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A MATTER OF THE SOUL:
OUR HUMAN RELATIONSHIP TO TREES IN NEBRASKA

by

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A MATTER OF THE SOUL:
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Ariana Brocious, M.A.

University of Nebraska, 2017

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We love trees. We connect with them more closely, relate to them more intimately, than almost any other plant. Nebraska, in the country's heartland, may be known today for its fields of corn, soybeans, and cattle. But for the last 200 years, Nebraskans have also labored to fill their prairie state with trees. This obsession has touched all kinds of things: tax incentives, state slogans, farming practices, rural homeownership, urban water bills, state celebrations, land use and conservation.

A Matter of the Soul: Our Human Relationship to Trees in Nebraska is a work of narrative nonfiction that looks at how humans have interacted with and shaped Nebraska through trees in the last 200 years. Nebraska is home to Arbor Day, as well as an ongoing, sometimes fierce, debate about the role of trees in grassland ecology and modern land management on the plains. Grounded in history, this place-based work traces the roots of this tree obsession through to today's modern conservation challenges on the central Great Plains. Informed by research, historical accounts, field reporting and interviews, the work also uses travel writing and memoir to move readers through stories and the landscape.

Critical Introduction & Author's Note

The writing of or about a place as a method to know oneself is a common literary undertaking, with examples rife throughout the English canon. The exploration of a place—whether novel or familiar—often affords opportunities to face new challenges, to struggle, and to adapt. It also requires a keen ability to pay attention, to take note of and accurately describe the natural world and its inhabitants. Through such writing, the stories and lessons from these experiences emerge, providing avenues for readers to learn about and connect with a place they may not know, and understand more about how we as humans relate to the world around us.

Much of my own writing has been influenced by classic and contemporary nature and environmental writers, including the likes of Aldo Leopold, Henry David Thoreau, Helen Macdonald, Gary Snyder, Ellen Meloy, and Edward Abbey. In addition, I draw deep inspiration from writers whose deft storytelling, engaging prose and attention to powerful details can immediately put me back into the southwestern desert landscape of my home: Luis Alberto Urrea (*Wandering Time, The Hummingbird's Daughter*), Barbara Kingsolver (*High Tide in Tucson*), Charles Bowden (*Blue Desert*). In the parts of this thesis devoted to describing the landscape, I seek to capture a sense of a place as they do.

In this work, I blend my own personal narrative of coming to terms with a new, unfamiliar landscape with the telling of how trees have figured into humans' experience settling Nebraska and the central Plains and how those issues play out today in modern environmental, land conservation and forestry challenges. I modeled the approach for this

project—a long-form braided or woven narrative structure common in nonfiction writing, off of a couple excellent examples that accomplish the integration of two narrative strands seamlessly: Helen Macdonald’s *H is for Hawk* and Dan O’Brien’s *Buffalo for the Broken Heart*. As a journalist, I also drew inspiration from numerous long-form nonfiction journalism pieces that accomplish the same thing, the likes of which appear in magazines like *High Country News*, *The New Yorker* and *Orion*.

In this work, I relied heavily on the tools and skills I’ve developed working as a print and radio journalist for the last eight years—interviewing, scene setting, selecting supporting quotes and information, and narrative storytelling. During my five years living in Nebraska, I worked as a public radio reporter for the statewide network, NET Nebraska, where my work largely focused on stories about the environment and natural resources. Many of the scenes, information and dialogue in this project draw upon my reporting from the field, either directly as noted in tapes and transcripts, or from later reflection or follow up interviews. Others come from conversations I held with people whose views I wanted to explore in more depth. Sections of this work were originally published online as news stories for NET Nebraska (as identified in notes).

This job, particularly the time I spent working with the Platte Basin Timelapse project, afforded me many opportunities to report on, research, and talk with people involved with issues around conservation, land management and the natural world in Nebraska. While I gained a solid understanding of many of these subjects myself, like much of today’s environmental or science writing, it can be challenging to explain the nuances of forest service fire policy or a rancher’s land management without quickly getting into the weeds. It pays to find characters or sources who can speak plainly and tell

good stories—something I sought to do in this writing project. In addition, as is true of so much journalism, much of the work behind writing this thesis came in the form of synthesis—taking large amounts of information and complex subjects and breaking them down into language an average reader can easily understand and engage with. My intended audience for this work includes the forest ranger, conservationist, city dweller, Nebraskan and non-Nebraskan alike. Striking the balance between writing for a very knowledgeable audience (like many of those interviewed and quoted in this text) and a general audience was another challenge of this project.

