

Field Guide 05 | **After Extraction**

a partial political ecology
of central Illinois



Ryan Griffis

After Extraction:
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Central Illinois

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2019

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PREFACE

The Illinois Headwaters is a name that creates a territory out of land, water, and countless lifeways. The territory names the flow of water along glacial moraines, through channelized streams, and inside clay and plastic pipes known as drain tiles. As a headwater, it represents the flow of several tributaries that eventually contribute to the greater Mississippi River watershed that drains water from 3.2 million square kilometers, or about 40% of the land occupied by the continental United States. Along with material evidence of settler-colonial society—millions of tons of sediment, barges filled with industrial commodities, and chemical run-off—these tributaries also carry linguistic evidence of settler violence.

Vermilion

Embarras

Sangamon

Mackinaw

Kaskaskia

Little Vermilion

Names—sounds—taken from the Miami-Illinois and other Algonquian languages, interpreted through French, and then English, tongues. First rendered in colonial maps, these sounds are now brought to life on-demand by navigators with globally connected electronic screens.

This story is being written from the perspective of a migrant to the Illinois Headwaters: a migrant to this

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specific region, but a settler in the larger territory occupied by the United States. My Welsh and Northern European ancestors were part of successive waves of European and US colonizers in the ancestral and current homelands of the Timucua, Mvskoke, Miccosukee, Seminole, Yamasee, and other peoples; lands now occupied by the states of Florida and Georgia. This story is partial. It is largely a story for other settlers, about a settled landscape that is rather unsettling. There are many stories that can be, and are, told of the lands addressed here, by many voices other than mine. By languages other than this one. With names other than those used here.

Along with the imposition of settler-sounds, these lands are also marked by an imposition of settler-soils created through processes of extraction. The extraction of the compressed remains of creatures that lived millions of years ago, what we call coal. The extraction of water and life from forests and grasslands. In their place are found concentrations of isolated and simplified materials: endless fields of a few varieties of corn and soy; piles of coal ash; straightened waterways almost devoid of life.

Where does extraction begin?

Where does it end?

How does one separate the past (what has accumulated on/in the land) and the future (what can happen on/in that land), when thinking about extraction?

Material extraction is also a form of time extraction, a mining of materials that came into existence over millions of years.

When material is removed from the Earth, the ground

upon which the future will be built is materially changed.

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DRAIN

Not all that long ago, before the United States and the corn and soybeans you see in this region today, the land here was like a sponge, clogged with mats of hair, intermittently soaked and crusty, and choked with grasses that extended four meters into the air and even deeper into the soil. A small fish, known to some today as a Mud Darter, swam through a maze of waterways, from trickles to fast-moving, wide rivers. The fish's sense of time was larger than its known lifespan of three years, its memory being contained in the waters surrounding it. As canals and ditches were dug in the 19th century, the vibrations from shovels breaking into the soil were unfamiliar and inexplicable. Even more unexplainable was the sudden pull of the water and the moist mud left behind.

Following colonial interventions in the land, the Mud Darters that survived in streams like the Embarras River learned to share the waters with a combination of new substances. Particles of familiar glacial and windblown soils mixed with chemical runoff from drained farmland and pulverized asphalt from county roads. These materials made their way into the many drainage ditches, streams and rivers that wind between glacial moraines that are more detectable in the Winter when 2/3 of the soil is left exposed after harvest. As the waters, rising and falling with the rains, flowed through streambeds, they passed over grooves in the sediment like a needle playing a record that took over 10,000 years to produce.

On December 2, 2015, the residents of the Village of

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Erie, Illinois received a warning that urged “DO NOT GIVE THE WATER TO INFANTS UNDER 6 MONTHS OLD”. The cause of concern was a finding of unsafe nitrate levels in the Village’s sourced groundwater. About 200 miles south of Erie, on the western edge of the Illinois Headwaters region sits Macon County and the city of Decatur. The headquarters for the Archer Daniels Midland Company, Macon County also has the distinction of being the county most affected by elevated nitrate levels in Illinois. These levels of nitrates are the result of mechanized and chemical-intensive agriculture, a chemical signature of the colonial and industrial policies that became dominant here in the mid 19th century.

