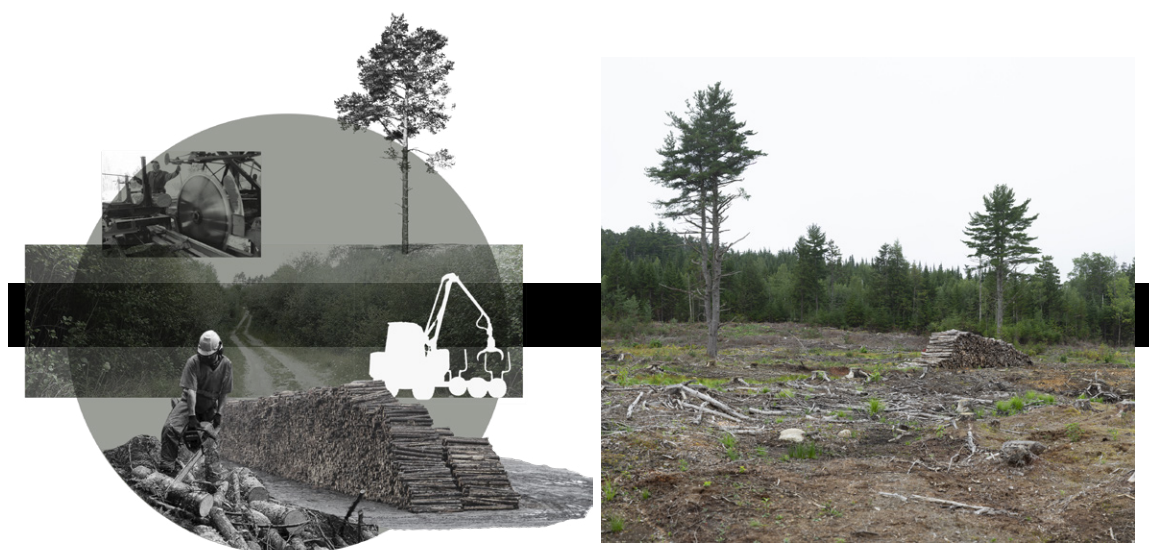
My committee has been instrumental in helping me articulate the curiosities that I brought to them. To Christine Macy: thank you for your decisiveness, clarity, and invaluable insights. And to Catherine Venart: your incredible wealth of knowledge and poetic instincts continue to inspire me to dream across boundaries.

Through the seemingly endless years of disappearing to the studio, my parents, friends, and partner have not forgotten me, but have patiently pushed me to keep going with their love and support. Thank you!

Chapter 1: Unfamiliar Forest

The Logger

Driving down the gravel road, the logger thinks to himself: here he is again in the woods like his grandfather, to cut trees. His grandfather's woodlot was tall and beautiful, like the trees around him here. He hesitates when he arrives at the open clear-cut, thinking of the many scars he's left in the forest like this. But this is just how he makes a living: he doesn't see another way with his skills and his knowledge. That's why he came here today.



1.1 The Logger's livelihood, and the culture it represents, depend on the forest.

The forestry industry is one of the oldest in Nova Scotia. In a province where roughly half the population lives in rural areas, industries like forestry play an outsized role in maintaining the prosperity of small or remote communities. Forestry is an integral part of the province's culture.

However, clear-cut forestry in Nova Scotia has recently been scrutinized for its damage to ecosystems. In 2021, a provincial government report was adopted (the *Lahey Report*) that made strong recommendations against clear cutting on crown (public) land in the interest of preserving ecologies at risk. In rural areas where forestry jobs have been abundant for generations, these recommendations threatened livelihoods. However, the Lahey Report cautioned that inaction today could cause the collapse of these ecosystems—and the timber industry entirely—threatening those jobs forever (Lahey 2018).

Two-thirds of the province's forest is privately owned, which limits the government's ability to regulate harvesting. But private woodlot owners are easily motivated to preserve or improve their forests with incentives and education, in the interest of creating legacy value. Organizations like the Otter Ponds Demonstration Forest aim to provide forest workers with skills upgrading, and to teach private owners how to manage their woodlots according to methods that restore ecosystems and extend the life of the woodlot (Verstraten 2021).

The Mainland Moose

At the treeline of a clear-cut, a mainland moose cow and calf hesitate to venture into a vast field of bare earth, littered with stumps, sticks, and young shrubs. Last year, this was cool and shaded. They are two of only a few hundred remaining moose in Nova Scotia. It is tempting to browse for young leaves in the open field. But to reach their usual shelter on the other side, they can either take the long way and follow the canopy, or risk the unsheltered sun. If they overheat, they will die.



1.2 The mainland moose is afraid of the clear cut, and will exhaust itself trying to walk around it.

This is a subspecies of moose native to mainland Nova Scotia, so called to differentiate it from the genetically distinct population introduced to Cape Breton Island. It is critically endangered due in part to aggressive forest harvesting. Moose require deep areas of old, intact forests to thrive because they are sensitive to the stress of overheating, even in winter. Although they often feed in open areas, they never stray far from the canopy. Clear cuts restrict their movements by fragmenting the landscape with huge openings in the forest (Snaith and Beazley 2004).

This creature's point of view is valuable to this story as a way to illustrate the implications of exploiting this landscape, and gives this other-than-human character agency in an architectural response. This is influenced by Thom Van Dooren's method of using narrative characters to break apart the human exceptionalism that stubbornly dominates discussions of nature. He aims to prompt new ethical questions about humanity's relationship to other species and the rest of the world, achieving what he calls a "thickening" of the facts and figures involved into something more relatable: to "hold open simultaneously a range of points of view, interpretations, temporalities, and possibilities" (Van Dooren 2014, 8).

The Olive-Sided Flycatcher

Meanwhile the cut's wildflowers, shrubs, and rotting wood have brought new insects. The threatened olive-sided flycatchers have arrived from the tropics to breed: tired, hungry, and looking for a place to nest, they prefer open areas like this for the abundant bugs. But this doesn't look like the natural clearings that they favour. Where is the dense cover at the edge where they can nest and hide? And where are the tall dead trees they use as lookouts? This edge comes all at once, and then disappears.



1.3 The olive-sided flycatcher (OSF) lives at forest edges, but might find the clear cut edge an unforgiving neighbourhood to raise their young.

Like many birds, the OSF inhabits a highly specialized ecological niche. Disturbing even one or two elements of this niche may increase the likelihood of nest abandonment and failure. In the case of the OSF, habitat loss in its South American wintering grounds makes its breeding success here crucial (NSDLF 2021).

In addition to opening empathic possibilities, the employ of multiple agents here as narrative characters broadens the architect's toolkit of experiential lenses. For all the efforts made to harness the experience of architecture to drive design, it is not possible to assume a universal experiencing subject. On the contrary, as David Abram writes in *The Spell of the Sensuous*, our consideration of human experience exists in cooperation with difference: "The field of experiences . . . [is] now seen to be inhabited by multiple subjectivities; the phenomenal field [is] no longer the isolate haunt of a solitary ego, but a collective landscape, constituted by other experiencing subjects as well as by oneself" (Abram 1996, 37). Thinking and working in this, what Abram calls the "life world," therefore means working with a multiplicity of experiencing subjects.

The Black Foam Lichen

Up high among the limbs of mature trees leftover at the clear cut centre, where it's just bright enough and just humid enough, a rare symbiosis of algae and fungi clings to life. The black foam lichen lingers here, eliminated from the rest of Canada because of forestry. But this perfect habitat is no oasis: now that it is surrounded by open air, it is too windy, too sunny, and too dry. Soon, the lichen will dry up, or its host tree will fall in the wind.



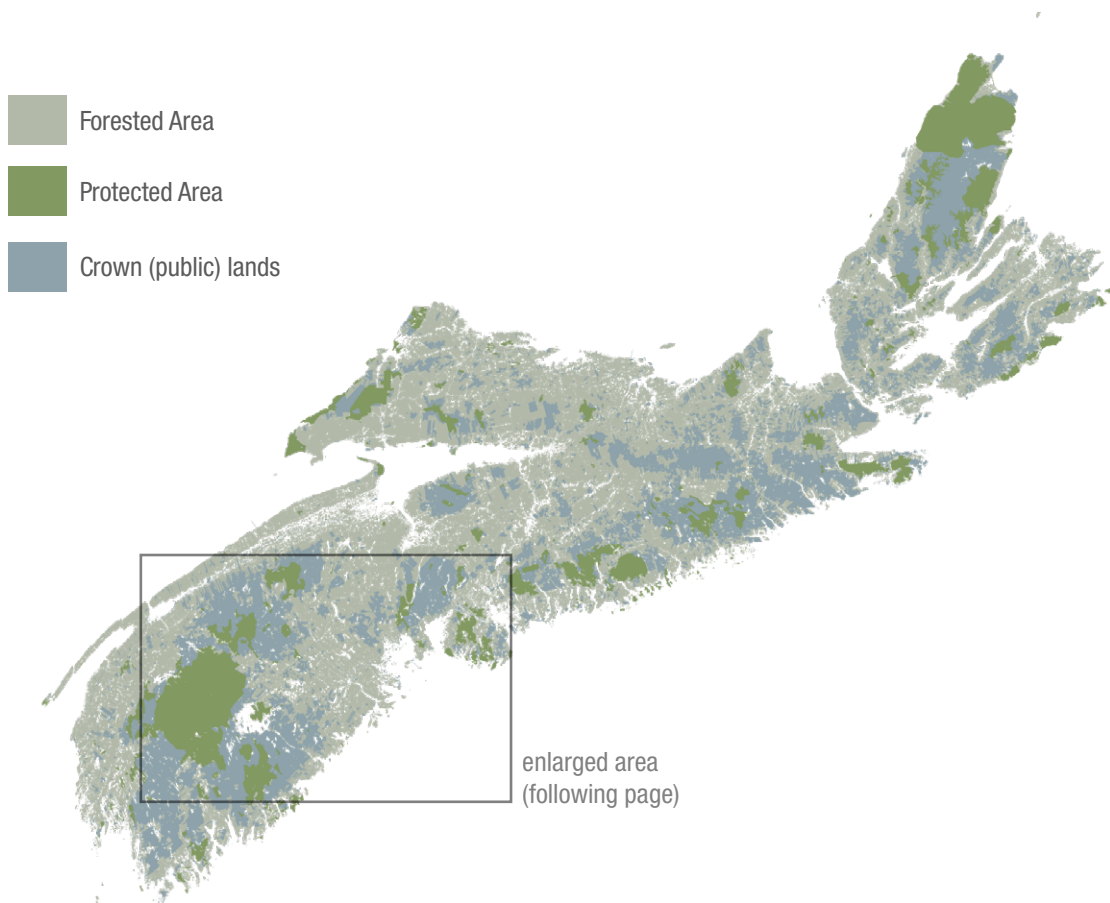
1.4 They may not be cute, but lichens, mosses, and fungi are crucial to forest health.

The black foam lichen is exceptionally rare worldwide. Once abundant in the rest of Canada, it is now found almost exclusively in the Maritime Provinces. Nova Scotia's mixed forest is an ideal habitat, and hosts more population groups than anywhere else. It is highly sensitive to forest harvesting because of its slow growth and sensitivity to environmental disturbance. Lichens like this play a crucial role in forest health as part of soil cycles and the recycling of dead material (COSEWIC 2015).

However alien, an effort to inhabit the perspective of the lichen is a version of what Donna Haraway calls "making oddkin"—finding ways to live on Earth that benefit human and other-than-human organisms "in unexpected collaborations and combinations, in hot compost piles" (Haraway 2016, 4). Incorporating these points of view is a step toward repair, and is itself an effort to combat the "game over" attitude of acknowledging damage to the Earth. Further, this might be a tool for understanding the natural world that we so clearly take for granted. Looking to Emanuele Coccia, who argues that anthropocentrism is a form of self-destructive narcissism, he writes: "To know the world, one must first choose the intensity of life, the height, and the form from which one wants to view it, and hence to live it. We need a mediator, a gaze capable of seeing and living the world where we cannot reach it" (Coccia 2019, 20). The gaze of the lichen, and the gaze of the other creatures here, might act as such a mediator.

The Acadian Forest

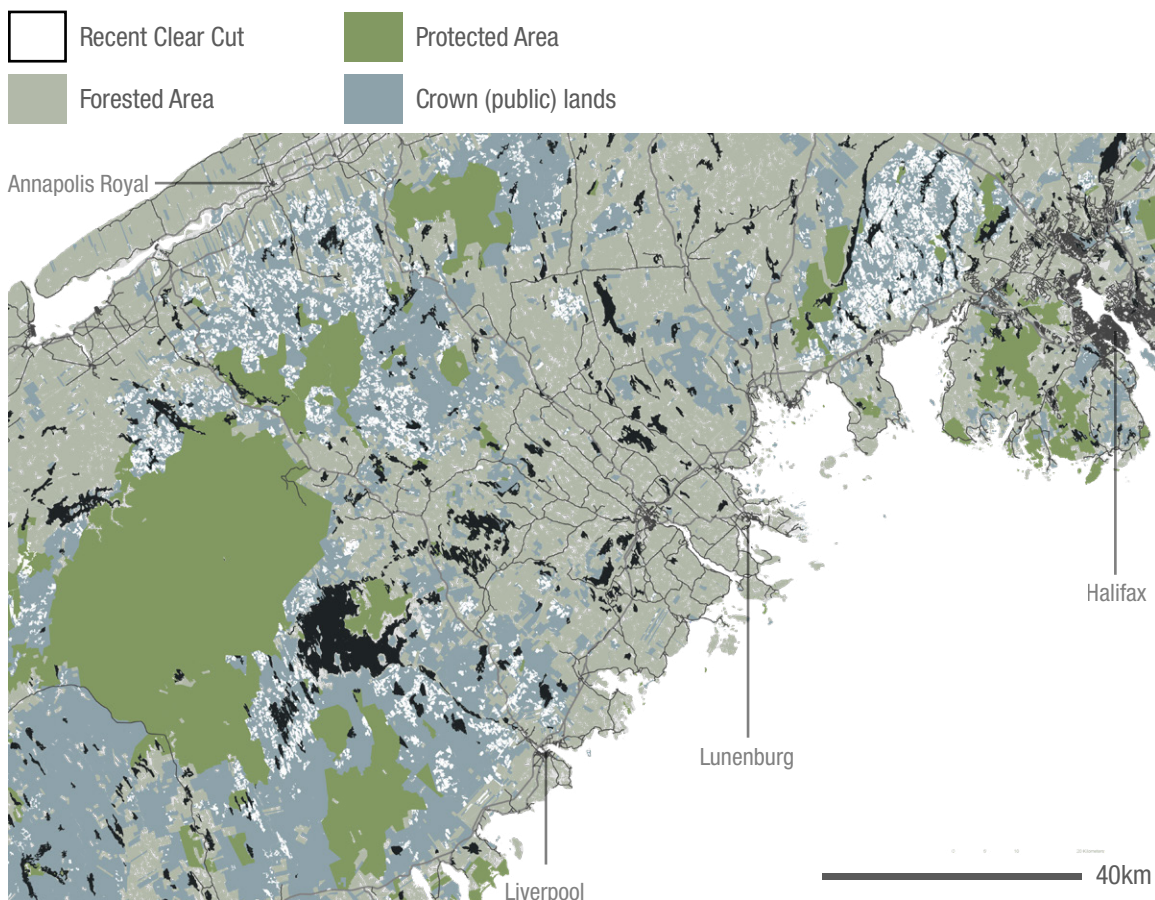
These are just a few of many species that live in Nova Scotia's forests. They are endangered or threatened with extinction, in part because of problematic forestry. It is no surprise that clear-cutting changes habitat. But just how much of these forests have been altered may be surprising.



1.5 The Acadian forest is both ubiquitous and disappearing (PNS, NSE, PA&E 2020; NSDNR 2022, 2021).

Forests cover most of Nova Scotia. This “Acadian forest” is a biome unique to the Canadian Maritimes and some of New England, where the combination of complex geology and soil types, a mild and dynamic maritime climate, and rare incidence of fire (there is no evidence of land-clearing fires performed by the indigenous Mi’Kmaq before colonialism) results in dozens of coexisting tree species of various ages and a naturally diverse and climate-resilient forest (Simpson 2008, 2; Loo and Ives 2003). Around one-third of this forest is administered by the provincial government and leased for harvest by private companies. Most of this harvest occurs by clear-cutting.

Known for its coastline, Nova Scotia is also home to vast areas of a unique landscape called Acadian forest: a diverse, mixed ecology bridging the southern hardwood forest and northern boreal forest in a fragile balance. This landscape is everywhere, covering 75% of the province's landmass, one-third of which is public land. It is a familiar and common place of leisure, rural living, and retreat, and is an important source of economic and cultural value.



1.6 If it is not a clear cut today, it once was before. White shows recent cuts on public land. Cuts on private land are not shown (PNS, NSE, PA&E 2020; NSDNR 2022, 2021; NSTDB 2020a, 2020b).

These forests have been clear cut successively for centuries, starting with old growth oaks near Annapolis Royal, after the first North American sawmill was built there in 1612 (top left of this map). These early settlers stayed in part because of the abundant and diverse supply of timber. Since that time, the forest has transformed into a patchwork of even-aged stands of trees, with the oldest trees becoming younger over time. In 1802, even after 190 years of cutting, early ecologists reported pines that were 54m tall. Today, 99% of the forest has been altered by harvesting, resulting in a simplification of species and ecosystem diversity. The forest now resembles the young growth that occurs after catastrophic fire: uniform in age, with few species—very much unlike the Acadian forest. This change has had effects that eliminate large numbers of native fauna like Woodland Caribou and Grey Wolf (Loo and Ives 2003, 462-5, 471). The tallest trees today are around 20m tall.



1.7 Healthy Acadian forests are a mix of species and a variety of ages. This diversity is naturally climate change- and disturbance-resilient: as warmer weather climbs north, heat-loving species thrive; as new pests invade, resistant individuals survive.