While not a deeply historical narrative, I drew on many sources to inform the historical aspects of this work—books, interviews, scholarly journal and news articles—and in so doing found even more material worthy of further exploration, but which didn't fit the scope of the work or the narrative explored here. Thus, this work is by no means a comprehensive summary of Nebraska's settlement history, nor the full range of environmental and conservation challenges related to trees in the state or region. Rather, I chose to narrow the focus to current conservation subjects I have direct experience reporting on to be able to more fully describe and characterize the challenges and the people involved in tackling them.

Narratives of first-person reportage, often driven by the journey of the author, are another major influence on this work and my overall writing. Books such as David Gessner's *The Tarball Chronicles* and Tony Horowitz's *Boom* provided a model for how to pull the reader through time and space via one's own travels while simultaneously exploring a specific environmental issue (the BP Gulf oil spill and proposed Keystone XL tar sands oil pipeline, respectively). While I aspired to achieve something similar in

this project, because the personal narrative told here took place over several years, it lacks a central spine of one continued journey like those in the works mentioned above. In addition, I sought to detail and explain several different environmental issues in the same work, rather than focusing on one major event. Both of these conditions proved challenging to write through, and offer a lesson for future writing in this vein.

Writing as an outsider can create many opportunities to view subjects with new perspective, yet also means forgoing some of the deep knowledge others may have about a given place or issue.

As a journalist, I've become accustomed to the practice of approaching a subject or story with eyes open and the intention of telling the most accurate, truthful and compelling narrative, all while knowing that in many cases, even after considerable research and work, I've only scratched the surface. In this case, my knowledge of Nebraska will never compare to those who've grown up here and continue to spend their lives in intimate conversation with the land, but unless otherwise attributed, the framing of conservation issues and the assessments of the landscape are mine, and stem from many days spent exploring the state.

Ultimately, in this work I seek to explore our human role in the natural environment we inhabit, and how we change it to fit our needs, wants, or expectations. My hope is that the personal stories collected here also tell a greater, universal narrative of finding one's place in a new landscape, of giving up preconceived notions of what is nature, what is wild, and what it means to find or create home.

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INTRODUCTION & WRITING SAMPLE

We love trees. We love their longevity, their ability to live along with us and to outlive us. We love them for the protection they give: from sun, from wind, from storms, from other humans. We love the way they remind us of ourselves: branches like arms, faces hiding in the bark, leaves like hands or hearts. We love them so much we bring them with us to new places, planting them in unfamiliar soils to make anywhere feel like home. We fill our cities, streets and yards with them. We give them as gifts, plant them to memorialize or celebrate. We care for them, and save them from destruction. We crave trees among us, and hate to lose them, even when necessary. In the words of naturalist Helen Macdonald, “We use trees to measure our own lives, to anchor our notions of time. To most of us, trees represent constancy and continuity, living giants that persist through many human generations... we want them to tower above us.”

We love trees everywhere. Across the globe, they stand in places sacred and mundane. But trees don't exist in the same abundance everywhere, a hard fact I learned when I moved to Nebraska, rather abruptly, in the winter of 2013.

Like so many others, I expected to find the central Great Plains largely empty or lacking interesting landscapes. But when I arrived in Nebraska, I was unprepared for how flat and treeless much of the state truly is. The great expanses of space, which many Plains residents find comforting, distressed me.

When I arrived on the plains, I did not love the landscape. But in the months and years that followed, the land worked on me through long drives, sunrises and sunsets, summer thunderstorms and winter walks, eroding my obstinate ideas of what makes a place beautiful or powerful. As I've lived here, I've sought to understand the varied natural environments that comprise the central Plains, especially the intense manner in which Nebraskans seem to be captivated by trees.