In 1849, the United States passed the first of three legislative acts that escalated the settlement of lands considered inhospitable to colonial expansion. Known as the Swamp Land Acts, their aim was to spur local development of lands acquired by the federal government through acts of theft and the forced removal of indigenous peoples. The designers and beneficiaries of these policies, US legislators and entrepreneurial settlers, saw the wetlands and meandering streams as obstacles to their efforts at nation-building. Alongside the assault on indigenous peoples and lifeways, the nation-state declared war on wetlands. As the anthropologist James C. Scott has written, “The work of civilization, or more precisely the state, consists in the elimination of mud and its replacement by its purer constituents, land and water.” US Congressional reports from the time make their hostility clear: “The passage of this bill and donation of these scraps of land, injurious as they exist, to the States, and utterly valueless to the Government, is but the beginning of the work of reclamation; the State Legislatures must

follow... and redeem them from the water.”

While these federal acts had little effect on their own, their intention was eventually realized by coalitions of state and local governments, land speculators, railroad developers, and technological innovations. The eventual impact was dramatic and catastrophic: between 1870 and 1930, the lands of the US Midwest were irreversibly transformed through stream channelization, the creation of drainage ditches, and the deployment of subsurface drainage tiles. 95% of the Wetlands in the US Midwest, which made up 1/3 of North America’s native wetlands, have been destroyed.

85% of the Illinois Headwaters region is estimated to have been Tallgrass Prairie and Wetlands. Now, 92% of this region is agriculture, mostly monocropped corn and soy that depends on drainage. The Illinois Department of Natural Resources summed up the scale of this transformation in 1997 like this: “The replacement of one grassland ecology—the prairie—with another—the modern farm—is the central historical, social, economic, and ecological fact in modern Headwaters history.”

In 1945, a pediatrician in Iowa City named Dr. Hunter Comly published a report in the Journal of the American Medical Association that documented cases of methemoglobinemia in infants. The condition is usually referred to as “blue baby syndrome” as the blood cells of those affected becomes deoxygenated and blue in color. The source of the problem was identified as high nitrate levels in the water used to make infant formula, sourced from wells contaminated by nitrate from nearby farms. Five years after Dr. Comly’s paper, 144 cases of infant methemoglobinemia, resulting in 14 deaths, were

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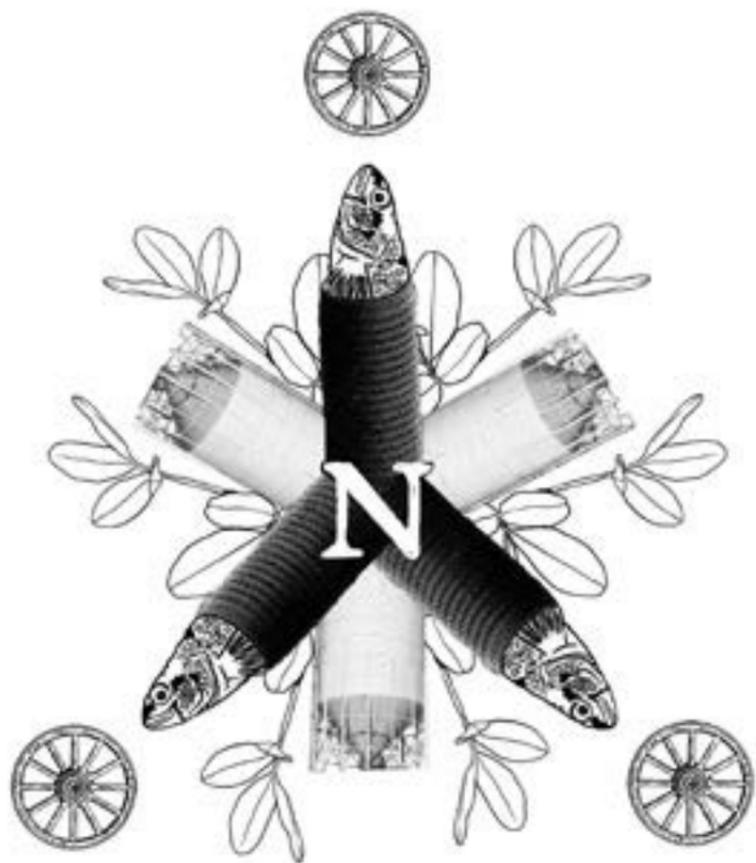
reported. Through the 1970s and early 1980s, doctors in a ten-county region of South Dakota reported treating 80 cases. More recent studies have linked exposure to nitrates in drinking water, even at levels well below the US EPA's standards, to birth defects and cancer. Since the 1980s, the State of Illinois has found unsafe levels of nitrates in 3% of public water systems and 18% of private wells.

