Spring 2014

Unveiling the Rural Landscape

Carolina Jimenez

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Mutable Systems of Nebraska's Cornbelt Region

Carolina Jimenez
Syracuse University
School of Architecture
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PREFACE

Within the past 50 years, industrialized farming has transformed America's rural and agricultural landscapes. These two landscapes have taken on increasingly divergent cultural representations in language, paintings and photography. Architectural interventions within the rural landscape can act as a device to reveal these differences. In this way I am engaging in four interrelated discourses.

Defining the Rural | *Linguistic, Painting, Photographic Representations*

In order to define the rural landscape, it is essential to understand the way it has been constructed by cultural representations in language, painting and photography. Images of nature mediate that which is outside of us, translating environment into a cultural object. Following a trajectory of pictorialization, the eidetic image of the landscape has led us to question our relationship to –what we perceive as- an entity outside of ourselves rather than processes we are integrated within.

Constructing Landscape | *Nebraska and the Corn Belt*

The American Corn Belt is deeply connected to personal scales and global economies. Nebraska produces the third greatest amount of corn of any state and is included within the part of the nation defined by its corn production. Additionally, Nebraska is the state that had the greatest percentage of land area –45 percent– settled through the Homestead Act of 1862, a piece of legislation that was deeply rooted in the ideals of Jeffersonian democracy. By studying the historical delineation as well as the present day processes (spatial measures, policies, farming techniques, systems of transport) that transform the Nebraskan landscape, we can create a new image for this territory.

Systematizing Site | *Aerial Photography and Mappings of the Mutable Landscape*

Understanding the physical characteristic, process and patterns of rural landscapes allows us to extrapolate relationships of agricultural lands to political spaces, to nodes, to networks. It allows for the creation of 'place' in replicable, expansive sites by revealing the complexity and particularity of one location. Pairing aerial photographs and mappings attempts to combat the picturesque construction of landscape.

Embodying Identity | *Manifestations and Representations of Mutable Conditions*

These projections and provocations for future design projects imagine interventions on the landscape. These apparatus are meant to reveal the dynamic nature of rural sites and are designed through the lens of their future representation. How do we reconstruct the collective understanding of rurality?

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DEFINING THE RURAL LANDSCAPE

Rurality can be defined through its representations. Landscape architect James Corner states, "landscape and image are inseparable. Without image there is no such thing as landscape, only unmediated environment." I am interested in the way that the cultural artifacts (paintings, maps, photographs, and computer technologies) that represent the rural have in turn transformed the collective conceptualization of these territories. I plan on cataloging then creating representations of the rural. I will look at paintings, mappings, photographs, and computer-generated images; analyze them; then create my own versions in order to define the landscape I am interested in. These would illustrate the divergent trends of the agricultural and the rural. I am taking on the documentation process fully cognizant that documentation is a not a neutral process, but in fact has a great deal of agency.

Whereas processes of cultivating the soil and rearing animals define the agricultural, the rural cannot simply be defined by its oppositional relationship to the urban because it is taking on physical qualities of industrialized labor processes.

The USDA defines rural as:

> "nonmetropolitan (nonmetro) areas, defined on the basis of counties. […] Nonmetro counties include some combination of:
> 1. open countryside,
> 2. rural towns (places with fewer than 2,500 people), and
> 3. urban areas with populations ranging from 2,500 to 49,999 that are not part of larger labor market areas (metropolitan areas)."

This illustrates physically expansive landscapes with low populations. There is overlap between what agricultural landscapes necessitate –the need for large amounts of space to produce profits- and ideas of rurality. Paul Cloke, geographer and editor for Journal of Rural Studies, raises the question of how rurality is defined and notes that spaces are produced by the way we live, act, and work in them. This implies that there are processes actively producing rurality, such as the cultivation of great swaths of land owned by few people, and increasingly, with the aid of mechanization. Processes of production –regional and individual farm specialization, spatial separation of livestock and crops, homogenization, and standardization– have defined rural and urban spaces as well as the boundary between them. Today we struggle to define the rural through its opposition to the urban, as we once could. We now see conditions of extended peripheries. We get suburbia and we get loose industrialization. Much of the industrial agricultural systems that we use today are rooted in mid-century policies. We continue to be heavily reliant on high capital inputs, high chemical inputs (pesticides and herbicides), regional specialization (Corn Belt), planting monocultures, technological fixes (precision agriculture, remote mechanization, GMOs), corporate consolidation of inputs (Monsanto, ADM, Cargill, ConAgra), government subsidies. These are processes of the rural; through my research I seek to understand what the signs and symbols of the rural are and how they are physically embodied.

LANGUAGE

Embedded within our usage of the words rural and landscape are mental images and associations. Hues and patterns, memories of textures and noises create an individual definition of these words, but the words themselves allow communication beyond our internal experiences. To better understand the social meaning of a word, it is helpful to understand its history. While this seems trite, the insights we gain from studying the etymologies of both words identify moments where change occurred and the how reconceptualiztion of words stems from wider cultural trends.

rural
ru· ral [roo r-uh l] adjective
1. of, pertaining to, or characteristic of the country, country life, or country people; rustic: ruraltranquillity.
2. living in the country: the rural population
3. of or pertaining to agriculture: rural economy.

Rurality is a nebulous concept. There are three different governmental definitions and each relates the rural to a lack of density. It does not speak to the qualitative aspects of these areas; this portion of the rural is defined through cultural representations. The word rural comes from Old French rural and Latin ruralis, which meant "of the countryside," and was tied to rus, "open land, country." Here we have established once more the idea of openness; it is a notion that also retains a feeling of opportunity, and in a very American sense, land yet to be claimed. Rus is derived from the Greek arura meaning arable land and this in turn came from the verb aroo: to cultivate farm or plow. If, when we speak of rurality, it is with the vague connotation of agriculture, this may be why.

landscape
land· scape [land-skeyp] noun
1. a section or expanse of rural scenery, usually extensive, that can be seen from a single viewpoint.
2. a picture representing natural inland or coastal scenery.

Our usage of the term landscape is no less tenuous than that of the rural. Outside of architectural discourse, the term refers to a view of a land area. However, the notion of landscape as a passive object, as an object to be viewed, is contrary to the origins of the term. The focus on image and vision was concretized in the 17th century with the predominance of the Duth landschap in reference to paintings of natural scenery both inland and coastal. The Dutch school of landscape paintings was concerned with portraying atmospheric conditions and the grandeur of their surroundings. The cognate to landschap is the Old English word for a painted image of the land: landskip. Producing images of land meant that the image was given significance separate from productive value of land. This established a standard of beauty by which to evaluate land; in other words, appearance became the primary point of exchange and assessment.

These etymological derivatives constructed a notion of land that differs greatly for earlier forms. The Middle Dutch word landscap -which preceded landschap- referenced a particular region. Similarly, landschaf -landskip's Old German precursor- invoked not only a visual understanding of land, but also described the organization of a productive landscape. Landschaft expressed a community's spatial relationship to the pastures, meadows and fields where they worked and the nearby territories which remained uncultivated. The notion of land at the time was much more than a specified swath of land but rather was tied to what we understand today through nation or state. Land in the Old Germanic context connoted belonging to a particular place and responsibilities to that community; land was essential in constructing identity. The suffix –schaft meant 'to shape,' and illustrated the abstract conditions of a place as well as processes that created notions of place. In this way, the word landscape was much more than physical areas. It recalled networks of movement, patterns of social activity as well as a community's temporal habits. Landschaft encompasses the construction of social ideas and images.

Our present understanding of landscape has abandoned the knowledge of social processes that were essential in the usage of landschaft. 'Landscape'

allows us to speak about a range of diverse places without the deep understanding of the construction of place; 'landscape' makes permissible a purely visual evaluation of a place. That is to say, we may fall in to the trap of believing that we know a place simply by seeing it from a removed perspective. It may not be a stretch to say that landscape preferences the outsider, an occupier of a landscape relates to the land in a distracted state without the distinct awareness of the visual which a visitor would.

An additional perspective in the construction of landscape is the effect of performance and event. J.B. Jackson in, "A Sense of Place, A Sense of Time," notes the way that landscapes of expansive homogeneity are often heavily influenced by the passage of time. The cyclical nature of days passing, the agricultural calendar, the changing of seasons, these ephemeral concepts of landscape provide a more complete unverstanding than a purerly visual mode of study and representation.

PAINTING AND PHOTOGRAPHY

The history of landscape representation in the United States is punctuated by characters that shaped the way that our culture as a whole formulated ideas of rurality.

Painting

Perhaps the most influential character of early American landscape painting is not an individual at all but rather the Hudson River School led by Thomas Cole. The Hudson River School painters focused on the development and settlement of the Hudson Valley and surrounding areas in the mid-19th century. A fascination with the frontier and American's peaceful transformation of wilderness were often the subject of the Hudson River School. Cole was born in Britain, but as with many others of the day, came to America as a young boy with his family who was seeking new opportunities. His hometown of Bolten-le-moors was undergoing rapid industrialization and Cole was influenced by the way large factories were encroaching on his rural town. Arriving in the New World, he was astounded by the vastness of the American frontier. His work is characterized by a sense of realism and romanticism towards the expansive countryside. Tension between natural and culturally constructed landscapes was central to Cole's work. As we notice in *The Oxbow*, Cole often painted distant views of the landscapes; this scopic regime gives the viewer a sense of omniscience. During the 19th century, Manifest Destiny was a prevalent belief during the time Cole was painting. Frederick Edwin Church, Cole's only student, seems to have been impacted by these types of ideals. Church completed works during the 1850s and 1860s and was very much interested in portraying the grandeur of natural settings, employing light and detail to describe uninterrupted nature. His work gives a sense of the sublime and seeks to diminish the painter's presence in the finished piece.

Church's work is related to the styles of other artists such as Fitz Hugh Lane and Martin J. Heade. Today these artists are identified as part of the Luminism movement, although the artists never considered themselves to be a part of a larger association with sentient attitudes about painting. Art historians describe luminism through its adoption of descriptive realism and emphasis on light qualities. Often, Luminist painters aestheticized their works, editing and combining views in order to express a landscape that was much more impressive than it might be on its own. Many who painted in this style portrayed Jacksonian expansion and optimism towards the new frontier. The term Luminism is thought to be the invention of art critics and collectors who wanted to inject value into certain bodies of work.

At the closing end of the Lumism movement, other artists were beginning to paint landscapes and individuals in the Realist style. Winslow Homer was an artist that is commonly associated with the movement; his work portrayed

Figure 1. Martin Heade, Summer Showers, 1865
Figure 2. Fitz Hugh Lane, Riverdale, 1863

Figure 3. Grant Wood, Daughters of the Revolutiom, 1932
Figure 4. Milton Avery, Harvest, 1953

Americans from all walks of life. Even the medium the homer chose to paint in reflects his ideas about the nature of the United States. Instead of using oil, Homer took to watercolors not only because of its material qualities but also because it meant he could sell his painting to a wider audience, not just the wealthy. His critiques of American Reconstruction policies are prevalent in scenes of rural America. Homer painted a wide range of subjects, from the urban dwellers, cosmopolitan women,. Additionally, his paintings are distinct from preceeding movements in that they emphasize the action occurring at the individual scale. Therefore, his painting's horizon lines are along the same lines as the eyes of the subjects.

Best known for his painting, American Gothic, Grant Woods played an influential role in creating distinctly American iconography as well as bridging 19th and 20th century art movements. Without departing from earlier interests of the American landscape, he began to investigate themes of government policies after the Great Depression. Other artists who took on similar motifs formed what is known as the American Scene movement. In part a rejection of the industrial character that presided over previous decades, the American Scene sought to identify the human spirit as an essential force in American identity. Similarly, the movement brought to light particularities of distinct regions and questioned the role of art within society. Although some of Wood's earlier pieces such as Daughters of the Revolution (1932) seemed to mock the attitudes of rural society (in this case by portraying the founding fathers as cross dressers), his later works began to exude great respect for farmers. Woods' paintings helped to form an image of the tireless farmer upon whom America is built. His paintings raised up farmers as integral and valuable constituents of the nation.

The trajectory of the American Scene was transformed by artists such as Milton Avery who, in the 1930s and 1940s began abstracting the seminal views of the movement into flat planes of color. Avery's work preceeded the Abstract Expressionist movement, and inspired artists like Mark Rothko and Richard Diebenkorn. Flatness of the picture plane, as well as a reduction of detail characterized Avery's work. Unlike the artists of the American Scene who were concerned with the social aspects of the landscapes they painter, Avery was fascinated by the way landscapes could be imbued with monumental presence through the shifting of color palettes and painting techniques. The accurate representation of a place was secondary to art's ability to imbue meaning to subject. Avery's reduction of detail serves to illustrate this fact. Visually, there are similarities between Avery's work and that of the Cubists. However, the likelihood of cubist influences on Avery's landscapes is unlikely. Whereas the cubists had a distinct ideology and intellectual methodology behind their style, Avery's primary concern was with studying subject.

Following Milton Avery's forays into Abstraction, a new set of artists explored the methods of abstraction to new ends. Richard Diebenkorn was one of these artists, aligning himself with the Abstract Expressionist and the Bay Area Figurative movements. Diebenkorn was highly influenced by landscape traditions and aerial perspectives. He was able to conflate two distinct interests into a unified style. As his work progressed, it became increasingly abstract, so even while he continued to represent landscapes, they were shown as large swaths of color, overlain with lines of sight that were notational devices in Diebenkorn's new visual language.

Painted representations of landscape have come to represent a wide range of cultural perspectives. Diebenkorn best represents the disconnectedness that a contemporary urban dweller may have to the landscape. Because landscape has undergone abstraction, we are each left to fill in an image of what that territory is and we do so without a full understanding of the systems that define and create it.

Photography

The use of photography as a means to describe a landscape occurred almost immediately after its invention, when combined with another recently developed technology –the airplane– it produced results that allowed artists to understand this as a conceptually charged tool.

Le Corbusier produced one of the first critical portfolios of aerial photography. His book, "Aircraft." argued that with the lens of the aerial photo revealed the shortcomings of the planning methods of the time. He spoke of the way that the airplane gave society a new eye by which to view the world. "By the means of the airplane," writes Corbusier, "we now have proof, recorded on the photographic plate, of the rightness of our desire to alter methods of architecture and town-planning." Additionally, because aerial photography relied on the aircraft made other aspects of that particular mode of transportation more salient. There was a greater sense of connection between distant locations.

Photographing during the same period, Arthur Rothstein focused on an entirely different mode of representation. His photographs were primarily in a documentary style; his purpose was to describe the lifestyle of the common man. Additionally, his photographs cut across a great number of American typologies; he captured urban, industrial, suburban, and agricultural areas. Likewise, David Plowden cut through a great cross-section of the United States, however instead of focusing on the individuals who made up the United States, he was driven by an interested in depicting specific images of the world. Through his study of urban conditions, we understand the way machinery and industrialization shapes the world. The processes of industrialization are faceless. Plowden chooses not to portray the human's role in creating machines, leaving the processes of industrialization hidden behind a pictorialized view.

James Corner and Alec Mac Clean's project, embodied in "Taking Measures Across the American Landscape," sought to convey the landscape in a more complete light, to illustrate the passage of time and the transformation of the landscape. They were both aware of photography's power to distance the viewer from place, to encourage viewing rather than engaging with the landscape. If we take this notion and apply it to the vast cornfields in the American heartland, we will recognize that the awe-inspiring patterns that create a graphic impact are signs of a larger system: a system that absorbs and processes, breaks down and alters the landscape. The agricultural processes of America are reframed by the coincidence of map and aerial image. They each allow a synoptic vision. Through the map, we are given a scale to reference and the photograph places these measures in a more tangible context.

What Anuradha Mathur introduces in "SOAK: Mumbai in an Estuary," are the concepts of narrative and time. Through her collaged maps and photo sequences, we understand the importance of being within a landscape, of experience in a social and cultural context. Although she does include maps -both historical and contemporary- she strongly preferences editorial photography. Overlaying, cutting, manipulating and annotating the photographs, Mathur synthesizes multiple systems of landscape in single drawings.

Many of the interests that Corner speaks of, Kate Orff studies through a similar representational technique in her own book, "Petrochemical America." Although she does not intend for the work to be understood through the lens of 'collage', she is –like Corner- representing systems and networks to challenge the pictorialization of landscape. Her book reveals impacts of petrochemical production across a wide cross-section of scales.

These contemporary practitioners are actively engaged in representational techniques that emphasize landscape's operative qualities. Through a study of ten visual landscape representations, we can see the historical and cultural trends in different systems of landscape representation.

Thomas Cole, *The Oxbow, View from Mount Holyoke, Northampton Massachusetts, after a Thunderstorm*, 1836

Cole's stylized landscape illustrates the British influence on his conceptualization of nature and industry. The scene is divided in two: a more natural, untamed portion on the left, represented by the billowing storm clouds and wild forests and on the right, the landscape has been transformed by agriculture and civilization. In this particular painting, agricultural cultivation is painted as a harmonious and almost divine use of the land. The cut stump in the foreground illustrates the idea of civilization's progress by the transformation of the natural world.

Repoussoir

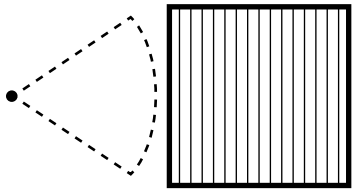
Traditionally used in European landscape paintings, repoussoir is the technique of using a framing element on one side of the foreground in order to direct the viewer towards the other elements in the composition. In this case, the cut tree punctuates the composition and directs vision towards the agricultural landscape in the valley below.

Horizon Line

The horizon line within this painting is far above the view of the individual painted in the scene. This suggests that Cole was more interested in depicting the grandness of the scene than the lived experiece of the actual place. Cole paints himself into the scene noted by the red dot.

The Natural and the Cultivated

The first thrid of the painting represents a wild nature while the latter two thirds are Idepicted as peacefully cultivated.



Winslow Homer, *The Veteran in a New Field*, 1865

After the American Civil War many farmers who fought returned to their fields. Homer depicts one such veteran, and paints the character as central to the composition. By doing so, he recognizes the importance of the rural and agricultural population in unifying the United States. Concurrently, Homer illustrates the farmer-veteran hard at work, with a sense of individualism. These are qualities that have been internalized as cornerstones of American character and as they relate to our land, they create a narrative of honest labor. The countryside is a place where the American ideal is most alive.

Expansiveness of the Landscape

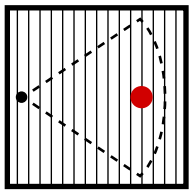
The use of a cropped image reflects an interest in the greatness of the landscape. We imagine the wheat stretching on in all directions, the very heart of America.

Horizon Line

The position of the Horizon Line illustrates the significance of the subject. Unlike paintings with aerial views, this positioning of the view places the composition at the same level as the subject.

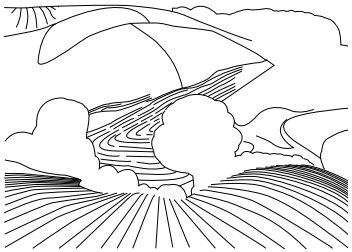
Importance of Farmer

The farmer is placed in the very center of the composition, dominitating not just the artwork, but also the land represented in the piece.



Grant Wood, *Young Corn,* 1938

In *Young Corn,* Wiood portrays a farmstead in his signiture style. Although the image is painted as if from a disttant location, it constructs the relationship of farmers to the land in a way that other removed views had not. Wood depicts a varied landscape and shows how the family living on the land transforming its natural form. He illustrates the relationship of homestead fo farmstead by also including the domestic space within the painting and constructs the larger social notion of the Agricultural Ideal.



Repitition and geometric forms

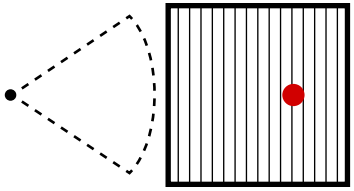
The rationalization of the landscape into repetitive forms illustrates the influence of 15th and 16th century German art on Wood. The forms also harmony of rural society

Caricature

Due to the nature of Wood's painting style, the landscape often seems like an unrealistic portrayal of the agricultural lifestlye. It is an idealized view of the landscape

Varied Landscape

Within this painting, Wood includes six different plantings. The diversity of cultivation types not only illustrates the type of agricultural techniques of the period, but also illustrates the richness of the land. The family in the painting has a symbiotic relationship to the land: it is central to their livelyhood and they in turn take great care to maintain it.



Richard Diebenkorn, *Woman in Profile*, 1958

Woman in Profile illustrates a significant shift towards the abstraction of landscape within painting as well as a greater social trend of separation from landscape. The subject of the painting reflects a general social trend, a movement away from the countryside. Unlike previous the previous landscape paintings, *Woman in Profile,* depicts an industrialized landscape. There seems to be freeway infrastructure in the backbround of the painting.

Brushstrokes

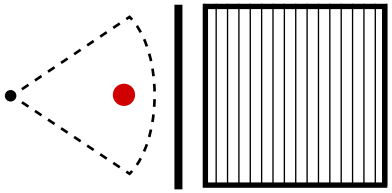
Diebenkorns work celebrates the process of creating the painting. Whereas Luminism and the Hudson River School wanted to remove the artists' toiuch, Diebenkorn celebrates these aspects as a part of the *process* of creating art.

Landscape Zone

Diebenkorn compartamentalizes the landscape into one zone within the painting. The woman's view occurs within this boundary, and yet she is turned away. His depiction of the woman reflects a larger social trend away from agricultural landscapes.

The Architectural Frame

Diebenkorn regulates the composition by introducing an architectural frame. Not only does it divide the picture plane, it also represents a larger social shift towards mediating nature through building; it shows the alienation of individual from the land itself.



Le Corbusier, Photograph from *Aircraft*,1935

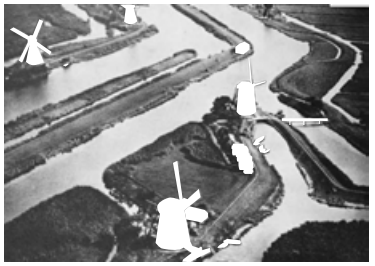
Although Corbusier was aware of photography's potential for revealing the physical construction of landscapes, he too readily believed that photography could reveal the shortcomings of architecture and urbanism. Representative of the Modern movement, there was a fetishization of the machine as well as the modes of seeing that iit allowed pervasive within *Aircraft*. The synoptic views gathered in the book depict general physical patterns of the landscaoe, and some photographs are able to reveal patterns of inhabitation and usage.

Order

This photograph has a graphic quality that is furthered by the contrast between the waterways and the ground. For this reason we are able to understand a repitive order that structures the landscape.

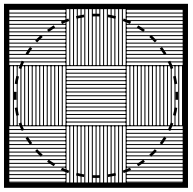
Cultivatable Land

The photograph illustrates the patterns of water usage. While abstract, the photograph shows adjacencies and implies relationships



Machines in the Landscape

The scale of human construction within the landscape is important because it shows the affect that communities have on nature and space.

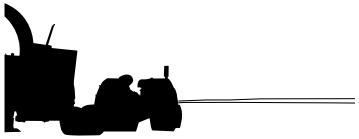


Arthur Rothstein, *John Frederick of Grant County, North Dakota, shows how high his wheat would grow if there were no drought, 1936*

This representation of a farmer is unique in that it shows the subject interacting with the artist.Taken just a year after Le Corbusier's book, *Aircraft,* was released, Rothstein work completely rejects the synoptic view in favor of a peronal understanding of larger social climes. he was interested in reporting, in describing the lives of Americans.

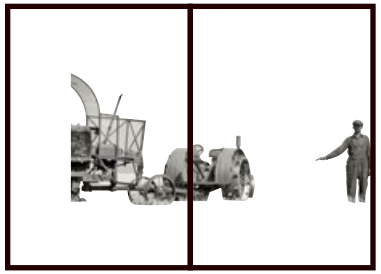
Expansive Landscape

The setting of this photograph illustrates the vastness of agricultural fields and the chasm that the spatial requirement hundreds of acres of farm land creates for rural population and urban populations.



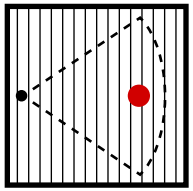
Division of the Image

The machine and the industrial infrastructure divide the image in two parts. Additionally, the photograph is able to capture varying scales of industry.



Alienation of Individual and Industry

In this photograph, the human subject is set apart from the machine. Additionally, the figure does not acknowledge the machine or the factory in the distance, rather his pose suggests connections to harvest cycles and environment.



David Plowden, *Seed Corn Plant,* 1983

Similar to Rothstein's body of work, Plowden's photographs centered around artifacts of production as well as the rural and agricultural. The most important difference between the two photographers is the scale of the human figure. Plowden's photograph denies the human figure while Rothstein's fully embraces it. Another important aspect of Plowden's photographs are the graphic qualities, the focus on pattern and texture.

Landscape as Visual Device

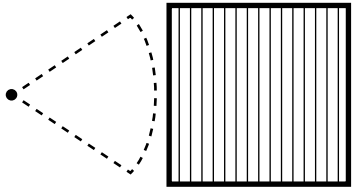
The landscape is used as a plane of color. Its field qualities are heightened so that it becomes less of a worked on physical entity, but rather the abstraction of a place.