1.8 A churning, teeming cycle of lives and deaths: a community of young and old. The Acadian forest is rarely disturbed all at once when not harvested. Forest fires are extremely rare here, and the diverse forest means large pest- and disease-related deaths are unfamiliar. Clear cutting introduces a new dynamic that looks more like the vast disturbances that occur in boreal forests, where fires and mass die-offs are common.



1.9 Traces visible from a drone reveal a former clear cut block of uniformly-aged trees, a slowly regrowing patch shaved from the landscape. Traveling down the road at bottom is an experience of mostly thick brush: the past clear cut apparently erased.

The Scientist

A scientist wakes to the sound of birds. She has been coming here two weeks at a time for five years, trying to learn how the forest recovers. Every year, she notices change. Will the moose survive the winter? Will the flycatchers disappear? The old clear cut nearby looks recovered, but the regrowth of the canopy hides deeper troubles: shallow soil slowly runs away; networks of old roots are rotten. The trees that return will not be the same. She remembers a poem by Louise Glueck: “We have deprived them of their origins,/They have come to need us now” (Glueck 2019).



1.10 The Scientist sees the forest as a fabric of pasts and futures.

Architecture might be employed in the clear cut to create understanding of its histories. But if it is imagined as a means of communicating ideas, it is important to consider the limitations of architecture as such an instrument. In some ways, architecture does indeed operate as an instrument: the corporation’s gleaming office tower conveys power; the custom house communicates the client’s wealth and style; the sculptural art gallery projects a city’s cultural ambitions. In this view architecture and art are, as Alfred Gell describes in his book *Art and Agency*, “a special kind of technology” that “enchants” recipients within a cultural context, using the understandings and expectations of that context to convey a specific set of ideas (Gell 1998, viii). There is a distinction here, in the interaction between the “doer” of art (or architecture, i.e., the architect) and the person or people influenced by it (the inhabitant): the doer selects from an “index” of existing cultural meanings and their relations, forming a device that psychologically and emotionally motivates the receiver. However, this assumption represents a kind of modernist approach to measuring landscape: that architecture (or art) can speak a single message to its audience, and in doing so can educate them or improve their lives. As outlined above, approaching the human experience of ecological systems demands a multi-subjective approach, problematizing this idea. How, then, might architecture speak so many languages?

A Hidden Wasteland

What we see in Nova Scotia's forest is not a primeval wilderness, but something more like a vast, slow-moving farm. More than 99% of it has been altered by a cycle of cutting, regrowth, and cutting since Europeans arrived, upsetting its delicate diversity.



1.11 Forests like wheat fields.

Like slow-growing fields, forests are clear-cut and replanted in cycles in Nova Scotia and elsewhere in Canada to produce wood, paper, and fuel. Unlike a field of wheat, this cycle is unfamiliar or invisible.

The surprising extent to which forests have been altered here is a departure from the apparent familiarity of our planet's physical and ecological systems received from satellite technology and centuries of empiricism. Every landscape on Earth is available to accurately view from above, thanks to free imaging technology such as Google Maps. The whole world thus appears familiar at the swipe of a finger. We also understand that scientists and others have accumulated detailed understanding of the planet's landscapes: *we know* our planet to a high level of precision, even in the remotest wilderness. This familiarity betrays our *unfamiliarity* with the pervasiveness of the *anthropocene*—a term used to describe the immensity of human effect on the planet, so impactful that it changes the geological record itself (Purdy 2015). And yet this familiarity feels disconnected from overwhelming reports of the impending, uncontrolled collapse of the biosphere: if we were riding a train and it were on fire, would we not smell the smoke? This “uncanny” experience is neither here nor there, impossible to see and yet impossible to miss (Morton 2018, 5-6). The uncanny unfamiliarity is one potential reason why meaningful action to combat the advancing anthropocene is so difficult to motivate, or could be why we summon techno-utopian fantasies as solutions to our growing problems, “succumbing to abstract futurism and its affects of sublime despair and its politics of sublime indifference” (Haraway 2016, 4).

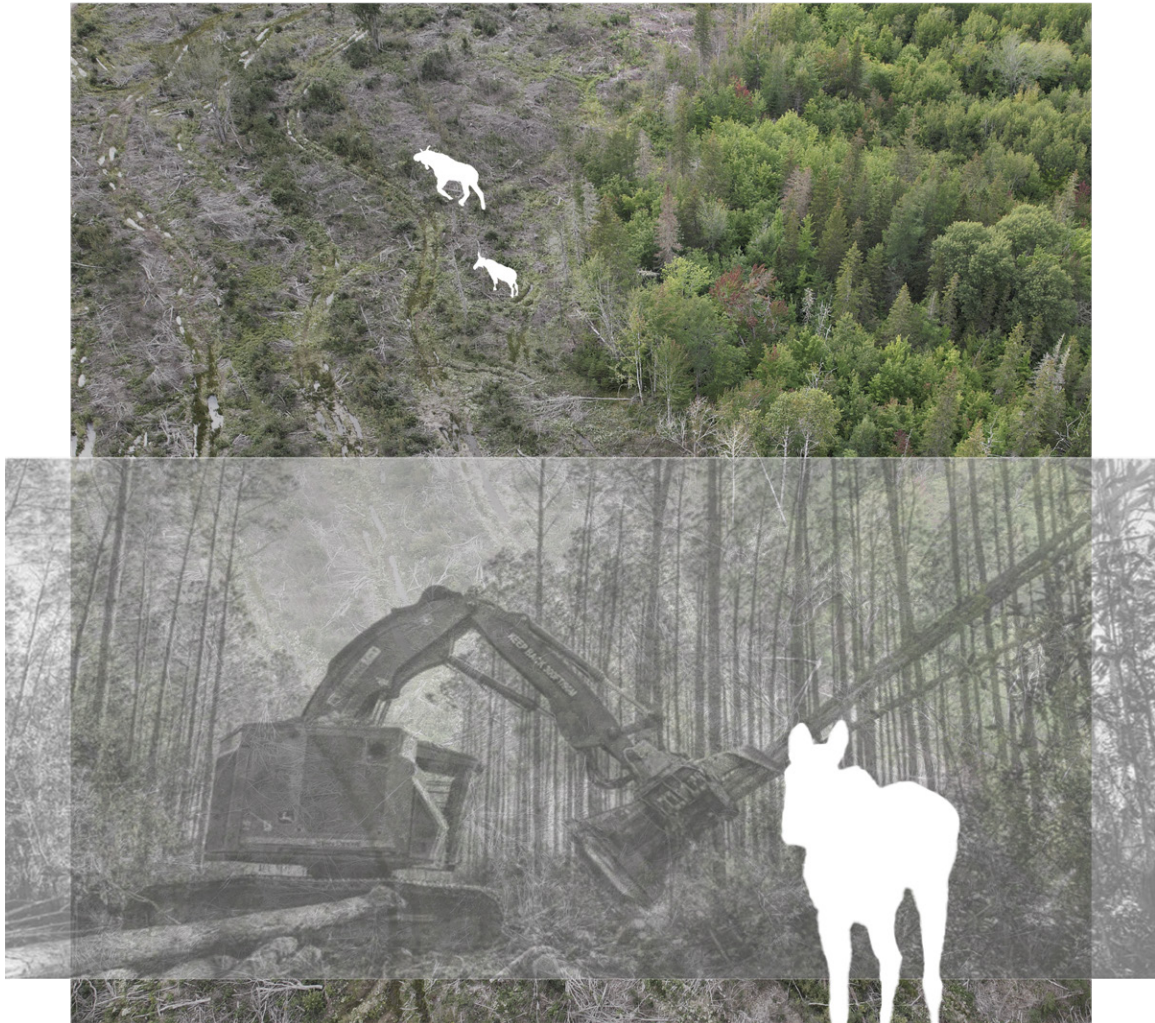
So, how well do we really know this familiar, ubiquitous landscape? In a sense, it is a what historian Vittoria di Palma would call a wasteland: both a human ruin, and a wild, untouched place, neither natural nor built (Di Palma 2014, 5-11). The idea of a wasteland evokes fear and disgust: with ourselves and with our abhorrent commodification of the Earth. But if this forest is a wasteland, this is not easy to see: when it regrows, it looks like forest, and cut blocks are often hidden, hard to access, and slowly ever-changing.



1.12 Wheat fields like forests (Kansas Wheat 2016).

We can measure the effects of environmental degradation, and yet they remain unfamiliar. We do not intimately *feel* the long-term and distant effects of mining, land conversion, logging or otherwise. Forest plantations are unlike the wheat fields in pastoral landscapes: they are hidden from everyday life and from our material practices, deliberately kept behind buffers of “nature” to protect locals and tourists from their ugliness; as a matter of consequence because they are remote and access is limited; and because the effects are so slow, immense, or spread out that they exceed human capacity for understanding—what Timothy Morton might include in his concept of a “hyperobject” (Morton 2013). Approaching this hiddenness has been one of the central projects of artists like Edward Burtynsky, who attempts to bridge the gap between gigantic and intimate to elicit empathy for anthropic landscapes. His photographs succeed because they straddle scales: spanning the gigantic and the intimate makes it possible to empathize with a coal mine. Clear cuts and other unfamiliar extractive landscapes similarly straddle two places in our imaginations: the natural and “wild” on the one hand, and the artificial and human on the other. Acknowledging this uncanny duality is crucial if we wish to live restoratively among landscapes of our own making. Jedediah Purdy describes them in terms that evoke Frankenstein’s monster: “The planet’s landscapes, its forests and fields, . . . are a *mélange* of those we have created, those we have cultivated and introduced, and those we let live—or, in only the deepest jungles, have not yet reached” (Purdy 2015, 15). When we can make friends with our monster, our task of carving out a future here can begin.

The moose, however, is familiar with these strange fields. This morning, she walked downhill through trees to the cool water of a swamp. When she returned the trees were gone: a hot, open scar. The machines are fast, but the forest is slow.



1.13 Too fast for the forest.

Machines are efficient and safe harvesters for human operators, but their speed is a function of the clear-cut harvest method. Some smaller machines are designed to lightly touch the ground in selective harvest operations. But large machines used in take-all operations trample and churn the soft forest floor into tracks of flooded muck. In order to reach valuable trees, these large machines must remove younger or less valuable trees in the process.

Aside from the ecological damage caused by certain machine use, there is evidence that large harvesting machines are financially unsustainable when taking into account insurance and interest payments on loans (Simpson 2015, 102).



1.15 The vastness of the clear cut beggars the imagination.

Architecture here might respond to this vastness by serving to frame it. Buildings frame our relationships to each other and to the specific places where they are built, making them valuable connectors to these landscapes of massive change.

In a way, buildings operate like any device that we use to augment, enhance, or modify how we understand our surroundings. Much like how an astrolabe augments the eye as part of a navigation apparatus, architecture engages the entire human body into a relationship with physical space: as Juhani Pallasmaa writes, it is “our primary instrument in relating us with space and time and giving these dimensions a human measure. It domesticates limitless space and endless time to be tolerated, inhabited and understood by humankind” (Pallasmaa 2012, 19). In this view, architecture functions as an implement for enhancing the sense experience we use to understand the world, helping to elucidate the spatial and temporal qualities of our environments.



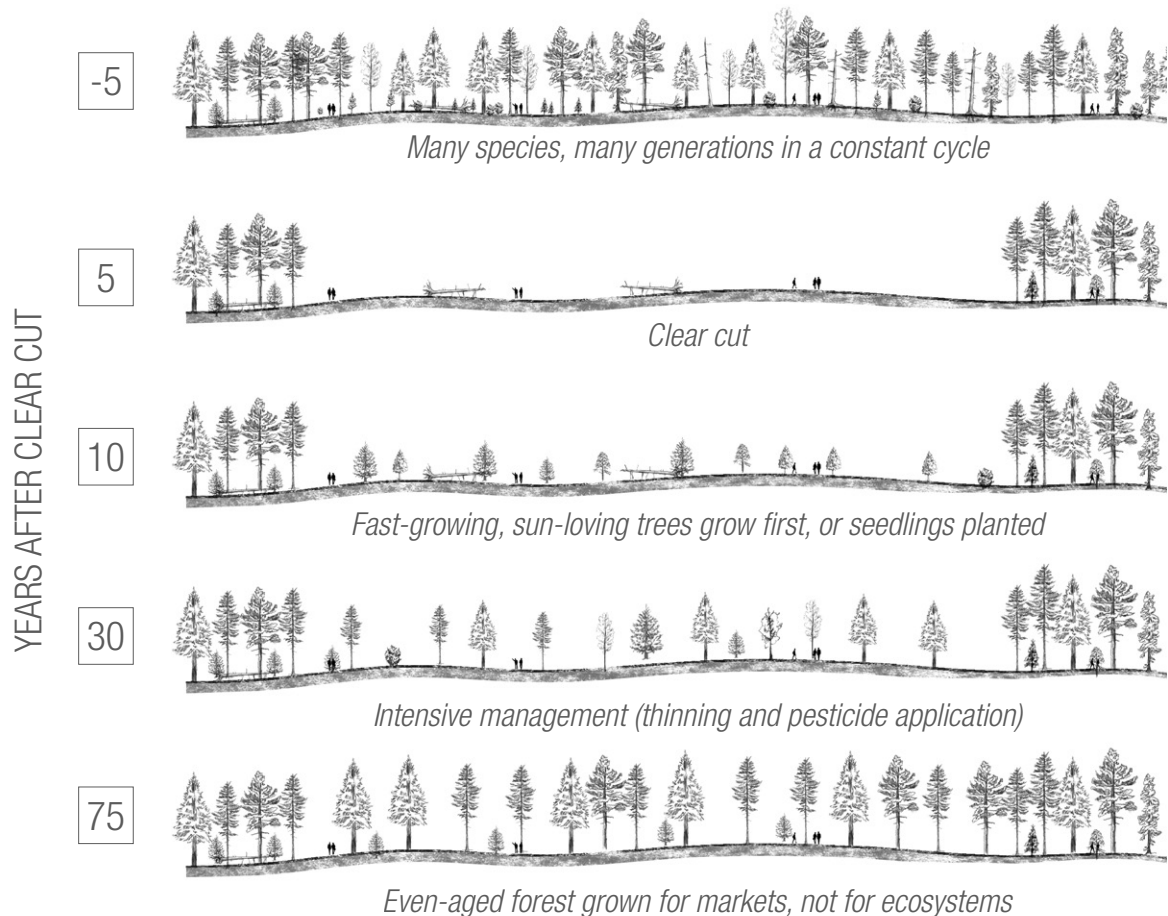
1.16 The elements found in a clear-cut landscape are as surprising as they are vast.

As places of gigantic spatial and temporal dimensions, landscapes are challenging to understand—they exceed Pallasmaa’s “human measure.” This gigantic quality has historically generated metaphor and myth in order to grasp the meaning and significance of vast landscapes: giants and gods that serve to bring landscape phenomena too immense to understand into the terrain of the imagination (Stewart 1993, 71-3). Thinking of architecture as measure implies that it might provide insight about its environs: that it might illuminate, teach about, or connect with certain qualities of a site or landscape. Steven Holl describes the relationship between architecture and landscape as such—as interpretive: “[It] does not so much intrude on a landscape as it serves to explain it” (Holl 1989, 9). As part of the process of siting, architects engage in a process of interpretation and analysis that becomes part of the design of a building. As a perceptual device, the building itself becomes a way of engaging with its landscape.

Chapter 2: Recovering the Clear-Cut

What is a Clear Cut? Critical Care for an Ecosystem in Crisis

In clear-cut forestry, trees are removed all at once and regrown quickly as plantations to maximize production and profit. This reduces biodiversity, erodes soils, and regrows as evenly-aged forests with fewer species, making them more susceptible to fire and disease.



2.1 Clear cuts regrow, but what regrows is not quite like it was before. It is something else: a human-made treed landscape. Why does it feel so similar, in a walk through the woods?

As our understanding of our relationship to the natural environment undergoes significant change, it is important to reconsider the architect's position as an interpreter of environments. If architecture "expresses and relates man's being in the world" (Pallasmaa 2012, 19), our unstable relationship to the world makes this mode of expression worthy of attention. The dire need to operate differently—to design our buildings and cities in concert with natural processes, for instance—is clear, but so has a need to understand the natural world differently: to operate under a new "planetary imaginary" that encompasses more than notions of sustainability, the visualization of planetary data, and the politics of emissions reductions targets (Wang 2021, 260).

Recall that the Acadian forest is diverse by definition. Paradoxically, harvesting this way reduces the landscape's capacity to produce trees of significant market value in the future.