Now, the US is working to mitigate the results of the policies it put in place to drive settlement from coast to coast. In 2015, Illinois adopted the Nutrient Loss Reduction Strategy (NLRs) that aims to reduce Nitrogen and Phosphorus pollution in the State's waterways and the Gulf of Mexico. Agriculture in Illinois is frequently the biggest annual contributor to both Nitrogen and Phosphorus sources that make their way to the hypoxic zone in the Gulf of Mexico, also known as the "dead zone." The hypoxic zone is an area lacking oxygen in the depths of the Gulf of Mexico. Often larger than the State of New Jersey, it is created when massive algal blooms, fed by excess nutrients from the Mississippi River Watershed, grow in surface waters, then decompose in deeper water. The goal of the NLRs, in collaboration with other states and federal agencies, is to reduce the hypoxic zone to 5,000 square kilometers through the implementation of conservation agriculture, wetland restoration, and the reduction of urban and industrial discharge. The strategy is to reduce, not eliminate, the unnecessary death of a marine ecosystem.

In the US, state and federal agencies act on contradictory mandates: increased wetlands conservation on one hand, supporting destructive agribusiness practices on the other. In the 1990s, the US implemented

a “no net loss” policy regarding wetlands with the National Wetlands Policy Forum. Decades before that, in November 1962, international scientists convened in Les Saintes Maries-de-la-Mer, France to discuss the ecological importance of wetlands. Eight years of meetings followed, culminating in a meeting in 1971 in Ramsar, Iran. On February 2, 1971, eighteen nations signed a treaty that became the first global agreement on conservation, the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, otherwise known as the Ramsar Convention. The Convention stipulates that all signatories designate at least one wetland to a List of Wetlands of International Importance. There are now 170 signatory nations and over 2,000 recognized wetland sites that encompass over 250 million hectares. Along the Illinois River, there are two Ramsar sites. The Emiquon Complex, a 5,729 hectares National Wildlife Refuge near the town of Havana, sits in the natural floodplain of the river and was put on the Ramsar list in 2012. 75 miles upstream, near the Village of Hennepin, is the Sue and Wes Dixon Waterfowl Refuge at Hennepin & Hopper Lakes. Also registered as a Ramsar site in 2012, this site is a crucial habitat for several endangered species of plants and birds, but like all wetlands in the region, it is under threat from surrounding industrial agriculture.

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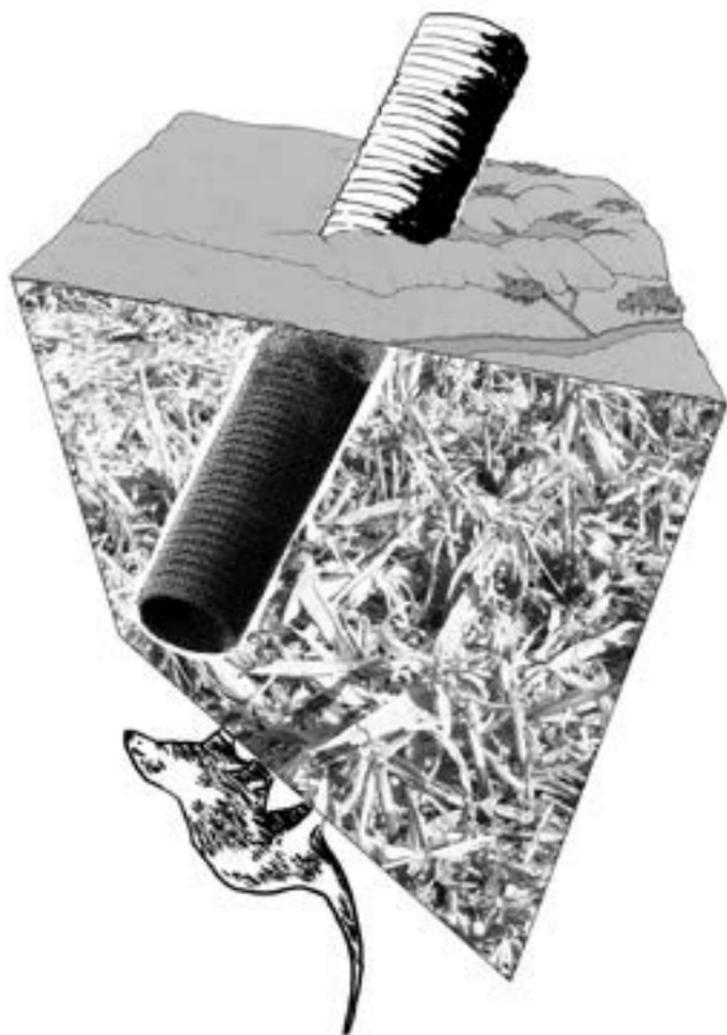
DRIFT