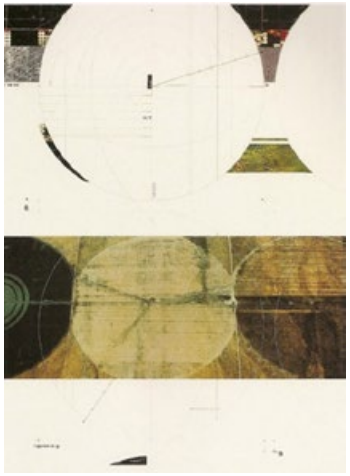
The Artifical and the Natural

Plowden reduces the effect of the industrial factory. He uses it to construct boundaries between the earth and sky.

Rationalizing the Image

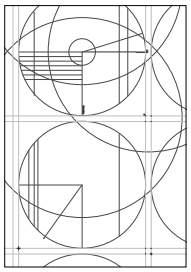
The division of the photograph in a 2:3 ration reflects an interest in creating a rational image. Similar to Corbusier's discourse surrounding aerial photography, Plowen's work seems to reduce the landcape to an easily dgestable version of itself.





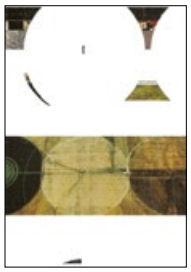
Pivot Irrigators II, James Corner, 1996

By critically exploring the limits of aerial photography, Corner developed a mode of representation where he keyed in photography to other modes of measurement. Through this technique, Corner is able to take Amex MacLean's photographs and use them to reveal the human construction of the natural world. He provides two modes of vision at once, giving the viewer the ability to reinterpret image in relationship to map. By keeping photographic elements, there irepresentational trajectory that Corner is altering. Once you have seen Corner's drawings, you are able to understand other landscapes in a similar way.



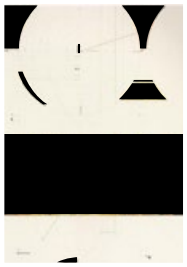
Measure

Corner chose the United States Geographic Survey as a system of meaurement for the drawings he made for its seemingly neutral and objective representation. This would allow him to use the same system across various types of landscapes.



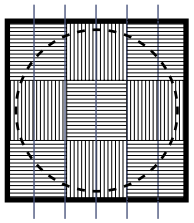
Photography

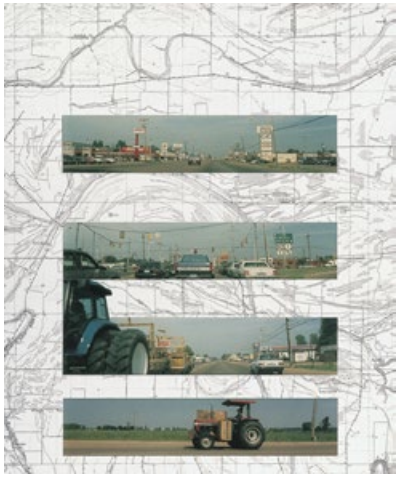
In Corner's images, the photograph is cut and collaged; by taking apart a whole image and restructuring it, he is attempting to illustrate the shortcomings of traditional forms of representation. Only by removing parts of the image do we have space to focus on other aspects of landscape.



Figure

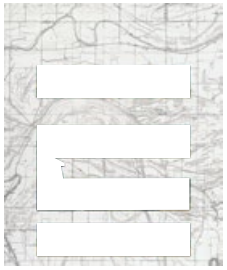
If we look at the way Corner has arranged the various elements, we immediately understand that they are interrelated





Anuradha Mathur, *Mississippi Floods: Designing a Shifting Landscape,2001*

In the way that Mathur has aligned image and map, photography and diagram as well as historical image and language, she attempts to engender a new visualization for Mumai's terrain. Her work representational work anticipates design interventions that respond to and are guided by the variability of the landscape.



Maps and Measure

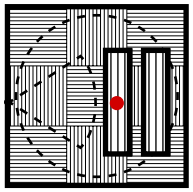
Whereas Corner uses maps as a way to organize and call out geometries within the landscape, Mathur's collage resists the map and denies its power to organize space.

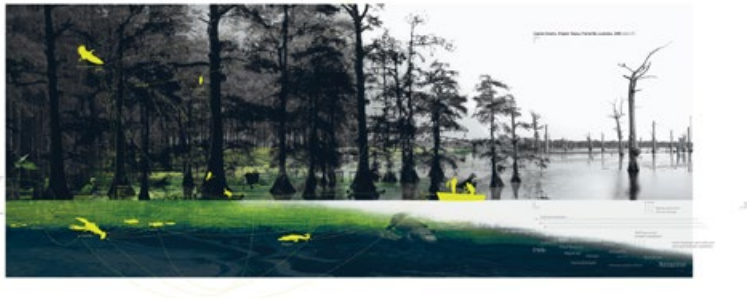
Subject

Here the subject once again breaks away from the structure of the grid in order to call attention to the narrative movement. The subject, the landscpe is shown ifrom variious positions, illustrating the multiplicity of its character.

Chronology

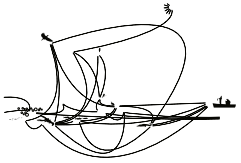
The repitition of frames acts like a story board, illustrating Mathur's interest in lstudying linear events.





Kate Orff, *Requiem for a Bayou*, 2013

Requiem for a Bayou, which is part of the book "Petrochemical America," illustrates a shift towards examining and revealing processes that construct the landscape. Orff studies the landscape not merely as a visual object but also as a living and changing entity. Thick sections describe aspects of the landscape a viewer would not be able to otherwise see.



Systems and Networks

The mode of represention the Orff uses to illustrate the ecological networks establishes various actors and elements within the landscape that effect its phenomenological expression.

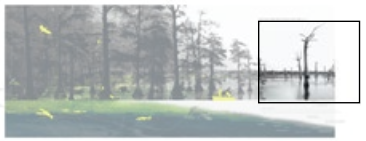
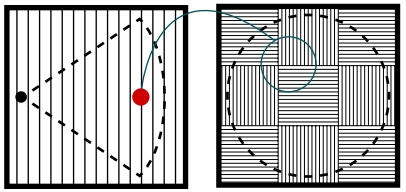


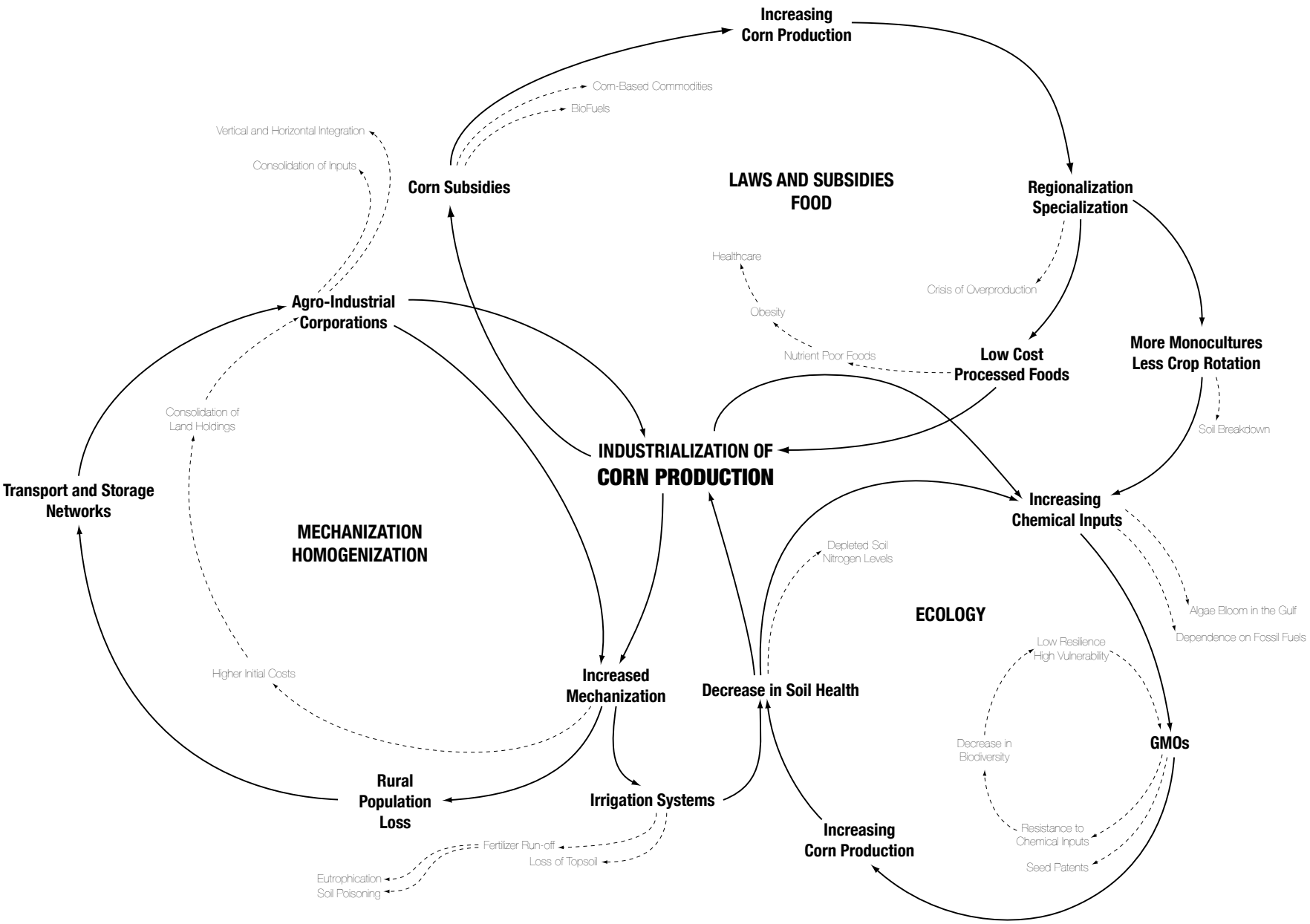
Image Extension

The photographic image is placed within the context of an activy landscape. The choice of photograph, muted and serene, is challenged by the addition of a vibrant rendering.

Subject

The Subject is merged with the other elements oif the representation, but the edges are noted. By allowing the viewer to identify the scope of the original photograph, we asked to question what is beyond other modes of landscape representation.




Increasing
Corn Production
Corn-Based Commodities
BioFuels
Vertical and Horizontal Integration
Consolidation of Inputs
Corn Subsidies
LAWS AND SUBSIDIES
FOOD
Regionalization
Specialization
Healthcare
Crisis of Overproduction
Obesity
Agro-Industrial
Corporations
Nutrient Poor Foods
Low Cost
Processed Foods
More Monocultures
Less Crop Rotation
Consolidation of
Land Holdings
Soil Breakdown
INDUSTRIALIZATION OF
CORN PRODUCTION
Transport and Storage
Networks
Increasing
Chemical Inputs
MECHANIZATION
HOMOGENIZATION
Depleted Soil
Nitrogen Levels
Algae Bloom in the Gulf
ECOLOGY
Dependence on Fossil Fuels
Low Resilience
High Vulnerability
Higher Initial Costs
Increased
Mechanization
Decrease in Soil Health
GMOs
Decrease in
Biodiversity
Rural
Population
Loss
Irrigation Systems
Resistance to
Chemical Inputs
Increasing
Corn Production
Seed Patents
Fertilizer Run-off
Loss of Topsoil
Eutrophication
Soil Poisoning

CONSTRUCTING LANDSCAPE

Imagine fields of sweet yellow corn stretching as far as the eye can see, the sun shining on our nation's golden heartland, wind whipping across the earth the only sound disturbing a picturesque view. Indeed this landscape holds an air of sublimity, the patterns and textures are pictorial, but the vastness and homogeneity that lends an air of the sublime to this quiet region is characteristic of industrialized agriculture.

The Corn Belt region of the United States is the territory of the United States where corn is the predominant crop. Indiana, Iowa, Illinois, Nebraska, Missouri, Michigan, Minnesota, Kansas and Ohio are generally thought to define the heart of this region. Due to deep soil and relatively level ground, these states are equipped to be corn crop powerhouses. These environmental characteristics, alongside social and agricultural policies, have shaped the history of the territory. Territorial transformation occurred alongside a reified notion of what rural landscapes are. In 1800, 98 percent of the global population lived in rural communities, in 1950, 70 percent of the population was rural, today less than half of the population is rural; structural shifts are at the heart of this trend. The urban is celebrated; it's vitality, it's concentration of activity and capital shape urban identity. Cities are nodes, while rural areas are fields.
A denial of rural place-ness is prevalent both in the architectural discipline and in the wider cultural context. From a cultural perspective, the salience of developing accurate understanding of the agro-industrial nature of rural landscapes like many in Nebraska lies in the political consciousness this knowledge imbues. In an architectural context, the rural landscape illustrates the complexity and simultaneity of networks on a seemingly neutral site.

By studying the physical transformation of the landscape as well as systems of production, we understand that landscape is much more than a picturesque view, it is created out of the intersection of multiple networks. These networks may not always be embodied architecturally, but their effects do become spatialized through effects of financialization -such as the growth of the Big 6 seed companies- or political will -as seen in the consolidation of farms.

Seventy-five percent of the corn that Americans use and a quarter of the global corn supply is produced in Corn Belt. Nebraska, the third highest corn yielding state, is a prime example of the way smaller scale farming has been transformed into commodity farming. The majority of the corn produced in this region -and in fact the majority of all corn produced- will be processed into other commodities –such as corn syrup or xanthum gum, many of those obscure ingredients on nutritional labels- rather than being directly consumed. Because of corn's physiological properties it can be stored in large quantities, for extended periods of time. For this reason, corn can be easily abstracted. When corn is bought from growers, it is stored according to its grade; mixing with other bushels of corn grown in other fields, by other hands. An ear of corn enters an industrialized system and cannot be traced back to the plot of land it came from: this is capitalist alienation exemplified.

Figure 5. Associated Press, Agriculture Secretary Earl L. Butz, discussing negotiations on grain sales to the Soviet Union, 1975
Figure 6. Jim Hamann, Massive Corn Pile Grows Larger at the Hills, Minn. Grain Elevator, 2009

In the past sixty years, agriculture in the United States has been radically transformed through various economic policies and political agendas. The agricultural revolution was critical in the development of neoliberal capitalism where the emphasis on increasing surpluses and constant productivity growth pushed farmers towards big-farm models (Hungry: 7). Today, the capitalist farming model is entrenched in the social structure. It seems the days of subsistence farming are far behind us; farming has been taken over by Big Business (Hauter: 11). And while there are various counter-trends such as the Slow Food Movement and the growth of farmers' markets, the power that large corporations have in shaping the agriculture landscape is not a pressure that is easily shirked.

Many of the characteristics of our modern agro-industrial system were developed post-WWII, when Depression-era policies meant to protect farmers were disassembled. New Deal policies sought to improve conditions for farmers who, despite many misconceptions, were in fact in a crisis of over-production. In order to support crop prices the government introduced parity programs that paid farmers not to cultivate their land, and in some cases paid them to slaughter livestock.

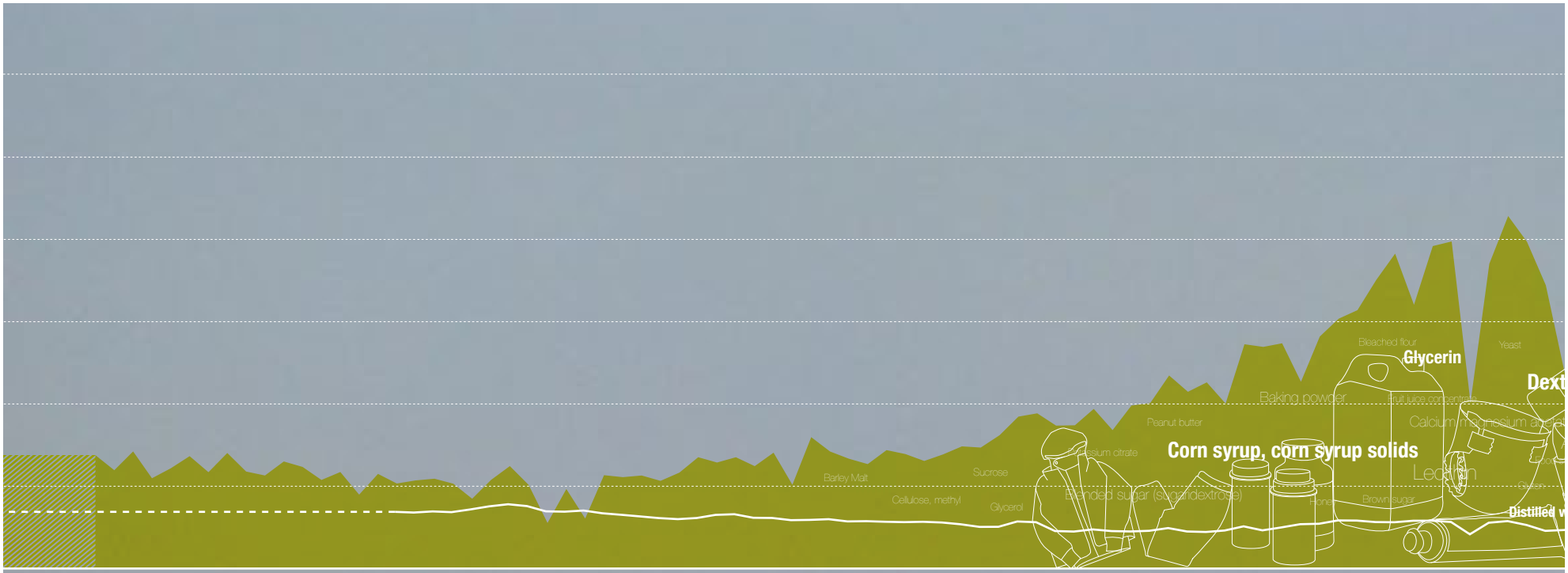
After WWII, farmers were heavily targeted by policies that aimed to release a large body of reserve laborers for work in cities. In 1955, Ezra Benson -Eisenhower's Secretary of Agriculture- began to disassemble these New Deal agricultural policies. Industry leaders saw farmers as excess labor that could be directed towards the. These same leaders –presidents and executives of major companies such as Kodak, Sears, and Ford- formed the Committee for Economic Development, and used their academic and media connections to weaken farmer's political power. At the time farmers were an active and forceful constituency and industry leaders. If food is power –and we have seen this concept

exemplified in history numerous times from the Roman Bread and Circus used to pacify the masses- then Big Business wanted to make sure they had control of the supply. Dismantling of parity programs continued and famers had to sell their land or take out large loans to stay in business. The hardships facing farmers continued when Nixon's second Secretary of Agriculture, Earl Butz took his position. Notorious for slogans like, "Get big or get out!", "Adapt or Die," "Agriculture is big business," he advised farmers to invest in larger operations. This, alongside the dismantling of parity programs and heavy subsidization of cash crops such as corn, created a crisis of overproduction and caused prices to drop. Hardship was in store for farmers yet again. Another important aspect of these changes was the emphasis on the crash crop production. Today only 2 percent of corn grown is sweet corn, Grade A corn, meant for direct human consumption. The rest is converted for use in processed foods, commercial products, and animal feed. This is another critical aspect of the development of the Corn Belt as a regionally specialized territory. Prices for corn-based animal feed fell, making Concentrated Animal Feeding Operations –large-scale livestock raising- a reasonable investment. A spatial separation of livestock and crops caused a disconnect in the food production system, tearing apart one network for the sake of profit margins and efficiency. Today the trend continues due to increasing use of technology and capital inputs in place of extra labor.

This has led to widespread population loss in rural areas and the condensation of population in urban zones. While Nebraska's total population has increased 27 percent since the implementation of these policies in the 1960s, the rural population is only two thirds of what it once was, a 25 percent decrease. This means that infrastructural changes were made to accommodate the loss of population. Rail and road networks were bolstered in order to preserve the efficiency of the system.

Representations of the landscape have created a chasm between the idea of agricultural landscapes and the type of industry actually occurring there. Advertisements depicting an idyllic countryside proliferate on supermarket shelves. This is a political landscape; the representation and construction of an architectural response must refer to these dynamic systems.. This is a political landscape; the representation and construction of an architectural response must refer to these dynamic systems.

Figure 7. David Littschwager, A World in One Cubic Foot, 2012
Figure 8. NPR, Cornstalks Everywhere But Nothing Else, Not Even a Bee, 2013



+1906 Pure Food and Drugs Act
FDA established

+1916 Federal Farm Loan Act
To provide farmers with long-term credit for farmland development.

+1921 Grain Futures Act
Regulation of select commodity futures trading, including grain

+1930 Plant Patent Act
This piece of legislation made it possible to patent new varieties of plants.

+1933 Farm Cedit Act
Credit system designed to aid farmers and ranchers through local Production Credit Associations
Emergency Farm Mortgage Act
Funneled 200 million into the Land Bank Commissioner to help refinance farmers' land.
Agricultural Adjustment Act
Aimed to reduce crops and thereby increase prices by paying farmers not to plant.

+1934 Frazier-Lemke Farm Bankruptcy Act
Restricted banks' ability to reposses farms by delaying foreclosure by five years.

+1949 Agricultural Act of 1949
Surplus food mandated to be sent to friendly foreign countries as development aid.

+1971 Farm Credit Act of 1971
Expanded certain authorities of local associations and led to a major reorganization of the Farm Credit Association.

+1977 Clean Water Act

+1980 Supreme Court exte
patent protection to
Food Security Act
Allowed lower commod
and agricultural income

1910 1920 1930 1940 1950 1960 1970 1980

CORN PRODUCTION

While the number of acres in use for cultivation of corn has remained relatively stable over the past 50 years, the output of the land has increased dramatically. And while, this might seem like one of the supreme achievements of technological advancements, we must keep in mind the effects of such changes. For many farmers, this meant the loss of their land due to the pressures of capitalist expansion. Displacement was the major trajectory of this rural dispossession. Rural populations moved to urban areas in search of better opportunities due to the inability to survive in the agricultural market. Another aspect of increased corn production was the corn production treadmill. In order to maintain profits, farmers increased production, but as this was the general trend more corn came on the market and prices would fall once again.

