Standing DEADWOOD:
an articulating landscape assemblage

a practicum submitted to the faculty
of Graduate Studies of the University
of Manitoba, in partial fulfillment of the
requirements of for the degree of:

Master of Landscape Architecture

Department of Landscape Architecture
Faculty of Architecture
University of Manitoba
Winnipeg

Acknowledgments

I would like to thank my committee members for their support while undertaking this journey. Their sharing of knowledge has consistently opened my eyes and mind to seeing that which otherwise would have gone unnoticed.

To my partner Karen, who has shared with me a landscape which we are inevitably bound to.

A special thank you to my mom, who has always listened with care and support, you curiosity in difficult times is aw-inspiring. I dedicate this work to you.

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"In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds constitutes an assemblage. A book is an assemblage of this kind, and as such is unattributable. It is a multiplicity......"[1]

Abstract

With over 1.2 million eukaryotic species identified within the earth's spherical landscape, you the reader (Homo sapien) happen to be one agent amongst the shifting millions. Within space exists amongst others, agents of territorialization and agents of de-territorialization. These agents can be one in the same, acting to break down perceptual and spatial territories while simultaneously constructing new territorial perceptions in their wake. In the latter these territories are inherent to the actions of the agent and therefore internal to that agent.

A landscape is an assemblage of agents. A series of acts performed throughout time, directly affecting and being effected by variable processes, ultimately transforming the role or roles of a landscape's identity. The language of assemblage theory, derived from Guattari and Deleuze in 'A Thousand Platues'(1987) and formalized via DeLanda's approach to social ontology in 'A new Philosophy of Society'(2006) gives a foundation to conceptualizing landscape as being more than a mere formal construct, defined solely by the human hand. Rather landscape may shift roles relative to processes external to the prescribed boundaries, possibly de-territorializing or destabilizing the internal homogeneity of both fluid forms and species living within its physical and or perceptual bounds. These processes occur through the interplay of a variety of acts. Within this de-composable unity, the human species exists as an agent within the assemblage and not as an agent of the assemblage.

The intention of this practicum is the exploration of my own articulating actions as performed within a landscape assemblage. The goal of this document is to act as a catalyst for the discuss surrounding the capacity for action within an existing landscape assemblage, the agency of territorial/ de-territorialization that may follow these actions and small techniques that may facilitate an individual's design process within the discipline of landscape architecture. Questioning what might constitute a landscape assemblage while understanding that its identity relies upon the articulation of multiple agents that formalize its makeup, remains as a constant.

Contents

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- PRIMER -
Assembly // Assemblage // Agents // Agency

An assemblage can be defined as a "part to whole" relationship in any given landscape. Where an assembly of objects or components simply has to do with the formal relationship between things, an assemblage is the active working relationship in which the internal and external agents effecting the assemblage elevate the whole to yield new properties of its own. An agent is a force or substance that causes a change, a means by which something occurs. Agents have the capacity to act, or to perform a task. "Agency is constituted by its involvement in practice, which, in turn, reproduces structure."[1] Within an assemblage the agents are more than a mere collection of elements. These agents yield the assemblages identity and are indivisible from the whole yet still retain the ability to be decomposed from it. This suggests that there is no permanent bond between agents of an assemblage and only through time does the identity of the assemblage shift by the aggregation and articulation of its internal and external agents. Defining the agents of a given landscape assemblage is critical to understanding its present identity and to the potential that arises from the alteration or introduction of new forms of agency. For an external onlooker, agency appears from the outset as the internal actions performed by an agent, which results in the articulation of an assemblage's identity. Though it also takes external conditions relative to the agent to undergo agency, conditions which may easily go unnoticed or be disregarded as inconsequential to the assemblage's identity.

<< A version of external agents territorializing an existing assemblage.

- Intro -

In the opening dialogue of Christine Korsgaard's book 'Self Constitution', she remarks that; "An action requires an agent, someone to whom we attribute the movement in question as its author...it is essential to the concept of agency that an agent be unified."[1] Though Korsgaard's reflection on the term agency demands authorship from a given agent; it also suggests a quality of assemblage, a type of whole; or to speak to the scale of an ecosystem, an assembly of agents undergoing a multiplicity of acts. These acts are the work of a series of catalysts, which play between what Manuel DeLanda defines as, "the process of territorialization and de-territorialization".[2] These processes act to stabilize or destabilize the identity of an assemblage, all the while retaining its part-to-whole relationship. It is by way of these processes that the balance of an assemblage may shift its given identity through the interactivity of a series of agents.

Southern Manitoba's rural prairie landscape is a place of such interactivity of agents. With a wave of immigration in the late nineteenth century, hundreds of thousands of individuals, mainly deriving from northern Europe, found new grounding in Canada's freshly surveyed and richly fertile prairie provinces.[3] Each brought with them a complex history and cultural narrative from their original homeland.

The majority of immigrants took up residence in the neatly divided rural landscape, which had been the ongoing task of the dominion land survey since 1867. Setting up small homesteads for individuals to begin cultivating a new landscape identity through agricultural efforts, these people were let loose onto foreign soil. Articulating their new environment towards the controlled production of food for an emerging country, a wave of new agency was beginning to be established amongst the existing landscape agents of the time.

Following World War II the heterogeneity of operating farms peaked at 58,024 in the province of Manitoba alone. In the last sixty years since, dramatic consolidation of farms has reduced rural land ownership to 21,071 farms.[4] This in combination with over 61% of Manitoba's 'suitable' cultivated soil being seeded with only 7 different species, which primarily consist of only one or two varieties has effectively territorialized the landscape through homogenizing agricultural processes to suit economies of scale.

This practicum does not focus on agricultural processes that rely on the economy of homogenous crop production to produce regional landscape formations. Rather it is on the edge of these territorialized formations that experimentation and acts of landscape are played out. A place to push the perceptual boundaries of what might

constitute a landscape assemblage.

This practicum does not focus on agricultural processes that rely on the economy of homogenous crop production to produce regional landscape formations. Experimentation and acts of landscape are played out on the edge of these territorial formations and a place to push the perceptual boundaries of what might constitute a landscape assemblage emerge.

The agricultural and family history of the first immigrants is steeped in these sites where the land has not conformed to the prairie grid. These sites are in the midst of a shifting identity as generations that have tended to the land in the past begin to age and their ability to devote time towards the propagation of heterogeneous assemblages dwindles. Here acts of divergence, stratification, transformation and ultimately catalyzing agents of the landscape have the freedom to be explored and their relationships encouraged, where needed.
 "The identity of any real entity must be accounted for by a process."[5] Through the mapping of action and interaction with the physical land, this work is an account of the processes explored through the shift in a landscape's identity.

> "My neighbor across the way is selling corn for $2 a bushel and I am selling thistle flower for $13.50 a bushel.....The only two things that are always asked in agriculture are 1. How do I kill this thing that wants to live? And 2. How do I keep this thing alive that wants to die? We waste so much time trying to figure out the answer to those two simple questions."[6]

Homogenized crop production and the resulting territorialized assemblage >>

- Distribution -
act 1

The movement from one point in space to another may be traced as a line of flight. Linked together through directional intent or sporadic wandering, the remnant or trace of any line may be found in the distribution of the actions that once occurred. Distribution comes in many forms, from the meandering herd of thirsty cattle to the transfer of one idea to another individual via an open platform such as the internet. To distribute is to attempt to make connections where connections are not immediately perceived. It is in these flight paths that form can emerge through the repeated actions of specific agents.

French philosophers Gilles Deleuze and Felix Guattari[1], describe lines of flight as creative and liberating escapes from the standardization and stratification of society. These lines of flight are comparable to the normative definition of 'thinking outside the box', while simultaneously attempting to uncover a greater understanding of what the identity of the box may be or the implications it may have on a given field of study. The act of flight holds the agency of de-territorialization, diverging from singular points of focus to uncover unforeseen potential within a given area.

In this section I have taken this description of flight and applied it to multiple acts of site exploration, each one attempting at taking measure of the landscape through mapping its physical surface with emerging digital software. Particular site visits have been a choreographed performance, relying on as much of the technical as the experiential to capture an array of images to be reconstructed at a later date. The following pages will look at the balance between the technical construction of a point cloud and the experiential qualities that are derived from it, both on site and within digital space.