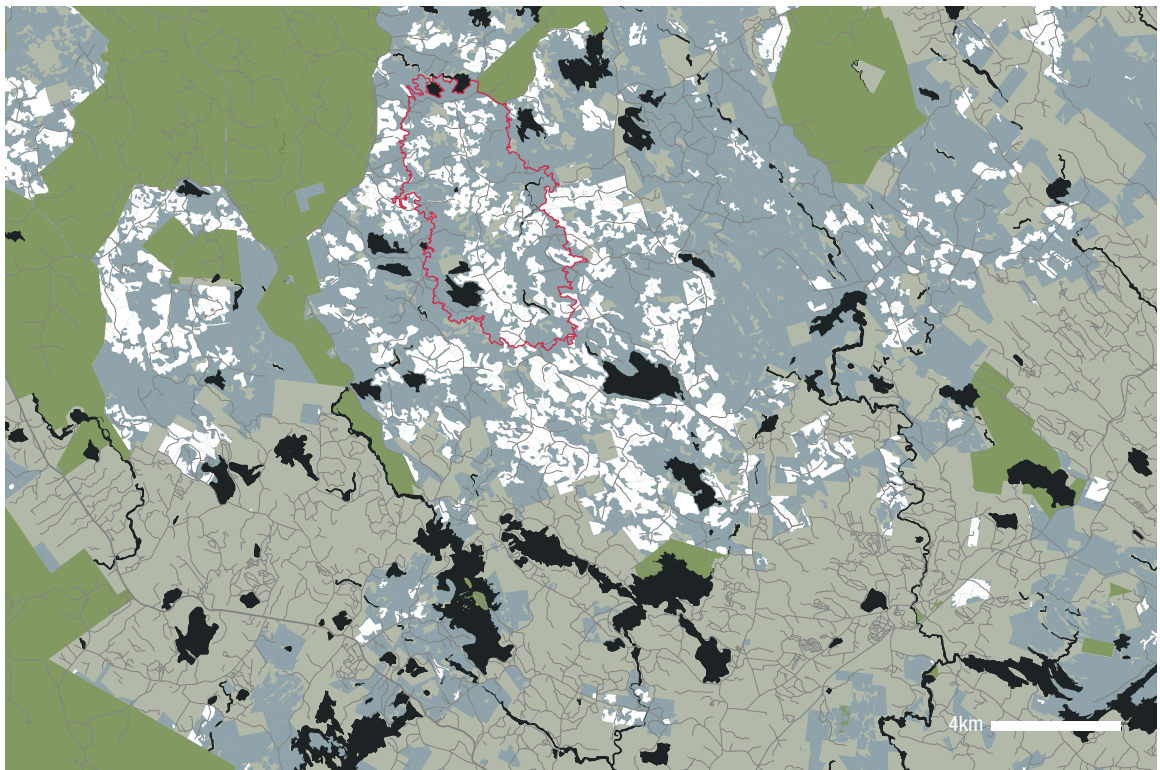
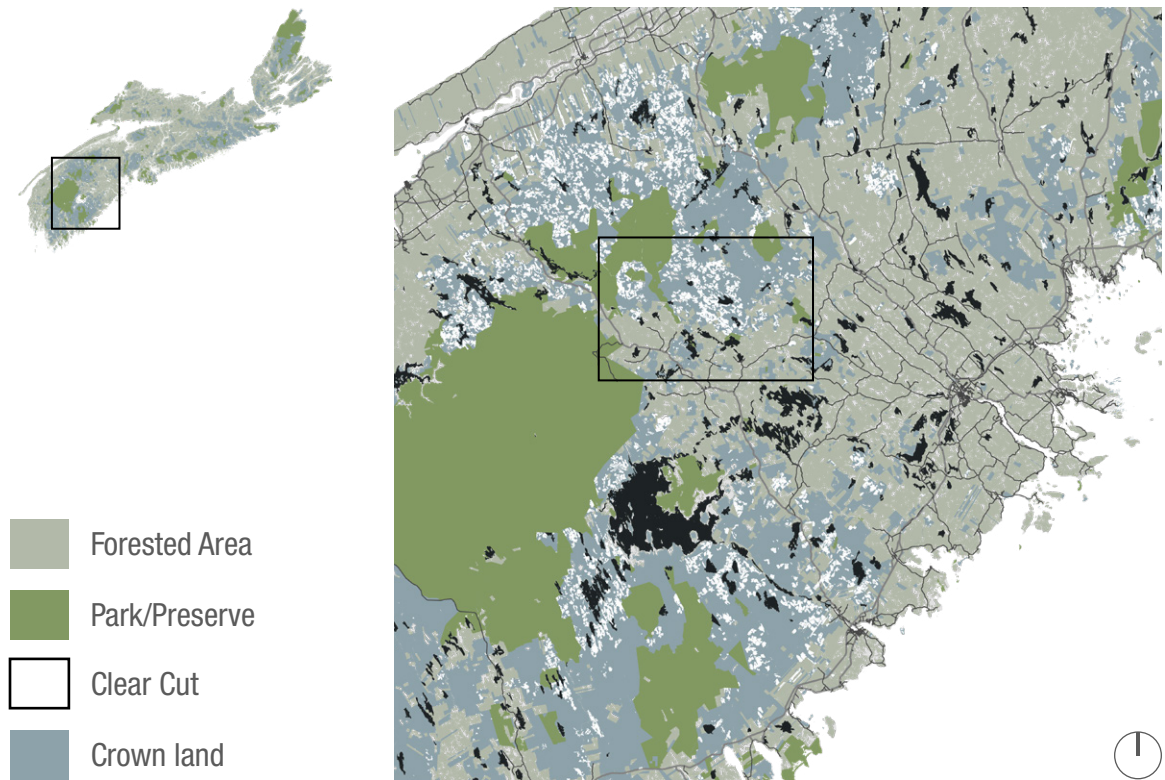
Alternatives to this harvest method exist. Scientists, activists, scholars, and indigenous peoples are calling for their implementation right away, in a kind of critical care for an ecosystem in crisis. This means halting most clear cutting in favour of a new forestry paradigm that takes a long-term view of forest resources.



2.2 Forests can be both productive and cared-for to mimic or augment “natural” processes. This is a fine example of a sunny clearing in an Acadian forest created by fallen trees.

Under an ethics of care, so-called “ecological forestry” continues forestry activity in a way that both improves ecological conditions or restores them to pre-clear-cut conditions, while increasing the future value of forest resources like timber. In the process, value is added to local communities by increasing the diversity and availability of labour and magnifying local knowledge. This originates from the position that we must work within the interdependency of natural and human systems to successfully bring about future that is—at minimum—liveable, and—at best—healthy (Fritz and Krasny 2019, 13).

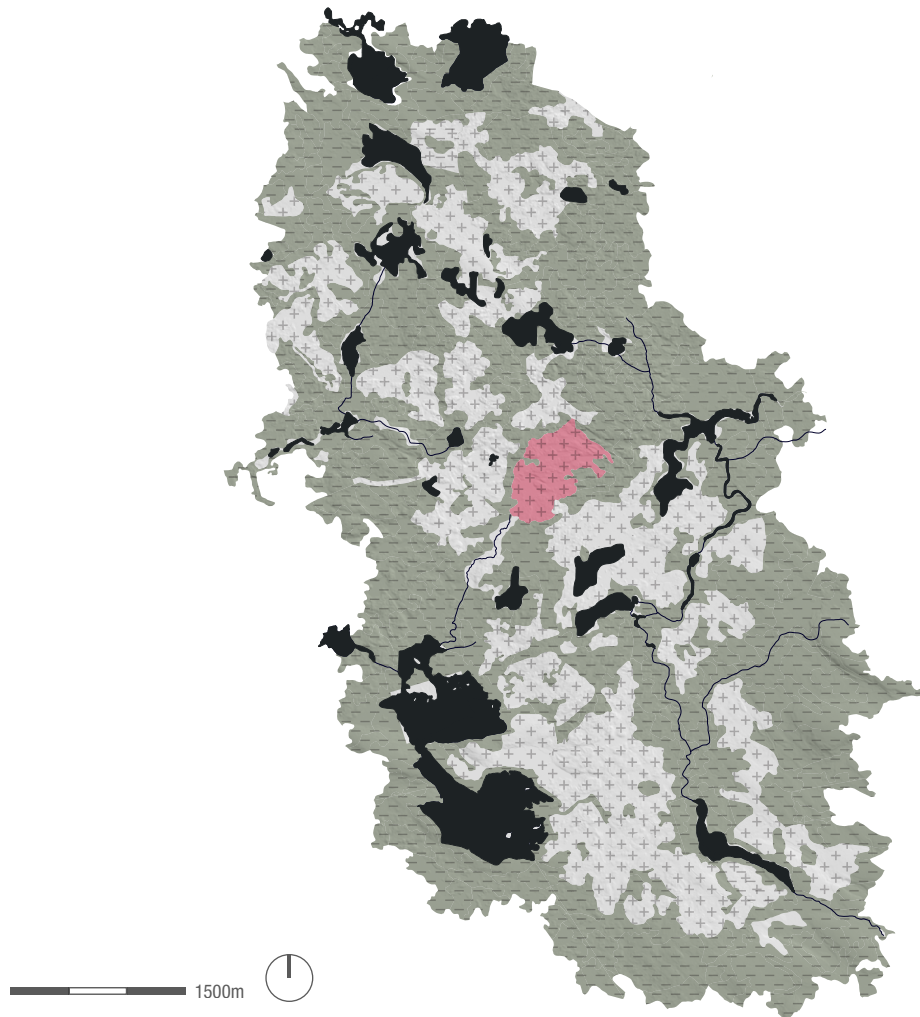
In the forest in this photograph, harvesting would mimic natural disturbances like this clearing, leaving the healthiest trees intact, increasing available light for saplings, and minimally damaging the mossy forest floor below. See Jamie Simpon’s book *Restoring the Acadian Forest* for a comprehensive description of the ecological and economic practices involved in this type of forestry (Simpson 2015).



2.3 Of the public land in Nova Scotia, much of it has been recently clear cut. This area (outlined in red) provides an opportunity to intervene at a landscape scale and restore the forest (PNS, NSE, PA&E 2020; NSDNR 2022, 2021; NSTDB 2020a, 2020b).

Recovery Strategy: Adding and Subtracting

This project exists in the near future, when Nova Scotia's public forests will be restored through this new paradigm of "ecological forestry." This will mean constant monitoring by experts, as well as selective harvest and planting operations, over the course of at least one hundred years.



2.4 Restoring the Acadian forest means removing undesirable trees where forest stands are intact (green) and adding or encouraging growth of native trees where the forest has been clear-cut (white) (NSDNR 2022, 2021; NSTDB 2020a).

The borders seen here differentiate forest "stands," or contiguous communities of trees, relatively uniform in their age, distribution, species, or structure, received from GIS data. Stands vary in size but are approximately the size of the site shown here in pink. One stand may be uniformly 50% black spruce and 50% red maple, for instance, in a patch bordering a wetland. Its uphill neighbour may be a mix of red spruce, white pine, balsam fir, and white birch.

This is the Centre for Forest Stewardship, a home base for this activity in this area.

To restore the forest, intact stands of trees are selectively harvested to favour native species, subtracting from the forest that was cut and transformed long ago. The resulting lumber is sold to fund the project or used on-site. Here, built infrastructure is avoided.

Clear-cuts, on the other hand, ask for addition: saplings are planted or regrow naturally, again favouring native species. Built infrastructure is introduced in these areas both to support the recovery programme and to provide access to this transforming landscape.

Thesis Question

So with this built infrastructure, this thesis asks: *“How can Architecture contribute to our understanding of forest landscapes altered by extraction, while acting on their recovery?”*

I will try to answer this by providing meaningful encounters with this altered landscape through framing its past, present, and future from multiple perspectives, and enabling active participation in a scheme of care and recovery.

Chapter 3: Site

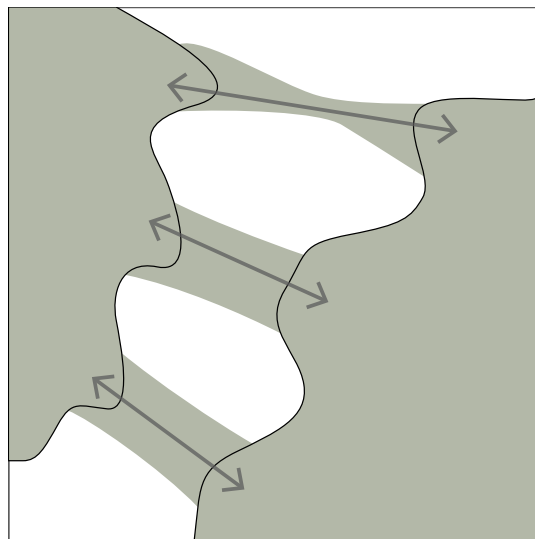
Sites of Intervention

To meet these parameters, the project responds to three eco-sites altered by the cut: *the Corridor*, *the Patch*, and *the Edge*.

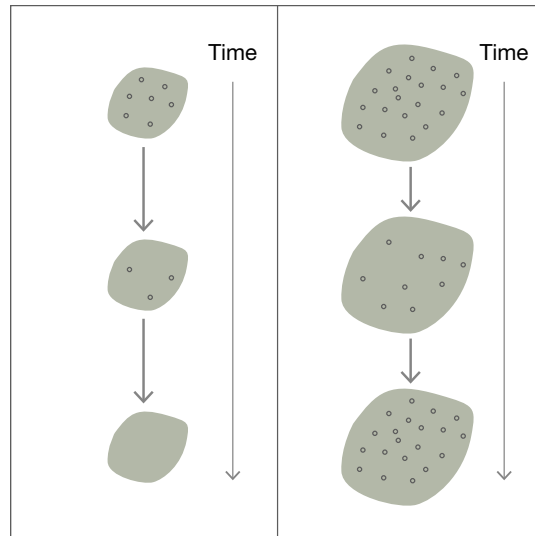
Corridors enable movement across the landscape for interior forest species like the mainland moose. They primarily inhabit continuous areas of old forest, and are unwilling to cross large open because they are sensitive to heat stress. In a landscape fragmented by clear-cuts, their movements are restricted to a few remaining corridors, and their populations dwindle.

In clear-cuts, patches of trees are left behind as seed generators, but the success of key species for forest health like moss, fungi, and lichen relies on the integrity of these patches. In the intact forest, the canopy protects from wind and sun, but these tiny patches leave them exposed and less able to reproduce, reducing the resiliency of the patch as a regenerator.

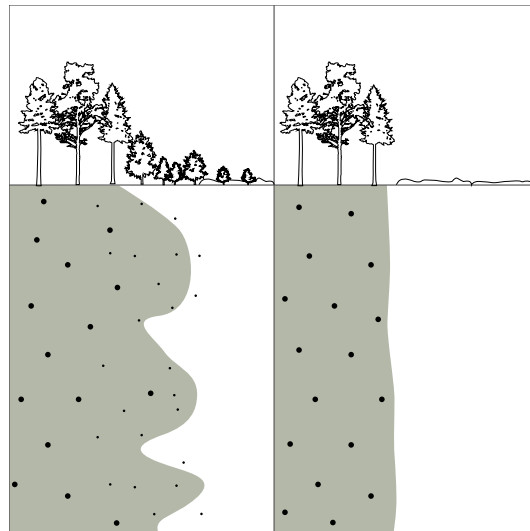
Finally, edges normally represent a structurally diverse transition between forest and open areas, where many species spend part of their life cycles. The edge of a wetland



3.1 Corridor ecosites connect patches of landscape features, creating continuity across the larger landscape. When corridors are interrupted with natural disturbances such as fires, or by human disturbances such as road infrastructure or clear cuts, the landscape becomes fragmented. Species that prefer continuous forests are among the most affected (adapted from Dramstad, Olson, and Forman 1996).



3.2 The patch ecosite behaves according to its size. Some species left within the patch will experience a higher probability of extinction because of fewer reproductive opportunities. In the case of the clear-cut, tiny patches are left to seed new growth, but these patches are threatened by their own insufficient sizes, which eliminates species that keep trees healthy such as mosses, fungi, lichen, etc. Additionally, trees are especially threatened by the effects of wind when isolated in otherwise bare patches of land (adapted from Dramstad, Olson, and Forman 1996).

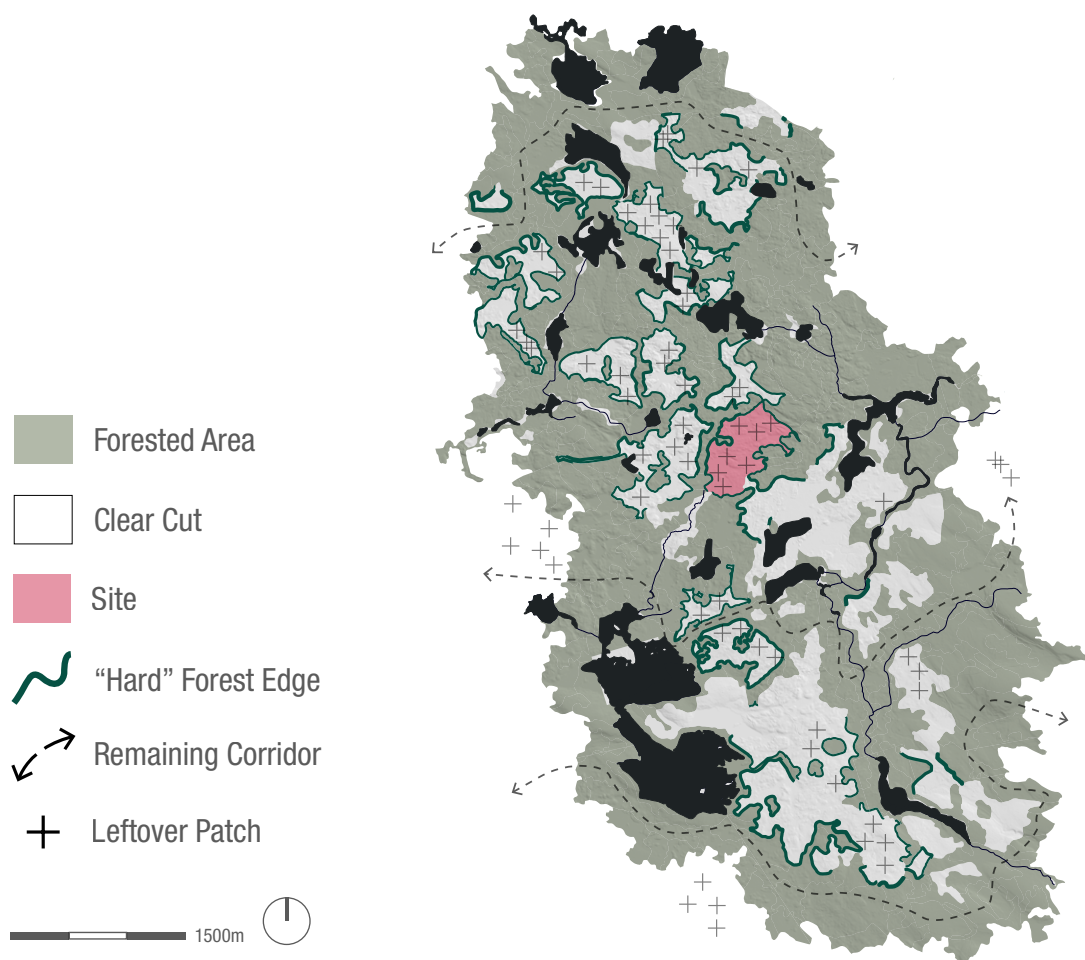


3.3 Edge ecosites are complex transition zones between different forest conditions, such as between dense forest and wetlands, bogs, or meadows (adapted from Dramstad, Olson, and Forman 1996). These transitions produce a structurally diverse edge as conditions on either side of the edge overlap and blend together. This diversity creates a richness of species thanks to the many physical habitats, plant species, and climactic situations here. These ecozones are cornerstones of healthy landscapes and entire regions: 85% of forest species experience loss of abundance when these edges are altered, and roughly 50% of all forests exist within 500m of an edge (Pfeifer et al. 2017). Structurally diverse edges are thus crucial for forest integrity.