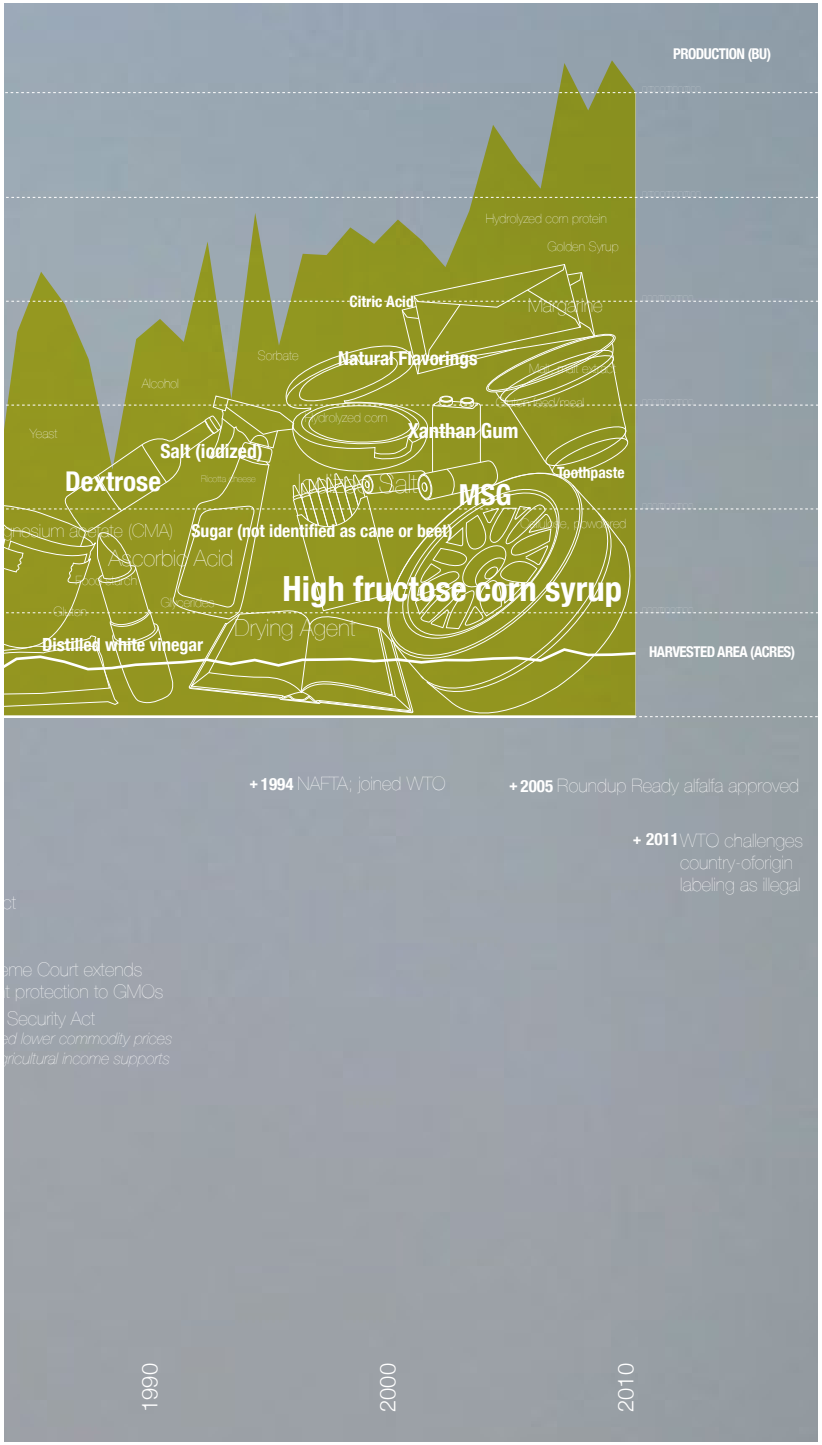
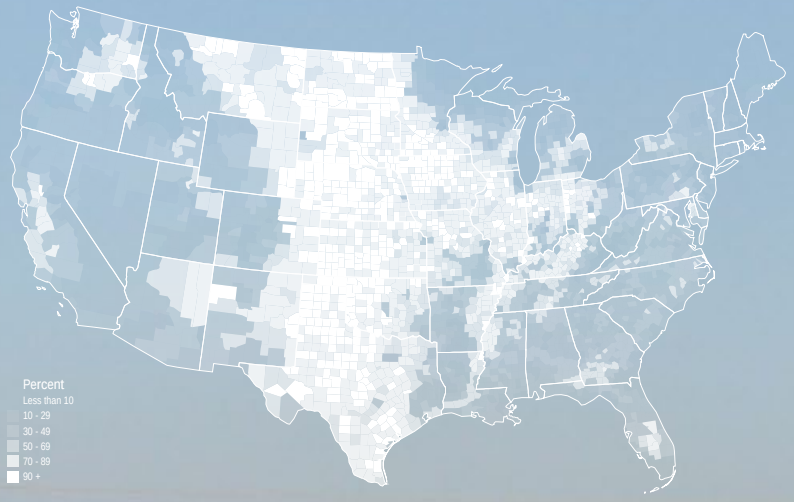
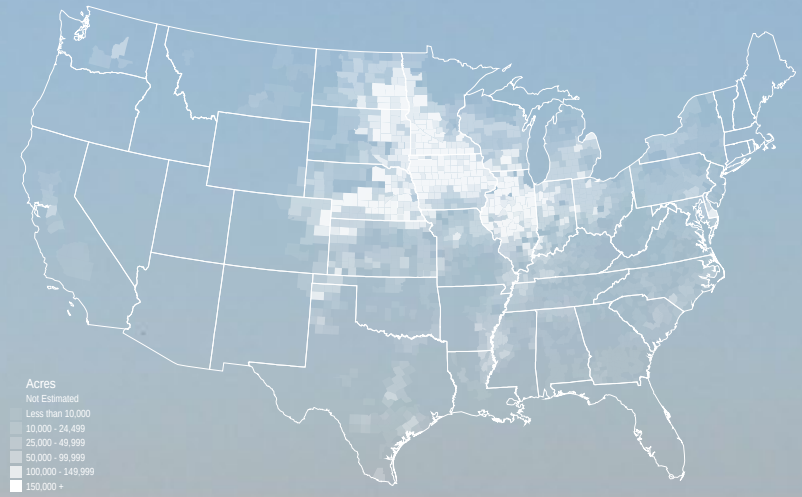


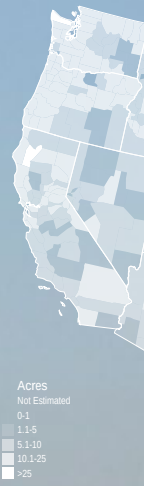
Figure 9. Timeline of Agricultural Events and Policy



Acres of Land in Farms as Percent of Land Area in Acres, 2007



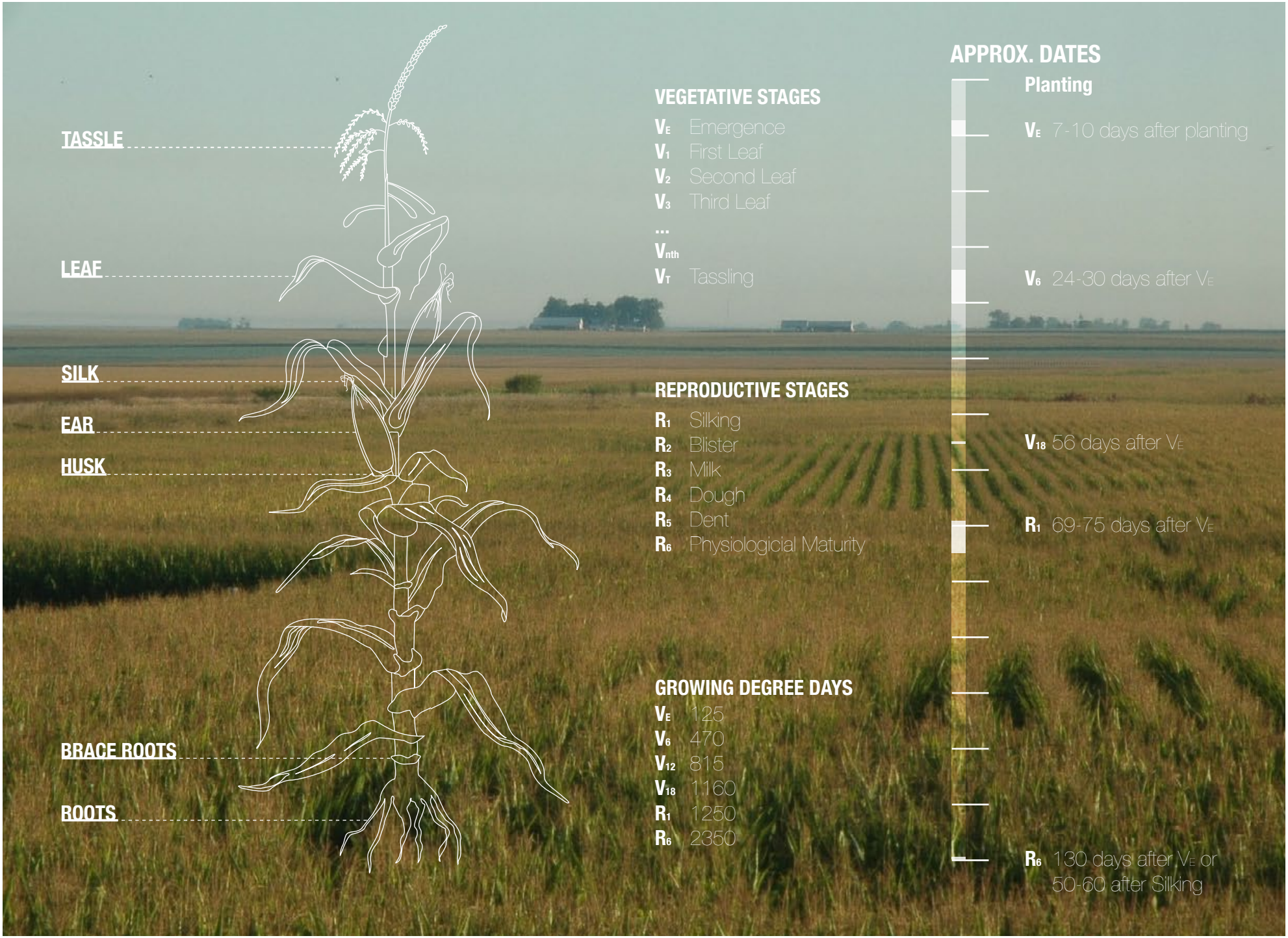
Corn for Grain 2012, Harvested Acres by County



UNITED STATES AGRICULTURE

At the national scale, regionalization and specialization of agricultural production have been important trends in the development of economies and cultural geographies. If we compare data across the maps we begin to see larger trends that illustrate national systems of production. For instance, if we look at the first map shows areas of the nation that are dominated by agriculture, and then compare this map to the third map, we begin to wonder why, in an area of heavy agriculture, there would not be more direct farm sales. Particularly for the Corn Belt region, illustrated in the second map, the farmland is not producing diverse varieties of crops. The region produces commodity crops that are processed to add value.

Figure 10. National Agricultural Trends based on USDA date.



VEGETATIVE STAGES

- V_E Emergence
- V_1 First Leaf
- V_2 Second Leaf
- V_3 Third Leaf
- ...
- V_{nth}
- V_T Tassling

REPRODUCTIVE STAGES

- R_1 Silking
- R_2 Blister
- R_3 Milk
- R_4 Dough
- R_5 Dent
- R_6 Physiologicial Maturity

GROWING DEGREE DAYS

- V_E 125
- V_6 470
- V_{12} 815
- V_{18} 1160
- R_1 1250
- R_6 2350

APPROX. DATES

Planting

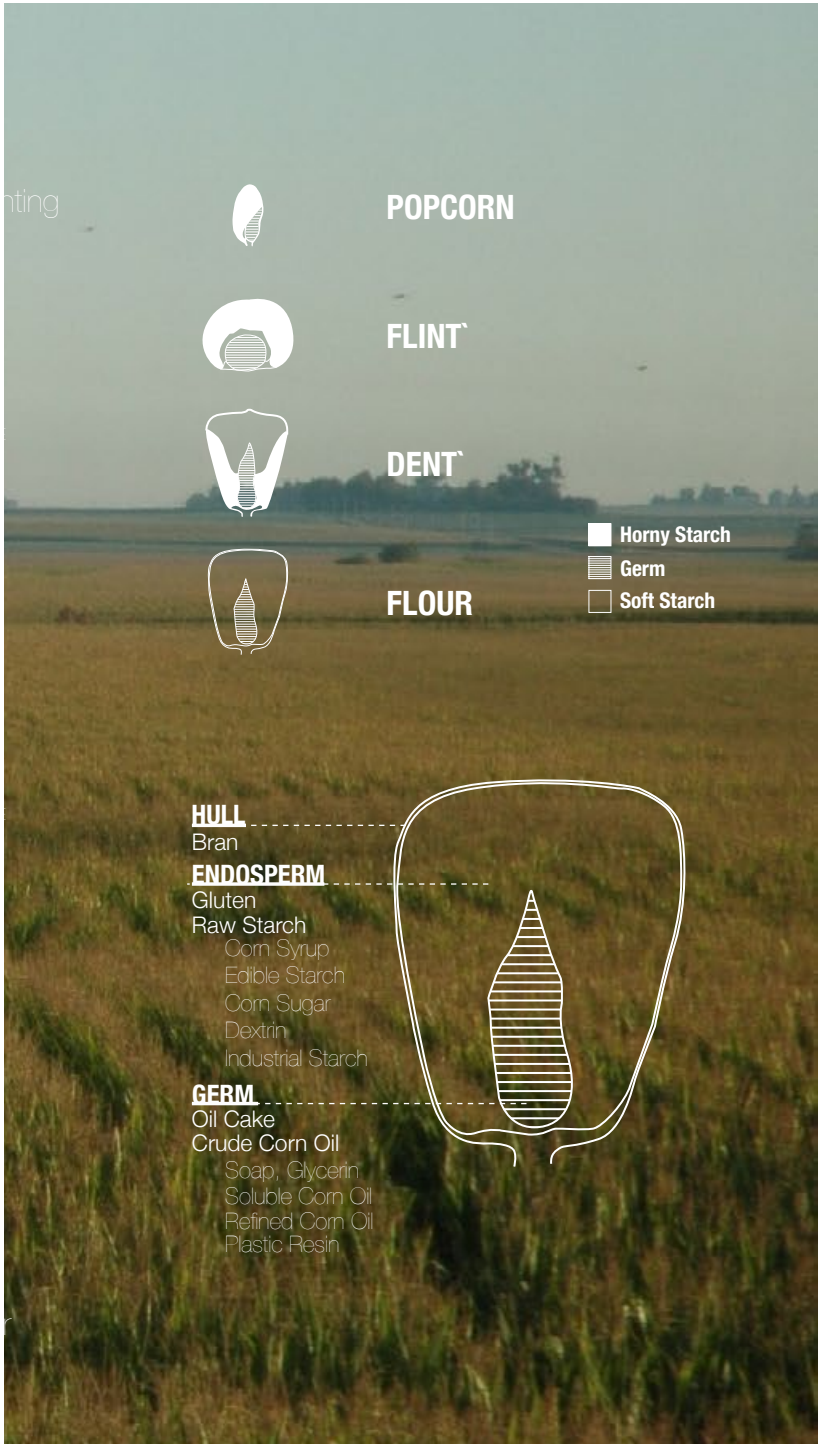
V_E 7-10 days after planting

V_6 24-30 days after V_E

V_{18} 56 days after V_E

R_1 69-75 days after V_E

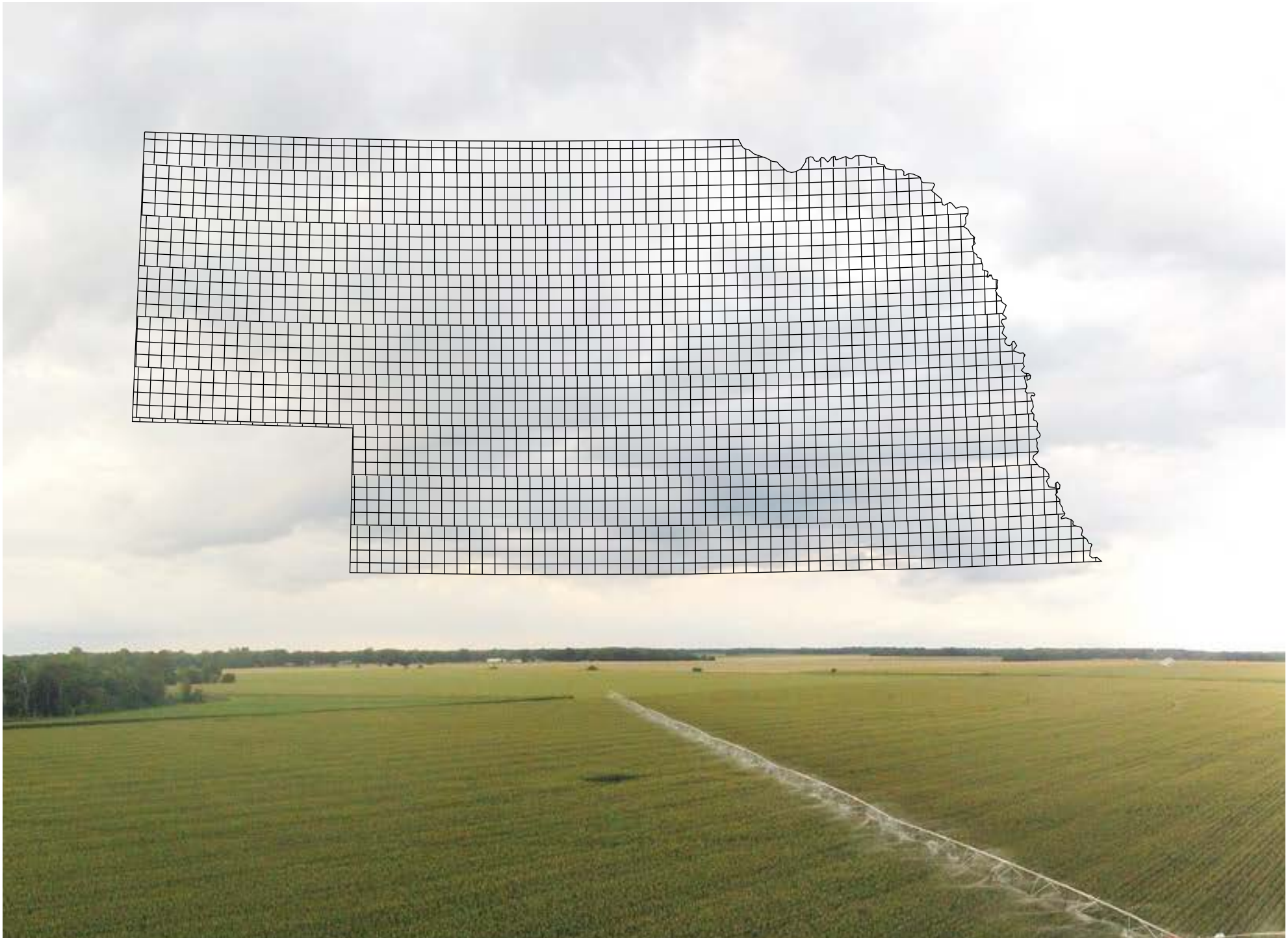
R_6 130 days after V_E or 50-60 after Silking



CORN PHYSIOLOGY

The physical and biological characteristics inherent to corn affect its utilization patterns as well as an agricultural community's seasonal habits. Of course, these change from year to year alongside weather patterns, but general guidelines help farmers gauge the development of their crop. Regardless of the type of corn being grown, one looks for particular traits at critical stages that indicate potential yields. According to industrial agricultural methods, there are also was to manage and increase potential yields through irrigation, pesticide and fertilizer application.

Figure 11. Corn: Critical Stages



RATIONALIZED LANDSCAPE

One of the most significant elements in the creation of a pictorial landscape is a sense of rationality through geometric repetition. Nebraska is the state most heavily settled through the Homestead Act of 1862. This act took advantage of the Jeffersonian grid which on one hand was meant to develop a land of yeoman farmers and promote a country of independent and democratic men, and on the other was a very useful tool in the development of land markets.

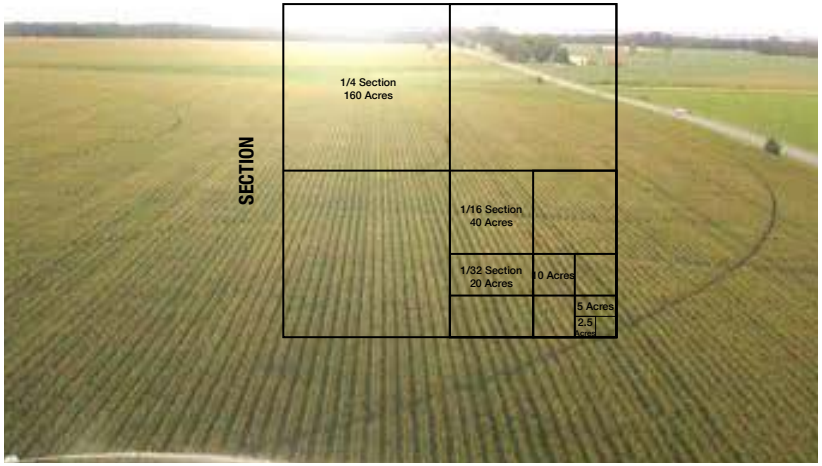
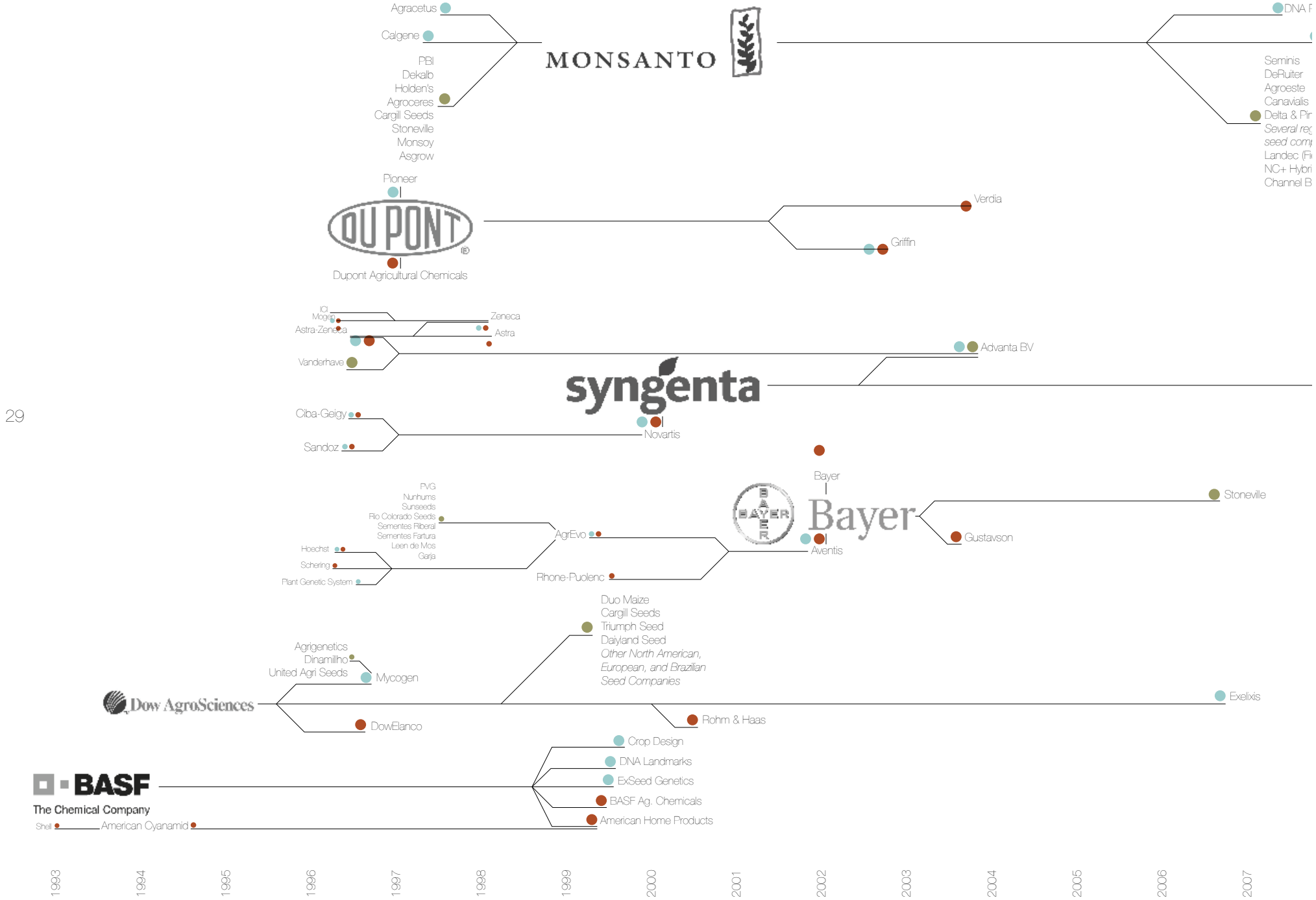


Figure 14. Land division according to the Jeffersonian grid.


Agracetus
Calgene
PBI
Dekalb
Holden's
Agroceres
Cargill Seeds
Stoneville
Monsoy
Asgrow
MONSANTO
DNA P
Seminis
DeRuiter
Agroeste
Canavialis
Delta & Pir
Several reg
seed comp
Landec (Fi
NC+ Hybri
Channel B
Pioneer
DUPONT
Dupont Agricultural Chemicals
Verdia
Griffin
ICI
Mogen
Astra-Zeneca
Zeneca
Astra
Vanderhave
Advanta BV
syngenta
Ciba-Geigy
Sandoz
Novartis
Bayer
BAYER
Bayer
Aventis
Stoneville
Gustavson
PVG
Nunhums
Sunseeds
Rio Colorado Seeds
Sementes Riberal
Sementes Fartura
Leen de Mos
Garja
AgrEvo
Hoechst
Schering
Plant Genetic System
Rhone-Puolenc
Duo Maize
Cargill Seeds
Triumph Seed
Dairyland Seed
Other North American,
European, and Brazilian
Seed Companies
Agrigenetics
Dinamilho
United Agri Seeds
Mycogen
Dow AgroSciences
DowElanco
Exelixis
Rohm & Haas
Crop Design
DNA Landmarks
ExSeed Genetics
BASF Ag. Chemicals
American Home Products
BASF
The Chemical Company
Shell
American Cyanamid
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

THE BIG 6

The Big 6 are the largest pesticide and seed producing companies. Often these companies agree to share patented traits for their genetically modified seeds. These products are often engineered (as in Monsanto's Roundup Ready Soybean) to withstand the company's own pesticides and herbicides. There is also concern that the consolidation of these companies poses threats to the market balances. In 1999, Monsanto allegedly pulled out of an acquisition of Delta & Pine Land Co. after learning that the U.S. Department of Justice intended to sue over the anticompetitive effects of the deal. Because of technological advancements as well as legal changes, barriers to accumulation on the part of corporate powers are dissolving. Additionally, agricultural treadmills make farmers more likely to participate in the dissolution of smaller seed firms.