The images to the right give a visual understanding of how a small herd of cattle under the continuous act of wandering back and forth to a water hole, construct a permanent path that points in a direction just over the horizon. This was the first staging grounds for playing with the construction of point clouds through structure from motion techniques(SfM). >>
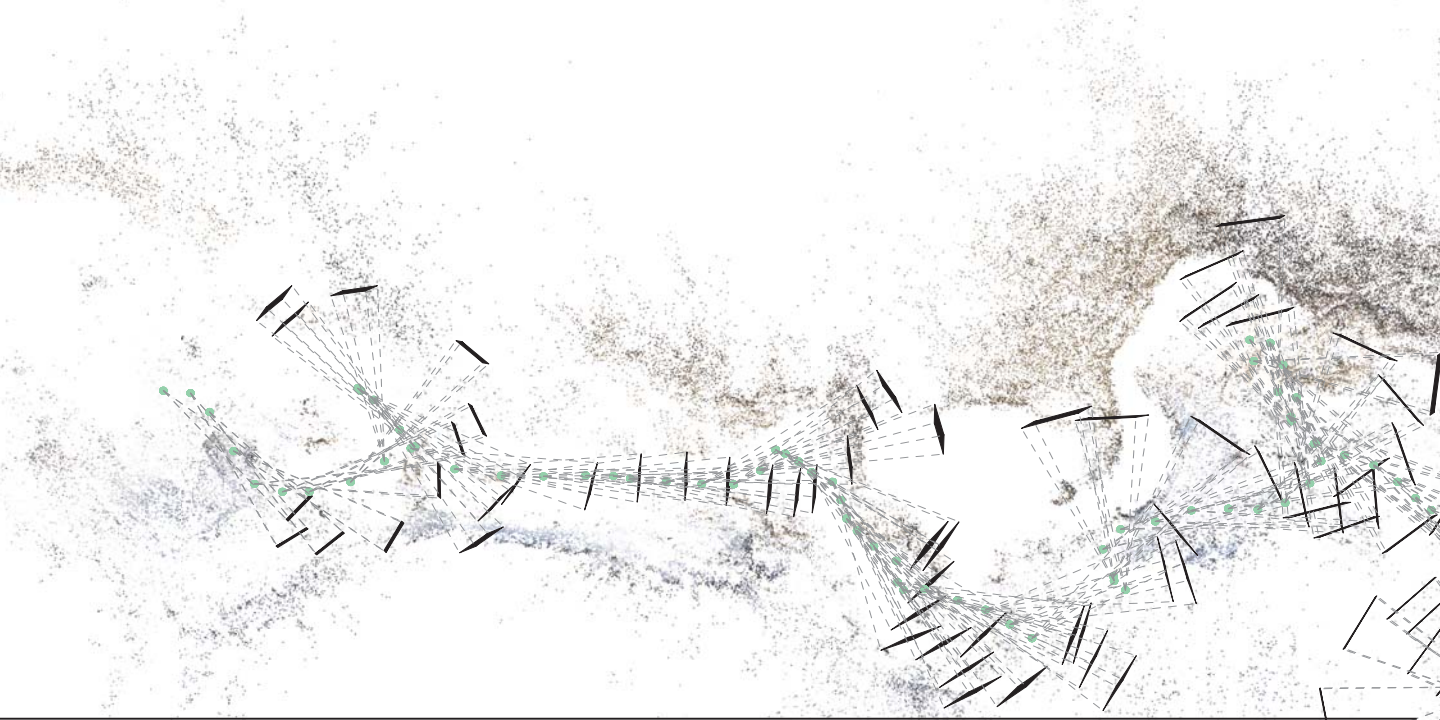
A line of flight that has continued to influence my curiosity surrounding site exploration is the digital mapping of landscape surfaces through techniques derived from the field of computer vision. Algorithms that take digital imagery as data and cross reference each image to place them in computational space as a single camera to look through. The placement of each image corresponds to the local position the viewer was standing at on the landscape when the picture was taken. What results from this mass computational number crunching is something quite 'magical' and ultimately very useful when attempting to take measure of an area that is remote and unfamiliar.

This point cloud has been stratified with the viewing position and camera direction for which the multiple images taken on site were acquired. The result is a visual assemblage that emerges from the composition of the individual relationships of the original landscape. While in digital space this assemblage retains its ability for articulation. >>
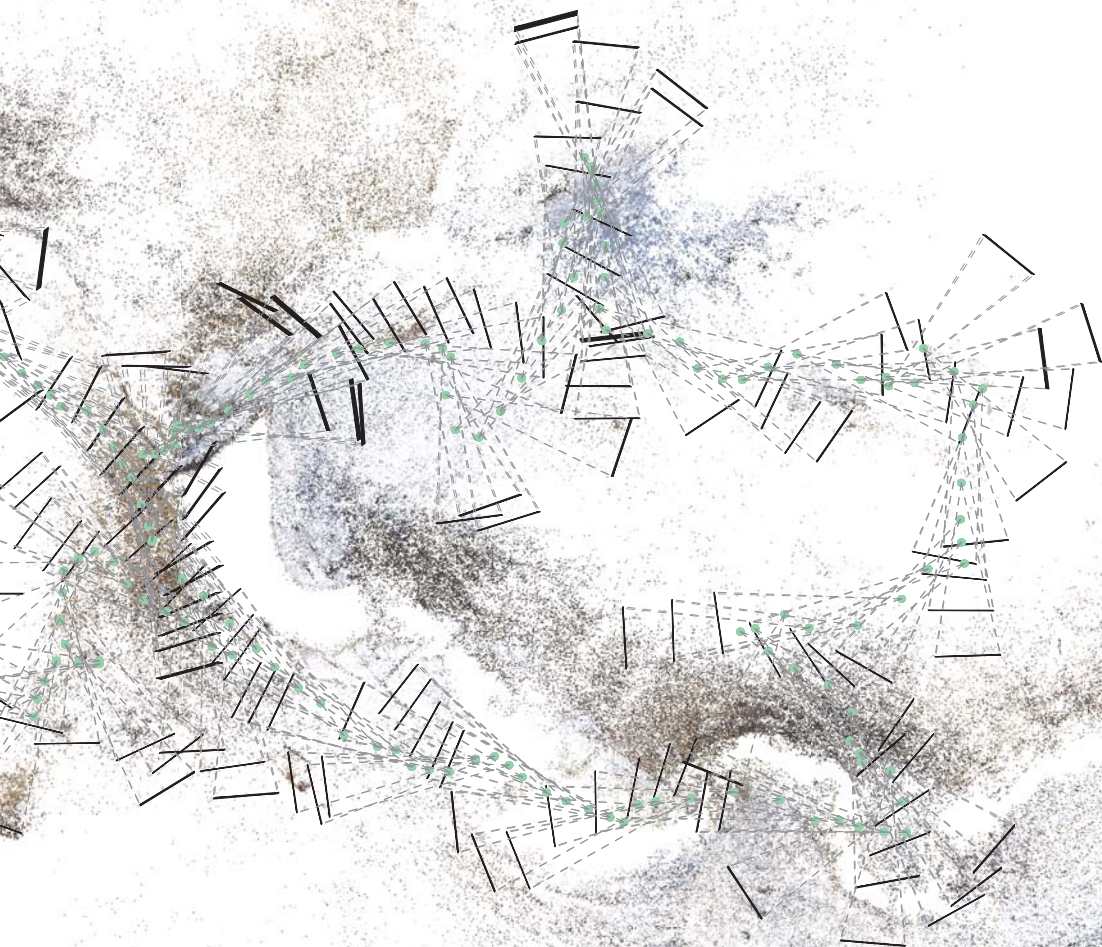
Using Microsoft's free online 'bundle adjustment' software called Photosynth [http://photosynth.net/]. Images taken from any environment, given enough overlap, can be uploaded to this type of photogrammetry software for the construction of a point cloud. Once constructed a seemingly unrelated cloud of points (vertices) float effortless on a screen. Since each vertex is positioned in all three axes of Cartesian space, this 'cloud' is more than mere visual in its construction and is generated by the underlying metadata that had been developed through the original images taken on site. In a very real sense this is a type of topographic surveying captured through the agency of photography.