The clear cut edge, on the other hand, is a “hard” and straight line that may remain so for at least 40 years without careful intervention (Marozas, Grigaitis, and Brazaitis 2005).

or meadow, for example, is complex and gradual—ideal for birds like the flycatcher that require both dense cover for nesting and nearby clearings for hunting. But clear-cut edges are abrupt and straight, disrupting this condition.

To support our companion species, interventions should preserve the critical habitat qualities of these eco-sites until the forest is restored.



3.4 A landscape of fragmented deep forest, lingering points of standalone patches, and hundreds of kilometres of new hard edges. This area is approximately the size of the Halifax peninsula (NSDNR 2022, 2021; NSTDB 2020a).

The long continuous chains of cuts form impassable terrain for species like the moose. Remaining corridors are few and far between, reducing travel options and shrinking effective territory size. This has the added effect of reducing intermingling and breeding between isolated population groups. Meanwhile, the cut landscape produces countless linear kilometres of hard edges, which produce swathes of modified edge habitat. Leftover patches number by the hundreds. This fragmented strip of public forest is proposed to be under the stewardship of the Centre for Forest Stewardship. It is a manageable size of approximately 5,000 hectares. By comparison, organizations like the nearby Medway Community Forest look over areas as large as 15,000 hectares (MCFC 2016).

Niche, Bridge, Stitch

These interventions are added in a sequence, beginning with the most urgent and least intensive infrastructure, and progressing as the effects of the first reinforce the next.

The first act addresses the fragile patches. A series of “niche” follies are built around these residual patches to protect from blowdown and the effects of exposure. At first they are built a few at a time along with new access trails, creating the first incentive for visitors

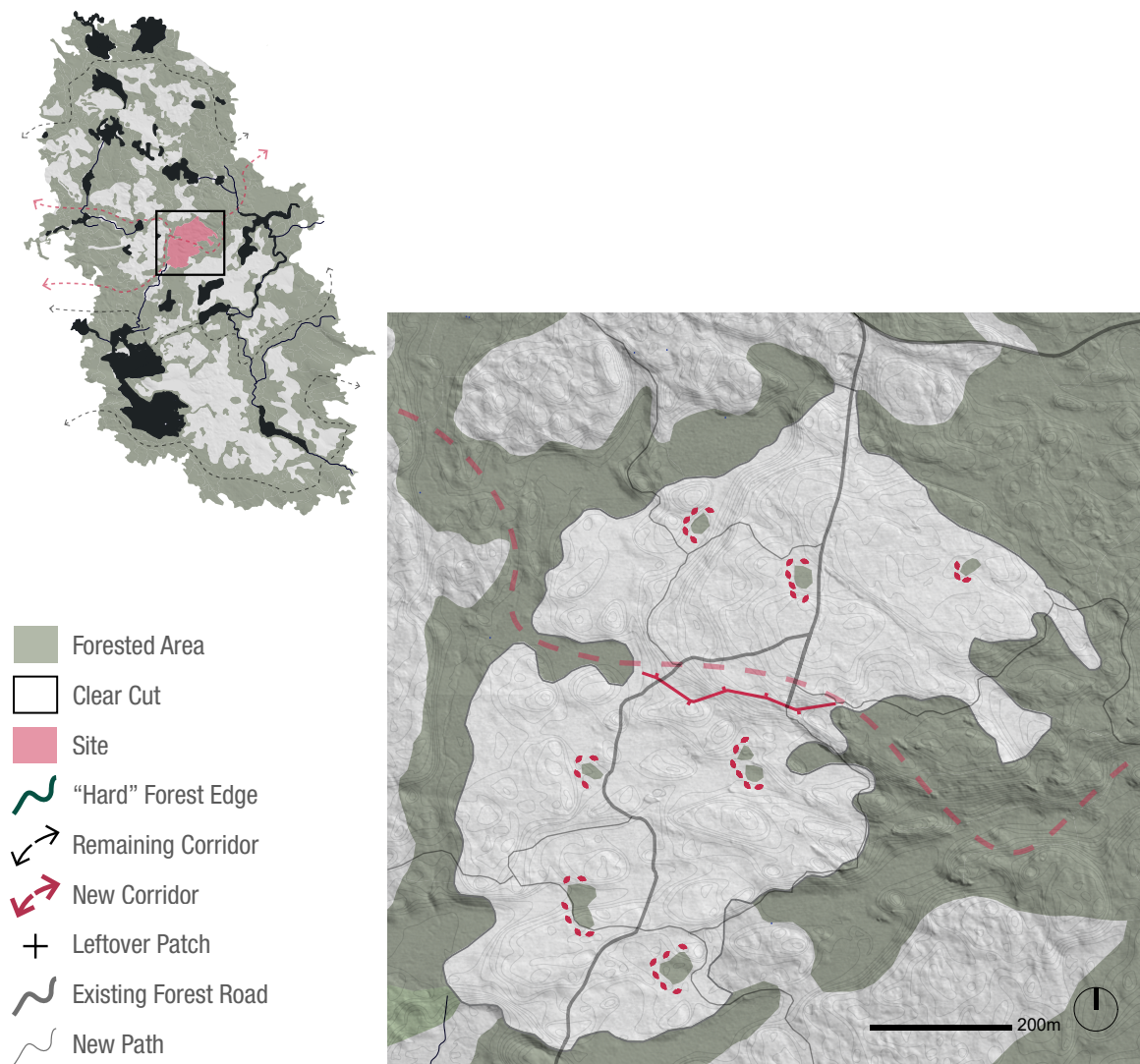


3.5 Niches as shields for the patches, and as generators of semi-enclosed spaces (NSDNR 2022, 2021; NSTDB 2020a, 2020b).

As small, mobile deployments they offer relatively easy modes of salvage, using the least number of resources for the maximum return as restorative infrastructure. Before more interventions take place, the niches offer simple, sculptural backcountry destinations for the public, serving also as points of interest for forestry learners and researchers who spend time in the cut.

and researchers to spend time in the clear cut. At the same time, these niches shield organisms in the patches from conditions that would strip them away.

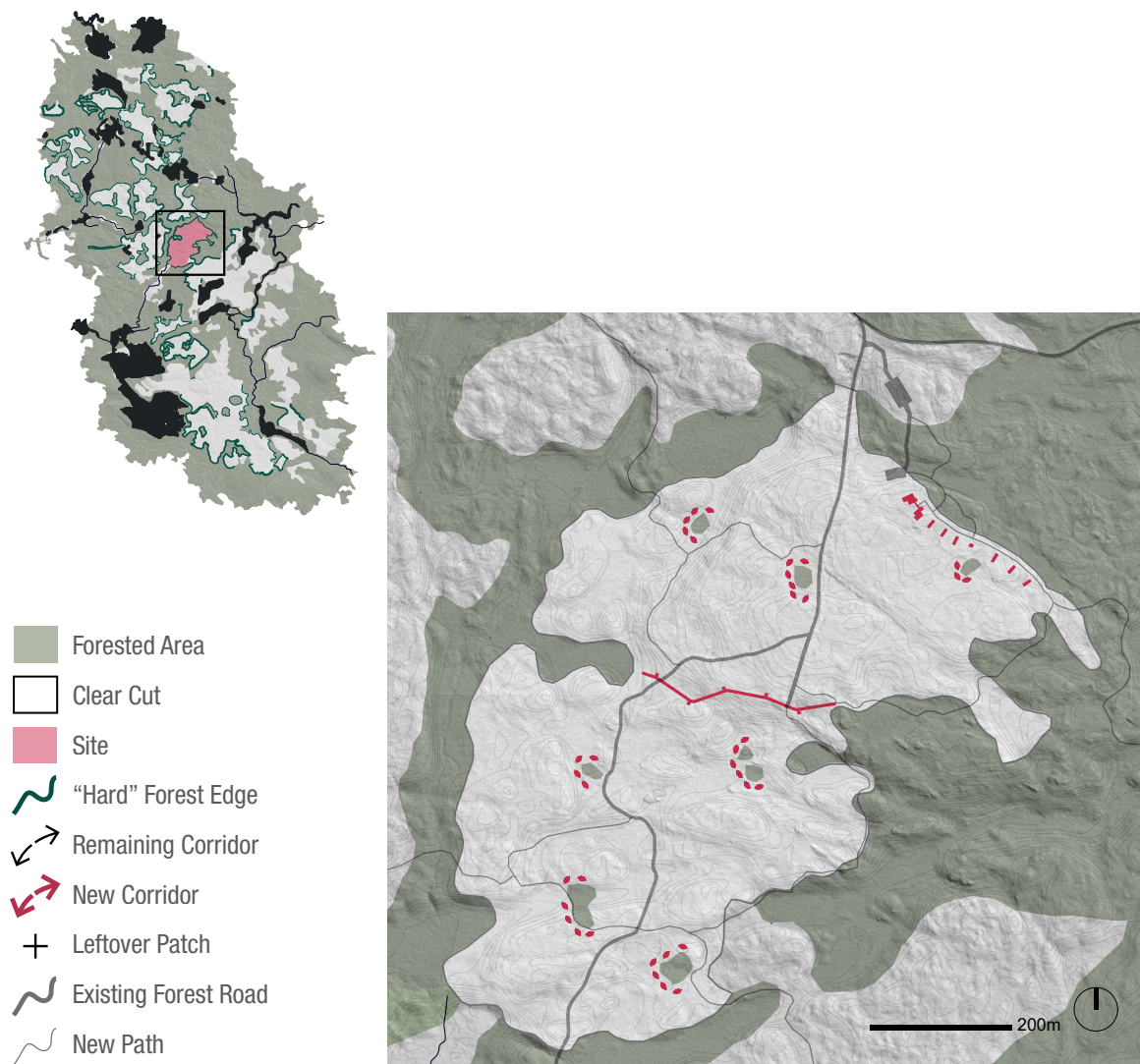
Soon after, the project introduces a link across the landscape: a “bridge” installation that acts to bypass the vast cut and connect two older forests. In effect this will function as a surrogate landscape corridor for cut-avoidant species like the moose, mitigating the worst effects of fragmentation.



3.6 A bridge as surrogate landscape corridor (NSDNR 2022, 2021; NSTDB 2020a, 2020b).

A more intensive piece of infrastructure than the niches, bridges like this can create strategically important links across the landscape where remaining forest corridors have been reduced or eliminated. The bridge is a more enticing draw for the public, and provides a unique raised vantage point for researchers and forestry learners to engage with the restoration process.

As the recovery programme gains traction, a permanent home for this Centre for Forest Stewardship softens the hard treeline edge: a “stitch” of buildings that weave together openness and density—an interim repair to diversify the structure of the boundary and provide a variety of edge habitat elements required by edge species like the flycatcher.



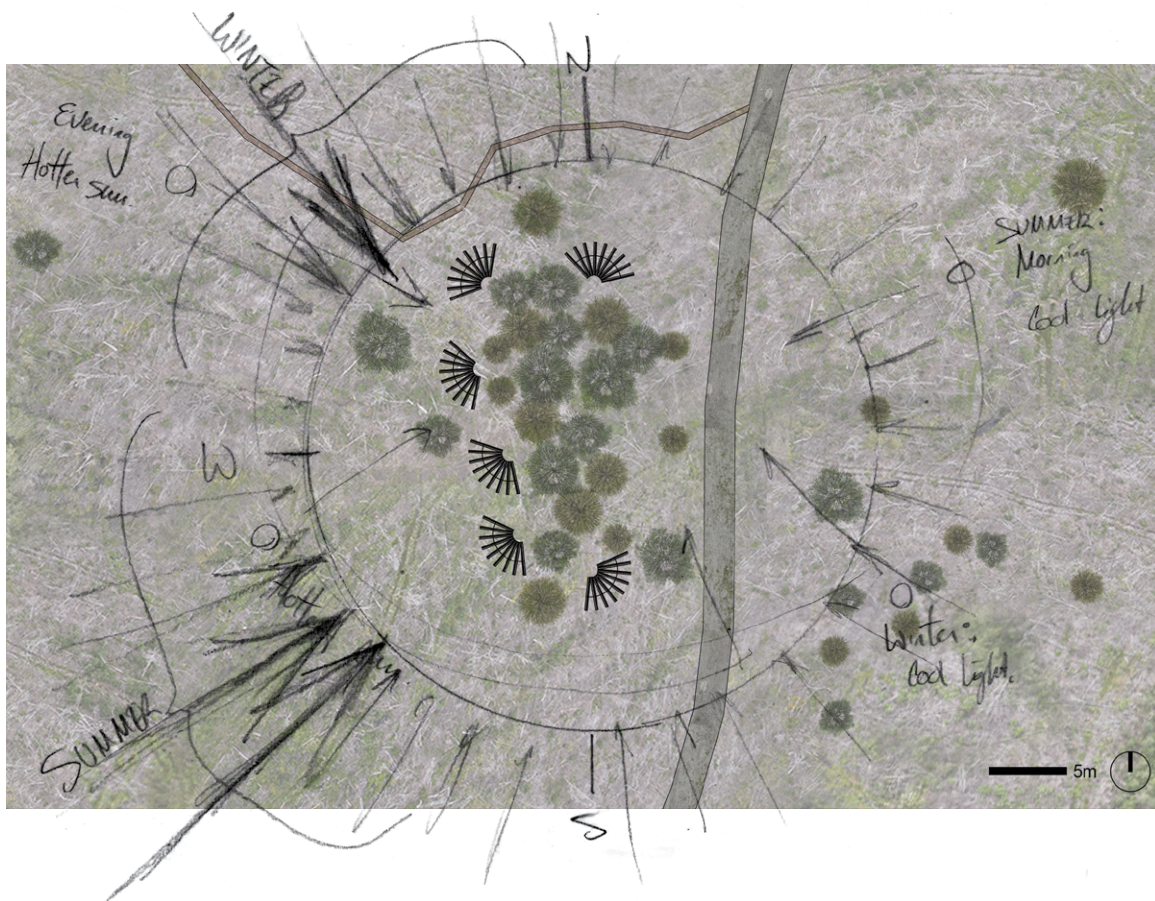
3.7 Infrastructure for interior spaces might multiply along the clear cut edge, a stitch weaving the cut into neighbouring older forest (NSDNR 2022, 2021; NSTDB 2020a, 2020b).

Siting these buildings at the forest edge offers opportunity for comparison between two landscape types and a register of change over time as the forest recovers.

Chapter 4: Design

The Niche

Here among the niches, the patch becomes a sanctuary. The structures embrace the patch with their long arms and inward focus, and reflect the chaotic debris of the cut. The lichen waits patiently for the canopy to return and protect it.



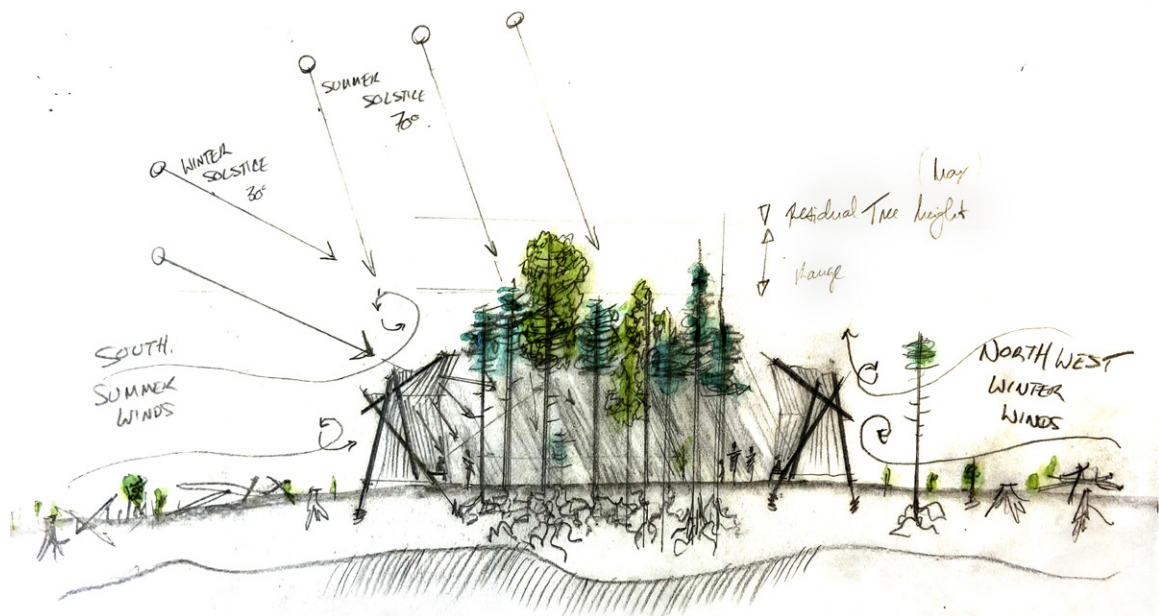
4.1 Installations as multi-species insulation (ISUIEM 2022).

In these landscapes of our own making, the “natural” evaporates, and with it conceptions of the blank, non-human world on which we build. Donna Haraway writes that to think of this ending as the end of the world is not only mistaken, but dangerous. Moreover, the idea that technical solutions will save the day (and the planet) would be to continue with a techno-utopian status quo (Haraway 2016, 4). Moving forward with a pragmatic optimism means re-imagining how we work together, both among humans and among species (SFAofficial 2017). Installations like this therefore explore how to live alongside one another in a so-called natural context, where collisions between human activity and natural landscapes are both hidden and active. Whether it provides a measurable solution to a problem is beside the point; that it envisions new alliances, however, is.