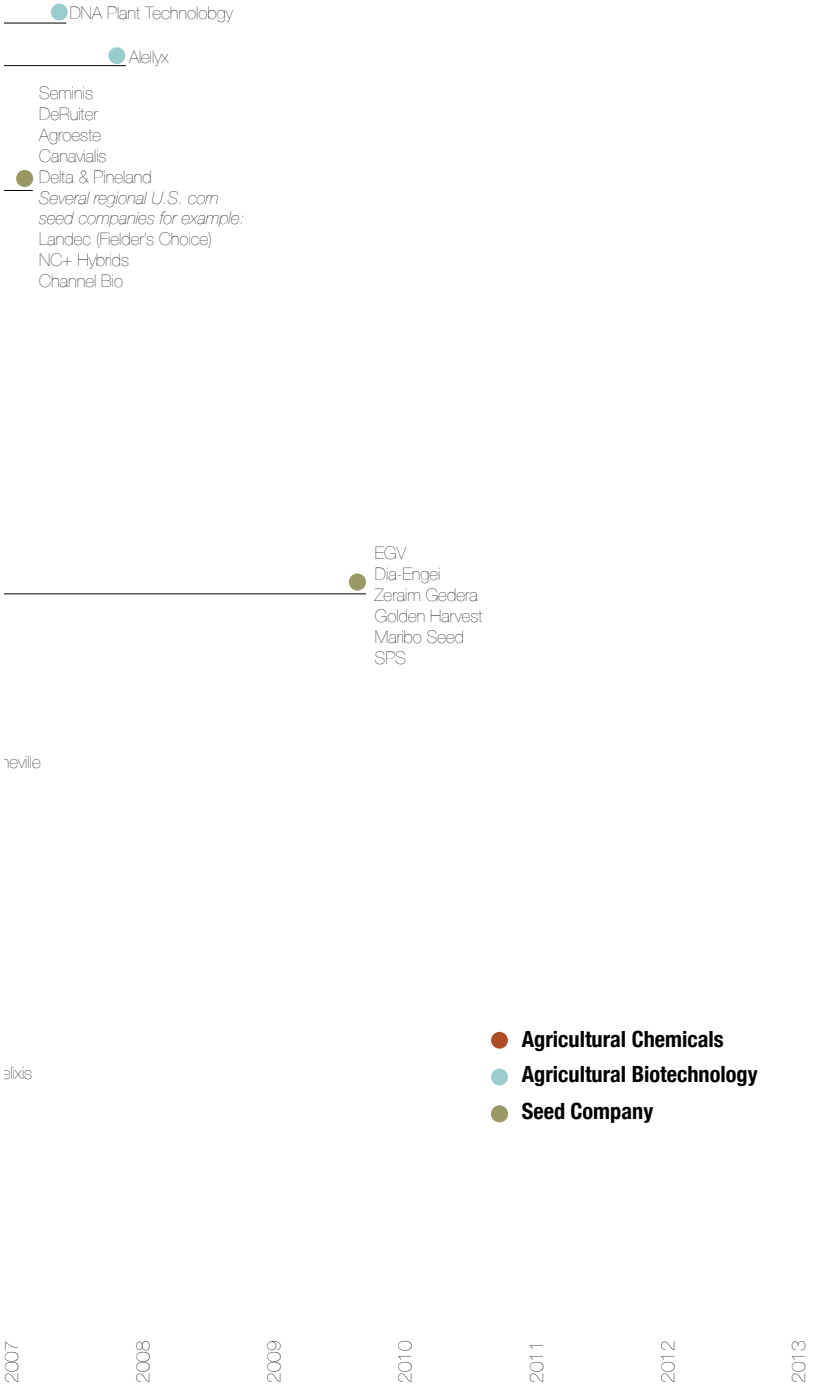
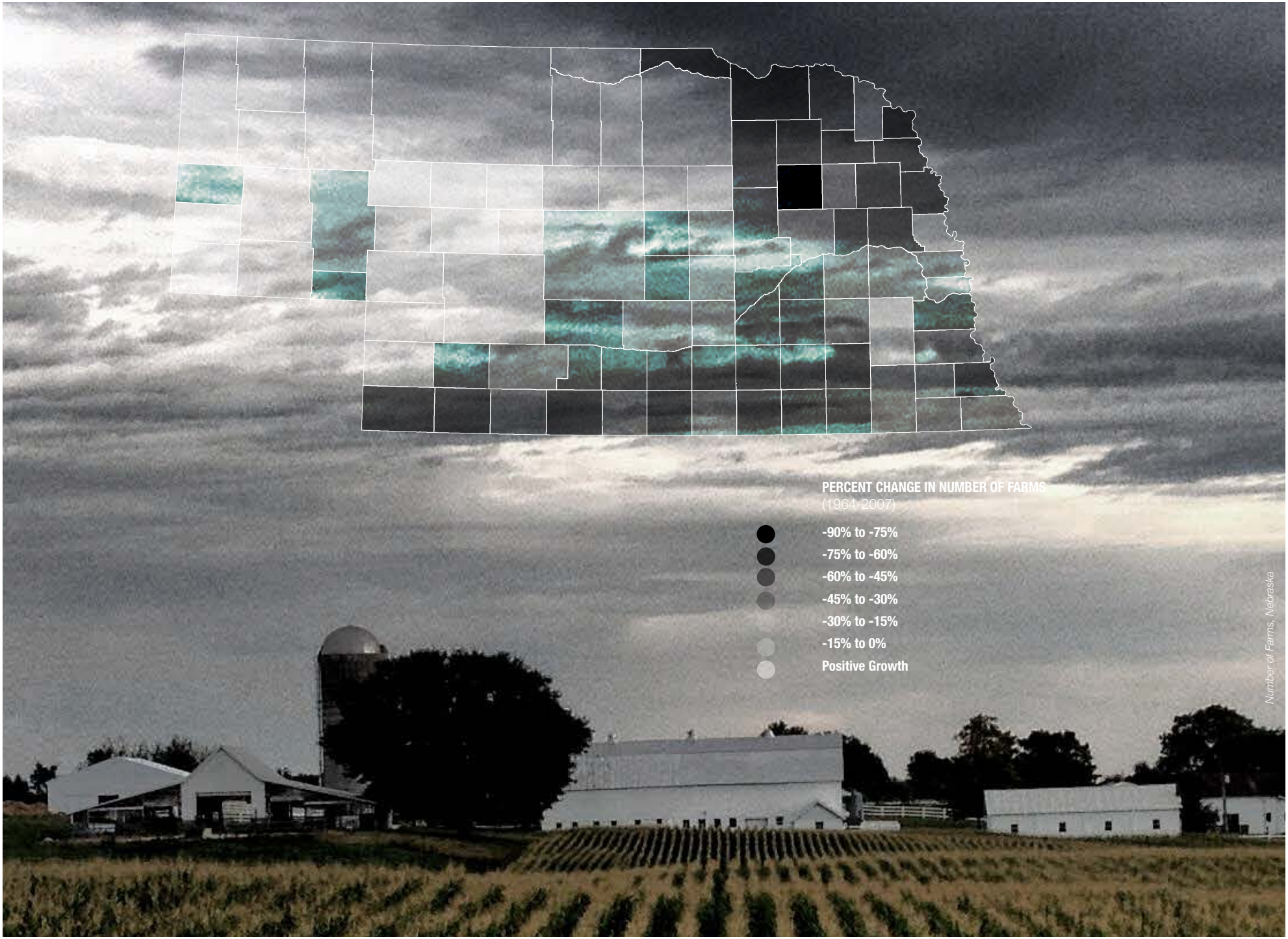


Figure 13. Acquisitions of the Big 6



Number of Farms, Nebraska

FARM CONSOLIDATION

Over the past 50 years, the nature of farms in Nebraska has changed dramatically. The majority of counties have experienced a decline in the number of farms while roughly the same amount of land is being cultivated. Even if the data didn't show the trend of increased farm size, we could easily guess this, by the pressure that big business farming has had on agricultural regions. Alongside this consolidation there has also been a decrease of physically marked boundaries, not only between parcels of land belonging to different land owners, but also within farms.

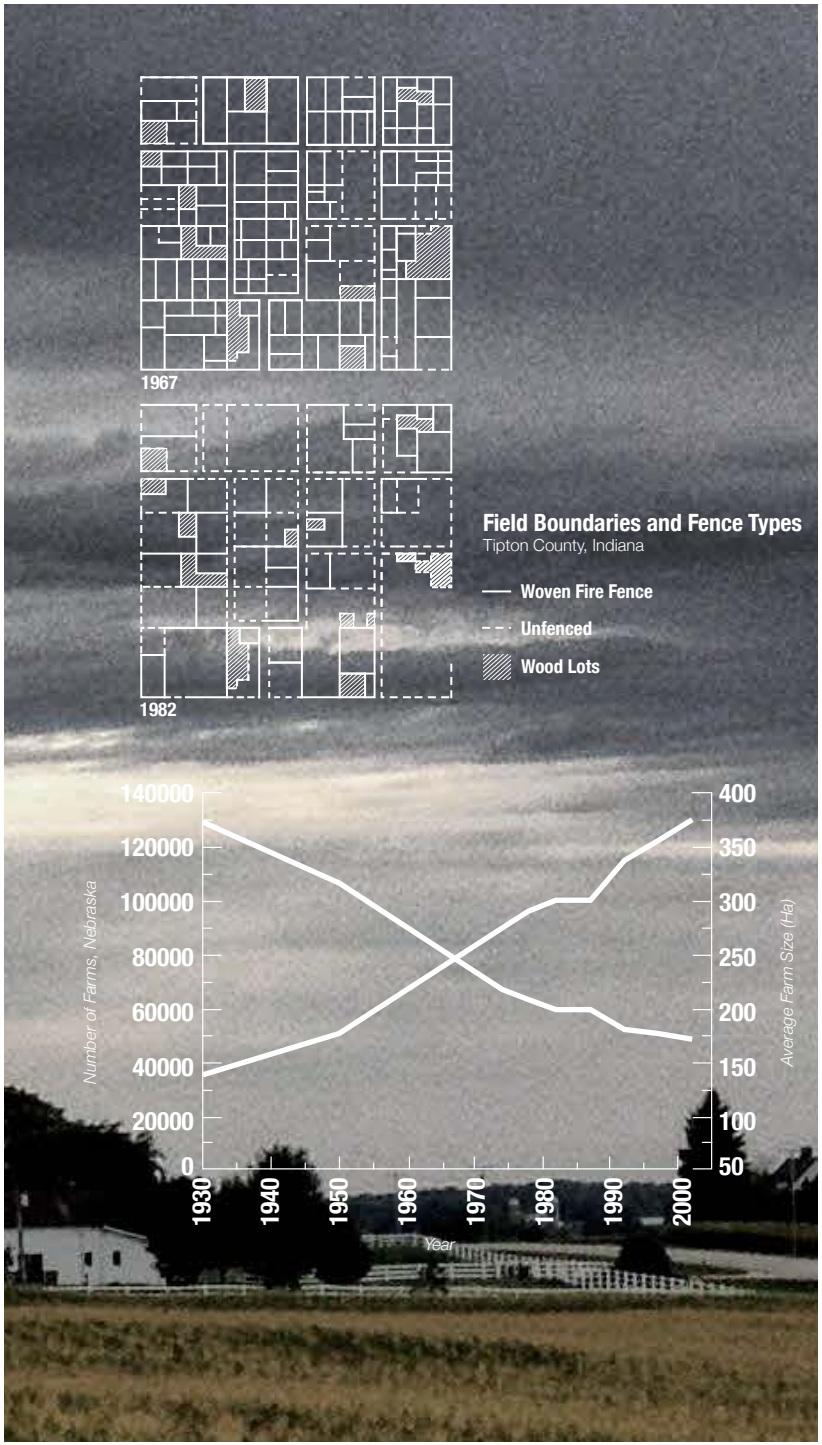
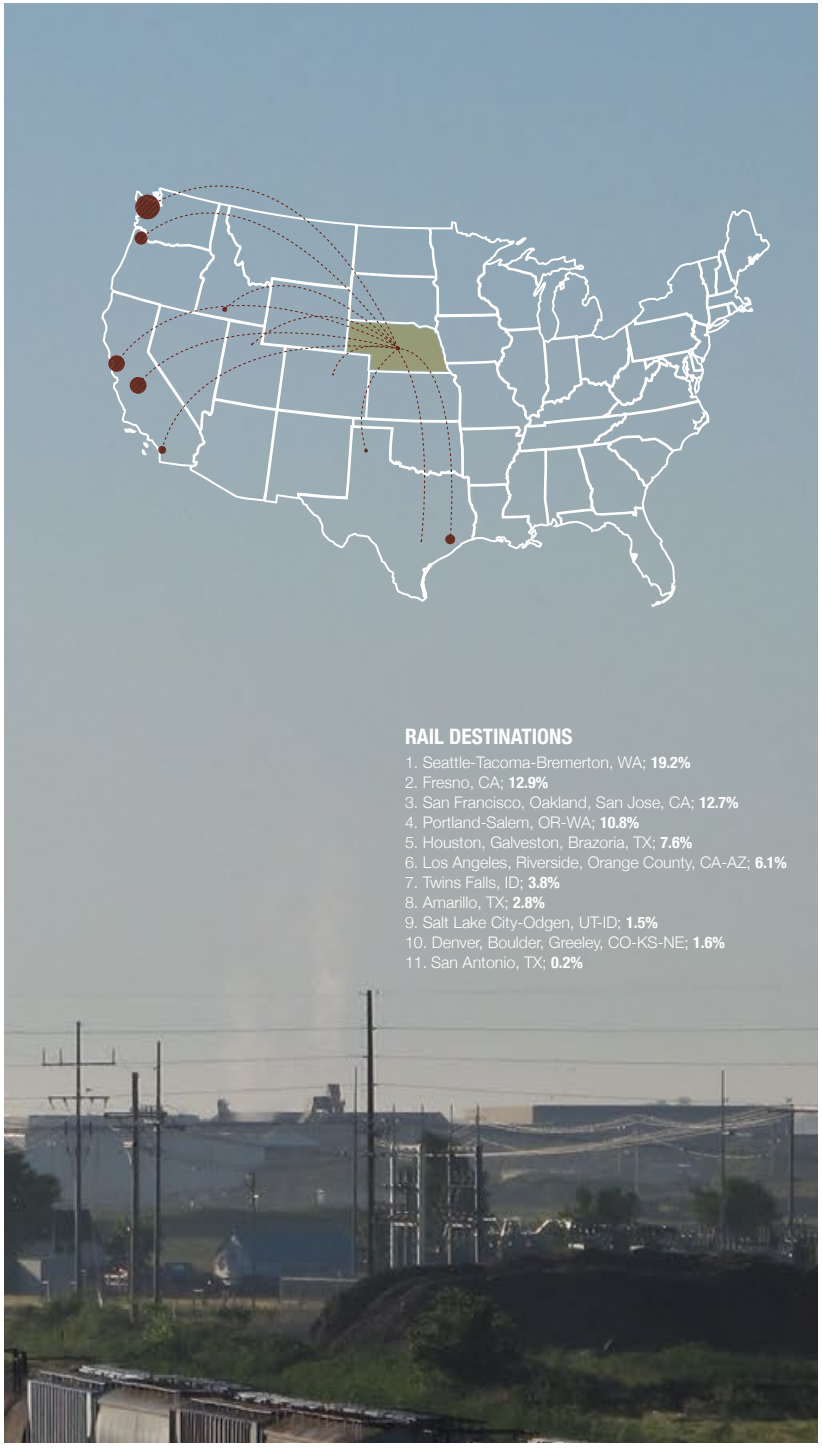


Figure 15. Change in Number of Farms per County; Change in Field Types over 15 years in Tipton County, Indian; Graph representing change in average farm size and number of farms in Nebraska


LOCATION OF GRAIN ELEVATOR
(Sorghum, Soy, Wheat or Corn)
SHUTTLE CAPACITY AT CORN ELEVATORS
(Unload and Load Car Capacity)
LESS THAN 75
75 TO 100
110 OR GREATER

RAIL SYSTEM AND THE GRAIN ELEVATOR

Corn production in Nebraska increased from nearly 941 million bushels in 2002/03 to about 1.5 billion bushels in 2007/08, an increase of 56%. Railroad revenue in Nebraska reached $926.7 million in 2007/08 as shown in Table 18. Nebraska's corn was railed an average of 1,122 miles in 2001/02, increasing to 1,373 miles in 2007/08. Nebraska's corn moved by rail is mostly shipped to California, the Texas Panhandle and the PNW. Geographically, Nebraska's position provides it better access to the PNW and California as compared to Iowa and Illinois.



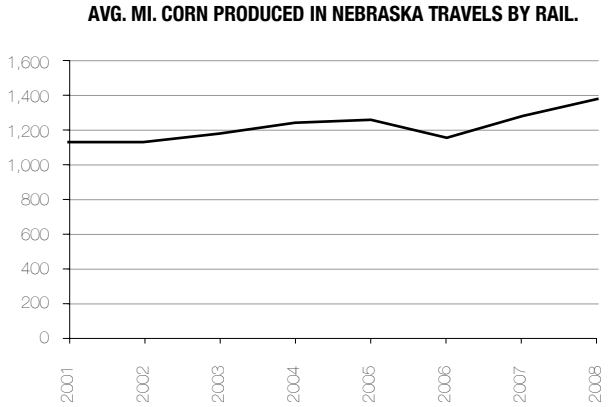
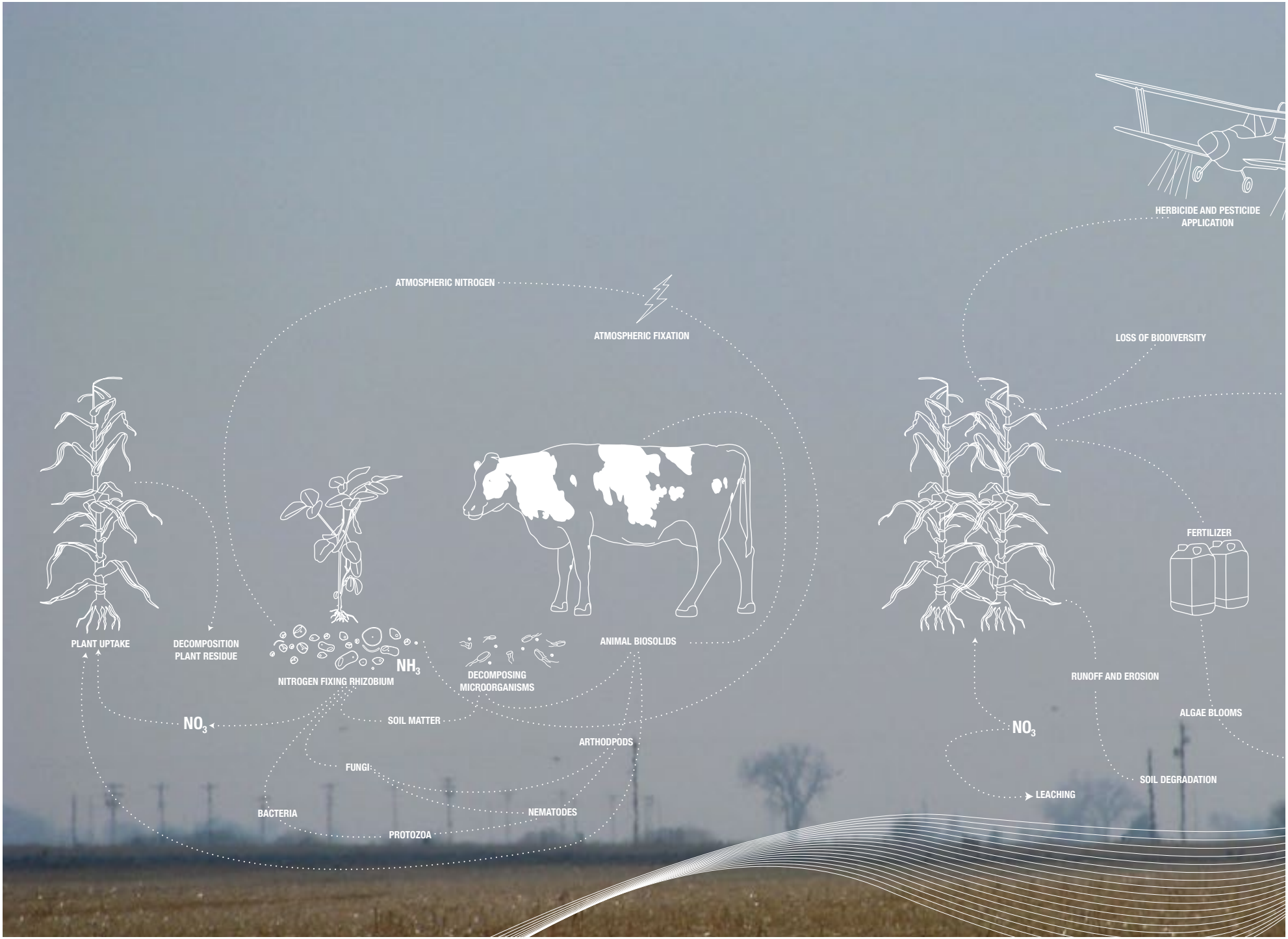
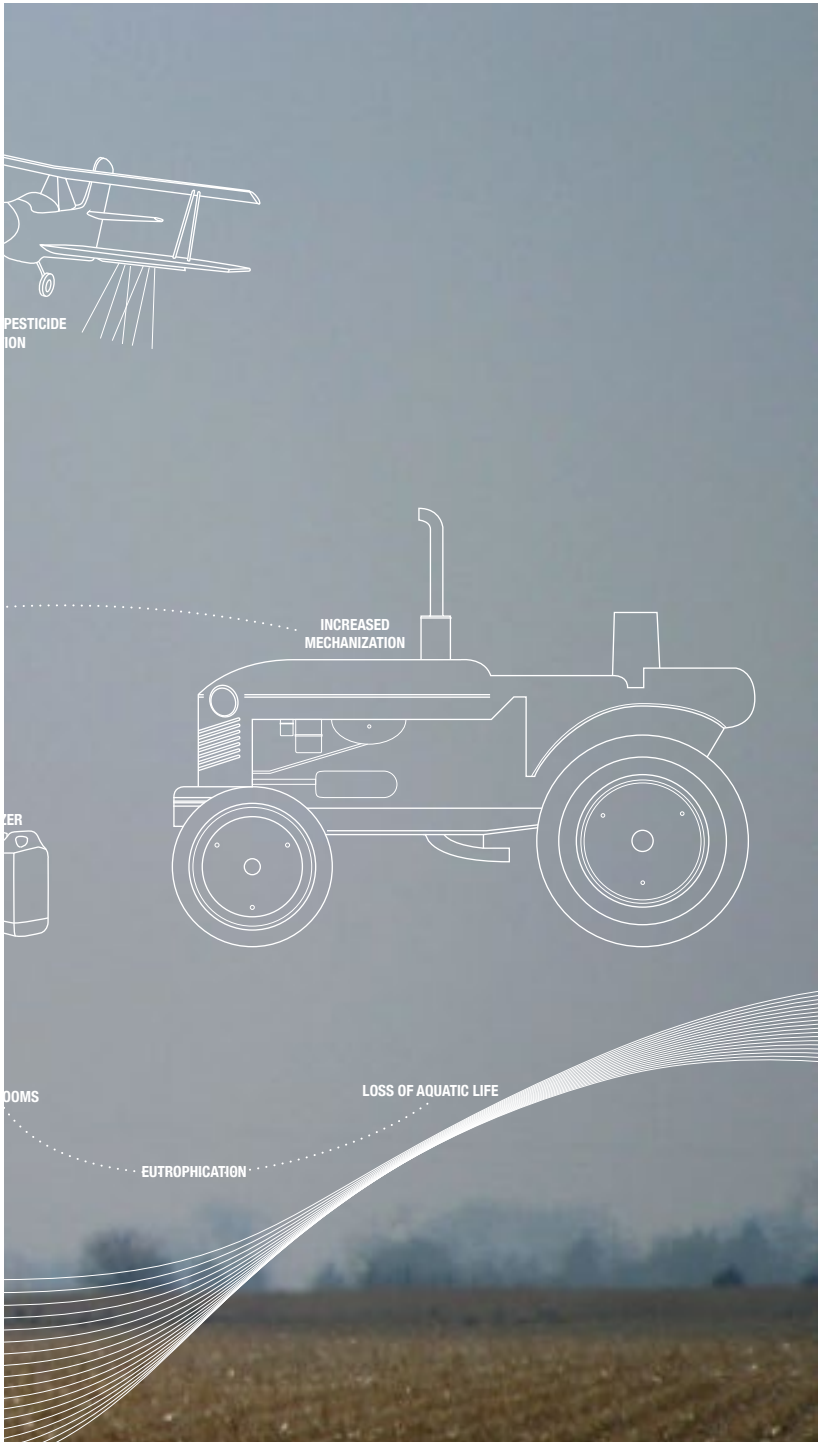