Upon reconstruction of the cloud into a solid surface, subtle elements that defined the spatial quality and tapestry of the site completely erode away through the manipulation and extraction of pertinent information to allow for surface reconstruction. This eroding of information to develop an 'accurate' topography of the physical land sparked the connection between my deeper understanding that was developing about this sites erosion patterns. A predominate feature of this landscape is the exposure of shale through agents of erosion. Through time water has acted as a catalyst to carve the steep slopes of this land. Its continual meandering through this ravine has the agency of force to slice even deeper into the hills sides. This coupled with the continual grazing and lines of flight perpetuated by cattle on the main ridges of the valley, put pressure towards the increased de-composition of soil erosion and sediment loading of the water column further downstream.

If water is viewed as a series of particles that flow along a surface under the weight of gravity, each particle wanders down the face of a slope and accumulates at the lowest point. In a ravine condition water does not evenly flow along the surface of the land, rather it meanders and concentrates along smaller valleys building up force to follow a line of flight with the least resistance. Ultimately this buildup of force has tremendous weight behind it and can easily carve away bare soil and strip the land of vital elements that other species need for survival.
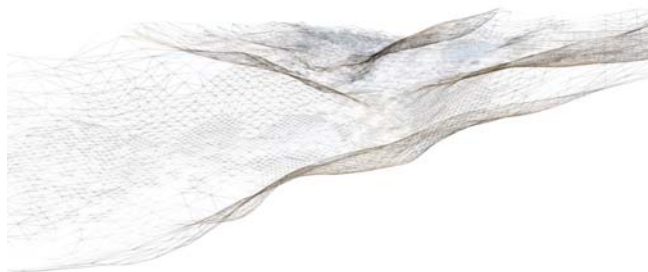
In the mid 1950's, Australian engineer/hydrologist/inventor Percival Alfred Yeomans[2] was exploring methods of retaining and redistributing water on sloped farmed lands
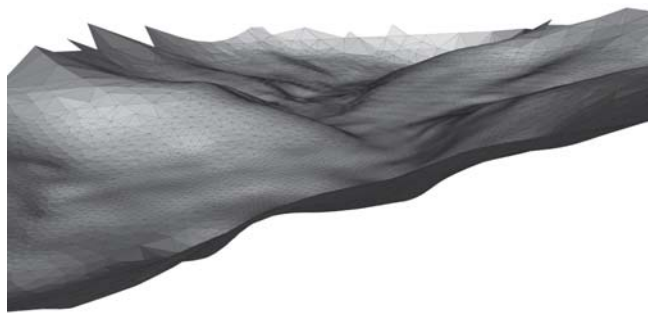
Original Point Cloud
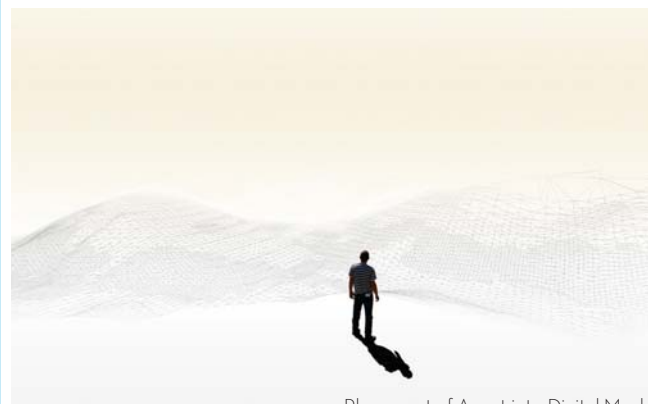

Refined Point Cloud

Meshed Point Cloud

Projecting Colour onto Mesh

Final Digital Mesh


Placement of Agent into Digital Mesh

that were suffering from massive soil erosion due to the cyclical nature of flood/drought conditions that persisted in much of Australia. What P.A Yeoman's had constructed was a system for not only holding water on the land but also distributing water back onto the main ridges, which constantly suffer from low water accumulation and drought. This system is called "Keylining" and has been actively taken up by the permaculture movement as an effective method to propagate bio-diversity, dramatically improve soil stability, increase land production, re-charge aquifers and stabilize water levels in areas with sloping land conditions.

The Keyline systems fundamental underpinning is the even distribution of water from primary valley conditions to primary ridges. This allows for new species to grow and stabilize the soil along areas of land that would otherwise remain arid and prone to erosion from heavy use by livestock. The Keyline system is defined by its use of a 'keyline' which is the transition point where the land sloping towards the water course begins to level out. At the center of the keyline within every primary valley denotes the 'keypoint' where the concentration of water from the upper slopes is greatest as is the potential for erosion. By creating small furrows in the land at a 1 degree slope in both directions along the keyline, water is able to be transported back towards the primary ridges. This system also allows water to travel a minimum of twice its normal distance over the surface of the land; this can be continued in a zig-zag pattern down the remaining slope, to increase water flow even further.

The beauty of this land management and water storage system is its ability to be implemented at a variety of scales relative to the tools one has access to. With help from a Bunyip (water level), one or two people can go out onto the landscape and mark out the keyline by simply wandering over the valley slopes, ' feeling 'out where the land makes its transition to a less dramatic angle. A stake is then marked at this point and used as the original keypoint to start from. Depending on the size of area covered, a shovel would be enough to turn over the soil to create the furrow needed in the distribution of water from the primary valleys to the primary ridges.

As a landscape catalyst, the keyline system tends to result in a series of sinuous rills, following nearly parallel to the main watercourse of the landscape. Often backed by trees and shrubbery on the high side of the keyline, this method of earthwork is the territorial framework for further stratification of layering multiple species and processes on a given landscape.
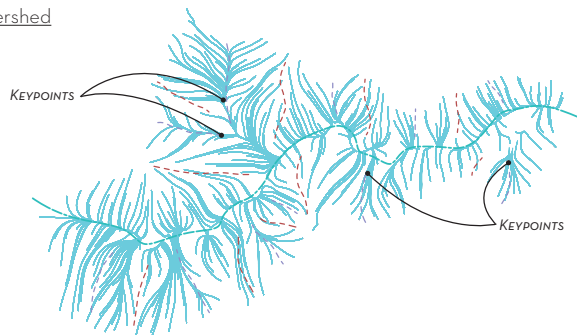
Identifiable land formations

Water Course

Primary Valleys

Primary Ridges
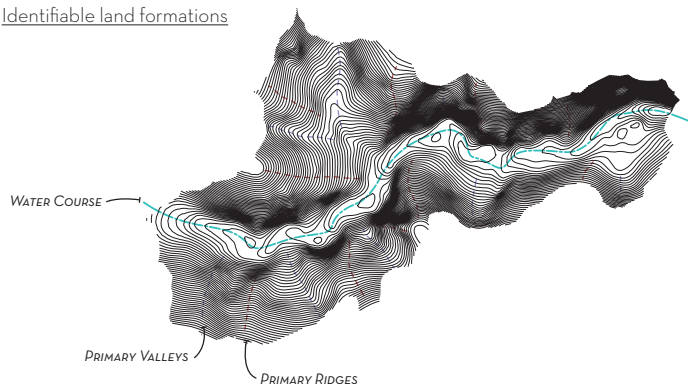
Sharp edges in snow cover, denote heavy bank erosion from the continue energy of the watercourse. Over and over again the water has cut into the bank creating visible striations forming new paths for animals to migrate over.
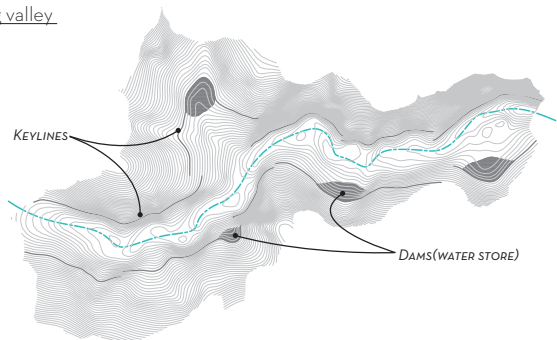

Present watershed

Keypoints

Keypoints

During early March, when the sun is beginning is assent in the sky, day time temperatures can suddenly spike at 17 C°. This sudden shift in temerparture shocks the sloping topography to give up its snow cover, transforming it into a rushing river within an hours time.


Remnantes of beaver dams slow down the flow of water decreasing soil erosion while dramatically increasing sedimentation. This newly formed setteling ponds act as future habitat and a stable water source for intensive crop production, formal patterns which are echoed in the keyline system.