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We can't know what the earliest humans thought of the landscape, but we know later Great Plains residents relied on the trees that were here. Two hundred years ago, the long stretch of the central Plains didn't have many trees. It's estimated that less than two percent of what is today Nebraska was forested. Most of the trees on the Plains concentrated along riparian corridors, like the forests bordering the Missouri River and the numerous wooded islands of the Platte River Valley. Eastern Plains Indian groups—the Pawnee, the Ponca, the Omaha—lived along the riverbanks where trees grew, establishing their farming villages on the river's fertile floodplains, well within reach of water and timber. Many other groups roamed through the land further north and west. They used trees to build tipis and canoes, to stretch hides, as firewood, for arrows, and to hold up the roofs of their earth lodges. When brutal winter storms swept down the length of the high plains, they sheltered in the dense stands along the Platte or river valleys

further west and their horses survived on the bark. Children made leaves of the cottonwood into toys and Omaha elders carved the tree into a sacred pole.

Plains Indian groups, especially those on the eastern side of the region, had a strong connection to the lands they lived in. “The map of the day shows the Great Plains as a void or a fiction of imaginary geographies. But the Great Plains were anything but a void to the Indians. It was filled with intimately known homelands,” writes Great Plains scholar David Wishart. Their deep understanding of place is evident in the way they named the months—tied to seasonal shifts in animals or the climate. For the Otoes of southeastern Nebraska, February was “the month of the water frog” and October was “the mating of the deer.” While groups like the Omaha and Pawnee were agricultural societies, they didn’t stay in one place all year long as later white settlers would. They moved across different ecoregions at different times of the year: from the tallgrass prairie of the east to hunting grounds in the mixed-grass plains of the west, maximizing their ability to gather game and wild plants throughout a wide territory.

The modern perception of the Plains as flat and desolate—promulgated by outsiders—has deep roots, stretching back to the way many early Euro-American explorers and settlers experienced the landscape when they arrived in the region in the nineteenth century. Spanish, French, British and other foreign explorers had already been forging their way into the continent’s interior for more than two centuries, coming into contact with resident and nomadic Native American groups, establishing missionary settlements and creating an extensive fur trading network. The 1804 to 1806 expedition of Meriwether Lewis and William Clark up the Missouri River Basin has become a touchpoint in our national history of the American West, one that spurred a century of

white invasion into Native American homelands and, subsequently, the taking of those lands by Euro-Americans seeking to conquer and cultivate the Plains.

Following the Louisiana Purchase in 1803, Stephen H. Long and John C. Fremont were sent out exploring by the United States government to gain new information about the newly-acquired Louisiana Territory and lands to the west. Long took the South Platte River into Colorado; Fremont took the North Platte River up into Wyoming. Throughout their trips they made observations, kept records of plants and animals, and collected specimens.

When Euro-American travelers like Long and Fremont began to explore the central plains, at first they delighted in the bounty of the eastern prairies, lush with grass and diverse plants and animals. Yet as they continued traveling west of the Missouri River, they began to disparage the unending sea of grass. Coming from the verdant forests of the east, they decried the lack of timber, and in their journals and accounts, repeatedly reported this wide expanse was lacking. In his report on the 1820 expedition led by Stephen H. Long, Edwin James describes the Platte Valley as “an unvaried plain, from three to eight miles in length, a vast expanse of prairie or natural meadow without a hill or other inequality of surface and with scarce a tree or shrub to be seen upon it.”

As they moved beyond the lushness of the eastern tallgrass into the mixed-grass prairie of central Nebraska, Fremont writes of being consigned to travel “the ocean of prairie which, we were told, stretches without interruption almost to the base of the Rocky Mountains.” Many early plains travelers write of the “ocean” and “sea” of grass they found—wide expanses of water being one of the closest parallels they had for the huge grasslands they were traveling through. At the western edge of modern-day

Nebraska, explorer John Kirk Townsend writes, “We had been long traveling over a sterile and barren tract, where the lovely denizens of the forest could not exist, and I had been daily scanning the great extent of the desert, for some little oasis...” Further west, explorer William Marshall Anderson begins to write about “our unpoetic deserts” and the “dry grass and sand of the plains,” and after a few more days, weary of travel, begins to describe the landscape as “these deserts idle.” This is consistent with the geography of the region, which changed as they traveled west from the lushness of the verdant, broad Missouri River Valley through the eastern tallgrass prairie, into the shortgrass prairie farther west and, as they move into Wyoming, into the sagebrush steppe. All along their journey, aside from the forests bordering rivers like the Missouri and the Platte, trees were scarce.