Figure 18. Crop Rotation Model versus Monoculture Model

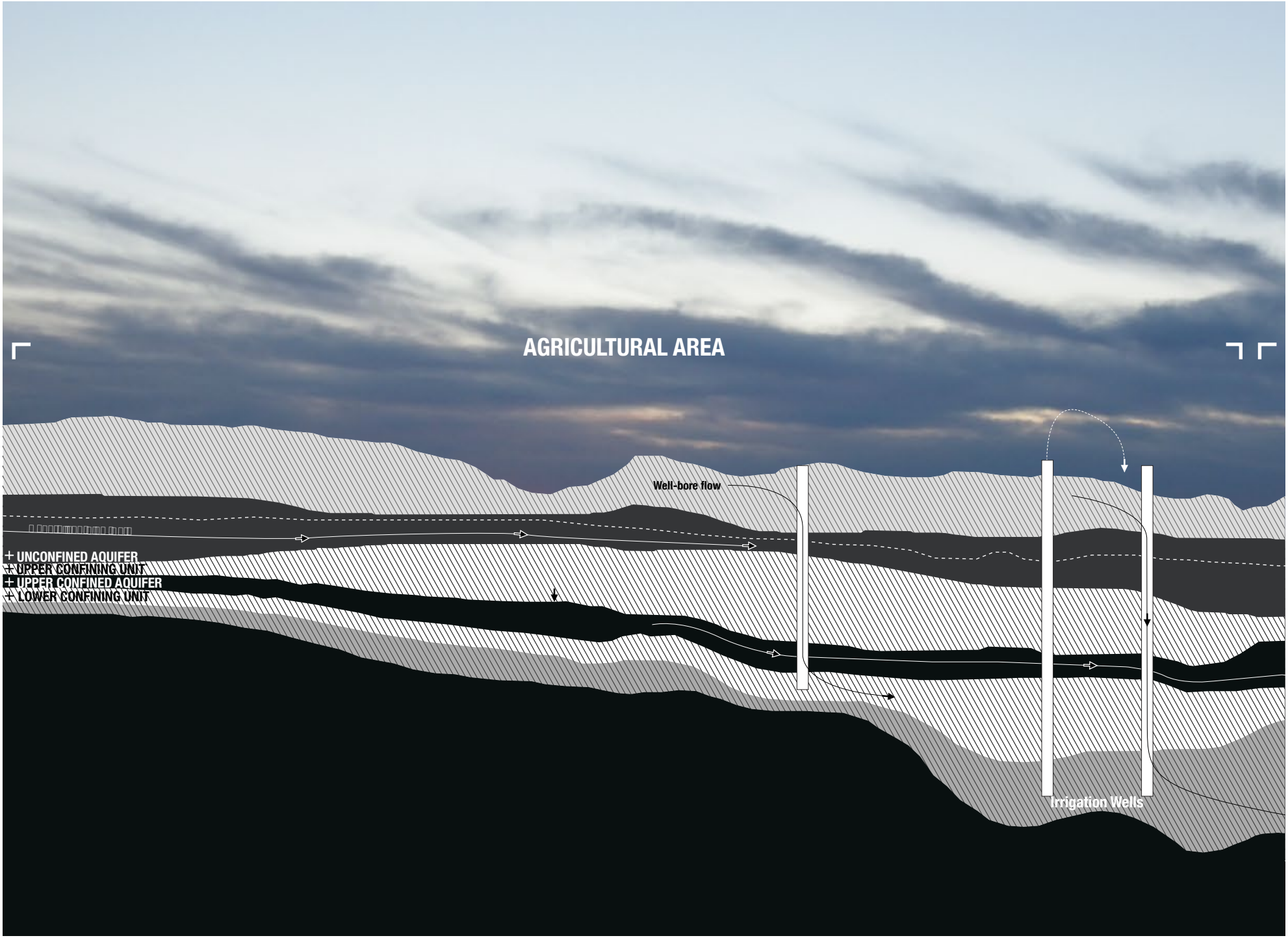

HERBICIDE AND PESTICIDE APPLICATION
ATMOSPHERIC NITROGEN
ATMOSPHERIC FIXATION
LOSS OF BIODIVERSITY
FERTILIZER
PLANT UPTAKE
DECOMPOSITION PLANT RESIDUE
NITROGEN FIXING RHIZOBIUM
NH_3
DECOMPOSING MICROORGANISMS
ANIMAL BIOSOLIDS
RUNOFF AND EROSION
ALGAE BLOOMS
NO_3
SOIL MATTER
ARTHODPODS
FUNGI
BACTERIA
NEMATODES
PROTOZOA
NO_3
SOIL DEGRADATION
LEACHING

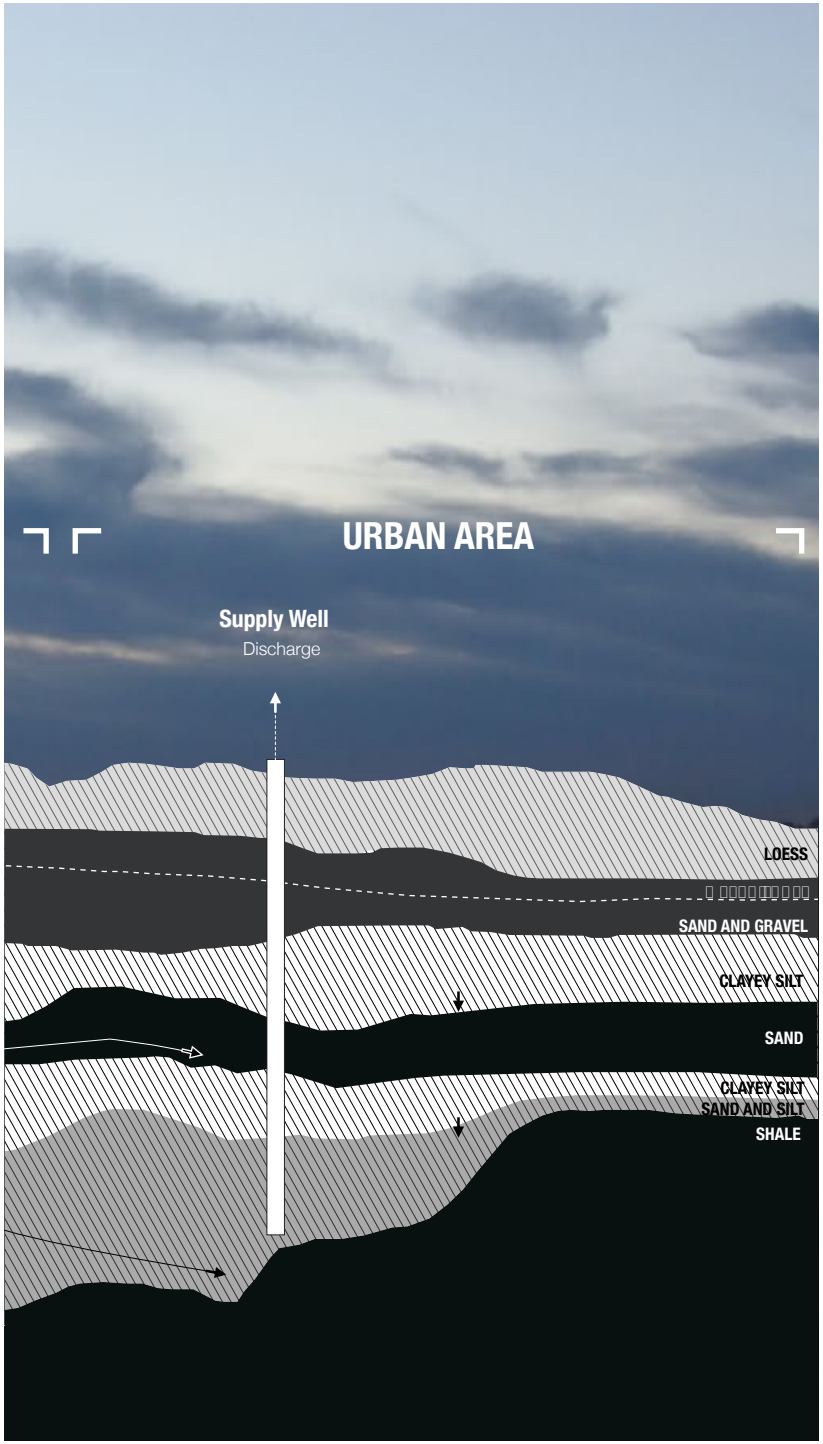


MONOCULTURES

Prior to widespread agricultural industrialization around the 1950s, farming relied primarily on internal resources. A family labored to produce crops without the use of special equipment and many of the inputs needed to maintain the farm were outputs from other parts of the farm. The pre-industrial farm often sustained livestock, perhaps cattle and poultry, each animal playing a special role on the farm, providing manure for fertilizer or eating specific varieties of grasses. This ensured corn was planted in fertile soil. It would likely be one of many crops planted. Diversification of crops ensured lower risk to any particular plant population if a pest came, and was also important in providing a varied diet for the family. The biodiversity of an entire region was also rich as many distinct plant populations provided food and shelter for other organisms. After the introduction of capital and technologically intensive farming –and with this, the advent of fertilizer and pesticide treadmills- soil became increasingly depleted due to over farming, and the lack of crop rotation. Poor soil health requires more fertilizers which often seep into water systems to produce algal blooms. The energy input cto produce the same amount of caliers is 50 times more in industrialized agriculture than traditional agricultural methods. The energy equivilant of 400 gallons is needed to produce the average American's annual diet.

Figure 16. Crop Rotation Model versus Monoculture Model


AGRICULTURAL AREA
Well-bore flow
+ UNCONFINED AQUIFER
+ UPPER CONFINING UNIT
+ UPPER CONFINED AQUIFER
+ LOWER CONFINING UNIT
Irrigation Wells



IRRIGATION

"Nebraska relies primarily on groundwater to supply irrigation. According to a 2007 Census of Agriculture report, Nebraska ranks first nationally with about 8.5 million irrigated acres. Most of the irrigated acres receive groundwater, followed by acres receiving commingled ground and surface water. Over the past 50 years, the number of irrigation wells in operation has increased by 300 percent to over 90,000. The highest density of wells are located in the Central Platte Valley where over 16 irrigation wells have been installed per square mile of land. The location of irrigation wells in 2007 reflects the availability of groundwater -due to the location of the Ogallala Aquifer, the suitability of the land for irrigation and the need for irrigation to meet crop water requirements. The development of irrigation sytems has resulted in the decline of groundwater levels (depth to groundwater from the soil surface) in some areas of the state. The most severely affected areas are the Box Butte area, western end of the Republican River Basin and parts of the Blue River Basin.

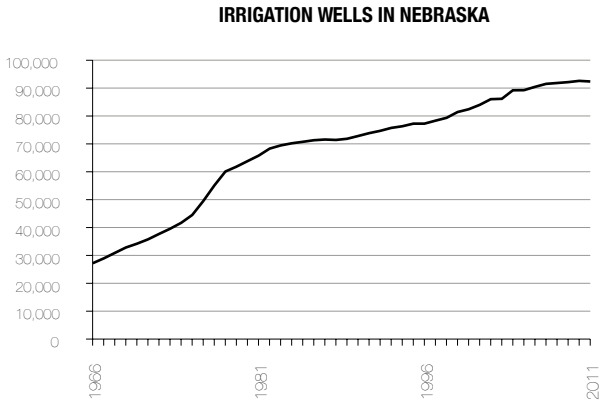
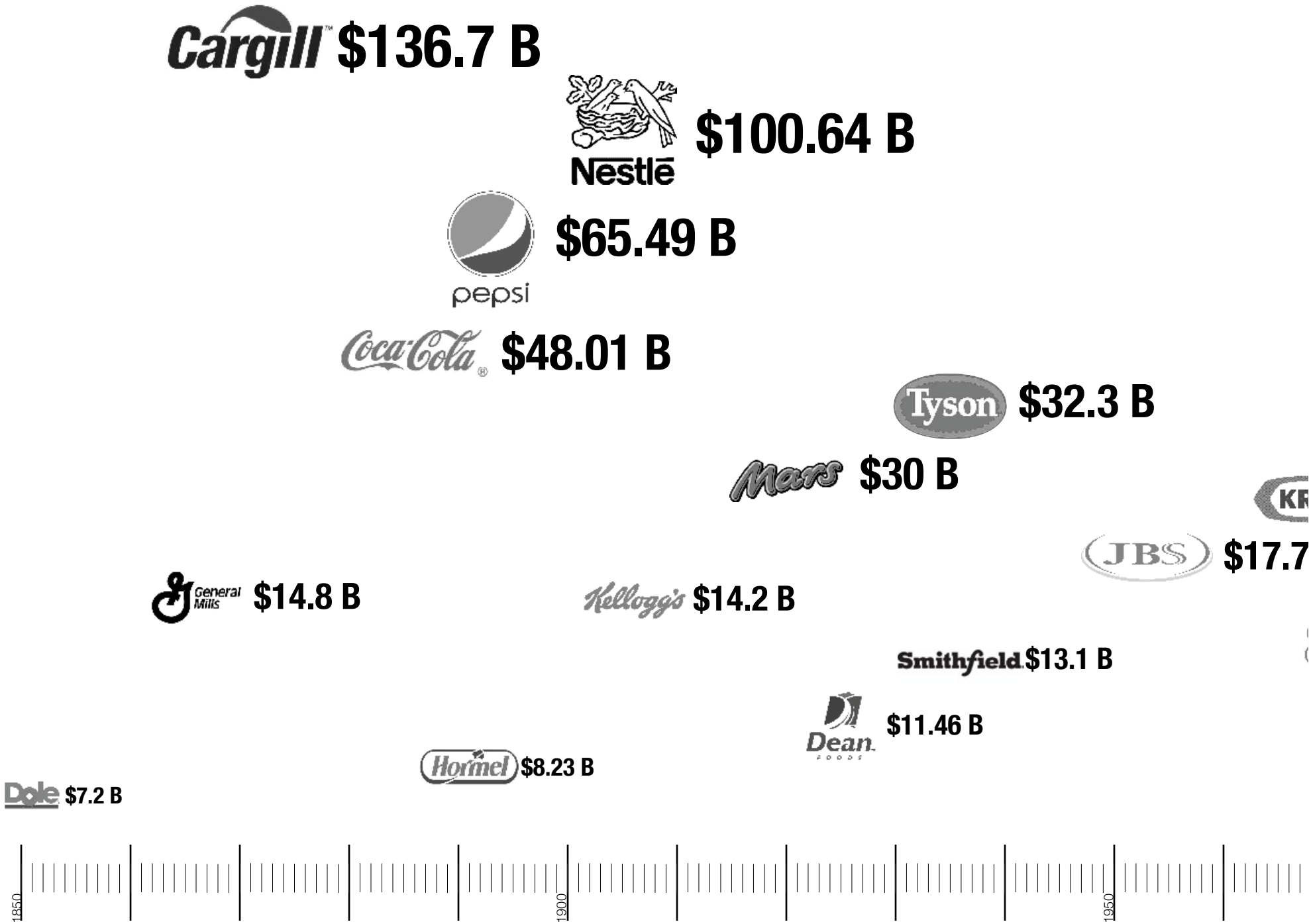


Figure 17. Crop Rotation Model versus Monoculture Model


Cargill $136.7 B
Nestlé $100.64 B
pepsi $65.49 B
Coca-Cola $48.01 B
Tyson $32.3 B
Mars $30 B
JBS $17.7
General Mills $14.8 B
Kellogg's $14.2 B
Smithfield $13.1 B
Dean Foods $11.46 B
Hormel $8.23 B
Dole $7.2 B
1850
1900
1950

FOOD COMPANIES

Increasingly, large food companies have consolidated the market. In order to maximize profits, they look for ingredients that can decrease cost. High Fructose Corn Syrup became a great candidate for replacing sugar because it was less expensive due to heavy subsidization of corn as well as tariffs on imported sugar. By taking advantage of economies of scale, they are also able to have a major effect on corn markets and need to support the continued production of corn. These large companies are producing large quantities of food products and therefore need stable supplies of ingredients such as cornstarch, dextrose, and high fructose corn syrup.

1. Cargill
2. Nestlé
3. PepsiCo
4. Coca-Cola Company
5. Tyson
6. Mars
7. Kraft
8. JBS
9. General Mills
10. Kellogg's
11. ConAgra
12. Smithfield
13. Dean Foods
14. Hormal
15. Dole

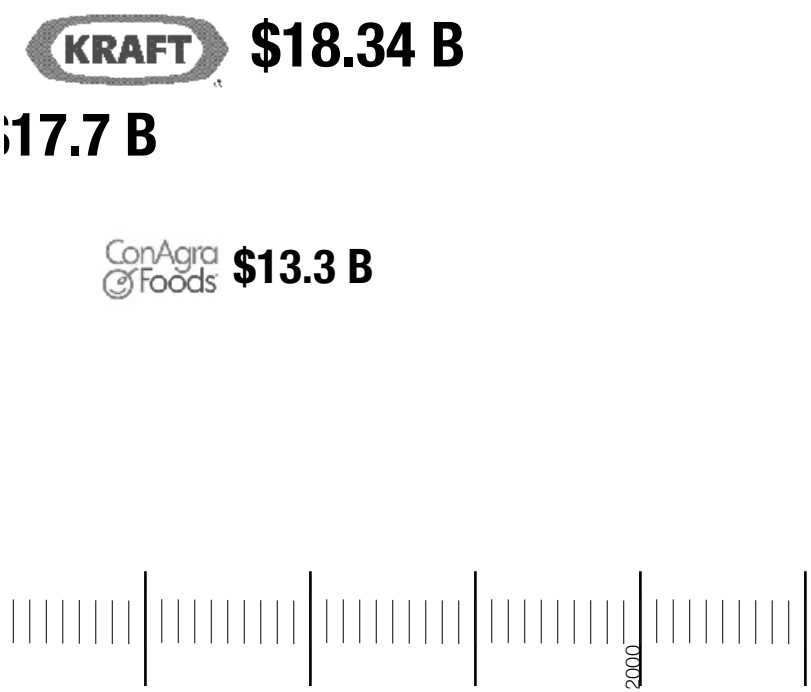
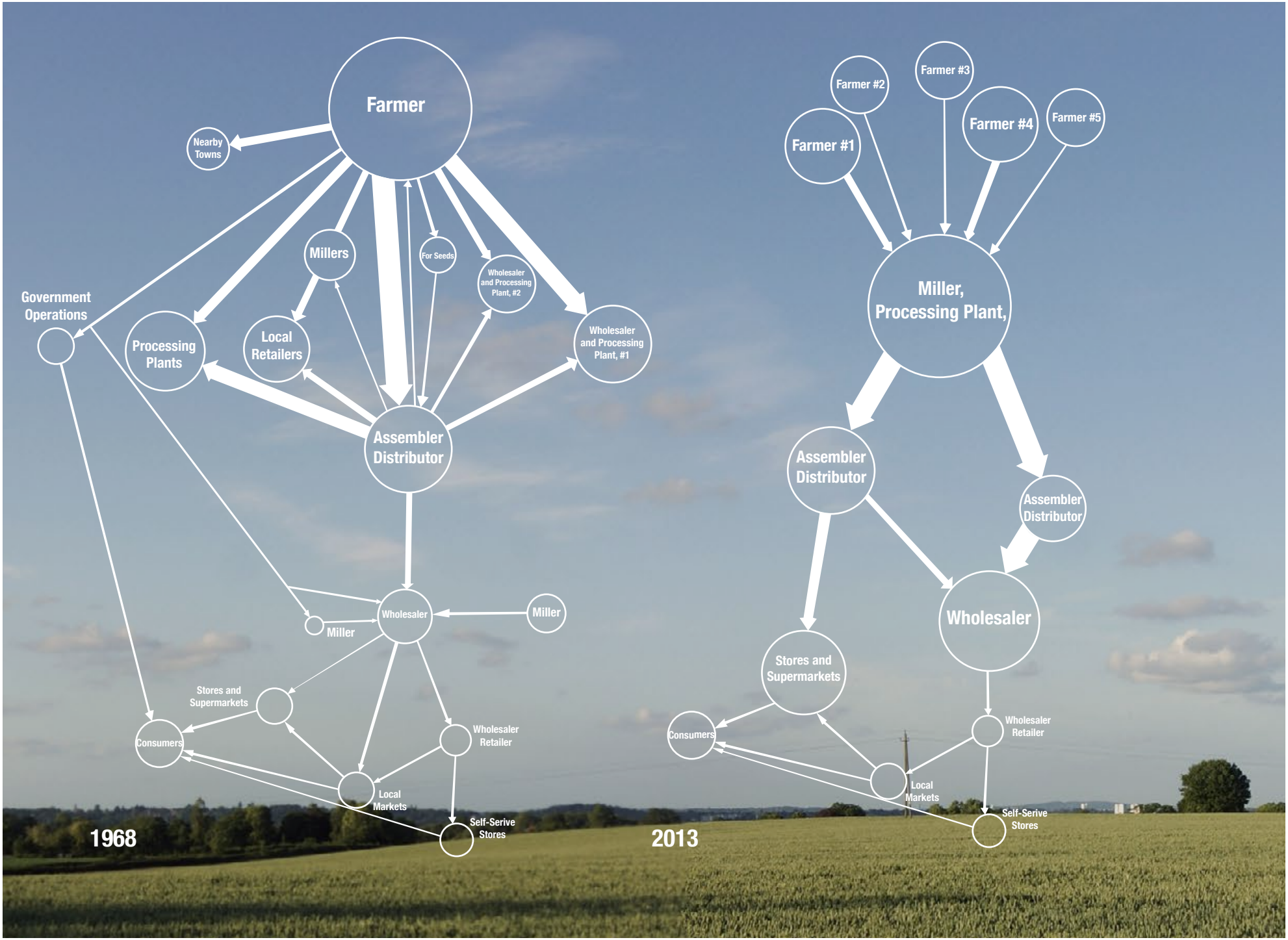
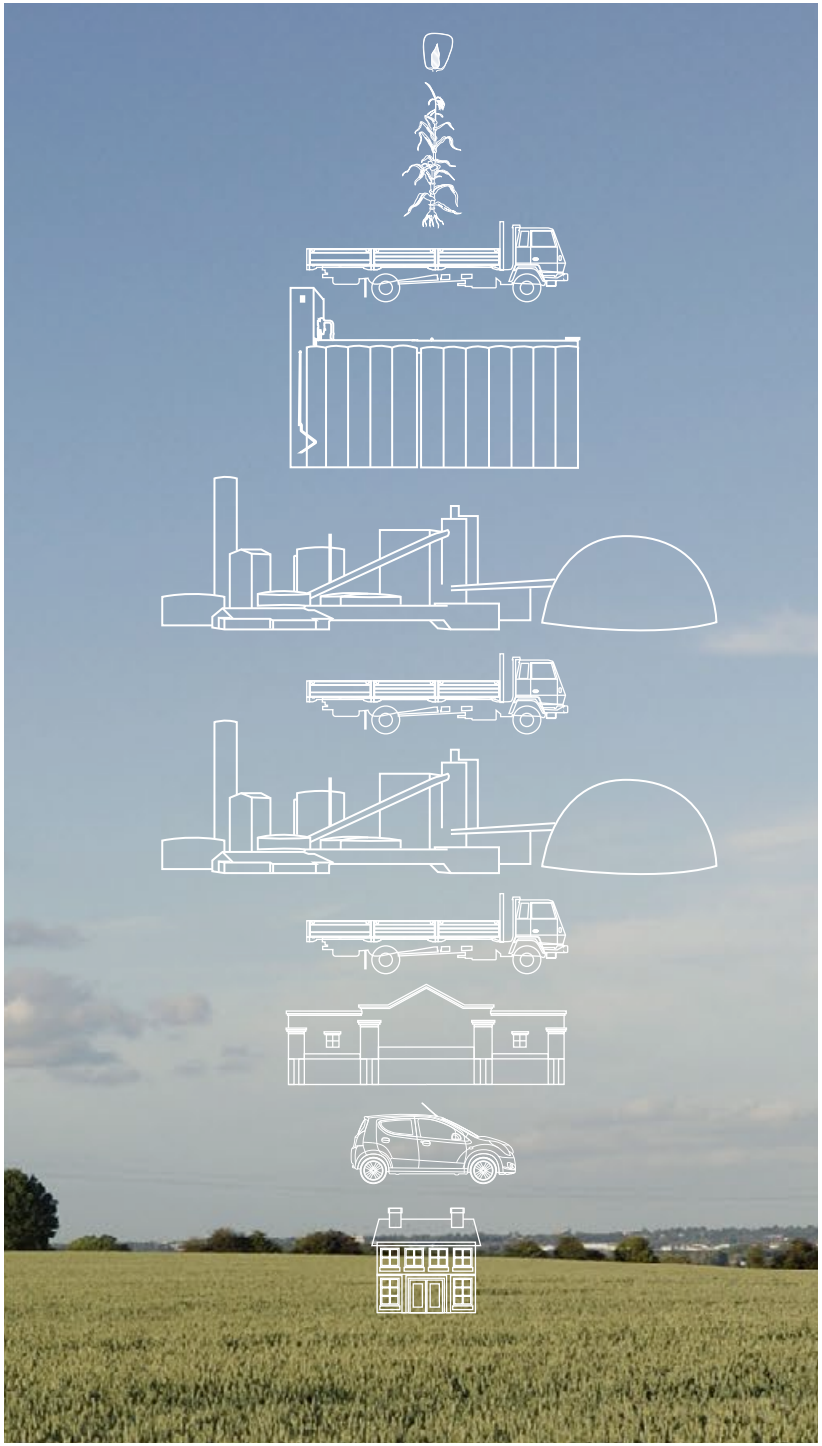


Figure 12. Timeline of Largest Food Companies' Establishment


Farmer
Nearby Towns
Millers
For Seeds
Wholesaler and Processing Plant, #2
Government Operations
Processing Plants
Local Retailers
Wholesaler and Processing Plant, #1
Assembler Distributor
Miller
Wholesaler
Miller
Stores and Supermarkets
Consumers
Wholesaler Retailer
Local Markets
Self-Serive Stores
1968
Farmer #1
Farmer #2
Farmer #3
Farmer #4
Farmer #5
Miller, Processing Plant,
Assembler Distributor
Assembler Distributor
Wholesaler
Stores and Supermarkets
Consumers
Wholesaler Retailer
Local Markets
Self-Serive Stores
2013



SEED TO MARKET

If we follow the channels of distribution that deliver food products to consumers, we are able to gain an understanding of the relationship between different actors. Also, through the omparison of a the supply chain in a less-industrial condtion from 1968 to the supply chain of a food product in the modern agro-industrial complex, it is apparent that power has shifted from the producer to the processer. There are also spatial implications to this system. Local business and local markets were closely linked in the 1968 system, while today, the farmers of commodity crops would not profit from selling their product to nearby towns and communities.