## Keyline defining valley

Keylines

Dams(water store)

An overview of this ravine shows much potential for the expansion of water storage on highlands to be used at a later date for irrigation and to promote the filtration of upland agricultural waste water that passes through this ravine and is deposited directly into the Pembina River.
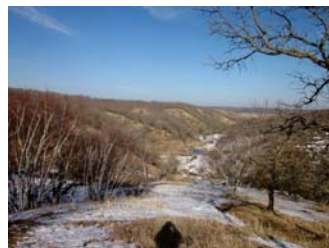
Present Watershed

The underlying digital topography in these images was used to animate the watershed of the valley ravine at the present time. This is accomplished with the help of a physics software that emits singular particles on any digtial surface. The particales are then effected by forces, such as gravity, to mimic the fluidity of water.
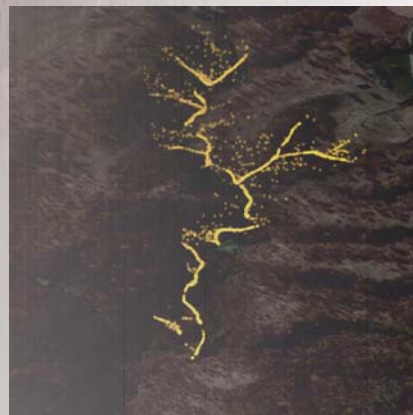
Keylined Watershed

Sculpting of the digital topography allows
for the visualization of how water might
be redistrubuted along the furrows in the
condition of a Keyline system. The animation
gives a general impression of how the water
may be articulated in the ravine after the
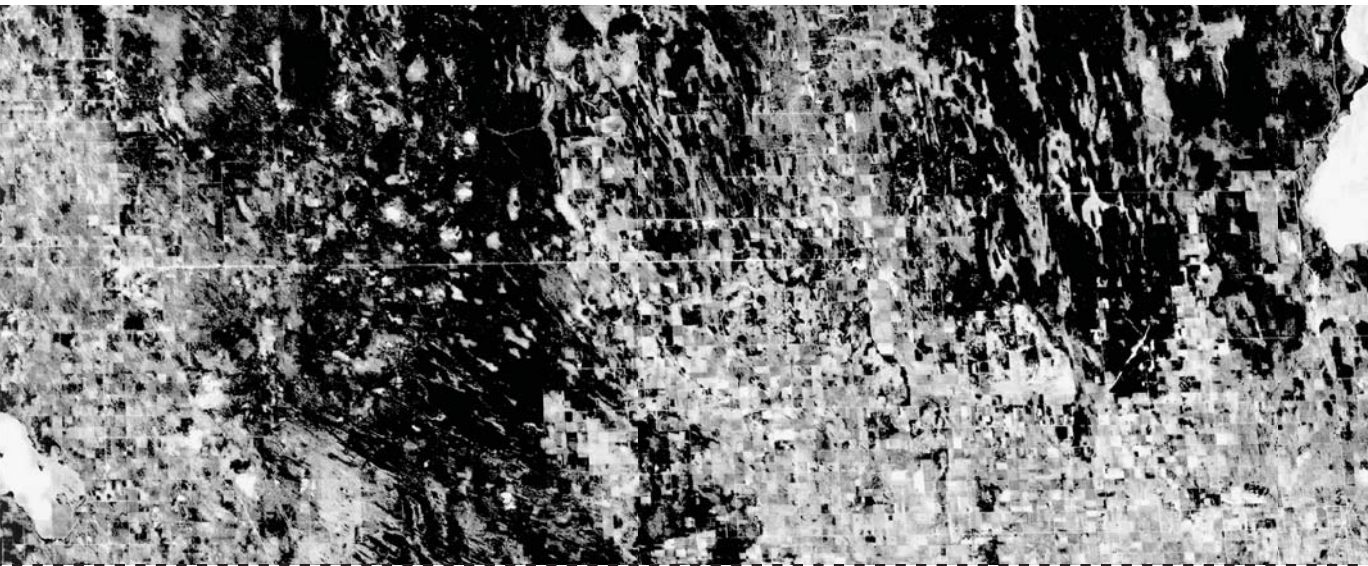manipulation of the landscape.
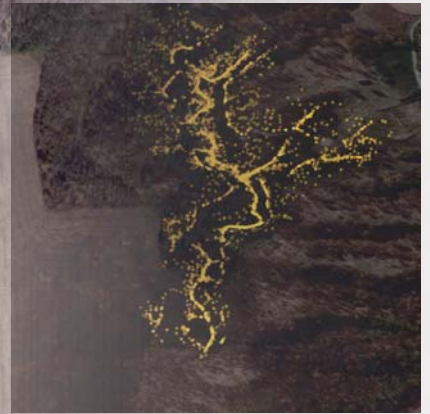
- Stratification -
act 2

Stratification is the act of layering: layering information, space, time; layering language along with the layering of materials, patterns, roles and processes. These layers amongst others culminate towards the identification of an assemblage. Under the act of removal, destruction or reduction of a given agent, an assemblage can still exist as a unified whole. Though in this act the identifiable boundaries that once defined the roles internal to the assemblage may have been sharpened or diffused, relative to the respective agent or agents undertaking the action of stratification.

Not all forms of stratification are immediately visible upon their introduction onto a new landscape. Presently one of the most powerful territorializing agents on the Canadian prairie landscape and its American Midwestern counterpart, began its emergence in the early 19th century. The Dominion land survey carried out by the government of Canada, "burst out over the nearly boundless prairies"[1] in 1871, in a successful attempt to categorically divide the land into units of ownership and governance. This division of land acted as an early catalyst to give formal organization to the prairie provinces, allowing the first European settlers to stake out a piece of 'virgin' soil and begin the collective organization of feeding and supplying materials for the then, newly forming country of Canada.
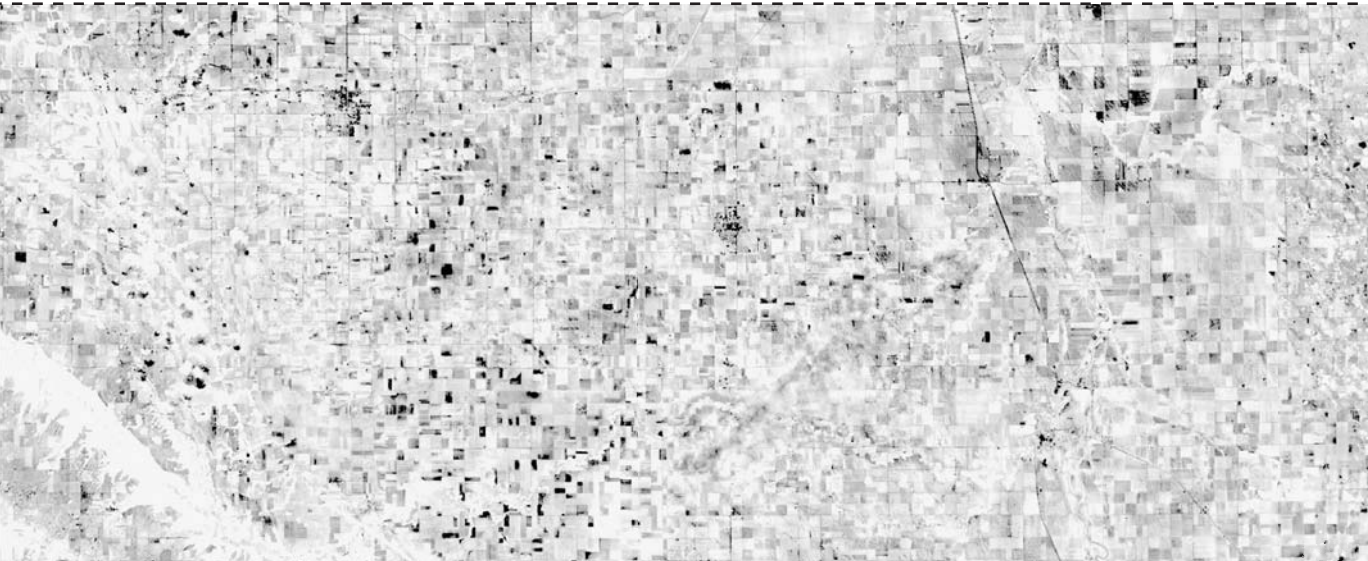
Even though these lines of stratification formed by the Dominion land survey were invisible at the time of their inoculation, they have given agency

51°35'4.30"N

49°21'14.70"N

Manitoba's central agricultural landscape

| Waters / Wetlands / Ravines | Diversity of Agricultural Species | Boreal/Native Forests |

Manitoba's soutern agricultural landscape

to individual landowners. Facilitating the wide open views that compose a majority of the prairie landscape, these formal lines have become the single most defining feature of the land and frame the cyclical actions that occur upon its surface. The reverberation of projecting a two dimensional Cartesian grid on a fluid surface can be seen and felt on a daily basis when one drives or wanders through the back municipal roads of the rural prairie landscape. It defines land ownership, drainage paths, transportation corridors and most importantly has the tendency to sharpen the boundaries of the agents living within a specific section or quarter section of land.