Until then, this is a place for quiet consideration of the landscape's past and future: a place within the wasteland to daydream, reminding us we are capable of resonating with the world.

The hikers linger here in the tall frames, hiding from September winds. They notice the lichen clinging to life above, spreading to the armatures around them.

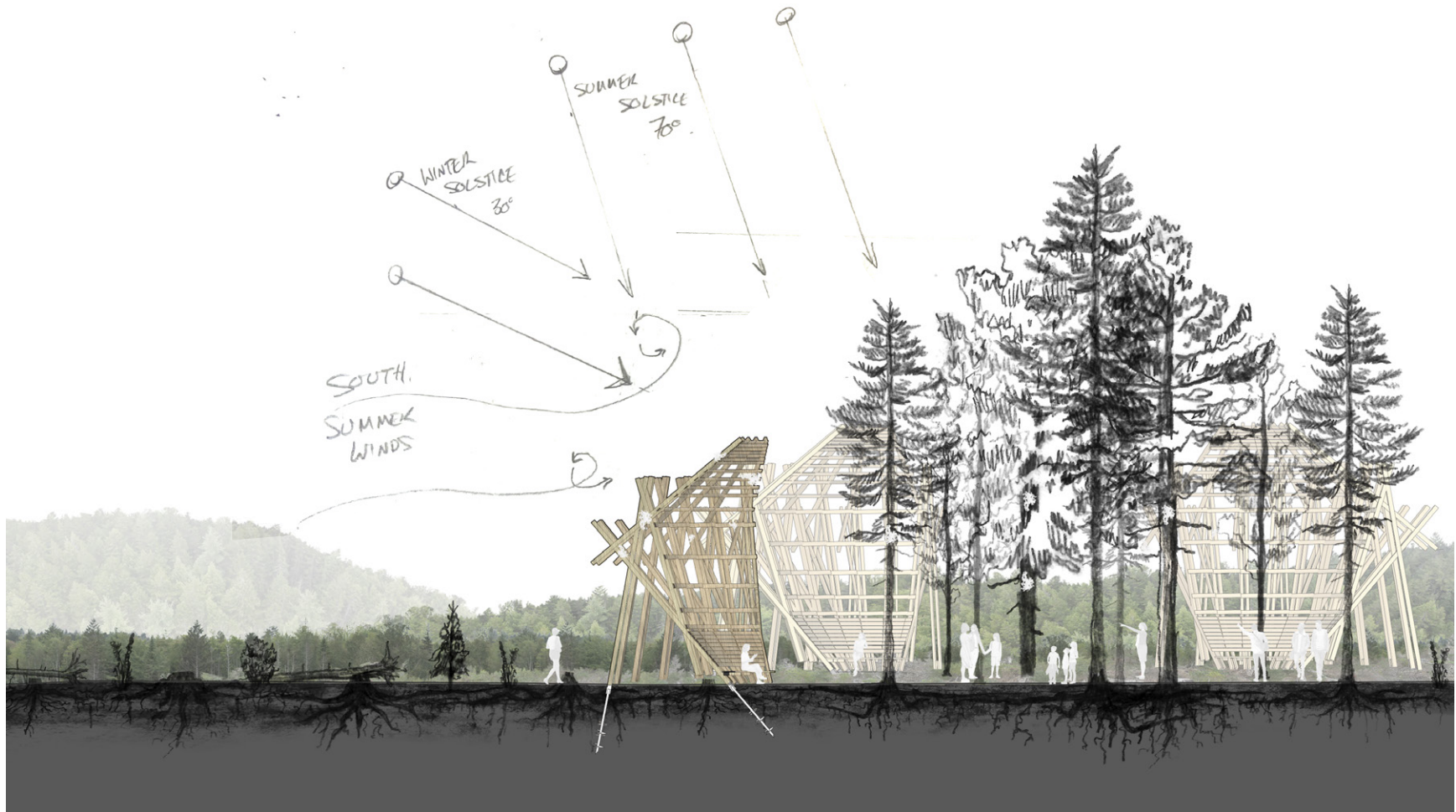
Tomorrow, the scientist will tell stories here to a group of kids. The niches enclose the space of the patch like a theatre in dappled light. What story will she tell them? And which of the kids will return in twenty years to do the same? The loggers, surveying the effects of their business, consider the canopy.



4.2 The niches frame forest patches.

The installations act as climactic moderators and highlight the patch as a point of interest. Over time, their verticality acts to measure change in the forest as it regrows around the patch.

Our everyday expressions betray how we register landscapes: a 'stone's throw,' or 'an hour's walk' speak to the intuitive experiences of the body and its exertion that we use to describe and understand their distances and times (Leatherbarrow 2000, 5). Landscape features similarly fall under these anthropomorphizing instincts as "the mouth of the river, the foot-hills, the fingers of the lake, the heart-lands, the elbow of the stream" (Stewart 1993, 71). Indeed the very idea of unitizing distance into measurable pieces comes from the scale of the body: feet, hands, and yards reveal that the description of scale comes from an analogical expansion of the familiar. Measurement takes us out of the intuitive understanding of a landscape or urban setting, asking us to think twice about what we believe we understand through embodied experience, and to ask instead what lies between here and there; between now and then. These installations similarly ask human visitors to make analogies through time as the forest changes around them.



4.3 Architecture as armature.

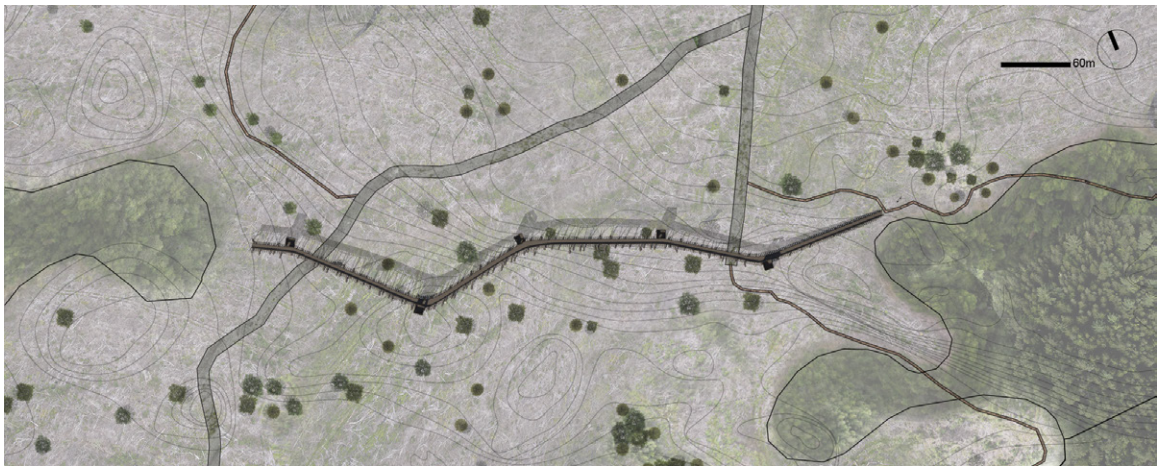
The follies create a climactic island for species like the lichen. They protect against southerly summer winds and northerly winter winds, in addition to filtering oblique sunlight for lichen on tree trunks. Ruined root systems linger below. Protected, the trees and lichen-like species spread outward, climbing up and through the armatures over time.



4.4 A forest theatre, a place of refuge, and a crossroads for considering the forest's past and future.

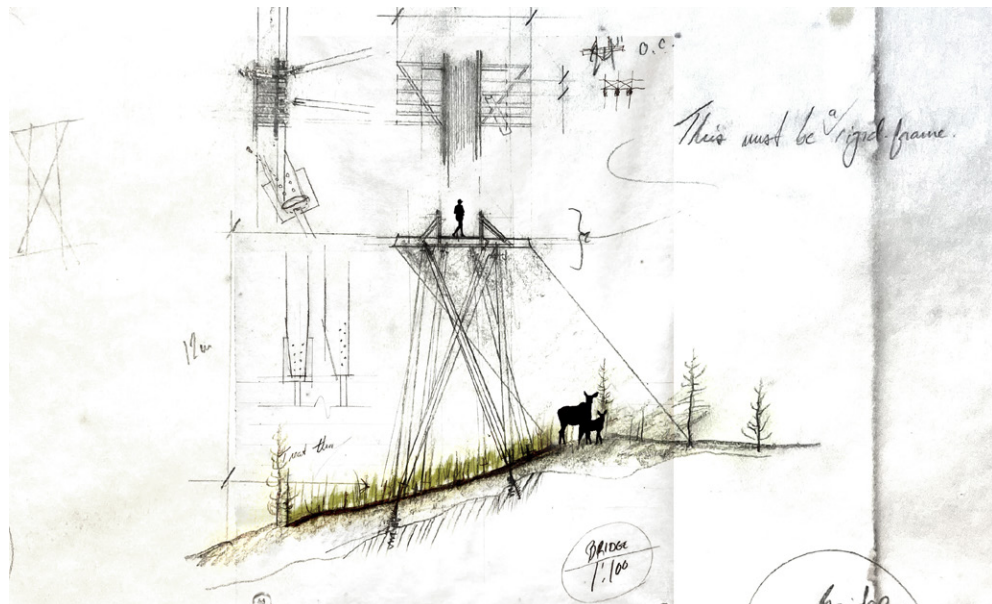
The Bridge

Peeking over the horizon, a line of verticals crosses the expanse: tall silver wood columns appear as ghosts of the forest to come. The hikers have wandered here from a trail and discover the walkway supported above. As they walk and gain height, they gawk at the immensity of the cut. From here they see a chain of other clear cuts in the distance.



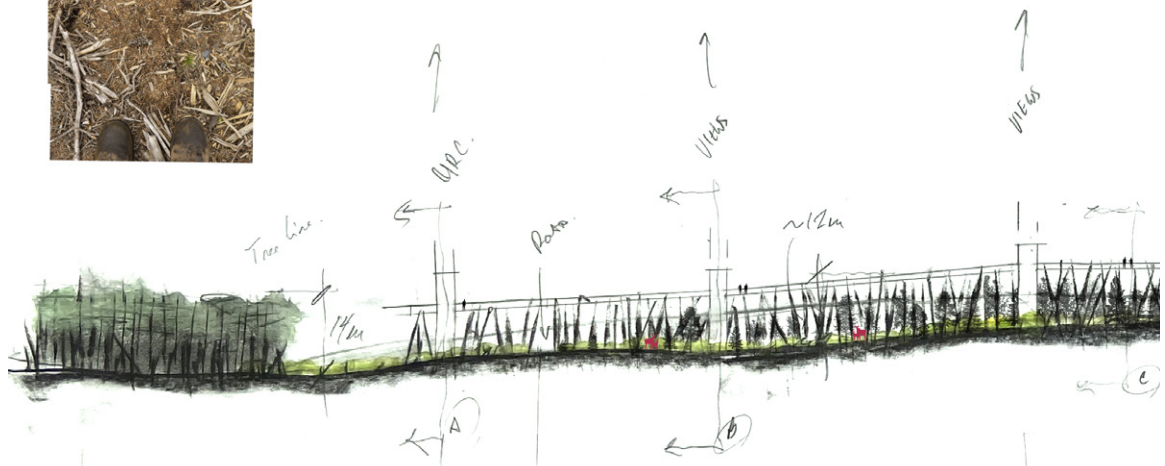
4.5 The bridge as surrogate corridor prototype.

The bridge joins two areas of intact forest. At grade to the east, the bridge joins a walking trail. Two forest roads are near to vertical circulation towers.

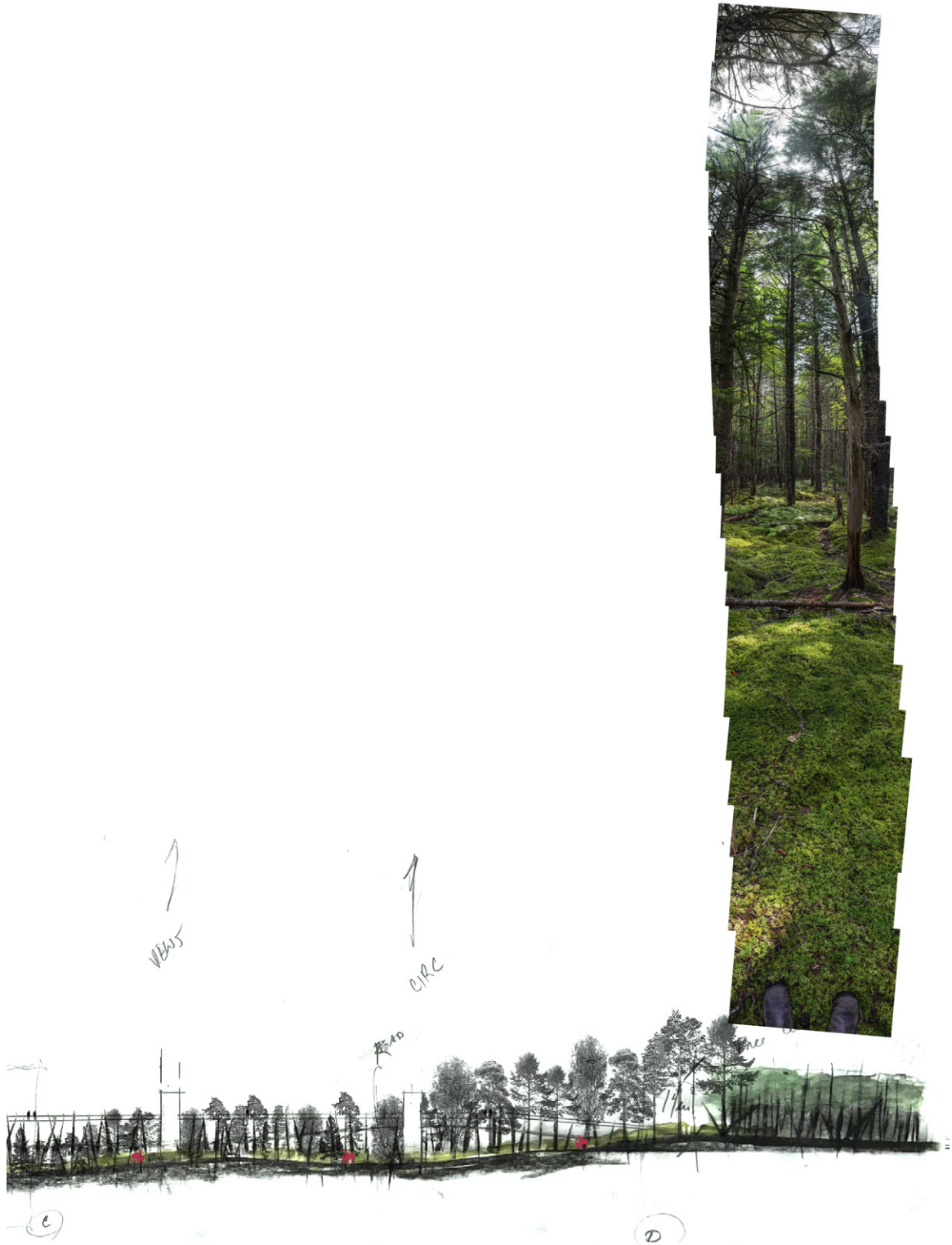


4.6 Shelter for the moose, panorama for humans.

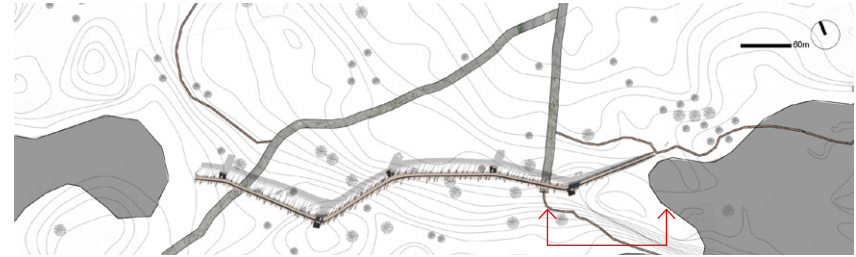
Triangulated wood columns and a filigree bridge frame resist toppling while providing a huge surface area for refugee organisms to attach. Screw piles bear lightly but firmly in the stony ground.



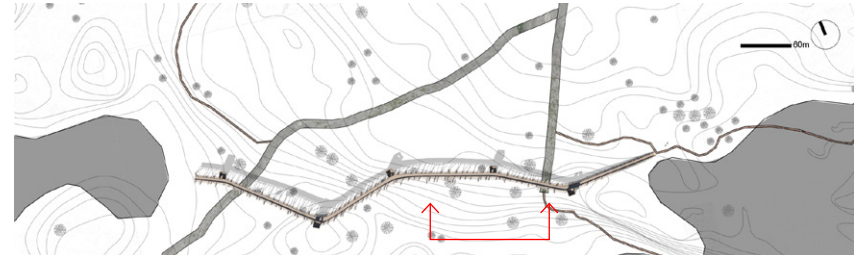
4.7a The bridge as register of the canopy datum. The canopy today is absent.