Figure 19. Corn Distributio Channels

DEFINING SITE

When engaging the design process questions regarding context arise; to define the scope and scale of a project the site is identified according to various principles. We study site carefully because critically analyzing and then representing site is the first way we design. Site is much more than location or physical adjacencies, it refers to the wider scope of cultural and environmental networks that an area of land is linked to. It refers to the memory embedded in that place, and the social and economic structures that simultaneously construct and are constructed by the site. By studying site we can also question the link between what is natural and what is artificial, the way that physical space has been and continues to be manipulated by human force.

Carol Burns gives us two models for understanding site: the cleared site and the constructed site. The former, she writes, is most commonly prescribed to undeveloped land –although I posit that this is also the way we view regulated agricultural land- and seems to look past the various ecological systems already at play on the land. It ignores the regimes of power that define landownership, the structures which define land value. Placing a rational geometry on the land lends itself to objectifying parcels. One land can be exchanged for another, indeed they each refer to a spatial area, but it makes no reference to the memory of that land, of the way that this location sits within larger infrastructures or systems of power. The latter, the constructed site- conceptualizes the site as a series of layers corresponding to different eras of development, ranging from prehistoric era to the more recent suburban developments.

We must conceded that site is not an easily definable term; site is dynamic, there is always a simultaneity of networks acting on site. How can architecture respond to the variable nature of site? Stan Allen has written about using ecological models to determine the efficacy of architectural indeterminacy.

The idea that a site is not bounded to a particular place but in actuality responds and extends into cities and territories which may be far removed is not a new idea, however when designing an architectural project that reveals and physically manifests a site in all of its networked complexity, we must therefore question the way this site is represented and then consumed within the other nodes of the network as well as the paths it must take to get there.

The purpose of creating various maps is to illustrate the way that site is constructed through the interaction of a multiple networks. Site is not singular; it is in a constant state of flux. To reject the conceptualization of static site means that we must engage issues such as the change in actors open site- we must question population loss and its effects on rural landscapes, more nebulous actors and influences such as government regulations. We must recognize physical transformation in larger scales of networks extends beyond socially constructed boundaries such as county and state lines- after all environmental phenomena take no notice of our attempts to divide and rationalize space. Shifts in boundaries should be embraced; architecture is a lens, and as such it must reveal the mutable landscape.

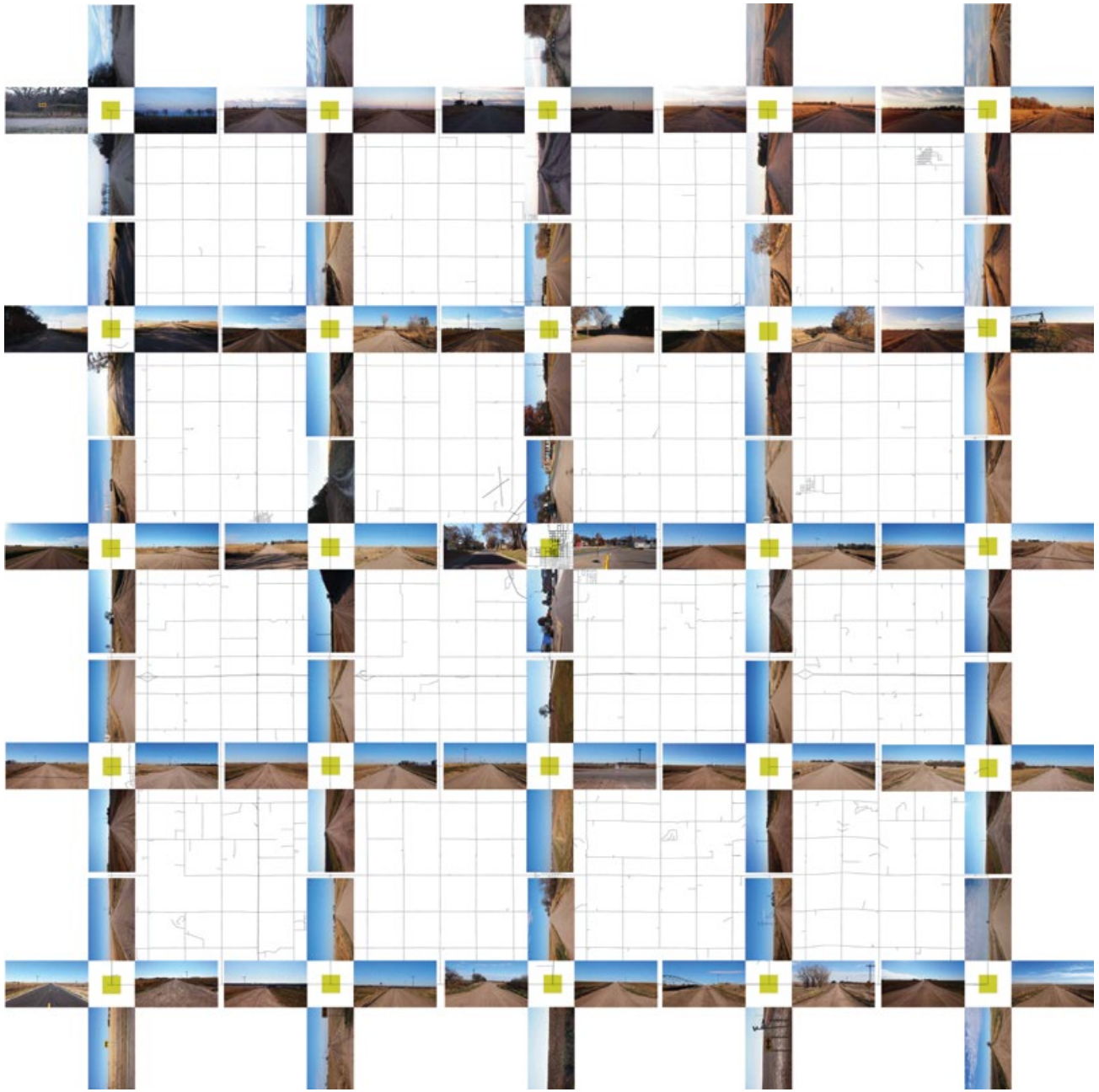


PLATE 1.
Quadrangle Intersections in York County, NE.

PLATE 2.
Unharvested, Harvested, 2013

PLATE 3.
Center Pivot Irrigator

PLATE 4.
Combine Tracings

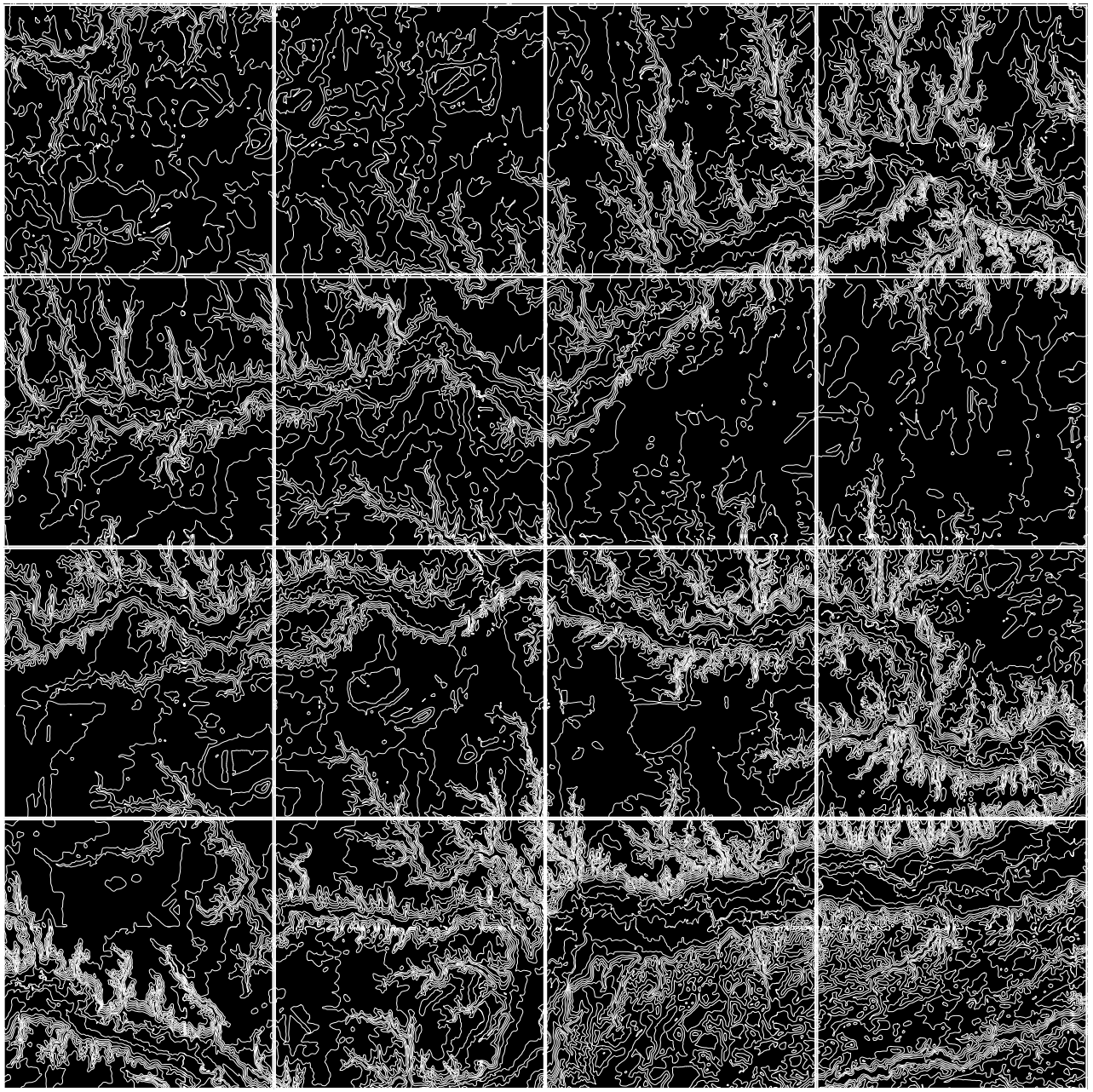


Plate 5.
York County, Nebraska: Topography

PLATE 6.
Harvesting on uneven surface, 2013

PLATE 7.
Combine on Open Field, 2013

PLATE 8.
Preparing Land

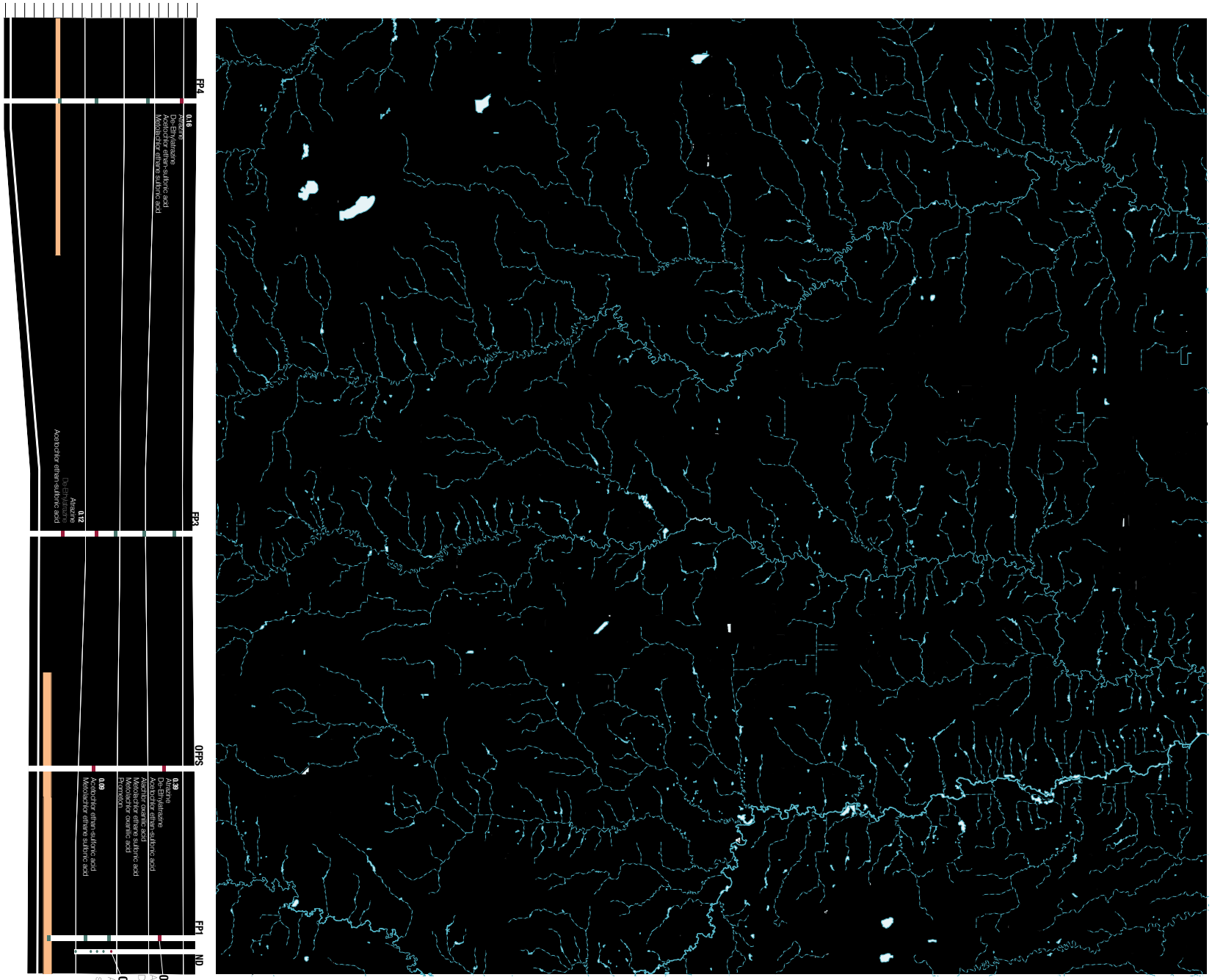


Plate 9.
York County: Topography

PLATE 10.
Train passes by pond in a fallow field

PLATE 11.
Rust

PLATE 12.
Rationalized Pond near Barn

PLATE 13.
Ponds disrupt the grid, 2013

PLATE 14.
Landscape graining and Small water body

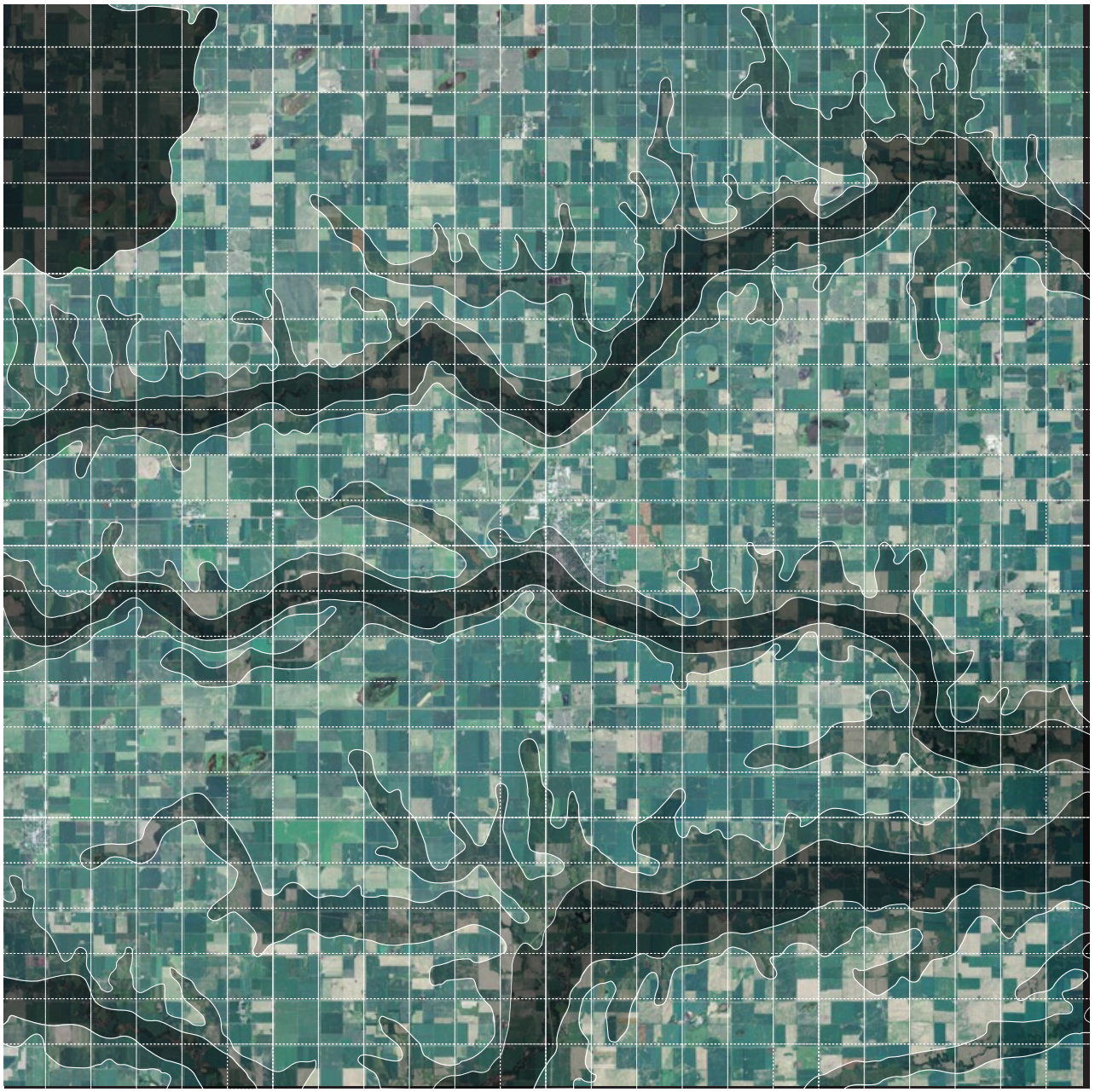


Plate 15.
Soil Map, Aerial Mapping: York County, Nebraska

PLATE 16.
Cultivation Pattern

PLATE 17.
The Machines and their Field.

PLATE 18.
Cuttings across Field, 2013

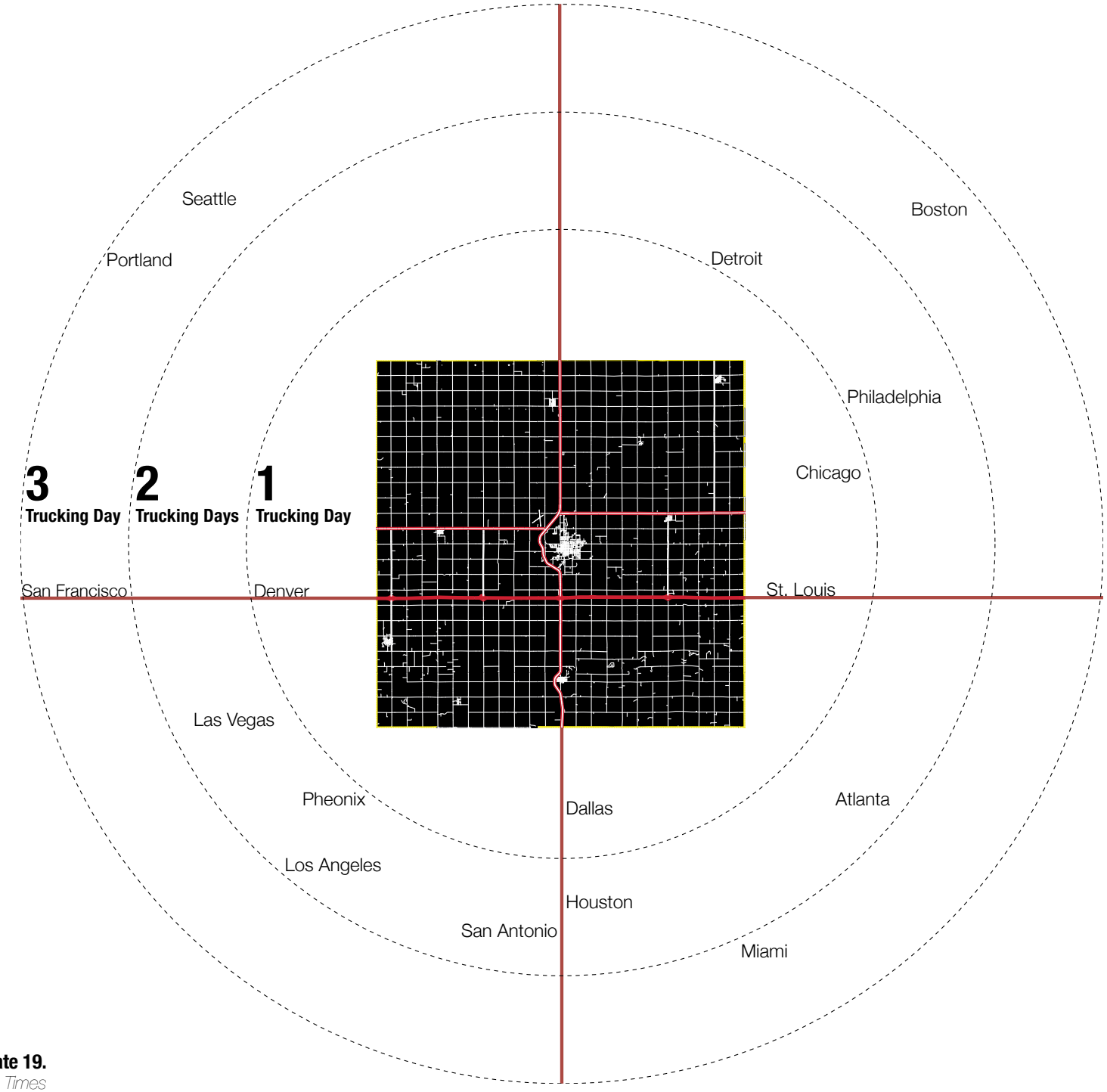


Plate 19.
Road System and Trucking Times

PLATE 20.
Roads in the Jeffersonian Grid

PLATE 21.
Meandering Highway

PLATE 22.
Rural Homesteads, Rural Roads

PLATE 23.
Networks in Space, Rail and Electricity, 2013

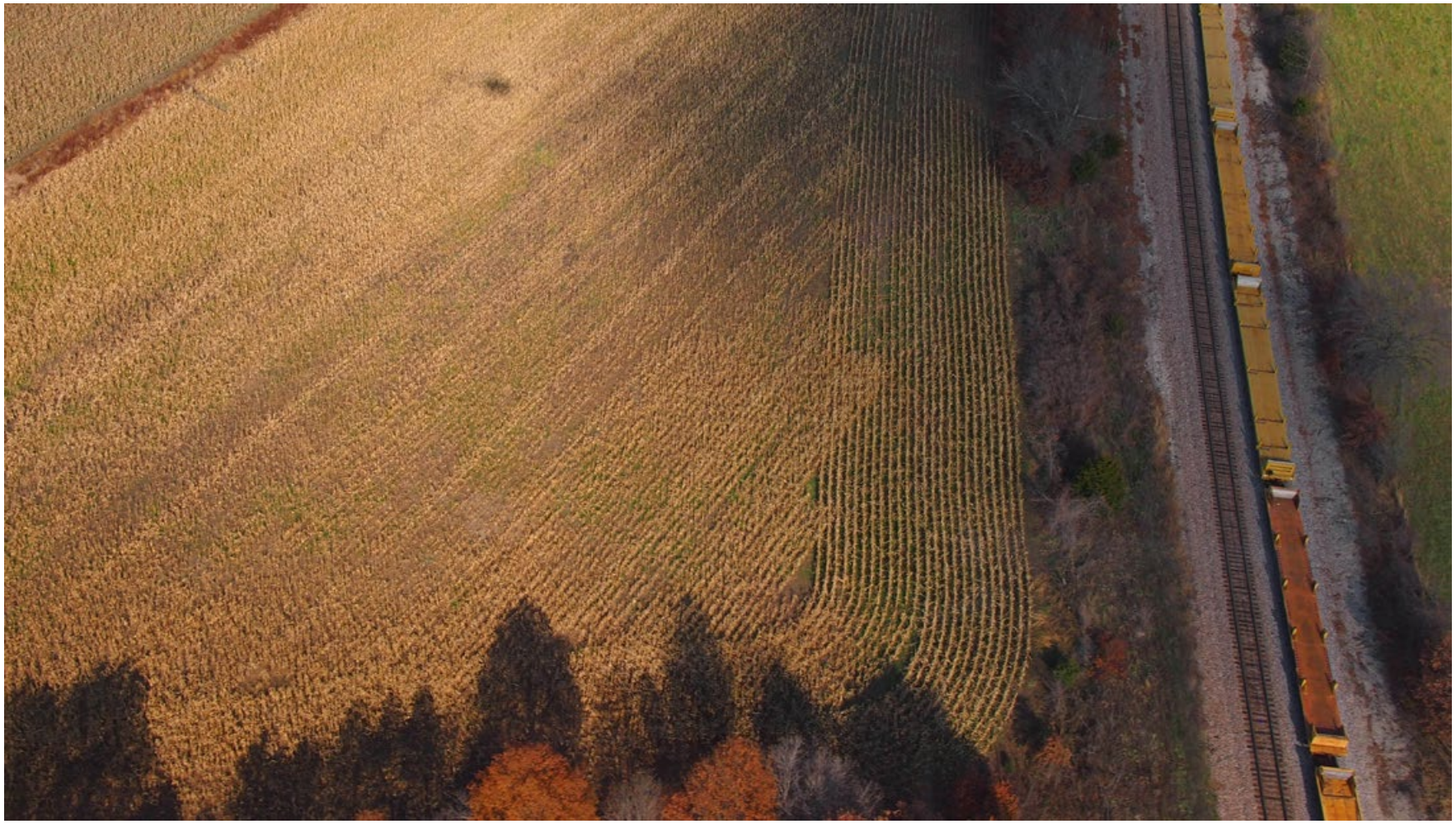
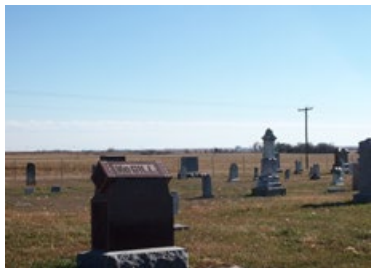