Throughout Southern Manitoba there exists areas where the land refuses to conform to the Grid. In these area's we can find agents of stratification within uninhibited environments that have remained on the outskirts of our periphery. These places hold a rich diversity of species, constantly attenuating their internal environment for the overall health of the assemblage. These areas tend towards the spreading out of their internal agents and are only held back by the strict practices of cultivation and agronomics that surround them.

One such area lies on the fringes of a biome known as the oak savanna. "The oak savanna, a natural community of scatted oak trees and tall grass prairies"[2] remains as a series of fragmented islands that run from the Gulf of Mexico in through Texas, meandering along the mid-west and into small acreages of Southern Manitoba. Much of these areas are overgrown with non-native and native plant species, with less than one percent of the biome habitat remaining intact in some southern States.[3]

Though restoration work is not the focus of this practicum, types of landscape management systems that have shown to successfully stabilize an assemblage while simultaneously increasing its internal heterogeneity is of
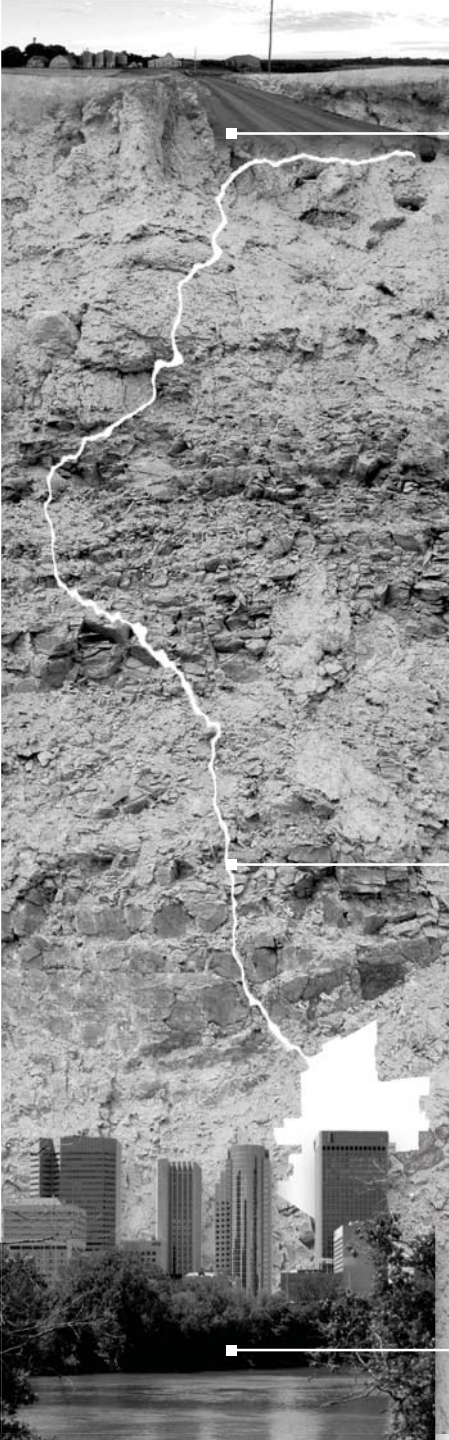
Research site
465 MAMSL