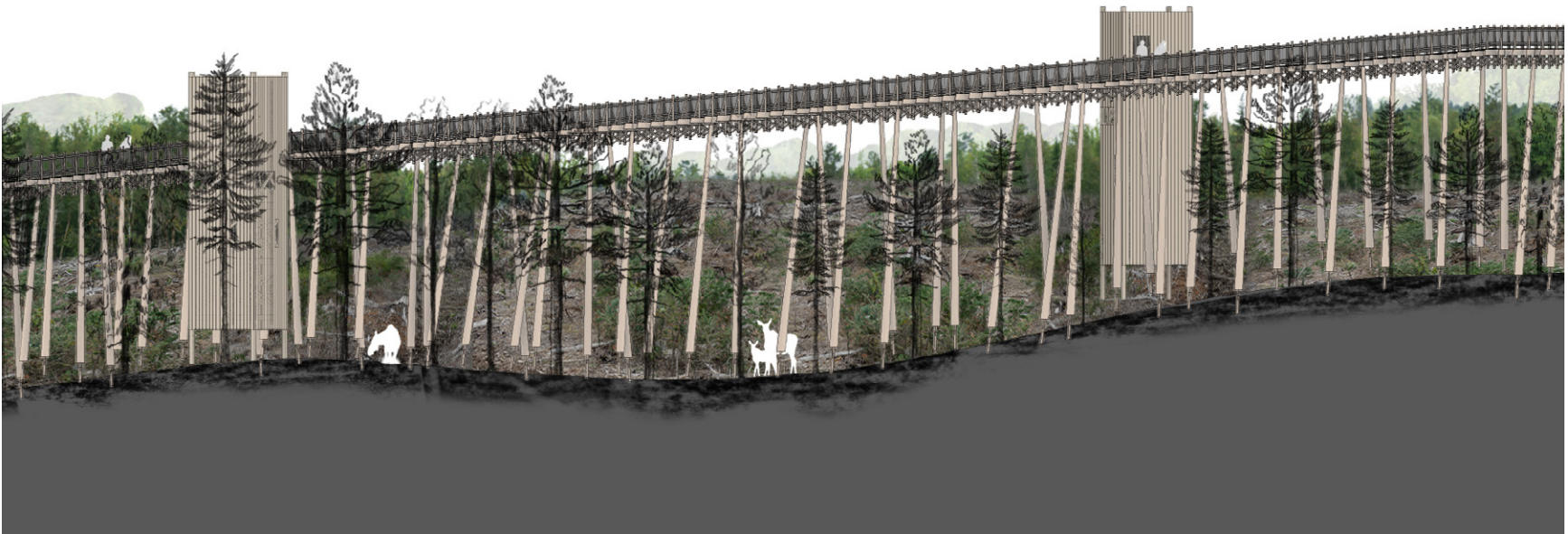
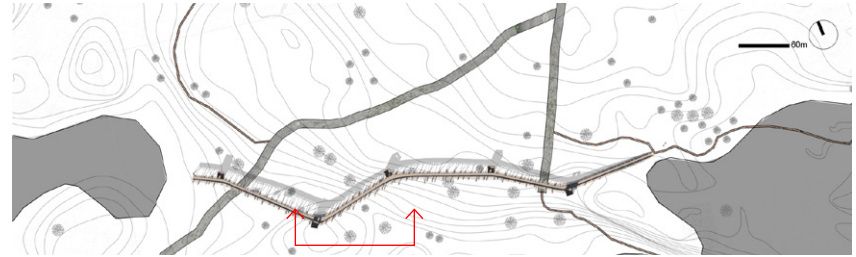
4.7b The canopy of the future is full and dense.



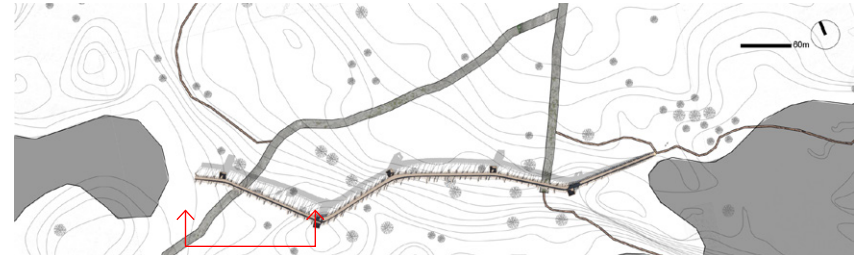
4.8 Surrogate corridor and treetop walk. Moose are protected below. Today, there are no adjacent trees.



4.9 Tomorrow, the trees are underfoot of the bridge. Moose and other creatures continue to shelter below.



4.10 The canopy begins to envelop the bridge.



4.11 The bridge's function as corridor for creatures has shifted to one of a treetop walk enveloped with dense forest canopy,

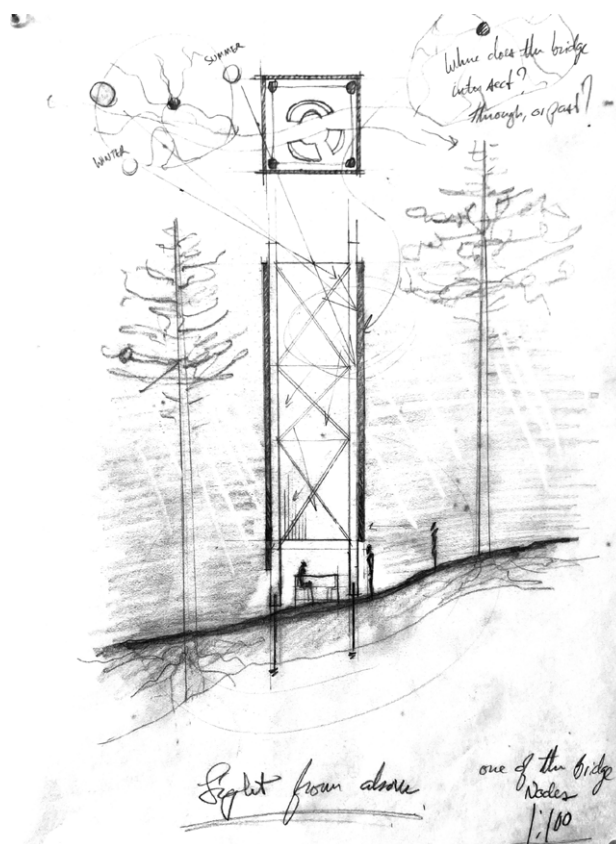


4.12 Shelter and armature under the bridge, panorama above. Ghosts of the future forest haunt the sky.

When their grandkids return in fifty years, this tall register of height will no longer offer a view. This vertical axis pursues the continuous dimension of forest growth and change, as if measuring the trees, and ascending as a climb into the canopy to come. As the canopy grows higher and denser, the vertical is enveloped by the tall, restored forest.

The moose are wary of the hot sun, but this long structure offers shade. Towering beside them, the strange new canopy protects their advance, stretching to familiar forest on the other side. They follow the shadow, chewing tender stems.

Along the bridge, pavilions offer new interfaces with the recovery. Some provide vertical movement, in addition to a journey through time using controlled views: what the hiker sees down low today is distant, but soon the view is filled with foliage. At another pavilion, the scientist lingers high in the canopy, taking notes, meeting students, and watching the birds: a whole new forest floor in the air. The bridge is an opportunity to combine sculptural installation with observation of the forest recovery.



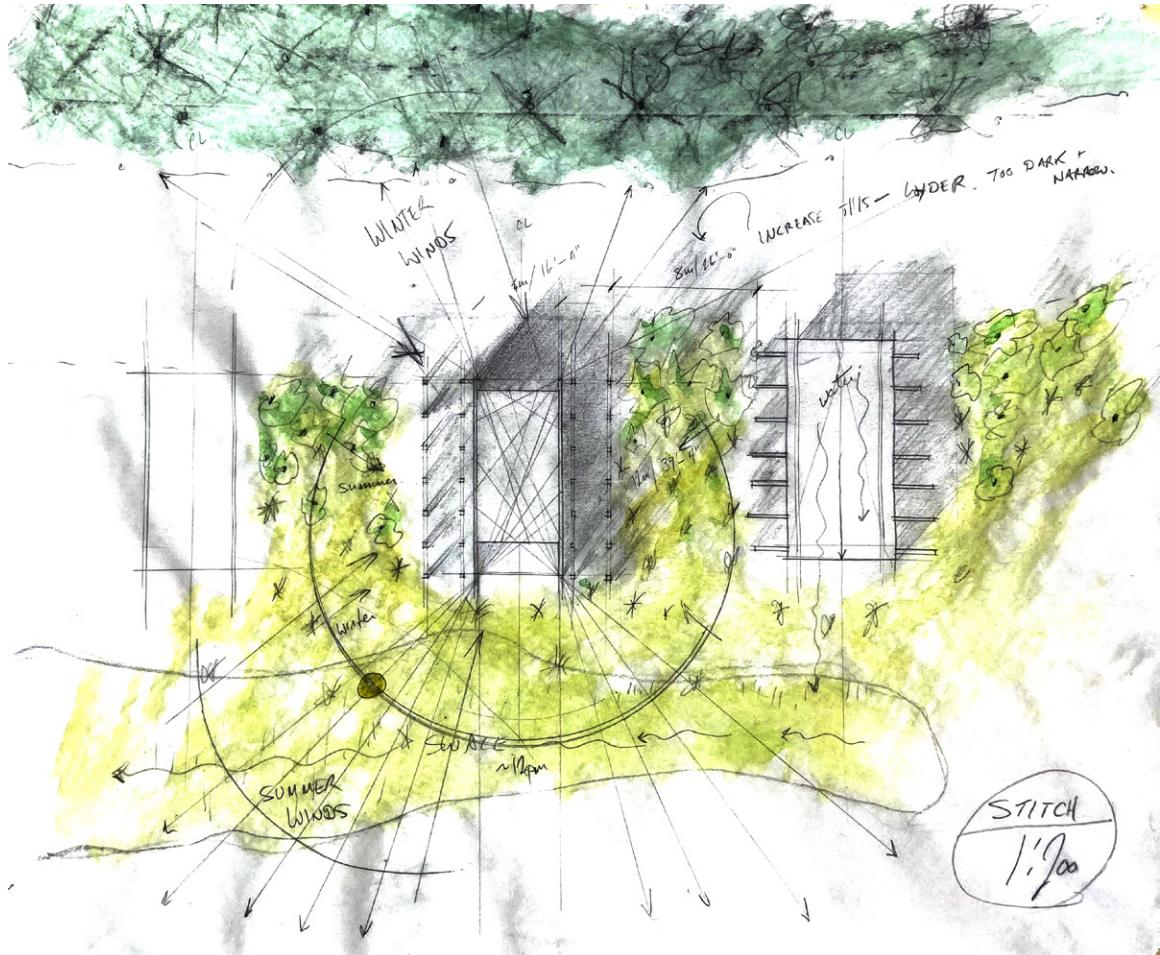
4.13 Along the bridge, tower pavilions speak to the verticality of the coming canopy, and provide places for visitors to linger. Here, an imagined picnic pavilion bathes visitors in light from above. Today the light is bright from all sides, but as the canopy covers the pavilion, it will be a light monitor directing the sun from above; a telescope through the cover.



4.14 Tower pavilions are points of interest along the bridge. On the left, a ladder tower girdled with directed views exposes visitors to new perspectives that change through time. On the right, a place for the scientist to linger, study the arriving birds and other creatures, and meet students.

The Stitch

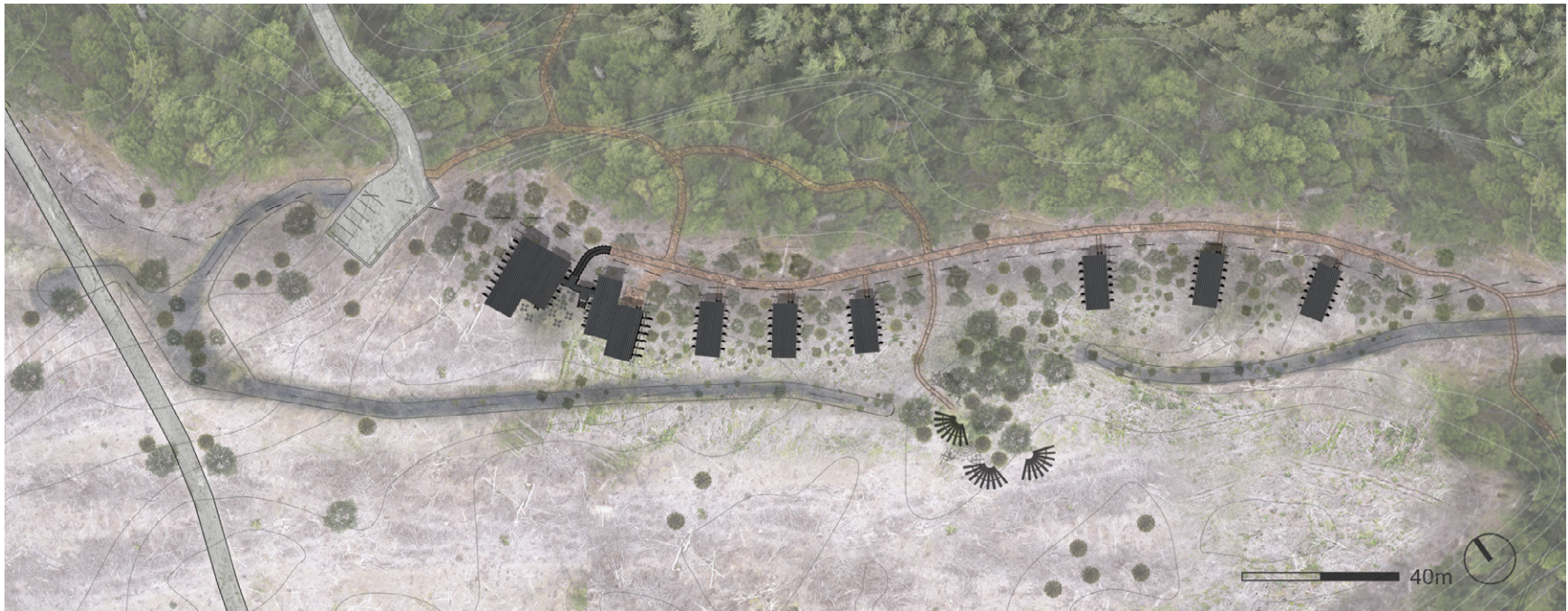
At the treeline is the stitch: the heart of the project. From a forest road and trail, the public building greets arrivals. Along the treeline, cabins for staff and for rent are increasingly private. Weaving the abrupt edge with the cut's openness, the stitch mediates the sun, wind, and driving rain of the open area into milder micro-climates for pioneer trees to establish. Rainwater is directed to a swale, away from the regenerating edge, toward the headwaters of the Medway River.



4.15 Buildings that stitch the hard edge together with the open clear cut.

The stitch buildings diversify the boundary structure to mimic natural clearings while providing space for interior programming. Spaced apart to create shaded, shielded alcoves, the buildings moderate climactic extremes with a more gradual forest edge. Multiplying the buildings along the edge provides abundant places to hide, nest, and hunt.

Like the niche and bridge, the stitch is an armature. But in this case, it might act as a base for experience as in a sculpture, in addition to its role as armature for organisms. As the user layers their own memories, values, and perceptions of the site onto the architecture, they form their own interpretation. Similarly, the site itself begins to layer its behaviours onto the armature.



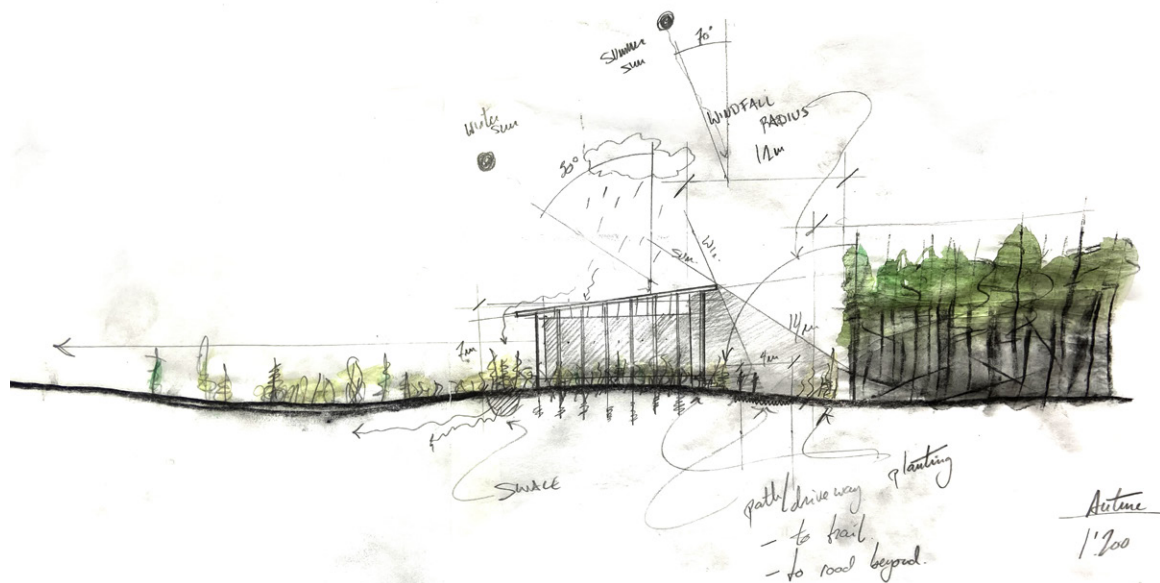
4.16 The stitch is the heart of the Centre for Forest Stewardship.

Approaching from an existing forest road, visitors ascend a short hill on a trail from within older trees. As the treeline opens to the clear cut, the buildings become visible and frame the vista, greeting the visitor with the most public buildings first (left). Private cabins accumulate further into the site with increasing privacy. Trails continue into the site and elsewhere in the stewarded lands.



4.17 Looking across the cut from the bridge, toward the forest edge and the stitch buildings.

The stitch buildings highlight a horizontal axis: sitting at the juncture between the past and future of the forest: their backs to the dense trees, their faces to the now-open vista. As the cut regrows, this horizontal anticipates the collapse of difference between the two. The past and the future blend together, becoming indistinguishable. Meanwhile the horizontal register asks us: in fifty years, how tall will these be in comparison to the trees?