PLATE 24.
Freightless

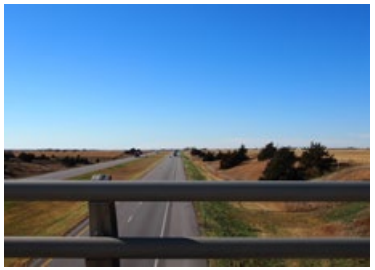








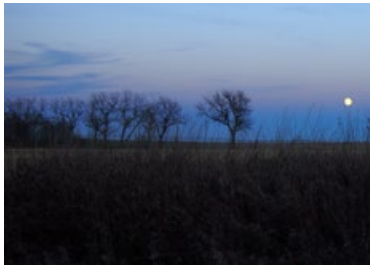


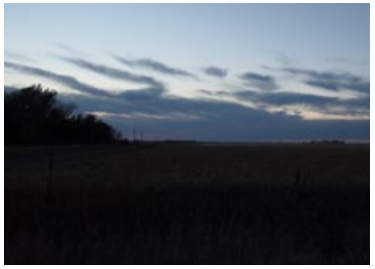



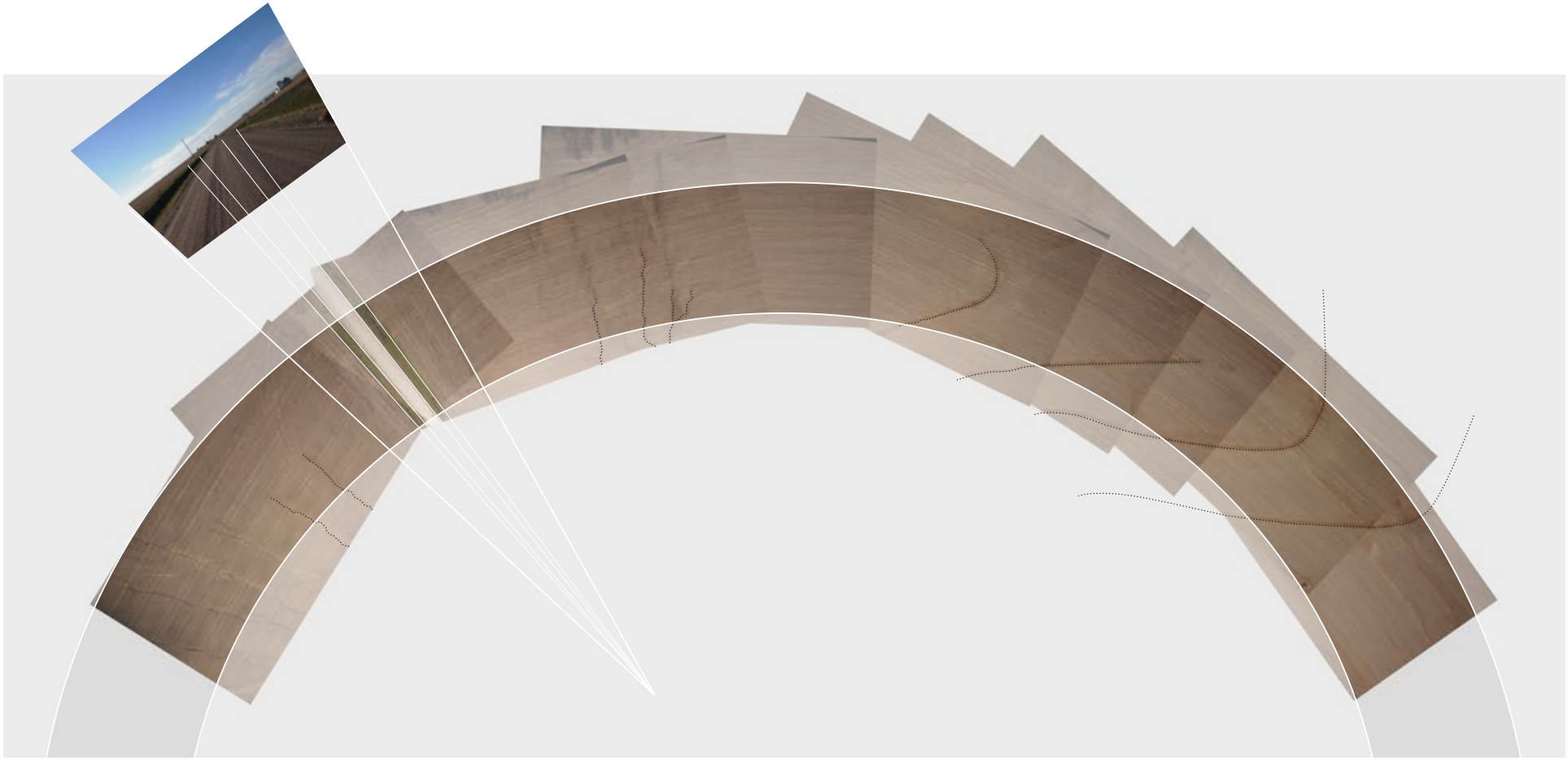



HOEGEMEYER




cenSMART






EMBODYING IDENTITY

After developing representations of York County that illustrate its non-static nature, it is important to develop responses that take these characteristics into account. These projections illustrate architectural devices that move along with the site. They are rooted to the landscape, but represent the site through kinetic means. The aim is to design an architecture that unveils the landscape. It is an architecture that aims to create 'place,' and to call attention to the power rural landscapes have in shaping we understand the world.

By developing these architectural devices, the goal would be to engage with the performance of landscape over time. While questions of representations remain important, these provocations aim to change the mode of thought that the goes along with architecture's relationship to landscape. The aim is to widen the scope that architects work within, to suggest the relevance of engaging other disciplines within our work. We must question perspectives that define landscape as surface.

Rural landscapes provide a site for the expansion of architecture from an autonomous field; they necessitate the inclusion of geography and geology. These landscapes are visibly influenced by economics and politics in order to adequately respond to the site. Corner notes that landscapes are often experienced in a state of distraction unlike photographs or paintings, which are removed from their context of production and reproduced for the sake of study. The goal then would be to great an architecture for the landscape that is meant to be reproduced in other media.

The routines and cadence of life bring a sense of place in the absence of topographical landmarks, J.B. Jackson notes. The notion of narrative and embracing the mutability time brings can be a generative mode of engagement.


Food Research and Action Center
Museum of Zea mays
Closed Loop Production
Guerilla Gardening
Community Supported Agriculture
Billboards
Center for Rural Affairs
Internalizing Externalities
Awareness Material
Billboards
Eco-label Index
Slow Food Movement
Poly-Cropping
Community Supported Agriculture
Closed Loop Production
Local Businesses
Poly-Cropping
Watershed Governance
Community Center
Closed Loop Production
Awareness Material
Industrial Ecology
Guerilla Gardening

STRATEGIES AND INTERVENTIONS

Reference Key: [**E**] Ecology [**F**] Food [**H**] Homogeneity [**L**] Laws and Subsidies [**M**] Mechanization

We have established the importance of understanding the rural landscape as a series of systems. It is within these constructed networks in which interventions must be projected in order to transform the way in which we understand places such as York, Nebraska. This guidebook is meant to question the limits of traditional representational techniques.

Laws and Subsidies

Regionalization || Diversify Economic Ventures!

Increased Corn Production || More Fruits and Vegetables!

Mechanization

Seed Consolidation || Options for seeds!

Distribution || People should know where their food comes from!

Homogeneity

Sense of Place || Give people something to be proud of, note ways that a place is different from others

Sense of Time || Meaning to cycles of Farming

Rural Population Loss (Farm Consolidation) || opportunities for new businesses

Rational Landscape || Make people understand that there is a lot going on behind the surface.

Food

Consolidation of Food Companies || Increase Local Businesses and agriculture

Nutrient Poor and Processed Food || Healthy food options, People need to know where it comes from

Ecology

Loss of Biodiversity || Increase Diversity

Water Pollution || Cleaner water

Soil Degradation || Improve Soil

Strategies

Billboards [**H, L, F**]

Billboards boasting the industry and systems that are rooted in York County serve to give a sense of identity and particularity for for the residents.

Buy Fresh Buy Local Nebraska

Buy Fresh Buy Local Nebraska encourages the purchase and enjoyment of locally grown food. The have created a guide to farmers' markets, CSA providers, restaurants and grocery stores that offer local food as well as gathering information about local farmers and ranchers who grow and produce local Nebraska food. They reason that supporting local food allows for food security and while most conventionally produced food is extremely resource intensive, traveling an average of 1,500-2,500 miles from field to plate, local food is not. This reduces fossil fuel dependence, carbon dioxide emissions, and use of packing materials and garbage. Additionally, buying local allows farmers to retain more profit. In conventional foodways, on average, only 10 cents of each dollar spent on food returns to the farmer. The other 90 cents goes to corporations for packaging, marketing, transportation, etc. However, farmers who sell direct to consumers receive 80 cents of each food dollar. Their website is designed as a guide to Nebraska locally grown foods. Whether you're just starting out or are considering pursuing local food more actively, we can help you decide which route is best for you, as either a consumer and/or grower of local foods.

Center for Rural Affairs [**L**]

Supporting organizations such as the CfRA are essential as they aim to maintain strong rural communities, social and economic justice, environmental stewardship, and genuine opportunity for all while engaging people in decisions that affect the quality of their lives and the future of their communities. They work to ensure that even rural communities have access to gorceery stores that have healthy and nutritious options and that are ciritical infrastructural elements to sustain population growth. Their REAP program serves to support small and self-employed business vetures through micro loans and business training.

Closed Loop Production [**E, M**]

Production techniques that use, what in industrial production is

usually thought of as waste -such as manure and plant biomas- as productive inputs characterizes Closed Loop Production techniques. ANother way to understand this process is thinking of a complete, sustainable eosystem where plants and animals produce waste that is food for another organism. In York, using Closed Loop Production could include increased crop rotation, where nutrient fixing bacteria could increase soil health, chicken could eat small pests, and cattle could consume naturally occurring grasses.

Community Supported Agriculture [**F, M**]

In Community Supported Agriculture (CSA) programs, consumers pay for a season's share of crops thereby helping farmers pay up-front farmer costs of a reducing a farmer's need to take out loans. Many farms that take part in CSA programs also reach out to their customers and invite them to the farm, giving them more of an understanding of how their food is produced. Often, the food recieved from CSAs is much fresher and depending on the year, significantlly less expensive than produce from supermarkets. This also decreases the power of large stores to set prices for goods and helps support local economy.

Community Centers [**H**]

Especially in rural areas it is important to promote events and spaces that bring the community together. These provide necessary opportunities for exchange and engagement.

Complete Streets [**H**]

The notion behind Complete Streets is that the current model for streetscapes in the United States is lacking due to the lack of material and lighting consideration. Complete Streets aims to use landscaping to provide space to walk, ride bikes, picnic, gather. It aims to promote social public spaces.

Cooperative and Communal Management [**H, S**]

While many farmers in Nebraska belong to a cooperative -the United Farmers Cooperatvie- the land is not communally owned as would be the case in traditionally cooperative models. Instead, it is the cooperative that is communally owened and provides assistance to farmers for their agronomy needs. The provide recuced rates for seed, and form a larger network that farmers can sell their seed to. The limitation in this model is that the farmers can only use the services that the cooperatvie offers, and changes to these services are voted on.

Corn Futures Website [**L, M**]

Similar to other Public Service Announcements, like the Got Milk? campaign, this project aims to inform and educate the public about the changing face of rural landscapes. This is done by making research easily available and also by providing ideas for action.

Distribution Tags [**F, M**]

Momo, a grafitti artist, tagged New York City with his name by riding his bike around the city with a paint can dripping orange behind him. Seen from the ground, the tracing illustrates a large scale system at a personal scale

Eco-label index [**F**]

A resource that gathers information used by manufacturers to articulate environmental and social impact of products and services. By gathering and standardizing many different indeces, they allow subscribers to compare labels based on sixty different characteristics. Transpency in labelling is critical because it gives consumers the information they need to make informed decisions and better understand production processes.

Food Research and Action Center [**F, L, M**]

One of the consequences olf our food system is the link between poverty and the accessibility of nutrient-poor foods. FRAC is the leading national nonprofit organization working to improve public policies and public-private partnerships to eradicate hunger and undernutrition in the United States. FRAC works with hundreds of national, state and local nonprofit organizations, public agencies, corporations and labor organizations to address hunger, food insecurity, and their root cause, poverty. One of FRAC's significant initialtives is the Food and Agriculture Policy Collaborative. Among their four main goals are iincreasing healthy food initiatives through access to local farm produce and stretngtheninglocal and regional farm and food system infrastructure.

Guerilla Gardening [**G**]

A tactic often used in urban settings, Guerilla Gardening is the act of gardening on land where one does not have the legal right to utilize. There are many reasons why guerilla gardening occurs, whether to beautify neighborhoods, to protest land usage or reclaim neglected land.

Integrated Pest Management (IPM)

IPM growers practice techniques that aim to keep pests at a managable level rather than kill them with pesticides. They do this because of the knowledge that having some pests may actually promote the health of their harvest and maintains biodiversity. IPM growers may use tatics such as pest traps, or apply natural substance such as kelp or rock powders and compost to lessen crop susceptibility to pests. Pest levels are monitored and potential damage is calculated so that pesticides are used only as last resorts. Many IPM farmers believe that promoting healthy plants and preventative measuresare the best way to deal with pests. This includes careful decisions about when and where to plant, and planting a diversity of crops which reduces risk of any particular pest attack. Another reason that pest management is important in sustainable agriculture is that it maintains a base level of pests so natural predators like birds will continue to have food and will keep their role as natural pest managers.

Internalizing Externalities [**F, L**]

Externalities are unintended positives or negatives whose coast or value is not are not reflected within the price of a good or service and which is not agreed to by affected parties. When we speak about externalities, they are usually negative impacts, such as water pollution, soil degredation, or ____. When these impacts are (fines on corn companies)

Local businesses [**H**]

One of the most important steps in promoting the health of rural areas is supporting economic health in the area. While large businesses provide jobs, there is also a danger that these businesses could relocate.

Mobile Services [**H**]

Because rural populations lack density, providing mobile services could be an important step

Museum of Zea Mays [**E, H, L, M**]

Inspired by a recently opened Museum of the History of Cattle, a Museum of the History of Zea Mays would be located at the end of the corn supply chain in order to inform large populations of consumers. The Museum of Zea Mays would follow the five systems described in this project.

Natural Fertilizers [**E**]

It is important to reduce the usage of petrochemical derived fertilizers, which are used to increase soil health in order to allow for a greater capacity of plants per acre (PPA) than the soil could normally sustain. This process depletes the soil of its own nutrients and creates what is frequently referred to as fertilizer treadmills. One way to combat this is to increase the usage of naturally derived fertilizer like manure, guano, or dung. This means that there must be changes in the spatialization of industry so that cattle ranches may be near farms and can share in local production loops. Historically, farmers in Europe and the Middle East would build structures for birds to live

Organics

Food grown without the use of chemical pesticides, herbicides or fertilizers may be certified organic, Animals that are organic may only have organic feed and may not be given hormnes or anitbiotics. While this is an important strategy because it allows consumers to know what practices were used to grow their food, it also places a large advantage on larger businesses that can afford certificication, a lengthy process that begins with three years where growers must use organic techniques, but cannot sell their produce as such. There are discussions that push for the implemetnation of a transitional organic label that would allow farmers undergoing the change into organic market to be compensated for losses that might occur in the transition period by allowing them to sell produce at a premium, as they would be once their organic certification had passed.

Poly cropping [**E, M**]

Poly cropping and Crop Rotation can serve to reverse the effects of soil degradation. rotating corn with a nitrogen fixing plants helps improve soil health, while introducing other produce types helps reduce the risk of crop failure by diesease or pest. Additionally, poly-cropping helps promote biodiversity. Approximately 40 of the land in York County is used for corn cash crop production, with anther 40 percent set apart for farming soy

Public Transit [**H**]

The benefits of public transportation are many. It reduces usage of petrochemical fuels and allows mobility for people who many not be able to own a car. In rural areas this is vital for individuals who do not have access to cars or cannot drive them. York County Public Transportation operates the public transportation system

for residents of York County, Nebraska, on a non-emergency, demand-response basis.

Rural Studies [**E, M**]

This is a field of study that attempts to define what rural areas are and how they can be developed. Because the range of conditions that are seen in rural areas are diverse, it is important to understand what makes place rural and if there aer general characteristics that should be preserved. Rural studies also look at that way that rural and urban areas interact, and can find -within their symbiotic relationships- ways to improve the quality of life and equality between residents of both zones.

SEED network

SEED® is a principle-based network of individuals and organizations dedicated to building and supporting a culture of civic responsibility and engagement in the built environment and the public realm. By sharing best practices and ideas, these parties create a community of knowledge for professionals and the public based on a set of shared principles. The SEED Network connects similarly minded members of the public with designers from the fields of architecture, industrial design, communication design, landscape architecture and urban planning.

Slow food movement [**F, M**]

A campaign that began in Italy, the slow movement strives to preserve and share local foods and food cultures. It is a response to the industrial food system and its emphasis on easily accessible fast food. Their goal is to defend and advocate policies that promote holistic alternatives to the industrial system.They attempt to do this through tastings, workshops and social opportunities through local Slow food groups. Hosting culinary events that showcase local food traditions, Slow Food celebrates regional culinary heritage.

Sustainable Food Project [**F, M**]

Begun at Yale, the Sustainable Food Project serves to educate college students on food systems issues. They have done this by implementing lecture series, panel discussions, and practicing sustainable farming techniquues for produce sold at local markets], Sustainable Food Projects also aim to influence institutional purchasing plan and provide guides that describe how to make institutional changes within university food sevices. University of Nebraska's own Sustainable Food Project called "Good. Fresh.

Local." serves a meal once a monthy at the university dining halls. The menu items are selected to promote the value of local food. GFL's mission is to educate students on sustainable agriculture and the positive impact it has on the environment, local economy and communities. By allowing local farmers to enter into distribution partnerships with the university, they also provide more opportunites for local farmers and producers.

The Unveiled Cookbook [**F**]

In 1930, the Italian Futurist, Fillipo Tommaso Marinetti wrote il Manifesto della Cucina Futurista in which he described the proper mode of cooking that related to the Futurist movement. He wanted to transfrom the way food was concieved and release the country from Italian culinary tradition. This meant the abolition of dry pasta, enemy of speed and modernity. In the same way, a Manifesto for the Unveiled Landscape should be created that promotes a new way of seeing our food in terms of their relationship to how their production has spatial consequences.

Watershed Governance [**E**]

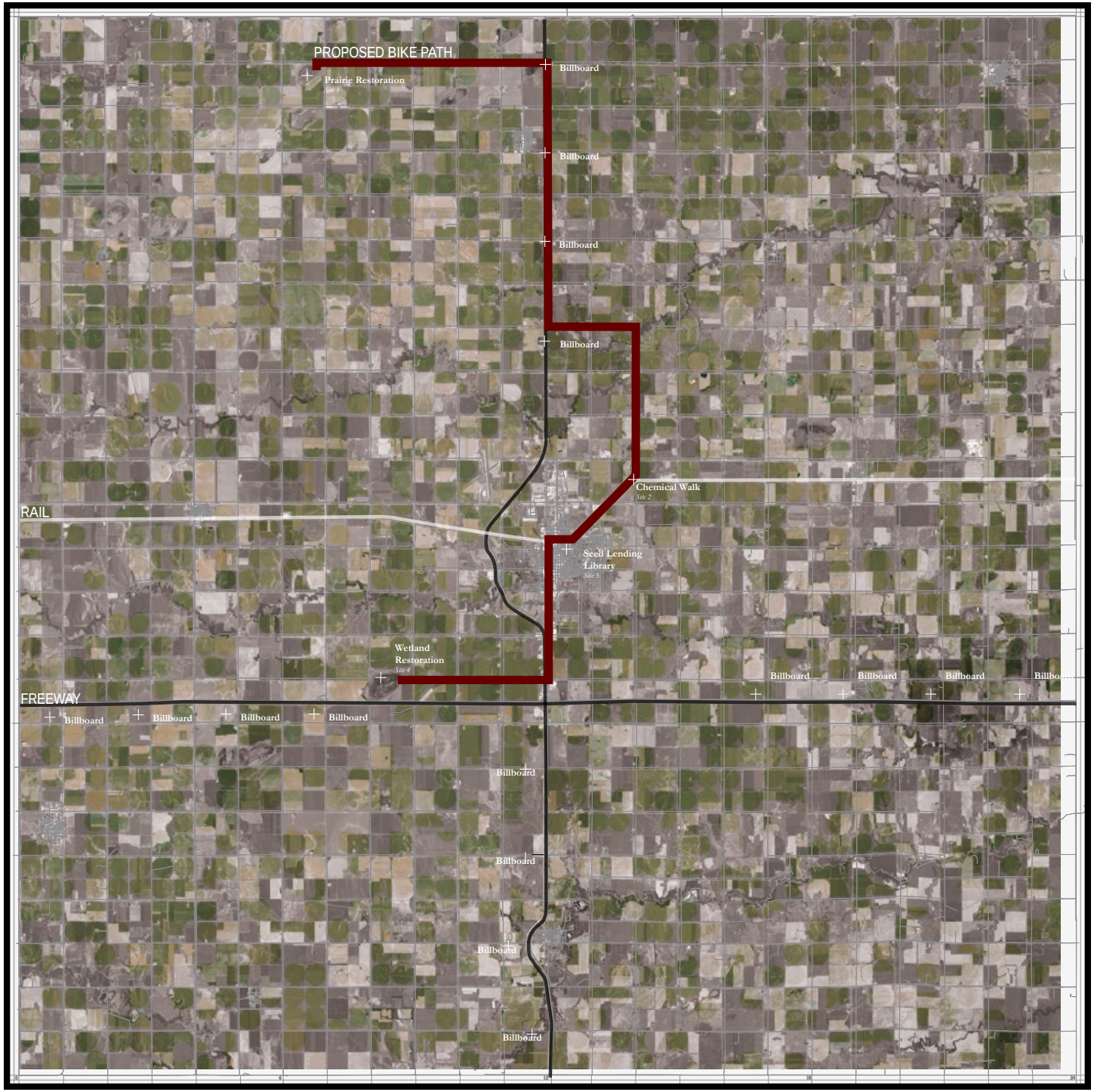
Often, the jurisdictional areas that legislates water usage does not reflect the boundaries that the body of water actually affects. Watershed governance is the notion that decisions that alter a particular watershed should be made by a political body that represents all the residents that are affected by polluted dwater.

Wetland Terracing [**E**]

Wetland terracing is a strategy that aims to restore the health of marsh areas by creating diverse ecological zones through patterned land and waterscapes. The first phase of implementation is dredging the wetlands so that small landforms about ten feet wide may be inserted. These landforms form a zigsag pattern and are then planted with new vegetation. Increased topographic variance and surface area lessens the effect of wind activity and stabalizes soil runoff. These steps promote the return or growth of local flora nad fauna populations and serves to restore the natural habitat.

York Towne Centre Farmer's Market [**F**]

Established in 2005, the York Farmer's Market is a weekly event where local farmers and craftspeople can sell their goods. Farmer's Markets aim to connect small scale producers with consumers and provides opportunities that facilitate a knowledge of food production proceses while simultaneously supporting local businesses. Additionally, smaller-scale production allows for more sustainable farming techniques.