MUNICIPALITY OF PEMBINA
MUNICIPALITY OF LOUISE

Research
Site

Pembina River empties into
the **Red River**

Winnipeg, MB
228 MAMSL
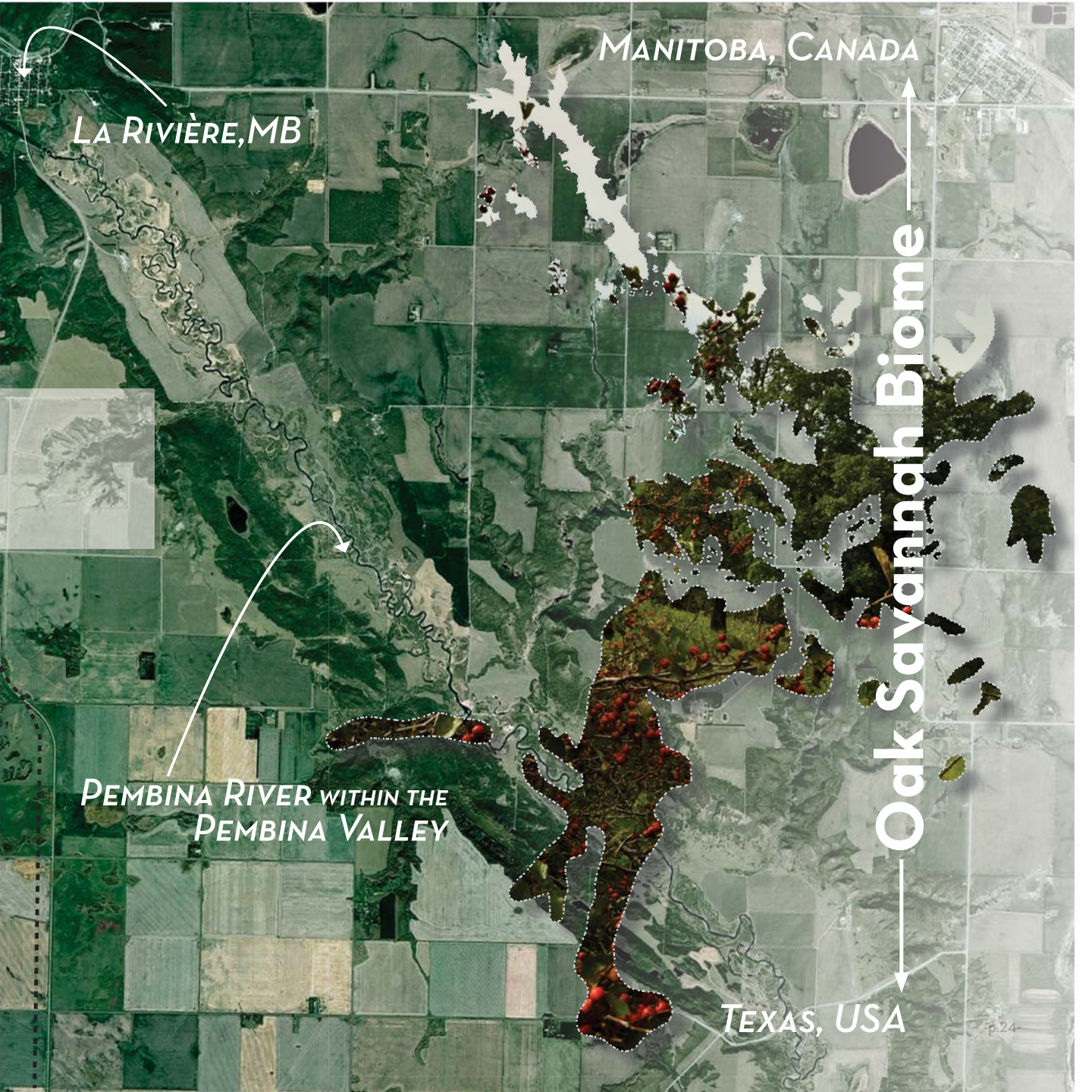
La Rivière, MB

Manitoba, Canada

Oak Savannah Biome

Pembina River *within the* Pembina Valley

Texas, USA

p.24

1 MILE

1 MILE

B^{The}rowns family farm
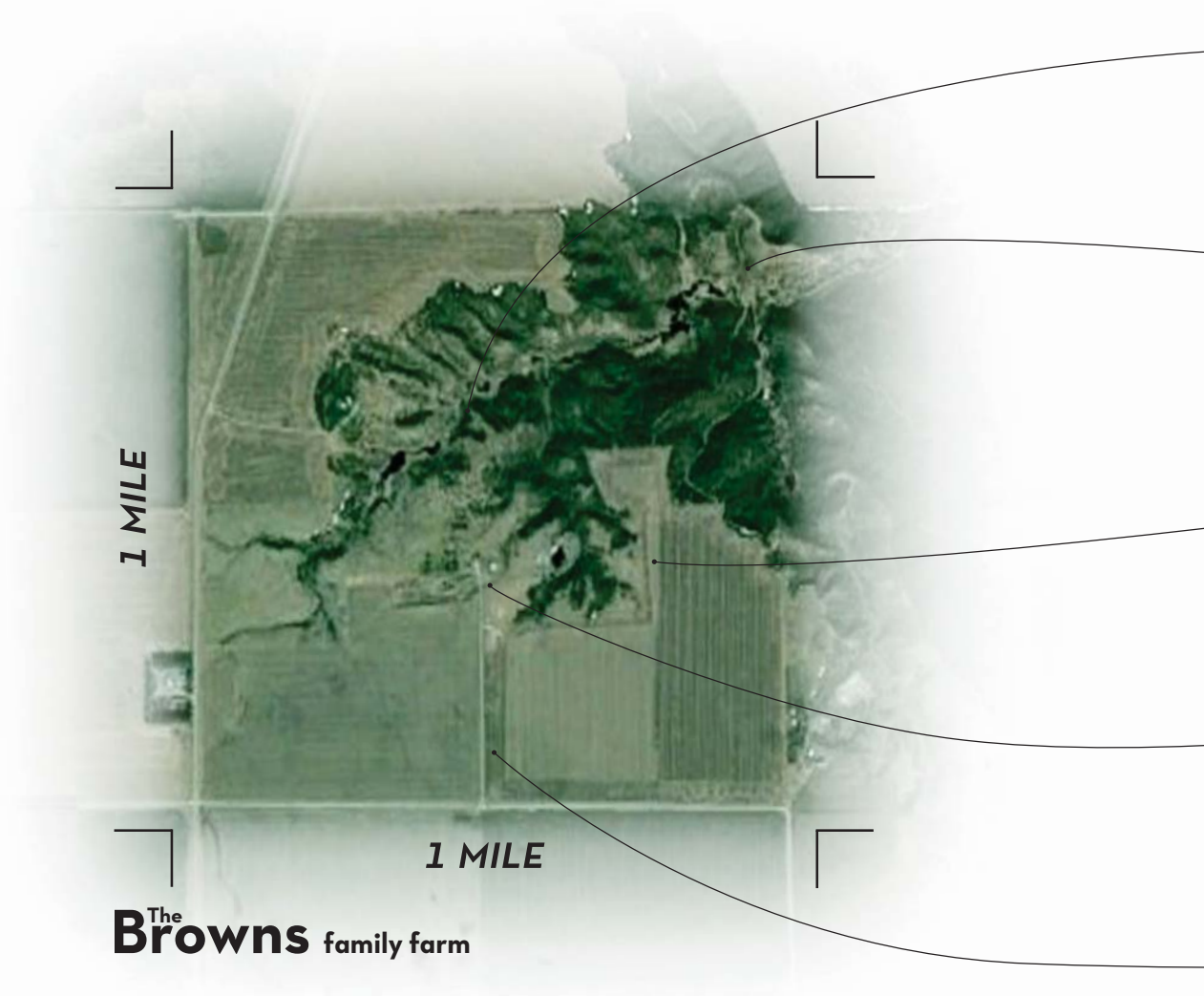
Each one of these locations were mapped and constructed as individual point clouds. The agents found surrounding each location were denoted and became the primary influence for further site development and design research. The Valley was chosen for further exploration because of its extreme distance from the surround grain fields and its internal diversity. >>

Pasture

The Valley

Waterhole

Home

Entrance

Green ash

Standing Deadwood

Hazelnut

Cattle

Thistle

Bumble Bees

Thimble Weed

Beaver dam

Humans

Oyster mushrooms

Miner Bees

A graphic example of the stratified layers of agents that compose this valley condition within the great region of the oak savanna biome.

Elm

Bur Oak

Saskatoons

Flying Squirrel

Whitetail Deer

Raspberries

Honey Bees

Deadwood

OSB
Oak Svanna Biome

particular interest to an articulating landscape assemblage. The pages that proceed will give visual reference to some of the fundamental elements that constitute the stratification of an oak svanna biome within the specific site which research has been undertaken.

A strong working precedent for the integration of articulating assemblages, are the continuous actions that have been undertaken in southwestern Wisconsin, at New Forest Farms. For the past twenty years Mark Shepard the CEO of Forest Agriculture Enterprises, has inoculated over 106 acres of land through the successional planning of perennial species derived from the oak savanna biome, brushlands and woodlands of the native eastern ecosystems of the Midwest.[4] Considered by many to be one of the most ambitious sustainable agriculture projects in the United States, Marks' philosophy extends from his studies of permaculture and is grounded in the work undertaken at New Forest Farms. Here the land is visualized as a whole system, one which can perform a multiplicity of tasks and take on a variety of formal constructs. Integral to this system is the stratification of species, specifically: Oak trees, Beech Trees, Stone pine trees, Apple trees, Mulberry trees, Aronia shrub, Hazelnuts, Chestnuts, Nanking cherry shrub, Elderberry shrub, Juneberry shrub, Seaberry shrub and more. In the act of layering, each plant plays a role relative to its neighbor, though has the ability to be laid out in a variety of manners. The placement or propagation of an oak tree does not restrict the understory growth below that tree to be a typical native cropping of grasses that are resilient to intermediate burn cycles. Rather the propagation of the understory growth that might articulate between apple trees and hazelnut shrubs, with a consistent lower level growth pattern of fungi, is not mutually exclusive. This demonstrates the ability of a given landscape assemblage to not only shift its internal roles over time but ultimately to move towards a cyclical pattern of growth that allows for the transformation of individual agents to be decomposed or further stratified, without losing the identity of the whole assemblage.

Areial view of the slow stratification of agents on `New Forest Farms` and the shifting identity that occurs along its territorial edges.

google earth

- Transformation -
act 3

When viewing landscape assemblages from an external position, the relationships that dissolve and emerge via a scalable lens, such as global imaging tools (ex. Google Earth, Bing maps) quickly transform the apparent identity and internal roles of a given landscape. Patterns that emerge at aerial views have multiple agency to them, some of which are attributable to physical agents of lower level assemblages while others are the computational makeup of the digital sphere. Though the latter is relative to the scalability of a captured still image.

The act of scrolling deeper and deeper into a digital image that is constantly being refreshed in the background, gives the sense that the world has been accurately and infinitely measured so the 'true' identity of any landscape is easily available for anyone to access online. One must be careful, as on closer inspection the 'infinite' image begins to breakdown into a digital assembly. An assembly that is composed of discrete pixels, sharing only a spatial relationship to one another which is completely distinct from the image it is attempting to represent. A more accurate lower level imaging system might begin to reveal or suggest the agents of a given area, giving expression to the complexity and rich diversity of relationships that physically inhabit a given assemblage. Possibly even giving the viewer the desire to go out and explore these places for themselves.
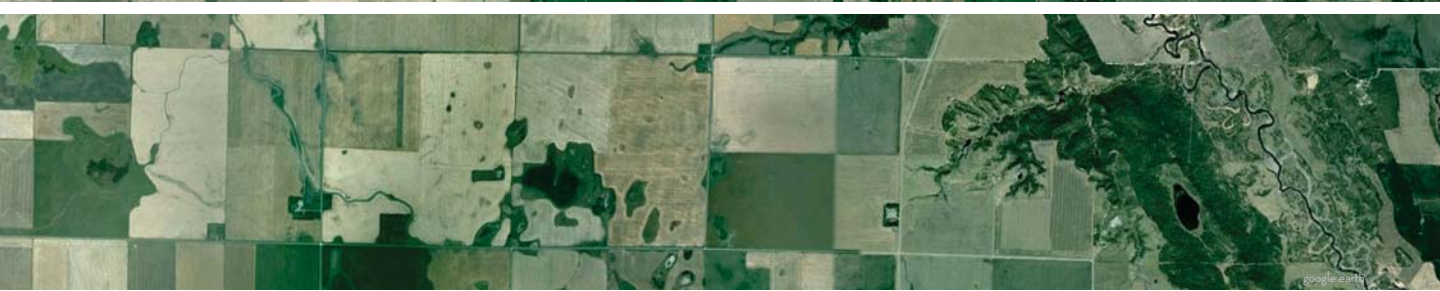
Lady Bug
- with the ability to consume up to 50 to 60 aphids per day these multi coloured insects help improve the health of the surrounding environment.