In the Spring of 1954 and 1955, Redwing Blackbirds observed planes spraying a fine mist across corn and soybean fields in the town of Sheldon, Illinois. The mist was a chemical named dieldrin, and the spraying was ordered by the US Department of Agriculture and the Illinois Department of Agriculture. Dieldrin was a pesticide, known by the scientific name 1,2,3,4,10,10-hexachloro-6,7-epoxy1,4,4 α ,5,6,7,8,8 α -octahydro-1,4-endo,exo-5,8-dimethanonaphthalene and commercially as Alvit, Dieldrix, Octalox, Quintox, and Red Shield. Its use was banned in 1987 and it is no longer produced. The target of this chemical assassin was *Popillia japonica*, more widely known as the Japanese Beetle. However, what the Redwing Blackbirds witnessed, along with researchers at the Illinois Natural History Survey, was sickened and dying Squirrels, Rabbits, and House Cats (which the Redwing blackbirds did not mourn). The entire population of Robins was nearly annihilated. The Robin's preferred meal of Earthworms happened to be an efficient pathway for dieldrin exposure. The story of this massacre was passed down through generations of blackbirds, becoming a new verse in a song that records the retreat of the Wisconsin Glacier, the first grasslands set ablaze by humans, the last bison shot from a train. Every Spring, when the Redwing Blackbirds return to the area, they now sing this song to an abundant audience of Robins. Humans can read about it in Rachel Carson's famous book, *Silent Spring*, from 1962.

Along with the Redwings' archival songs, the bodies of other creatures carry the story of dieldrin into the

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present. Research conducted in 2012 found the pesticide in earthworms 45 years after a “moderate” application. The largest concentration of dieldrin ever observed in North American River Otters was recorded by scientists in Illinois in 2011. The heightened concentrations of the chemical are evidence of what scientists call biomagnification, the accumulation of substances as one moves up the food chain, eventually into the bodies of apex consumers like River Otters. And Humans.



SILO

A deep growl like that of a bulldog magnified fifty diameters, filled the air, and as the [thresher's] cylinder gathered speed it rose from a bass to a baritone, and then to a tenor of a volume which sang over four-square miles of haze-obscured prairie.