Why were there so few trees? The bioregion we know as the plains, from the shortgrass at the base of the Rockies down to the tallgrass on the edge of the Missouri, evolved over eons. Major forces—at their simplest the four cardinal elements of fire, water, wind and earth—are responsible for creating the epic grasslands of the Great Plains, though ecologists believe the eastern edge of the region, the boundary line of forest, moved back and forth across the landscape.

Over the course of those millions of years, the landscape and climate of the central plains changed many times. At one point, the mid-continent was covered by a shallow ocean. When the great Rocky Mountains began to emerge from the earth, rivers that rose in the mountains swept down and carried sediment out in wide alluvial fans onto the sloping plains to the east. The central Great Plains owe their infamous flatness to ancient glaciation, to massive sheets of ice that scoured the land as they moved. After the

last glaciers retreated, the climate warmed, turning the central Plains into something like the African savanna. Camels, horses, rhinos and elephants roamed throughout the land we now call Nebraska. Even after that, ice sheets, erosion, fire, and drought reshaped this stretch of the continent many times during the millennia that preceded humans' arrival, causing tree cover to ebb and flow across the plains. Erosion worked the land, too, sculpting the High Plains back and carving canyons into their western flanks. As far as we can tell, by the time humans started to inhabit the plains, trees were concentrated mostly along the rivers and streams, which provided water and shelter from prairie fires and the pounding hooves of stampeding bison.

Today, the region we now define as Nebraska stretches about 500 miles wide, straddling the hundredth meridian, which divides the humid east from the arid west, encompassing wide topographic and geologic variation. The Rocky Mountains lord over the western plains, pulling moisture from West Coast air masses down into alpine snow and rain, keeping much of it from reaching the arid plains to the east. Precipitation grows from as little as 10 to 12 inches in the western panhandle to more than 30 inches on Nebraska's eastern border. And as rainfall increases, elevation decreases—from nearly 4,000 feet in Scottsbluff to just over 1,000 feet in Omaha. This sloping, vast territory contains everything from tallgrass prairie, deciduous forest, short grass prairie, river valleys, high desert and mixed pine forest. The region's dynamic, extreme and variable climate, compounded by the weather patterns that collide in the middle of the continent, is also partly why so few trees grow naturally outside of the river valleys. Water, or the lack of it, is an elemental determining force. Prolonged periods of drought, some lasting thousands of years, shaped the region. Prairie grasses evolved to rely on rainfall, and as

such the xeric shortgrass prairie in the west requires less rain than the mesic tallgrass prairie of the east. This is also why trees, like cottonwoods, took root along the banks of rivers and not up high on the hills.

Fire is another potent force. Whether set by lightning or human hand, fire has shaped the landscape of the central plains for eons. Native Americans routinely set fires, knowing the char would attract bison and other animals and help regenerate the grass. Prairie fires burn hot and quick, racing across open meadows. Prairies thrive with fire, which clears away dead leaves and duff, creating new space for sunlight to reach the ground and germinate seeds. Tree seedlings don't fare as well. So regular fire on the grasslands kept trees confined to canyons or riparian areas where they stood safe with their feet in the water.

Then there were bison. Enormous herds, hundreds of thousands, far beyond what we can even imagine today, trampling the land, eating the grass, churning the soil. Tree seedlings would have a hard time surviving intensive grazing and repeated bison stampedes. Native Americans thought bison were an inexhaustible resource, one that would always be around as long as they conducted their spiritual ceremonies with proper respect, and nineteenth-century European travelers could hardly believe the sheer number of bison on the plains. Upon encountering a distant herd, Fremont notes that they first thought the animals were stands of trees. In one memorable passage, James writes, "we saw before us, upon the broad expanse of the left margin of the river, immense herds of bisons, grazing in undisturbed possession, and obscuring, with the density of their numbers, the verdant plain; to the right and left, as far as the eye was permitted to rove,

the crowd seemed hardly to diminish, and it would be no exaggeration to say, that at least ten thousand here burst on our sight in the instant.”