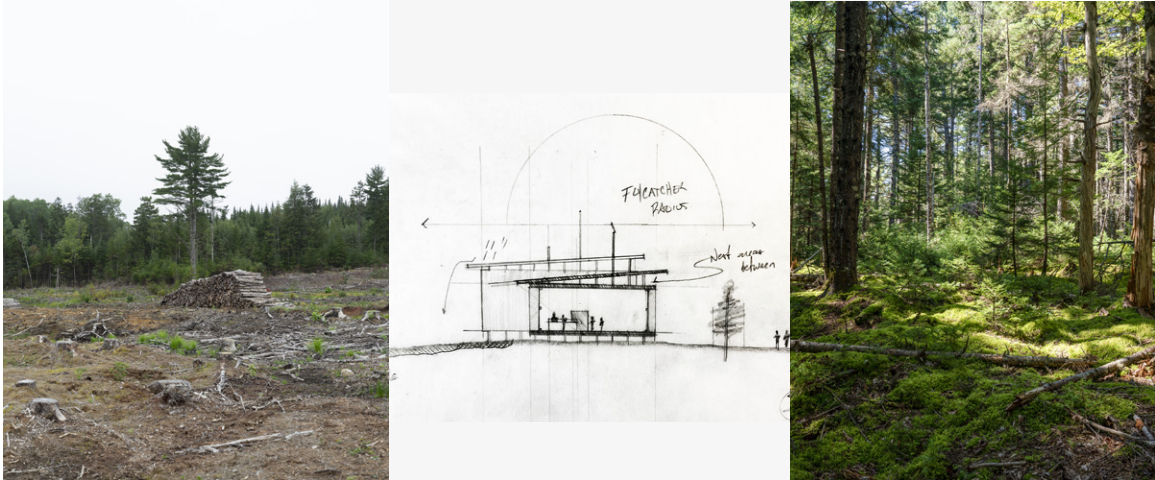


4.18 Framing the clear cut's past and future: visually, spatially, and as surrogate habitat.

Buildings are always a part of landscapes, and serve on purpose or by accident to measure the phenomena of that site. For an example of this intimate connection in practice, we might look to Steven Holl's buildings and writings. He writes that "architecture is bound to situation... [and] intertwined with the experience of a place. The site of a building is more than a mere ingredient in its conception. It is its physical and metaphysical foundation" (Holl 1989, 9). The role of the architect, in this view, is to explain or augment the site's existing features through building. But the role of architecture in a landscape is not just as a response. Holl's "intertwining" implies a reciprocal mode of interpretation, in which building functions as a formulation of, and a means of interpreting, landscape. At the least, it might ask us to think twice about what we intuitively understand through embodied experience, and to ask instead what lies between moments of change in dynamic landscapes. And in doing so, as David Leatherbarrow writes, "we would accept the challenge of imagining terrain with gaps or unclaimed areas, a discontinuous field, an uncommon ground . . . built up situation by situation, not taken for granted, like space, as an extended receptacle wanting infill (Leatherbarrow 2000, 19). This is not a geometric measurement as the route to understanding, but a means of acting as an armature for a range of unique, subjective landscape experiences: to let inhabitants do their own observing, just to "catch" the scene, is the point—in a way, framing the landscape, "the way one 'catches' the movement of a dance, something a drawing of footprints can never show" (Leatherbarrow 2000, 12).

After exploring the site, the hungry hikers head to the kitchen, and are directed to the nearby library, full of books about the forest. They are invited to listen in at tomorrow's timber industry conference.

The scientist returns here after her field work with samples. She unloads at the laboratory, diligently labeling and storing them with the well-stocked supplies. Exhausted from the day in the nearby woods, she heads to her nearby cabin to rest before dinner.



4.19 The vast scales of landscape time come together at the stitch.

Whether we can perceive the immensity of landscapes and the vastness of their time scales has more to do with our imagination's ability to analogize, extrapolate, and envision than it does with simply seeing or sensing. In his seminal *Poetics of Space*, Gaston Bachelard writes that immensity is not so much a phenomenon that we sense, but an expansion in the mind stimulated by the senses. In his characteristic dreamlike prose, he calls immensity "a philosophical category of daydream" that "feeds on all kinds of sights, but through a sort of natural inclination, it contemplates grandeur. And this contemplation produces an attitude that is so special, an inner state that is so unlike any other, that the daydream transports the dreamer outside the immediate world to a world that bears the mark of infinity" (Bachelard 2014, 201). It is almost impossible to describe experiences of immensity. They are imaginary, like an absence. Contemplating immensity is to stir something within oneself—a certain capacity to imagine emptiness, size, and the synthesis of many parts. The process can't be forced, but comes about as a "relaxed participation" (Bachelard 2014, 208) that we allow to come to us, rather than to be sought out. Not that immensity can be conjured from nothing, but a certain recipe of clues and cues might arouse it in the mind: not just consideration of a single thing, but a fusion, an "exterior spectacle [that] helps intimate grandeur unfold" (Bachelard 2014, 209). To perceive immensity, in this view, is to undergo correspondence and an exchange of values, stimuli, and thoughts, not controlled but activated. Alternatively, it is a kind of analogical thinking, such as that described by Susan Stewart, who writes that the idea of the *gigantic* is a kind of metaphorical mental leap that allows us to imagine and understand the incomprehensibly vast: "The selection of elements that will be transformed and displayed in an exaggerated relation to the social construction of reality" (Stewart 1993, 74). In effect, this is a tool for expanding and contracting the imagination. With these ideas in mind, we might think of the stitch buildings (and the project as a whole) as a means of aiding the imagination to extrapolate the vastness of landscape phenomena.

Finally the logger arrives after learning about selective harvesting on the site. He strikes up a conversation with the hikers, who convince him to join them for dinner with a view of the site. There, the scientist joins them, sharing the stories she'll tell the children tomorrow.

Above them, the flycatcher sits as high as he can. His keen eyes catch the metallic glint of dragonflies drawn to the swale. His perch is not the usual dead tree, but a tall imitator. The view is great, and his nest is close.

As they leave and walk further along the treeline, the scientist retires to her cabin and points the hikers to their own. Passing each of the stitches, they take in the alternating rhythm of the buildings, noticing the slender pine frames that lift them up like portals, as if they hardly touch the scarred Earth below. Dark wood treated with pine tar obscures the forms in the darkening light.



4.20 Here, several species might cross paths, but so might several divergent groups of human agents.

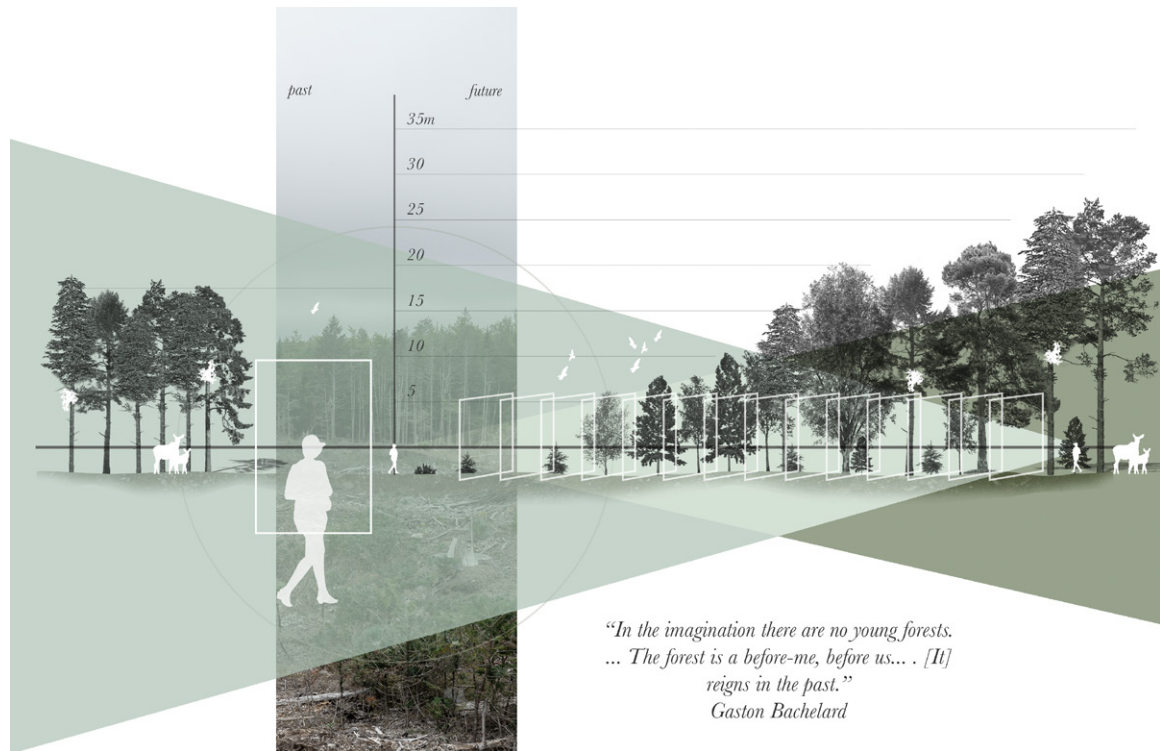
Facilitating mixing, the main building features a gathering and conference space, a kitchen, a library, and a field laboratory. Staff, long-term researchers, and forest workers staying in the nearby cabins will mingle here with members of the wider public.



4.21 A fusion of companions in forestry, bearing witness to one another and to the process of restoration.

Landscape Time

Gaston Bachelard writes that “in the imagination, there are no young forests. . . . The forest is a before-me, before us. . . . [It] reigns in the past” (Bachelard 2014, 206). In this project, the architecture confronts this condition by projecting this before-time into the future, framing a relationship between inhabitants and the long, slow process of landscape time.



4.22 Landscapes are not static canvases on which our measured experiences occur.

Landscapes are dynamic, changing over millennia due to geophysical forces, over lifetimes as sediments and trees grow and decay, and over years with the changing of seasons. Looking to Tim Ingold to clarify how these time scales relate to the experience of landscapes, he writes that our relationships to them depend on the interpretation of their temporal dynamics, and they in turn contribute to our understanding of time (Ingold 1993). Sensing distances in a landscape requires movement of the body through space, but also through time: to appeal to the idioms that reveal this in daily speech, we imagine space and distances in terms of the time it takes to travel there—an hour drive, a ten-minute walk. But to move across landscapes is also to engage with the deep time that they possess. By traversing hills carved by the actions of glaciers and erosion, for example, we assess these effects over time through our bodies, and “they are directly incorporated into our bodily experience” (Ingold 1993, 166). This idea extends beyond movement to the inhabitation of a landscape, and the activities of dwelling—of living, working, or visiting in a landscape. Returning, for example, to a field every autumn to harvest wheat punctuates the year and offers a register for measuring the passage of deeper sets of temporalities, seeing new limbs on a tree or the appearance and disappearance of animals—nesting the time of human activity within the larger time of landscape. The experience of landscape time thus depends on participating in the actions of being a social human in a landscape.

Chapter 5: The Future

Recovery Year 2042

In its first years, the locals and tourists who've come for day trips and overnights have left with stories; dozens of PhDs have worked here; and hundreds of loggers have learned both to restore and to profit from their woodlots.

As a retreat and research station, the Centre has been profitable despite massive reductions in harvest volumes. Soon the huge high-value trees of old growth will be available to selectively harvest, and the site will join a local community of mills, builders, and craftspeople. The flycatchers have returned to nest and hunt, the moose have become hidden among the growing trees, and the patches have grown, and the lichen with them.



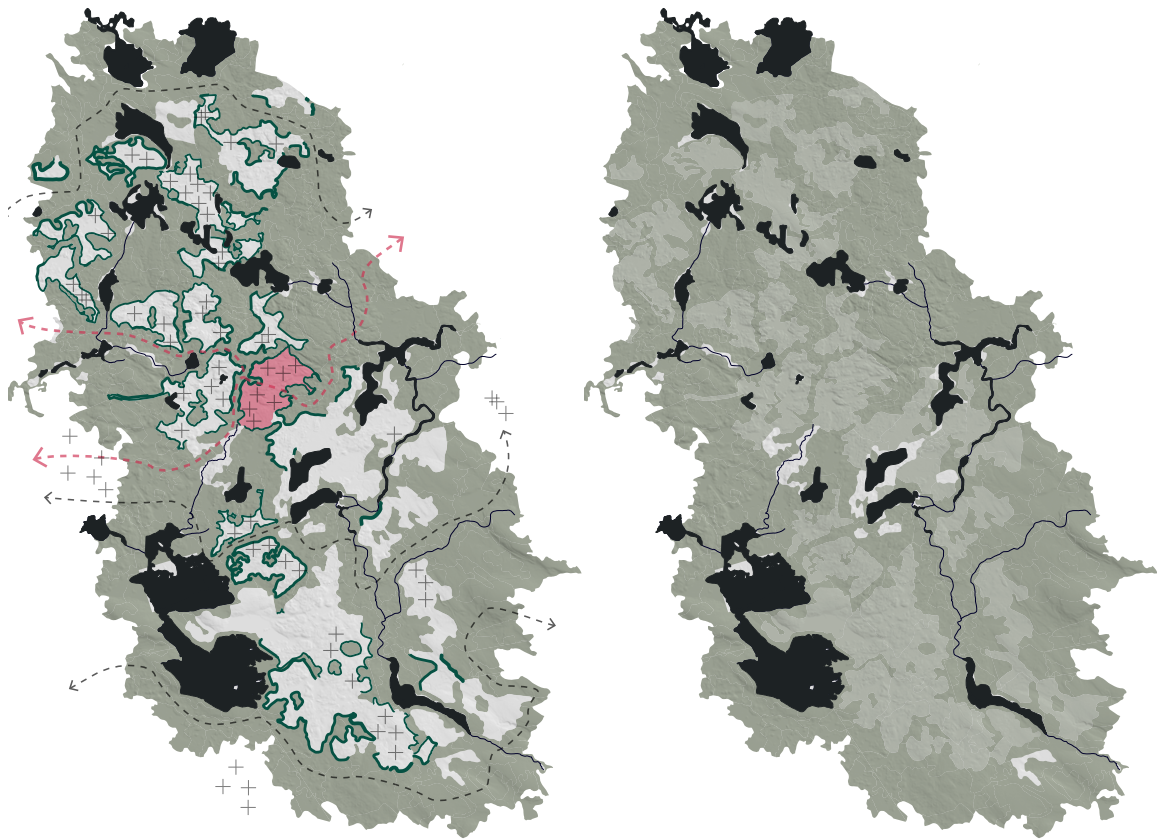
5.1 A prototype for an engaging architecture that supports multi-species alliances.

This project takes cues from the Otter Ponds Demonstration Forest (OPDF) in Nova Scotia: a “living laboratory” on leased public land to demonstrate the feasibility of restoring native forest while producing economically valuable timber and non-timber products such as tourism (Verstraten 2021, 3). The OPDF is unique in facilitating the cooperation of government, woodlot owners, environmental non-profits, community associations, and a forestry company—agents whose interests typically conflict, and whose disagreements about land use are often heated. The OPDF brings these and other agents together for scientific research, workshops and courses, public outreach, and leisure activities. While the OPDF sits on 500 hectares, Nova Scotia has over 1.5 million hectares of harvestable crown land and a further 3.8 million hectares of private woodlot. This vast territory represents a significant opportunity for implementing the change demanded by the Lahey Report, and for introducing the infrastructure explored here.

Recovery Year 2082

As a retreat and research station, the project has been profitable despite massive reductions in harvest volumes. Soon the huge high-value trees of old growth will be available to selectively harvest, and the site will join a local community of mills, builders, and craftspeople.

Over time, interventions like these can spread across the landscape as part of wider recovery efforts in Nova Scotia's public forests. In sixty to 100 years, the role of the Centre will change with the forest, but this vast hidden wasteland may yet be a vibrant landscape stewarded into a healthy Acadian forest.



5.2 Over time the landscape becomes less fragmented, permitting travel through landscape corridors, and the cut patches regrow (NSDNR 2022, 2021; NSTDB 2020a).

Although the Lahey Report calls for reserving some of Nova Scotia's forests as no-cut preserves, most public land would remain part of a productive but restorative system for the foreseeable future (Lahey 2018). While today repeated clear-cutting has changed most of this forest's rotation and species mix to favour trees for low-value pulp and paper, a scheme such as this might return more of these forests to high-quality, large-gauge timber that was so valuable to early settlers—large and abundant enough to outfit entire fleets of tall wooden sailing ships.

Chapter 6: Conclusion

An Orienting Process

Environmental topics have permeated popular and academic media of all kinds, in response to terrifying yet uncertain predictions about the impending state of the planet's ecosystems. One will similarly find environmentally focused themes among a majority of theses produced by this author's cohort. It is worth looking to moments of uncertainty such as this as places for architectural focus: this is where society is undergoing major shifts. Architect and educator John Hejduk worked this way, identifying that "the transition between millennia represented a precarious threshold. . . . Frames of reference and zones of meaning were punctured, and thoughts were no longer able to be contained through rational references to one another" (Hays 2003, v). In effect, this transition and de-centering drove Hejduk to work on a reflective architecture that might re-orient architectural meaning and question its origins. In a way, we are undergoing such a shift today, which similarly deserves our attention. This is the "trouble" that Donna Haraway implores us to "stay with" (Haraway 2016; SFAofficial 2017): a narcissistic blindness to the intermingled subjectivities found in the so-called natural environment where all human activity (including architecture) occurs—a shaky ontological basis for meaning that has underlain all western social, economic, material and cultural practices.

As generalists working across a broad range of theoretical and practical pursuits, architects are well-positioned to confront the many intersections between considerations of landscape, resource extraction, concepts of nature, and the environmental impacts of human activities on the Earth. This thesis has pursued some of these intersections by seeking the overlaps between architecture's capacity as orienting presence in the wasted landscapes of the Anthropocene, and its ability to collect, represent, and facilitate the many perspectives and programs required to address these landscapes' alarming yet invisible decay. Beyond presenting some prototypical possibilities for addressing specific issues of forest restoration with a registering, representative architecture, this thesis also presents itself as a way of working—as a process of storytelling, which in itself summons in the imagination a new and livable future.