Herbert Quick, "The Hawkeye," 1923

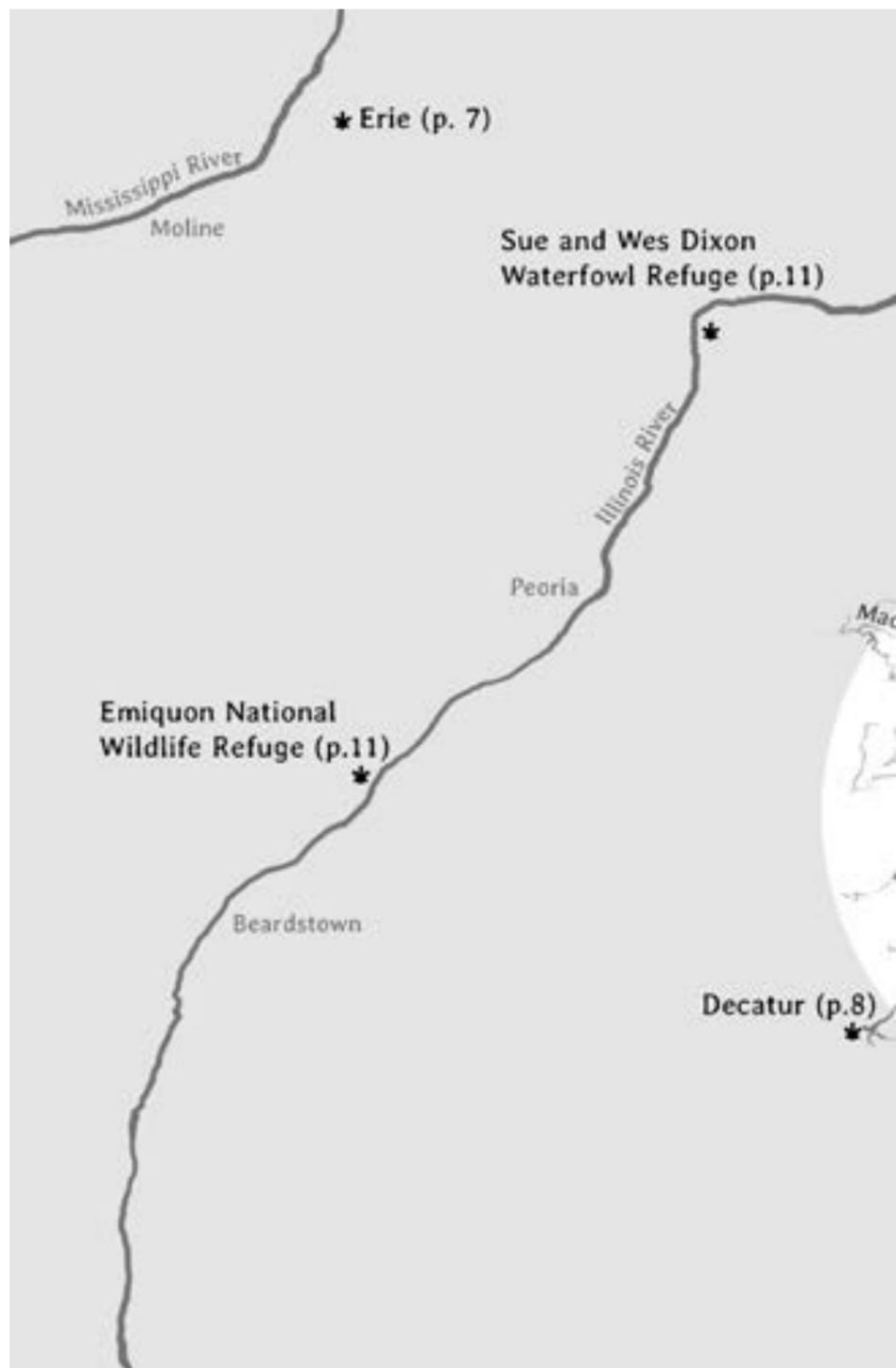
Look around at the seemingly endless horizontal fields of Corn and Soy surrounding you on almost every county road in Central Illinois. These highly engineered legumes and grasses are a new kind of grassland, one that must be annually planted, fertilized, treated with various toxins, and harvested. These fields of single crops sit on land formerly composed of Tallgrass Prairie, an ecosystem whose biodiversity is considered second only to South America's Amazon Rainforest. These ecosystems hosted a massive weight of life and carbon. Fields of corn, being composed of single, annual varieties of plants, are practically devoid of biodiversity. Yet the biological simplicity of a cornfield obscures the complex social history that created and maintains them.

These industrial crops may be fungible and mobile, but they are not weightless. As they move through the world in different forms, they release carbon into the atmosphere. The abstract, weightless numbers that move through the Chicago Board of Trade depend on massive, vertical stockpiles of material and horizontal expanses of land. Myths of feeding a growing global population depend on storing unfathomable quantities of material

that no one can eat. This weight is felt by the land and those who work on it. For example, over five hundred people, workers on farms and at storage facilities, died between 1960 and 2010, suffocated by masses of bulk grains contained in silos. In these large, round bins, each vertical foot of stored grain exerts about 300 pounds of pressure. Augurs that draw the grain out of the bin can create a vacuum that workers cannot escape. The invisible dark matter of the universe has its equivalent in the combined power of international grain companies that are unbelievably powerful, yet practically invisible to the naked eye.

About half-way between the Illinois Headwaters and the Mississippi River, there is a facility in Central Illinois that loads corn into 100-car trains at the rate of almost a half-million bushels (about 28 million pounds) in half a day. An engineer there once showed me a warehouse that could hold several million bushels. As I marveled at the mountain of corn in front of us, he told me a story. A few years before, a similar mountain of corn in this very warehouse spontaneously caught fire from heat building up at its center. Workers were unsuccessful in extinguishing the rotting, smoldering mass for several months.

Hundreds of miles south, near the end of the Mississippi River, I visited another facility. This one has a machine, composed of giant mouth-like buckets, that operates 24 hours per day, 7 days per week, gulping up rotting kernels from low, flat barges that have spent weeks in transit. The barges arrive from all over the Midwest. Their contents have further to go. On my visit, I watched the mouths, one by one, dump the corn into the cavernous



Lake Michigan

Kankakee

Illinois Headwaters

★ Sheldon (p.13)

kinaw River

Prairie Rivers
Network (p. 28)

★ Vermilion Power Station
(p.23)

★ Champaign

Danville

Sangamon River

Vermilion River

Kaskaskia River

Embarass River



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hull of a ship named Shou Chen Shan, bound for China. The body of the ship groaned and pinged, and slowly sunk under the new weight, into the surrounding sea. Several more ships waited in line, like hungry beasts of burden, waiting for their last meal before an arduous journey.