PROPOSED BIKE PATH
Prairie Restoration
Site 1
Billboard
Billboard
Billboard
Billboard
Chemical Walk
Site 2
RAIL
Seed Lending Library
Site 3
Wetland Restoration
Site 4
FREEWAY
Billboard
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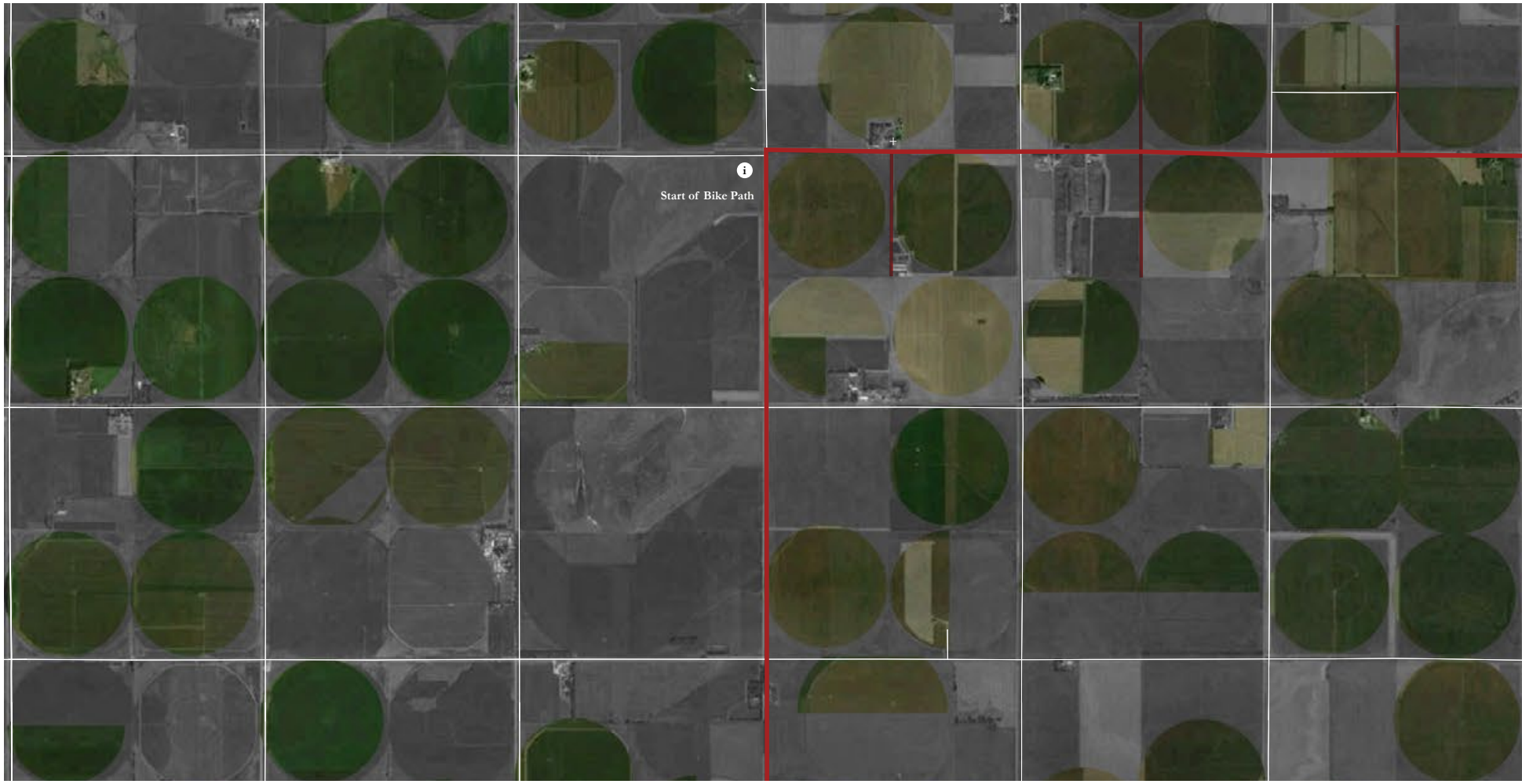
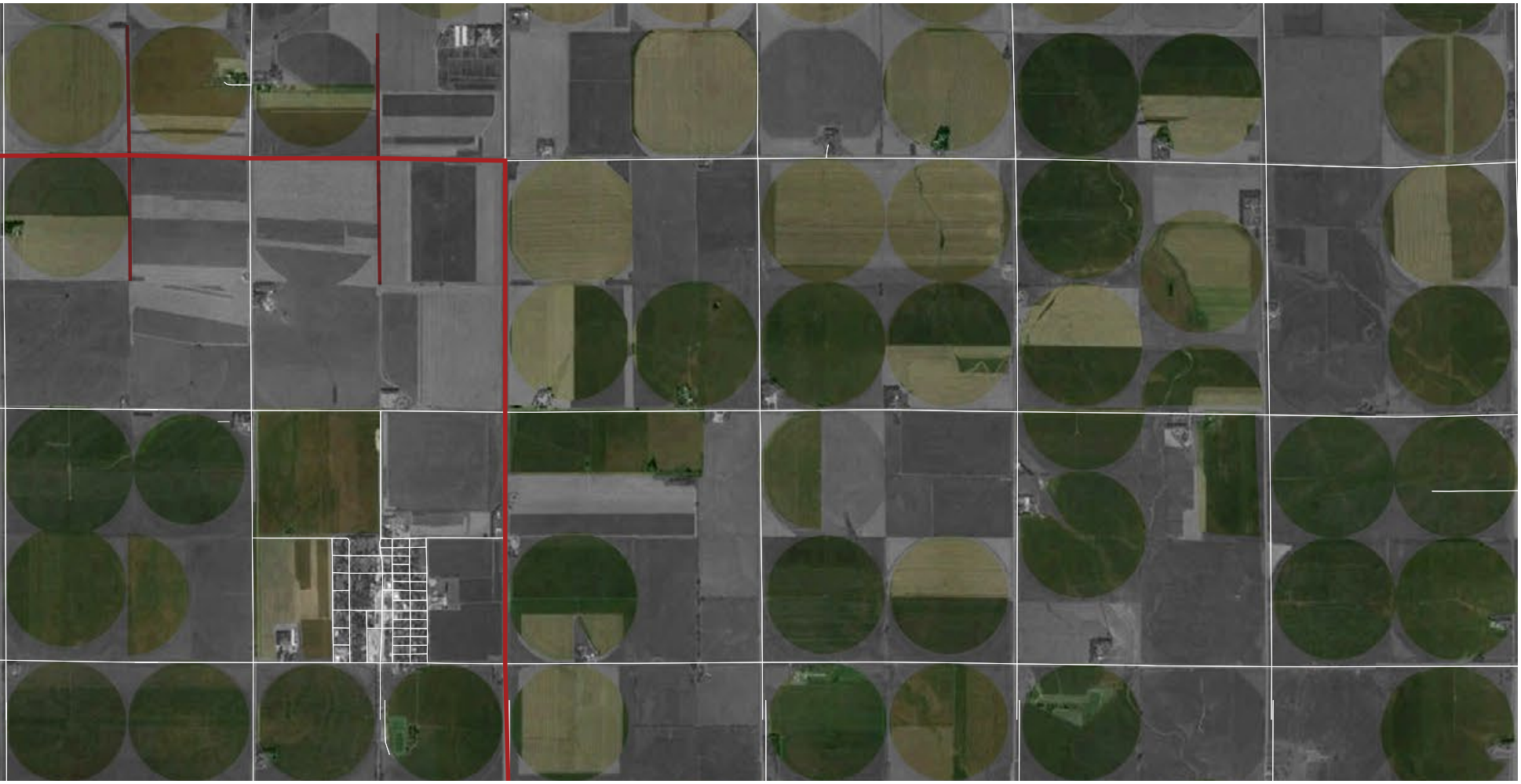
Landscapes are
Manufactured.


Ecologies have
been erased.
Nebraska has lost 90% of its wetlands in 150 years.


Big Food keeps
getting bigger


Start of Bike Path



PHASE 1: Harvest Seeds and Clear Site

Seeds suited to the particular location are gathered from seed banks and nearby prairies. Corn is harvested and stalks may be left.

Corn
Zea Mays

PHASE 2: Seed Distribution

Seed may be distributed in various manners. For public Involvement, seed bombs can be made. Weeds may be taking root, but it is best to leave them as trying to remove them decrease the viability of any prairie seed mix planted on site. Other plants that may take root are sturdy plants that will continue to grow through October.

Prairie Ragwort
Senecio plattensis

Sun Sedge
Carex heliophila

PHASE 3: Management

More varietals will bloom during the summer. It is important to note where long grasses versus short grasses are growing, and differences within the prairie. In order to ensure the health of the ecosystem, microecosystems should be rotated annually.

Big Bluestem
Andropogon gerardii

Leadplant
Amorpha canescens

Cutleaf Ironplant
Machaeranthera pinnatifida

Ground Plum
Astragalus crassicarpus

Upright Prairie Coneflower
Ratibida columnifera

Narrowleaf Milkweed
Asclepias stenophylla

Purple Locoweed
Oxytropis lambertii

Maximillian Sunflower
Helianthus maximilianii

Plains Yellow-primrose
Calylophus serrulatus

Wavy-leaved Thistle
Cirsium undulatum

Purple Prairie Clover
Dalea purpurea

Skeleton Plant
Lygodesmia juncea

Prairie Cinquefoil
Potentilla arguta

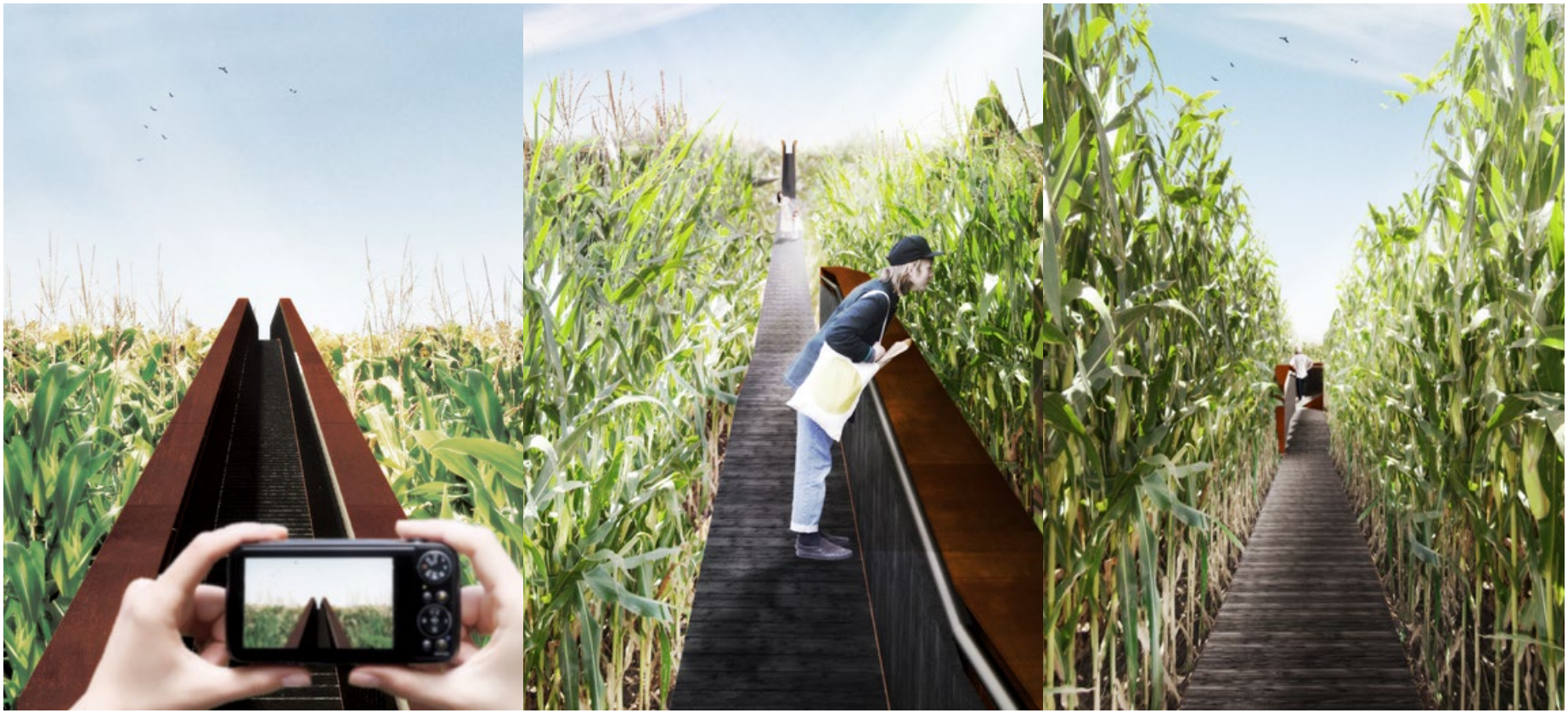
Purple Coneflower
Echinacea angustifolia

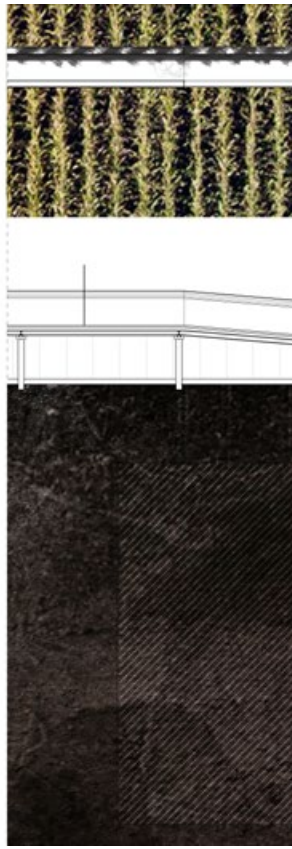
Whorled Milkweed
Asclepias verticillata

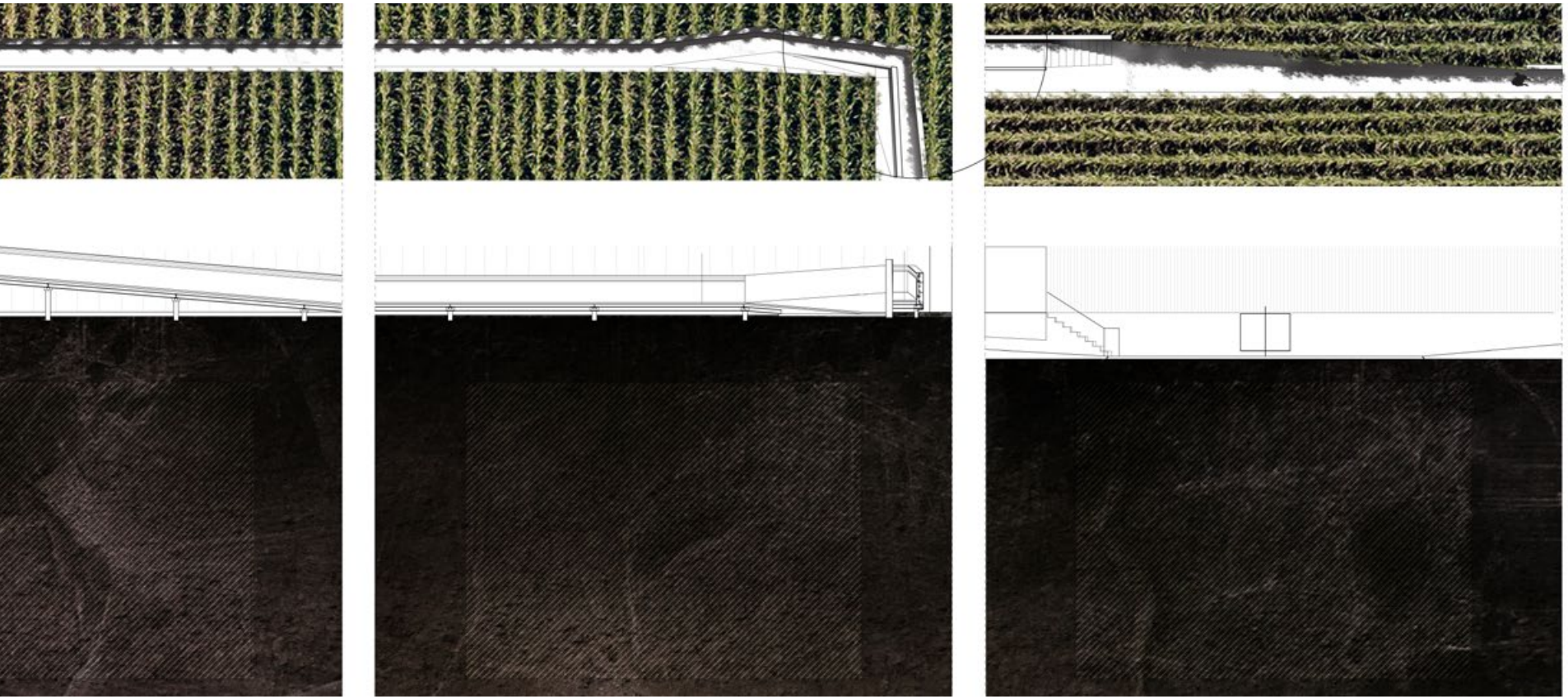
Dwarf Prairie Rose
Rosa arkansana

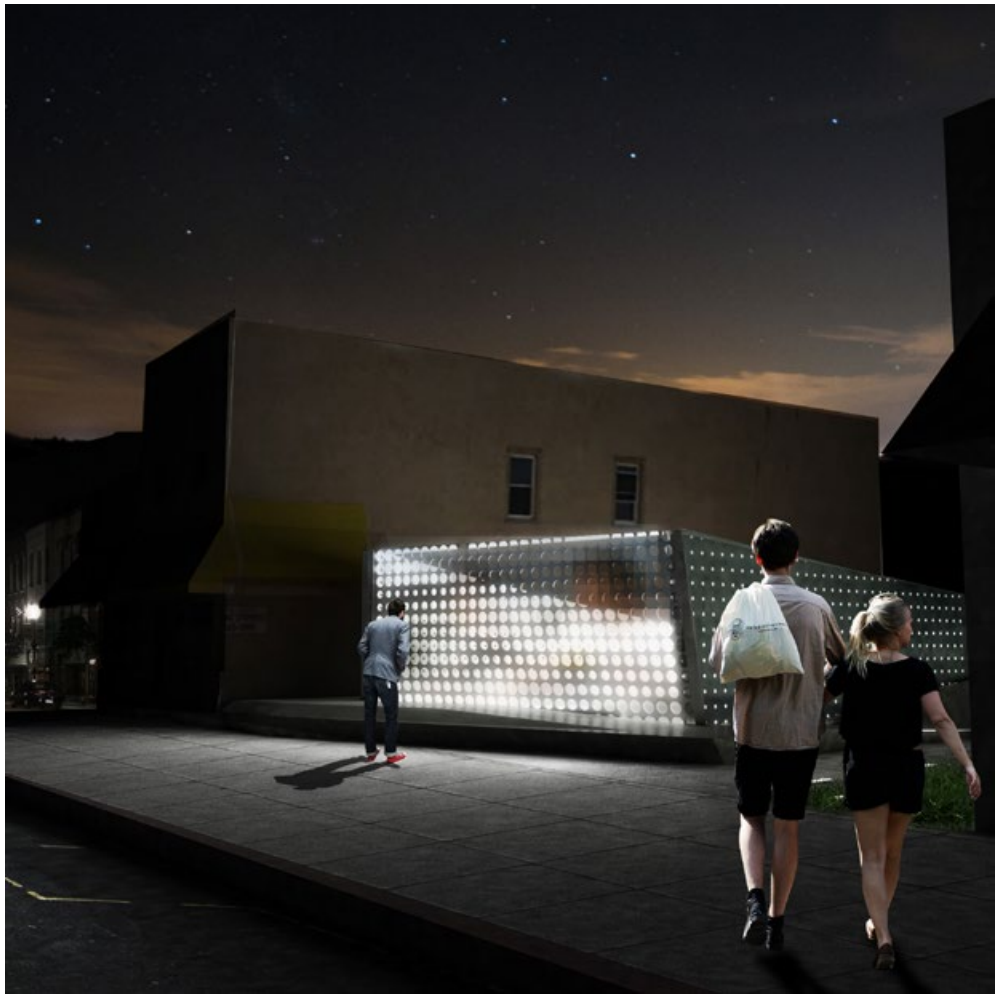
Sensitive Briar
Mimosa quadrivalvis

Wild Four-o'clock
Mirabilis nyctaginea









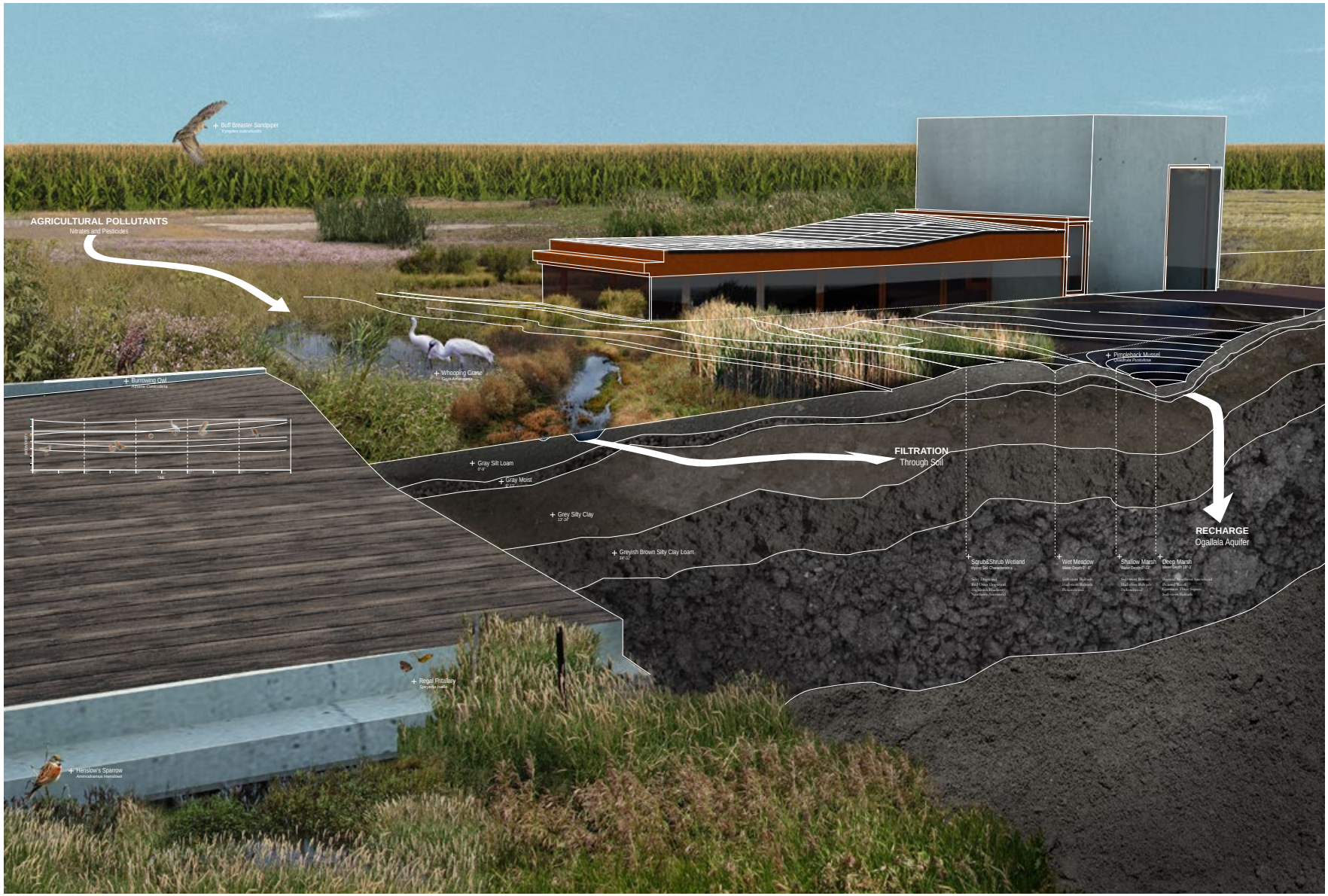

Buff Breaster Sandpiper
Tryngites subruficollis
AGRICULTURAL POLLUTANTS
Nitrates and Pesticides
Burrowing Owl
Athene Cunicularia
Whooping Crane
Grus Americana
Pimpleback Mussel
Quadrula Pustulosa
Gray Silt Loam
0'-9'
Gray Moist
9'-12'
Grey Silty Clay
12'-24'
Greyish Brown Silty Clay Loam
24'-32'
FILTRATION
Through Soil
RECHARGE
Ogallala Aquifer
Scrub&Shrub Wetland
Hydric Soil Characteristics
Wet Meadow
Water Depth 0'-6"
Shallow Marsh
Water Depth 6"-12"
Deep Marsh
Water Depth 12"-2
Regal Fritillary
Speyeria Idalia
Henslow's Sparrow
Ammodramus Henslowii

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Figure 16. Crop Rotation Model versus Monoculture Model