The idea that architecture might be an orienting narrative process grows from the concept of *worlding* put forward by thinkers like Kathleen Stewart and Donna Haraway: a “blending” of material and meaning into a coherent whole that “affords the opportunity for the cessation of habitual temporalities and modes of being” (Palmer and Hunter 2018). Worlding, for these authors, is to create the possibility of a positive material presence on the Earth by re-orienting how we discuss and define solutions to ecological problems. Haraway, in typical word play, argues that “it matters what stories we tell to tell other stories with; what thoughts think thoughts, what descriptions describe descriptions. . . . It matters what worlds world worlds” (SFAofficial 2017). In other words, the way we tell stories about architecture impacts the content and impact of the design. For this thesis, a story about how we might design buildings in clear cut landscapes is the way we might *think about* the landscape itself: as a tangled web of interrelated narratives, which, when told in parallel and overlap through an architectural narrative, might empower relevant agents to understand, care for, and benefit (from) their natural environments. To recall an aphorism heard in architecture studios: *Architects do not make buildings; Architects make drawings*. This thesis might change the last phrase: *Architects make drawings and tell stories*.

Appendix 1: Pre-Thesis Research Project, “Framing the Landscape Imagination”

Bruce + Dorothy Rossetti Scholarship, Summer 2021

Project Statement

The various stages of forest clear-cutting and regrowth explored in this project represent Nova Scotian traces of the Anthropocene: that increasingly familiar term for our current age, when humanity’s effect on the Earth has become part of geological time.

Attempts to communicate the vastness of human landscapes and their surprising collisions with the natural world have recently focused on large-format and aerial photography. Artists such as Edward Burtynsky use photographic techniques that bridge familiar scales with the huge scale of satellite imagery, reaching a delicate balance that depicts everyday objects alongside gigantic industry-scapes.

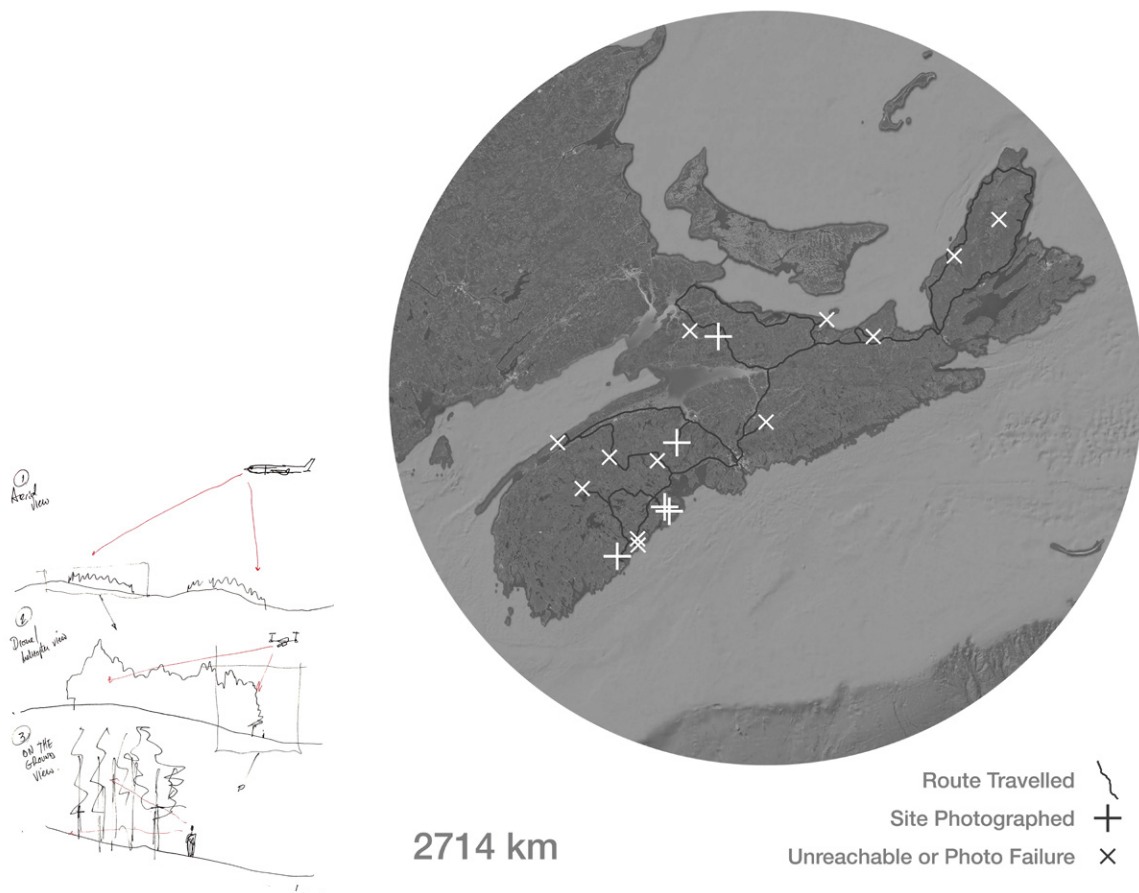
This project works toward bridging the aerial view and the view from the ground, in order to expand our ability to perceive the vast spatial and temporal scales of anthropic landscapes. By introducing a one-metre-diameter plastic hoop into the image series, the scalar imagination extends through the known dimensional object into the photograph, and outward to the scale of the landscape and the satellite view. The hoops are physically exhibited alongside the photographs to accentuate this perceptual effect. In doing so, the project aims to test the combination of decontextualized image and spatial object, transporting what Walter Benjamin

might call the “aura” of these landscapes into the exhibition space.

By asking how spatial interventions might act to frame, measure, and scale anthropic landscapes, this project opens possibilities for architecture that positions us squarely in the Anthropocene and prepares us to understand and discuss how to live within it.

Nature is Industrial Landscape

In Nova Scotia, we are blessed with an abundance of nature—what some may imagine is an untouched place free from human influence. However, the vast majority of our



1.1 How does the aerial understanding of scale translate to the ground?

1.2 In the height of the COVID pandemic, the international Rossetti scholarship was kept closer to home. Driving through Nova Scotia, I visited a number of forestry sites.



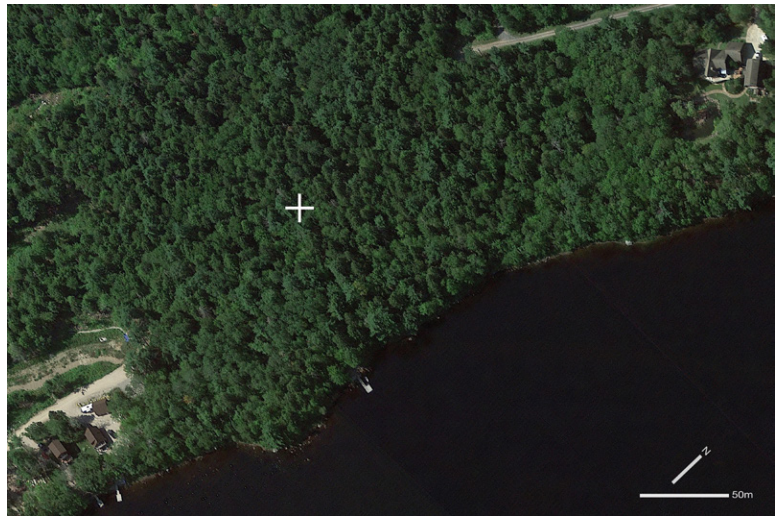
1.3 Approaching forestry sites and non-forested sites meant travels into the edges of human inhabitation.



APPROACH

Looking for suitable sites to photograph was surprisingly difficult. Limited access, bad weather, and bad roads eliminated most possibilities.

“nature” is in fact a slow-moving industrial landscape that has been harvested for timber several times since the arrival of Europeans. Just as a vegetable garden is harvested yearly, our forests are harvested once a lifetime. The various stages of forest clear-cutting and regrowth I explored for the Rossetti Traveling Scholarship represent local traces of the surprising collisions between what we conceive of as “landscape” and the human industrial activities that happen there.



1.4 Satellite views show the farm-like quality of some cut blocks, in contrast to intact forest (Google Maps, 2021).

The Eye in the Sky

Imaging technologies like Google Earth make these traces easily and eerily visible from the smartphones in all our pockets. The flick of a finger lets me scan this entire green province, where I find endless evidence of clear-cut forestry. But despite the immediate availability of this imagery, it does not transport us to these landscapes: as Walter Benjamin wrote almost a century ago in his “Art in the Age of Mechanical Reproduction,” the camera creates a unique set of perceptual circumstances that modify our perception of reality. They offer us access to the world in new ways, therefore constructing the world for us in differently: “. . . With the close-up, space expands; with slow motion, movement is extended” (Benjamin 1969, 16). So although the satellite images in my pocket show me so much about the huge patchworks of scraped Earth and their cycles of regrowth, Benjamin might say this mode of perception puts a kind of cognitive distance between me and the landscape.

The Eye on the Ground

During the lockdowns of 2020, I had a close encounter with these landscapes while building a cabin with friends on a former clear-cut block near Lunenburg. Spending time on the site every week, I began to recognize that a gap existed between what I was seeing on the ground, and what I could see from a satellite. I could see with my eyes that a neighbouring property had very recently been cut, and that another neighbour hadn't been cut in over a hundred years, but that long in-between stage was harder to distinguish from the ground.

The Rossetti Project

Meanwhile, the Pandemic forced me to rethink how to spend the time and generous funding of the Rossetti Scholarship. I had to scrap my original plan to visit former industrial landscapes in Germany, where I planned to study how landscape parks communicate the vast scales of activity that formerly happened there, and to learn how the architecture positions that activity in time. So while I returned weekly to our scrubby cut block to build the cabin, I realized that



1.5 Satellite views show the farm-like quality of some cut blocks (Google Maps, 2021).

we had our own vast industrial activity right under my feet, albeit in extreme slow motion. I saw an opportunity to dig deeper into my curiosity about how these activities might be made visible.

I am not here to demonize forestry, or to debate the merits and faults of clear-cutting. For me, forestry is simply a local and visible example of how humanity's vast impact on the living world is—on the one hand— so thoroughly recorded, analysed and understood through data and the science— and on the other, almost completely hidden from everyday experience. Unlike the landscape parks in Germany, here we do not monumentalize this industrial history or program these sites with museums, theatres, or trails—interventions that provide opportunities for critical reflection on how we practice these activities.

My curiosity here is about how framing and positioning can combine with spatial interventions, as part of the design of a communicative architecture. This is an experiment about a way of working— a test of translating the immensity of things to the experience on the ground. The images are arranged without a sequential narrative, but instead they follow something more like what Charles and Ray Eames pursued at the Moscow World Fair: an array of images to provide a “broad menu of options” that inspires an “impulse to make connections.”

In Conclusion—an Anecdote on Scale

You might recall a series of travel agency advertisements from c. 2001, with the garden gnome traveling the world. This consistent object, placed in postcards from everywhere, somehow shrank the whole world down to the size of your front lawn. I was reminded of this when reading Gaston

Bachelard's *The Poetics of Space*: he writes that the perception of immensity comes about in "correspondence" with stimuli in "an intensification of the senses, each enlargement of an image enlarging the grandeur of another image, as immensity develops. ... Grandeur [he writes] progresses in the world in proportion to the deepening of intimacy" (Bachelard 2014, 212). My hope with this project is that these images are similarly able to transport the imagination. Instead of traveling to Paris and Rome with a garden gnome, I hope to travel from the total vision of the satellite to the embodied vision of the everyday.



1.6 Drones offer a tantalizing in-between scale, between aerial views and the ground. This cut is brand-new.



1.7 A drone view shows how clear cuts regrow all at once—albeit in a way that obscures their desolate past.



1.8 Intact forests are dense, lush ecosystems, favoured by cottagers and others.



1.9 The vastness of clear cuts beggars the imagination. This is only one of thousands of such cuts in Nova Scotia.



1.10 Zooming into the clear cut, using a uniform unit of measure—in this case, a length of PEX piping as a hoop.



1.11 Older growth forest in Nova Scotia is rich with undergrowth, dead matter, and multi-aged canopies.



1.12 Clear cuts are not dead zones, although they are entirely different from the forest that was here. New pioneer species flood the clearing with dense shrubs. Growth of a forest will take many decades.



1.13 These former clear cuts appear as lush environments, which obscures their past as dense, tall forests.



1.14 Seed trees leftover in the clear cut are meant to regenerate the forest, but are often victim to blowdown and disease in the absence of neighbours. These trees may soon die.



1.15 Scaling the clear cut in comparison to the forest, with evenly-spaced measuring devices. The hoops are 1m wide circles of plastic PEX piping, spaced 5m apart.



1.16 Scaling the clear cut in comparison to the forest, with evenly-spaced measuring devices. The hoops are 1m wide circles of plastic PEX piping, spaced 5m apart.



1.17-19 The Rossetti exhibition, approx. 16'-0" of wall space, and approx. 25'-0" viewing alley in the rear.

The images of the scaling hoops were augmented with the same scaled device in person, breaking the boundary between the image, the device, and the sites in the photographs.



Appendix 2: Nature Suits

Installation at Art Festival Nocturne: Art at Night in Collaboration with Jessica Lynn Wiebe, 2021.

Project Statement

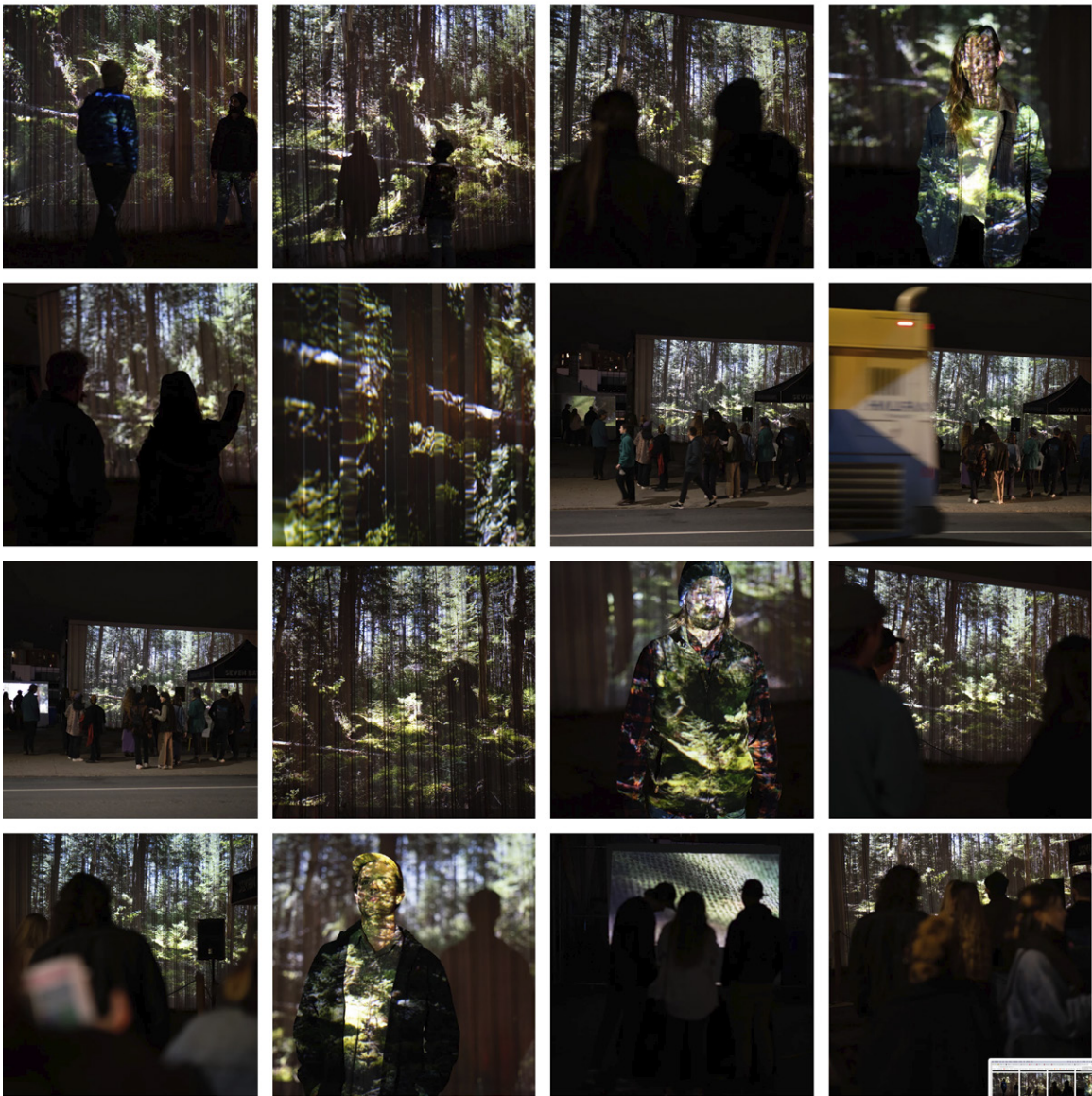
You are in a lush forest, and a pile of leaves rustles to life in front of you, stands up, and walks away. What is happening here?

Nature Suits is a video installation exploring the space between seen and unseen. Camouflaged in a forested scene, artists reveal the undeniable likeness of humans and nature—natural and artificial—through acts of making, performance, documentation, and display.



1.1 Still from the video of Nature Suits, projected life-size on the corrugated steel exterior a gym in the heart of Halifax NS with a secondary “making of” video projected on a fence nearby. Both videos played on loop for the duration of 5 hours for Halifax’s Nocturne Art at Night Festival, Saturday 16 October 2021.

Borrowing from an adapted method of military camouflage, Nature Suits are constructed on-site by artists using a mix of found natural items and manmade materials, placing artists in a liminal state of hiding and revealing, shifting viewers' perception of the forest.



1.2 Projecting nature onto corrugated steel.

The interplay between the projection of gently swaying trees and leaves, and the occasional walkabout of one of the performers in a nature suit, provided a further element of surprise for the street audience.

Nature Suits reimagines camouflage as an instrument for revealing the hybridity of the human and the “natural,” working within the layered qualities of biological and social ecologies and the liminal, in-between spaces between humans and nature. Re-imagining a military tactic typically used in scenarios of offensive violence, the work attempts to combine the human and the natural as a protest to unite these two worlds.

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