SEEPAGE

We may call it black diamonds. Every basket is power and civilization. For coal is a portable climate. ...coal carries coal, by rail and by boat, to make Canada as warm as Calcutta; and with its comfort brings its industrial power.

Ralph Waldo Emerson "The Conduct of Life" 1860

Well briefly, in accordance with the social conditions and the affairs of the world, life is about the cheapest commodity there is.

Jack Battuello, a former coal miner responding to a question about the violence enacted against workers by Illinois coal mining companies in the early 20th century. From an interview by Nick Cherniavsky and Bobbie Herndon, Oral History Office of Sangamon State University, Springfield, IL

To those who have machines, men are given

John Berger, "A Seventh Man"

...now I can just get in my canoe and put it in Bluegrass Creek and float down to the Middle Fork River... one of my dreams was just to go all the way to New Orleans.

Jan Pridemore, resident of Potomoc, IL, speaking at the People's Hearing: Risks of Leaving Coal Ash on the Banks of the Middle Fork, June 11, 2018, Danville, IL.

There is a Salamander, commonly referred to as a Silvery Salamander, that lives in vernal ponds amongst a mesic Oak-Sugar Maple-Beech forest surrounding a meandering stream that official maps call the Middle Fork of the Vermilion River. This Salamander's species evolved from other species thousands of years ago when this territory was a place where Tallgrass Prairie and Woodlands met. This community of Salamanders is composed solely of females. The Middle Fork is a smallish river with wildly varying water levels and has the distinction of being Illinois' only federally recognized "wild and scenic river." The waters of the Vermilion River, including all of its tributaries, eventually make their way south to the Wabash River before joining those of the Ohio, and then, Mississippi Rivers. This is the eastern edge of the Illinois Headwaters. Visitors to the Middle Fork, north of Interstate 74, will find it surrounded by Kickapoo State Recreation Area (named for the peoples who were forcibly removed from this region and currently hold tribal land in Oklahoma, Texas, Kansas and Mexico) and the Middle Fork Woods Nature Preserve. The topography there is uncommon for Central Illinois: substantial river bluffs, riverine forest, and perhaps most surprising for Central Illinois, hilly terrain. This place is also one of only two places in Illinois where the Silvery Salamander lives.

The terrain here is a complex assemblage of geological and industrial activity. Located on the northeastern rim of what geologists call the Illinois Basin, the surface has been shaped by the Wisconsin Glacial Episode, when glacial deposits covered bedrock and left low, broad moraines across the region. Over 500 million years ago, during the Paleozoic Era, a vast inland sea often covered this land, leaving sediment as it ebbed and flowed. The oldest

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exposed rock you can find here—sandstone, siltstone, shale, limestone, coal, and clay—are the results of these sediment deposits. You can see these strata where the actions of streams—like the 15,000-year-old Vermilion River, originally created by glacial meltwaters—have cut into the land’s surface.

The other cause of exposed bedrock here is industrial mining, including surface/strip mining, slope mining, and shaft mining of shale, sand, gravel, and especially seams of coal. Coal in this region was observed by French colonists in the 17th century, and the first strip mining for coal in the United States began just outside the town of Danville, IL in 1866. Initially carried out by miners working with horse-powered scrapers, strip mining became heavily mechanized in the early 20th century, with the introduction of steam-powered dredges and shovels. By the 1960s, strip mining supplied one-half of Illinois’ coal output. Illinois is the fourth-largest coal-producing state, and has seventeen active underground and surface mines, mostly in the western and southern parts of the state. More than 800,000 acres of land in Illinois have been affected by coal mining. Coal mining has left lasting, irreversible marks on the land. Shaft mines have resulted in subsidence—large depressions on the surface resulting from collapses that occur where removed coal seams have left a void—causing damage to homes and roads. The surface impacts of strip mining are visible in aerial photographs that reveal patterns of linear depressions in the land that resemble claw marks.

Mining is not the only way that these lands have been impacted by the industrial uses of coal for heat and energy. On the western banks of the Middle Fork

River, about five miles north of its convergence with the Vermilion River's primary stream, is the Vermilion Power Station, a coal-burning power plant that ceased operations in 2011. The plant was opened in 1955 by the Illinois Power Company and acquired by Dynegy Inc. in 2000 (Dynegy is now a subsidiary of Vistra Energy, both Texas-based power companies). Like most coal-burning power plants, the Vermilion Power Station is located next to a river to meet the demand for a consistent source of water for cooling. Along with electricity, coal plants also produce coal ash, a by-product known in the industry as "coal combustion residuals." This ash contains minerals and heavy metals that are naturally occurring in the coal—such as mercury, arsenic, selenium, chromium, and cadmium—but in higher concentrations, since most of the carbon has been burned and released into the atmosphere as Carbon Dioxide. The negative effects of exposure to these substances on life is well documented, including cancer and neurological-system damage.