Chicken shed
-the slow shift of this once active structure holds a range of material and objects inside it's walls, just waiting to be discovered.

Apple Trees
- like us, the apple tree is a "heterozygous". This essently allows for new varities of the species to be genetically variable, and allusively wild.

Honey Bee
- Whith a close proximity to water and south facing slopes, this area is being used as an experimental underground habitat for honey bees, to ease the over wintering process.

Red Angus
- This four legged creature can weight up to 1500lbs and increase the relative rate of site erosion 5 fold, when fenced into confined areas.

Human
- This area was once used as gravel pit for the existing farm site. Due to the distrabution of the soil, a water hole now exists.

A static representation of a lower level imaging system that might be used to visualize the agents that compose any given site. The point cloud would be used here to hold individualized narratives (metadata) on specific agents, relative to their physical location. Giving the remote viewers a glimpse into what constitutes a specific landscape assemblage. This metadata could be collected through the individual investigation that might occur on site at any given time of the year, or through the attachment of images and stories via the remote users site interaction.

Along the line of flight to questioning what might constitute a landscape assemblage. I have exposed myself, with the help of others, to the physical reality of the land. Walking its hills and taking in its presence. Within this assemblage it is apparent that the complexity and rich diversity, which this place is inundated with, holds limitless potential to act as a simultaneous landscape for the production of produce while addressing a human need for the exploration and experience of a seemingly wild habitat. To addresses these needs the agents of an assemblage should be drawn out in an attempt to help others perceive of multiple connects that otherwise would not been seen. Here we will begin with the bee.

All species of bees carry with them the agency of transformation. This agency is drawn out via the act of pollination, a mutually beneficial relationship that has emerged to sustain both organisms through the interactions of their individual parts. These singular acts of pollination simultaneously increase genetic diversity within the reproductive organism, while feeding the individual pollinator and its larger collect assemblage back at the hive. The honey bee (Apis mellifera) originally native to western Asia, the Middle East, Africa and Europe is the typical symbol for pollinating species.[1] This is mainly to do with its refined relationship through the past 10,000 years of human history. The fact that the honey bee is a social insect and one of the few that are considered eusocial (we fall into this category) may have a lot to do with our vested interest in it, as it lends itself to examples of social structure. The immediate benefit to ourselves from these species as the only pollinators that can produce honey at an industrialized volume, appears from the outset as a critical point on which we depend on the honey bee for sustenance in both a direct and indirect way. Though in an assemblage there exists a wide range of pollinating species. North America has over 4,000 native bee species alone and this does not include other

Introduction of honey bees into the valley was an exploration in fostering and understanding the relationships that emerge between species in an articulating assemblage. The resulting collision between large mammals and honey bees helped refine a location and brood chamber to see them through the winter months, unassisted by human hands. >>

pollinators such as wasps, flies and butterflies.[2] In the case of the landscape focused within this research there have been numerous sightings of a variety of Miner bees, Sweet bees, Mason bees and Leafcutter bees. All of whom play a critical role in stabilizing the internal identity of the assemblage while simultaneously adjusting to new forms which may be inoculated in the landscape.

The agency of transformation brings about a re-constitution of site resources or matter through the aggregation of its existing form. This change often carries with it the tendency to deterritorialize the present and prescribed use of an assemblage.

The malus seed (apple seed) is one such agent of transformation; coated in a protective shell this stratified object must undergo a series of temperature shifts, relative to its environment and its own identity to transform into what we see as a fruiting tree. Not unlike us, the apple's genetic variability in every new seed is known as heterozygosis,[3] though in the apple this is an extreme tendency. Every apple seed produced from a single tree has the ability to be its own variety, giving a new apple tree the potential to exist almost anywhere on the plant by deterritorializing its singular parent identity into thousands of forms each year. This process gives way to shifting color palettes in the fall and undulating flowering periods in the spring. Both of which add a level of diversity that allow the uptake of pollen at different periods of time in the spring and genetic variability that adds to the overall health of the environment.

Another such agent of transformation comes in the form of a fruiting body at the surface of the landscape. Though below the soil and internal to other agents lies its rhizomatic structure which can reach across the land to interconnect huge expansive areas. These agents are known as fungi. Ranging from edible to poisonous, fungi can be found across Southern Manitoba in a variety of forms. Some of the most typical and economically viable are: chicken of the woods, golden chanterelle, oyster and morels. Highly sensitive to their internal assemblage, fungi often share a discrete relationship with other agents in their immediate surroundings. Flying

<< These apple seeds were collected from a variety of locations. Spanning from apple orchards along the Pembina Valley escarpment, to Gala seeds collected from the everyday purchase and consumption of apples growth a great distance to this site. Each success full seed that germinated was planted in the farm yard to acclimatize the plant to the surrounded assemblage. Individual trees that survive to the following year will be planted within the valley and protected from external pressures put on it, such as deer. The form of this protection will be covered in the act of catalyzation.

through the air, spores projected out from the existing fruiting body of an oyster mushroom, come to rest on the truck of a fallen poplar tree. Given the right conditions hyphae can begin to form throughout the agents body and begins the rapid decomposition of the poplar trees lignin.[4] While the tree slowly gives up its internal structure to the fungi, a transformation of the trees existing identity gives way to the formation of new elements which can be easily taken up by other organisms (ourselves included). These

<< The successful inoculation of oyster and chicken of the woods mushrooms in the valley was highly sensitive to their mirco climates. Well suited areas proved to produce may fruiting bodies and became a point of interest towards the excitement of future site visits.

internal actions that are performed between the existing tree and the newly inoculated mushrooms share a close relationship to the actions that can be performed on the surface of the landscape to shift its internal identity.

Here we find discarded pieces of collective cultures that lie tucked away from prying eyes. A heap of decomposing material having thoroughly transformed from its previous state of linearity, now rests quietly in an interwoven body of rubble. The assemblage is given formal expression by its relationship of parts; the potential for an identity shift lies in the reformatting of the identifiable parts. By differentiating the scale of the assemblage and looking at the existing joints that once held this decomposing fence line together, the pile of rubble can be transformed to be given a new construct. One which affects its spatial surroundings while still holding its previous identity of matter and linearity in check. This re-constitution of matter came out of my internal need to transform the present surroundings. An immediate desire to place something in a state of precarious balance, knowing that it would not last more than a moment due to external forces acting to deterritorialize the new composition. This formal assemblage was the catalyst to address a landscape intervention that attempts to take into consideration the act of distribution of individual agents on the landscape, stratification of multiple species in an assemblage and suggest the transformation through time that will exist via the interactivity of these articulating agents.

This pile of deadwood was left to sit for the foreseeable future and slowly de-compose over time. Though in a playful act of curiosity it was an afternoons work to transform the 'deadwoods' identity by exploring relationships of balance and instability. >>

- Catalyzation -

act 4

Catalyzation is the process of using a catalyst with other reactants to increase the rate of a reaction without the catalyst being consumed in the process. The insertion of any new agent within a given assemblage will cause a series of reactions, ultimately producing both desirable and undesirable effects. The identity of the site of exploration within this practicum, presently exists as an articulating heterogeneous assemblage, constituted by an array of species acting and reacting to the daily rhythms both external and internal to it dominion land boundaries. DeLanda remarks that, "The identity of any assemblage at any level of scale is always the product of a

process and is always precarious, since other processes can destabilize it. For this reason the ontology of assemblages is flat since it contains nothing but differently scaled individual singularities (or hacceities)."[1] If true it is these singularities that compose a landscape assemblage's identity through processes of territorial and deterritorialization carried out by the interactivity of its singular agents.

Looking back to the first acts performed on the landscape and the generation of structure from singular points in space (point clouds). There is a tangible relationship for the language used in this practicum to act as a form of landscape architecture by drawing out a series of singular interventions on the land. Site singularities are imagined as a catalyst that hold their own compositional makeup while sharing a common topological structuring that helps facilitate the growth of their internal agents for the production of both foraged and farmed produce. These catalysts are generated from the transformation of existing elements within the landscape. By bending stocks of hazelnut shrubs found in abundance on site, spheres begin to frame space and alter the identity of the existing valley. Inspired by the geometrical composition of a truncated icosahedron, these spheres are distributed throughout the valley floor to take on new species and preform as the framework for the articulation of this landscape assemblage.