Just above the flowing waters of the Middle Fork sit three impoundments (basically, landfills) of coal ash produced by the Vermilion Power Station. These three impoundments contain over 3.3 million cubic yards of ash, enough to fill the Empire State Building in New York City almost 2.5 times.

While the existence of the coal ash impoundments, and their harmful effects on the local ecosystem, have been known for many years, an organized community response began in earnest following findings by Illinois regulators in 2008 and the issuance of a violation notice in 2012. A series of widely popular resolutions were passed in Vermilion County in 2014 calling on the State

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to enforce its regulations and address shortcomings in the management of the ash impoundments. The dangers of coal ash impoundments filled national headlines after the catastrophic coal ash spills at Tennessee's Kingston Fossil Plant in 2008 and Duke Energy's Dan River Steam Station near Eden, NC in 2014.

Since the initial violation was reported against Dynege, local and State-wide organizations such as Prairie Rivers Network and Eco-Justice Collaborative have been organizing legal and grassroots responses. In 2018 and 2019, lawsuits were brought against the company, and in June, 2018, a "People's Hearing" was organized by Eco-Justice Collaborative and held at Danville Area Community College to provide testimony to state regulators and politicians. Another hearing was held there in March 2019, this one called by the Illinois EPA. Area residents, scientists, business people, and activists rallied before the hearing, chanting, "Dynege, move your ash!" and singing coal miner union songs from the 1930s. A common refrain throughout the testimony was a challenge to both the profit-driven motives of energy companies and the wisdom of imagining that engineers could control the river. While the human publics that showed up loudly voiced concern for their own immediate economic and bodily wellbeing, there was consistent appeal to the agency of the river and its related lifeways.



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I live in what's called the Grand Prairie, I sit in the watershed between the North Fork and the Middle Fork Rivers. Between the two rivers is a giant stone bowl. It's three hundred feet deep, alright. That water flows out through and interconnects all of the water in that area, interconnects with all the other water. You keep talking about discharge in the waterway... the waterway is the discharge. You can put a wall up, and it's still going to go up and around and down. The problem is you have leaking ash, and the only way that you're going to protect us from that is to move it somewhere and seal it. What you see coming out of the bank is what's in the ground, and it goes out for miles.

Arthur Cronkhite, a citizen of Vermilion County, speaking at an Illinois EPA public comment hearing at Danville Area Community College on March 26, 2019.

GROUNDED: AN INCONCLUSION

In the fight against coal ash contamination in the Middle Fork River and other communities across Illinois, the actions of the mostly white, settler society there has led to some legal protections of river systems. The Coal Ash Pollution Prevention Act (CAPPA), was signed into law on July 30, 2019. The law provides the basis for holding coal ash producing companies legally and economically responsible, while providing increased support for regulatory agencies. The CAPPA, like most regulatory laws, however, does little to describe the reasons that riparian ecosystems, like the Middle Fork, need protection. It provides the technical language to justify the enforcement of regulations, but does nothing to tell us why they are at risk from powerful actors, like utility companies and mine operators, nor does it speak to who is harmed by the effects of coal ash.

In a conversation with Catie Gregg, an agricultural programs specialist for Prairie Rivers Network, (the organization works on many aspects of land use and conservation) I asked about the difficulty in communicating the importance of understanding soil as a complex ecosystem, rather than as just a medium for growing crops for a market. She responded that, while she loves thinking about and discussing the biological complexity of soil, it's important not to forget that people are part of that complex system. There aren't two "sides" in agriculture: agroecological practices versus "conventional" industrial farming. There are people making decisions based on options presented to them, options that reflect (or don't) an understanding of the land as a partner in a collective set

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of lifeways. Those options are societal, not just individual. As Gregg explained, the degradation of the land by the industrial agriculture that dominates Central Illinois is systemic. The majority of farmers cannot be expected to make decisions that run counter to the larger systems that support them.