Over time the agents that are housed, protected and nurtured within these spheres will slowly begin to deterritorialze their wooden boundaries and emerge together as a collective assemblage of fruiting bodies. Each strata of species pays homage to the existing oak svanna biome which sharpens its boundaries and gives a background horizon for which to view the articulating assemblage against.
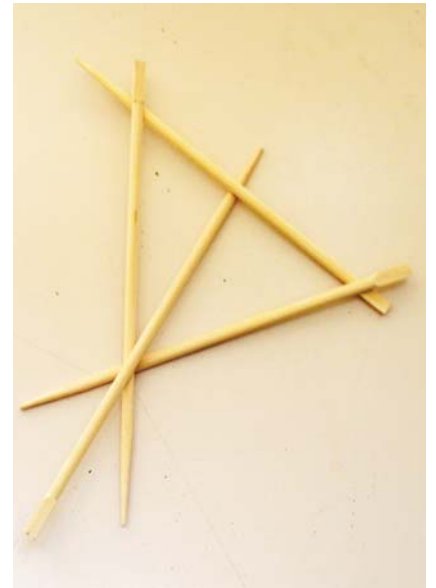
In time, summers will see individuals decent upon the ravine to pick from the bounty of the multiple singularities that have emerged here. From apples to chestnuts, fungi to ferns, saskatoons to chamomile, people are encouraged

Conceptual design of a site singularity. It's topology follows that of a truncated icosahedron, which was intended to give the sphere the ability to be de-constructed and re-purposed to be used again in the future. ⌃

The original joint that was designed to hold the singularity together focused to much force on the material that was used. It also presented the issue of fabricating hundreds if more than eight singularitiyes was going to be constructed. ⌄

A more elegant solution was designed which allowed for the composition of the singularity to be completly derived from material found on site. The exploration work done on site gave rise to this joint detail. ⌄

Refined Stock
Framework for singularities

Hazelnut Branches
Corylus americana

Filberts (nuts)
A snack after some hard work

Singularity {1:1 test of the partial working of how the singularity might be constructed}

a viewing agent!
{An agent of the red angus/ simmental breed}
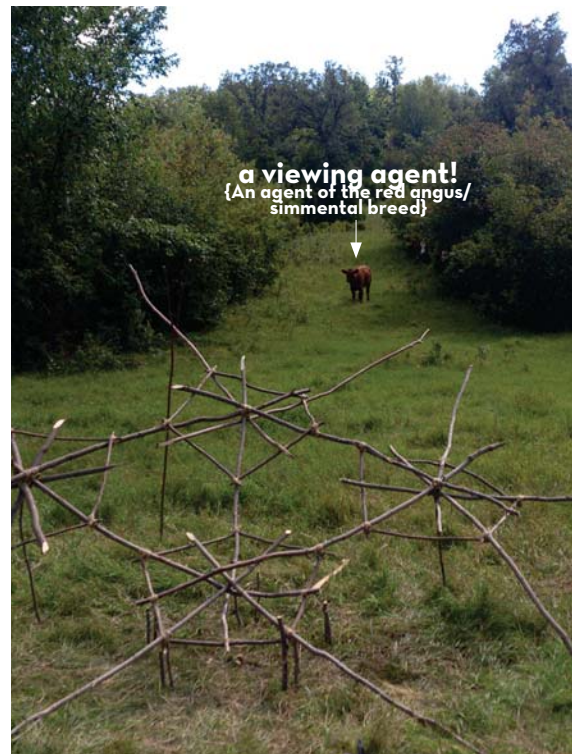
Individual Singularity

{A digital rendering of one type of site singularity. Over time this sphere of grass would decompose and inoculated seeds would emerge to form larger canopies. }

Future Growth Patterns

{This digital rendering demonstrates the de-territorializing nature these singularities might have over their external assemblage. Through time spreading across the landscape, being encouraged by the beneficial relationships discovered between internal and externalized agents. }

to descend amongst the trees and wander in through the valley, passing across the 'Keylined' rows that distribute water back to the primary ridges, a melody of frogs, geese and fish are found waiting in the newly constructed ponds. On the distant highlands, a herd of whitetail deer pass just above a drove of cattle that freely graze the lush valley floor. On the edge of what is now a ten year old catalyst, a pack of ruffed grouse delicately waddle through the fallen foliage and pause to pick away at the bark on a fallen tree.

Throughout the years the newly established species demonstrate legitimacy in their elegant relationships and prove themselves as a reliable source of produce. From here the identity of the heterogeneous ravine gives rise to deterritorializing the assemblage further. Reaching out of the valley and onto the fertile highlands, a second wave of catalysts are created that focus on the growth of carbon sequestering species. These species will eventually grow to reach deep into the shale soils and uptake over 50 gallons of water a day, helping to raise the water table, slow the speed of surface runoff and dramatically improve the rate of filtration on the highlands before polluted water is able to migrate into the Pembina River. These singularities are focused around the growth of Oak, Beech, Elm and Stone Pine trees. But before any of this can come to fruition it would be helpful to have a few elements that give landscape agents the capacity to act as an agent for this change.

Combing through images and reflecting on the numerous experiences that have occurred while descending into this valley condition, there are a few tools that have been very helpful in articulating this practicum work. The primary one is a simple digital point and shoot camera. Handy when attempting to identify plant species, reconstructing whole landscape surfaces or for simply freezing a memorable moment in time. Next on the list are long thick socks. From early June to mid-August, wood tics tend to be out in numbers and a long sock pulled up over a pair of pants makes it easy to knock those little devils off. An axe, shovel and small knife have proven to be a very useful for opening up dense thickets of brush, taking down small hazelnut shrubs to be repurposed as small spheres and for turning over furrows of soil to allow water to drain in a new direction. String, twine

⌃ A small example of agents that were used on site to help explore the articulation of this practicum work.

or jute come in handy when attempting to bind together joints or hang food out of the reach of other agents. Dowels inoculated with mushrooms spores are a must when stumbling across a fallen tree, or alternatively to fell a rotting tree and inoculate for a crop of mushrooms the following year. Storage via baskets, bags or containers are needed as each day brings a new variety of fruits and nuts to pick from. A clear tube and a multipurpose measuring device make for a nice Bunyip (water level), and facilitate in the implementation of the Keylining system. Finally a comfortable seat which can break down into some of the other tools listed above, gives an agent the ability to take a moment for rest and recovery with a good cup of coffee and simply watch the surrounding landscape articulate before their eyes.

The rich diversity that constitutes this landscape assemblage, is utterly palpable in its physical form. To ignore the tapestry of this landscape would be to ignore its very identity. Action without inspiration from the site, risks the possibility of any catalyst being consumed or consuming the surrounding agents of a given assemblage. It is critical for landscape architecture to address the relationships that exist between differential scaled individual singularities, as we are so often working between differential scales. It would be a great error of judgment to take recognizable patterns at one scale and simply inoculate them at another, as this would effectively be a singular act of deterritorialization of an assemblage's identity. The consequence of our design actions once formalized and constructed in physical space holds agency to it and will be bound up in the actions of the agents that articulate space long after the landscape architect has left the site of study. Which brings about the question – is it not the work of a landscape architect to draw out future relationships for a multiplicity of agents through the conscious articulation of a present landscape assemblage?

All the work done in this practicum has been
undertaken through two fundamental agencies...
Exploration & Play

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SOFTWARE USED

Grasshopper for Rhino
A free parametric plugin for Rhino3D, which can help individuals manipulate data in real time and visualize the results through the rhino environment.
http://www.grasshopper3d.com/

MeshLabs
MeshLab is an open source, portable and extensible system for the processing and editing of unstructed 3D triangular meshes.
http://meshlab.sourceforge.net/

Photosynth
A free 'bundle adjustment' software online used to reconstruct 3D environments through analyzing still digital imagery.
http://photosynth.net//

POINTCLOUD WORKFOLW

Digital Camera ---> Photosynth ---> MeshLabs ---> (Any 3D CAD software)

A Reprise

Territorialized // Deterritorialized
by jason hare

I have been bound by natural patterns,
Structured within the nature of creativity
Held by the point of certainty of continuance,
Fixed to a definitive set of elements.

I am a foundation to bound from,
A space to bound through
A place to bound to
A life to bound towards

Bound to the economy,
To the local
To the global
To the prosperous

I am bound to be called home
To be used
To be abused
To be forgotten

I am bound to be remembered