We might choose to understand the situation through the lens of what scholars Nils Bubandt and Anna Tsing have called “feral dynamics,” a term used to name situations constituted by a “double process of human management and more-than-human excess.” Responses to “the unintended ecological consequences of modern projects of progress,” they propose, would benefit from an ability to “appreciate both the human and nonhuman acts of landscape making, as these alternatively jostle or augment each other.” (Nils Bubandt and Anna Tsing, “An Ethnoecology for the Anthropocene: How a Former Brown-Coal Mine in Denmark Shows Us the Feral Dynamics of Post-Industrial Ruin,” *Journal of Ethnobiology*, 38(1), March, 2018.)

What coalitions will confront the feral dynamics created by industrial-modernism and settler-capitalism in this region? How can this conceptual understanding be brought to the work of making different decisions about how we live with the land? Any such decisions will ultimately be based on how one understands the ground beneath them. A recent article by Jodi Byrd, Alyosha Goldstein, Jodi Melamed, and Chandan Reddy (“Predatory Value: Economies of Dispossession and Disturbed Relationalities,” *Social Text* 135, June 2018) calls for a theory of “grounded relationalities.” “Grounded” in the context of their argument means quite literally situated

in relation to and from the land but without precluding movement, multiplicity, multidirectionality, transversals, and other elementary or material currents of water and air. This is a being grounded and living relationalities in which the nonhuman world and the materiality of land and other elements have agential significance in ways that exceed liberal conceptions of the human. If the grounded relationalities of Indigenous philosophies might tell us anything, then, they remind us that knowledge must always remain grounded as the land calls to us and for us to find our place within the ongoing acts of interconnectivity that surround us.

The authors go on to call for a reconceptualization of land as something that is not a passive thing upon which events happen. In fact, they argue, land can be seen as the very material basis for relationships between human collectivities.

What happens when land is understood not as property or territory but as a source of relation with an agency of its own? How might reconceiving of land as relation shift the ground of racialized and embodied histories away from the territoriality of the state?

An understanding of land as a set of relations in conflict with the territorial machinations of the nation-state may seem like an academic, philosophical discussion. As soon as one steps out into the world, however, where one finds coal ash, nitrates, Silvery Salamanders, Red-winged Blackbirds, glacial moraines, and farmers, the terms of the conflict become as firm as the ground beneath your feet. Or, as ever-changing as the water in a stream.

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Notes on Units of Measurement

A hectare measures an area of 10,000 square meters/107,639 square feet

An acre is 43,560 square feet/4,047 square meters

Additional Resources

The Anthropocene Drift Project: medium.com/anthropocenedrift

Prairie Rivers Network: prairierivers.org

Eco-Justice Collaborative: ecojusticecollaborative.org

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Nance Klehm, *The Soil Keepers: Interviews with Practitioners on the Ground Beneath Our Feet*, Terra Fluxus Publishing, 2019.

Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*, Milkweed Editions, 2013.

Anna Tsing, Heather Swanson, Elaine Gan, Nils Burbandt (editors), *Arts of Living on a Damaged Planet*, University of Minnesota Press, 2017.

Rachel Carson, *Silent Spring*, Houghton Mifflin, 1962.

Illinois Natural History Survey: www.inhs.illinois.edu

Ramsar Convention on Wetlands: www.ramsar.org

Acknowledgements and Special Thanks

Sarah Ross, Karen Klebbe & Sam Vandegrift, Nick Brown, Sarah Kanouse, Brian Holmes, Deep Time Chicago, Jennifer Monson, Melissa Pokorny, Andrew Rehn and Catie Gregg of the Prairie Rivers Network, Dr. Jeffrey Matthews, The College of Fine & Applied Arts at the University of Illinois at Urbana-Champaign

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The Field Guides are a series of publications released in conjunction with Mississippi: An Anthropocene River, a research-creation platform exploring the Anthropocene's changing spatio-temporal formations in the vast but patchy region around the Mississippi: a constantly shifting ecosystem, a catchment of cultures, a dividing line, a water highway for resources and goods, a sink for pollutants, and both symptom and product of the radical transformation of the Earth.

The once-dominant biome of tall grass prairie found in Central Illinois was maintained through the overlapping work of Indigenous peoples, grazing bison, weather-induced fires, and the underlying, deep effects of geological and climatic forces. Environmental historians tell us these grasslands were, in geologic terms, a relatively new and fragile, biome. Their near-complete destruction, including the lifeways through which they were constituted, only took about one hundred years. The Westward expansion of the settler-colonial nation state brought legal and mechanical technologies that turned the complex landscape before it into a simplified medium for extracting row crops and coal. This book combines creative non-fiction and montage-based images to depict a partial history of extractive land use in Central Illinois.