Long before the arrival of Euro-American settlers, Native Americans relied on timber for fuel, building materials, weapons and fuel. As the farming groups in the eastern Plains, like the Pawnee and Omaha, depleted their local supplies of wood, they had to travel farther and farther away or periodically move their villages to seek new sources. According to one account, by 1830s the Pawnee were cutting logs for their earth lodges as far west as Grand Island and floating them down the Platte River to eastern Nebraska.

While Europeans were shocked by the lack of timber supply on the Plains, they also played a huge role in altering what natural forests existed at the time. Euro-American explorers, soon followed by the hundreds of thousands headed west on the Oregon Trail, deforested much of what existed along the central Plains. In the 1850s and 1870s, the Pawnee repeatedly complained about white settlers taking the timber from their lands. Because of this scarcity, when Euro-Americans began to settle here instead of merely traveling through, they planted trees everywhere they could—for fuel, for building materials, for protection from the wind, for beauty. A Nebraska botanist led the effort to plant nearly 30,000 acres of sandy grassland with pine and cedar, resulting in the nation’s largest hand-planted forest. In 1895, Nebraska, a place once defined by waves of grass stretching farther than the eye could see, declared itself the “tree-planter state.”

One hundred years later, our love for trees persists, and grows yet. But today’s landscape is wholly different from that which early travelers saw. The historic forces that shaped this landscape are largely gone. There are no longer immense herds of bison or

oceans of prairie. Bison exist, by luck and sustained, apologetic human efforts, but will likely never again roam the way they did. We've turned their ancient pasture into corn and soybean fields. Wolves and bear were forced off the plains into the mountains decades ago, and the diversity of plants and animals that remain in this region of monocrop industrial agriculture does not compare to what existed and thrived two hundred years ago. The Platte River has been dammed, its flows regulated to a shadow of their former power, now only a trickle some of the year. Even though many of the trees that thrived along the wooded banks of the Platte were harvested by explorers and settlers a century ago, many more have returned, because the river's flows have been so significantly curtailed. Fire—an essential part of the grassland ecosystem—has been largely banned from the region for more than 100 years.

After nearly two centuries of completely transforming this landscape, humans have begun to recognize the changes and damage our civilization has wrought. Nebraskans have begun to reconsider the notion that trees should be planted anywhere, everywhere. But we're rarely content to leave the land alone. Many trees in Nebraska now were either planted by humans or run the risk of being removed because they conflict with our notion of what a certain place should be. Conservationists in the Platte River Valley remove young willow and cottonwood trees to make habitat for the endangered whooping crane and restore the region to a version of what they think it used to be like. Others advocate for leaving them, arguing that trees were common along the Platte and are still needed today for the species that have evolved to rely on them. As trees and shrubs have spread across the landscape, interfering with rangeland and pasture, we've started to allow fire to return to as a valuable tool to keep grasslands treeless.

And trees face new dangers all the time: the triple threat of drought, heat, and fire; climate change, invasive pests, disease. Many stem from globalization and international trade. “If you are a tree, death comes hidden in wood veneer, in packing material, in shipping containers, nursery plants, cut flowers and imported saplings,” writes naturalist Helen Macdonald. As the climate continues to change, we don’t know how our resident trees are going to cope. Foresters and researchers continue to test out all kinds of trees from all parts of the country, even other countries, to see what grows well here, because the harshness and unpredictability of Nebraska’s climate can wipe out even those deemed able to weather it. In this new era we must think critically about how many trees we plant, and what varieties to pick to withstand a warmer world.

Because beyond our universal human love for trees, they are immensely valuable to us: trees provide food, timber, fuel, serve as windbreaks, provide shade, cool buildings, and relieve some of the heat-island effect of our big cities. Trees even improve our mental health. But for those Nebraskans and central Plains residents who prefer trees over their native prairie, this history and future means understanding that the mostly treeless landscape we’ve come to inhabit is not faulty, our frame of reference is. As I learned during the course of five years in Nebraska, you must embrace a place for what it is, not dwell on what it lacks.

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This is a collection of stories about trees in Nebraska. About how we feel about them, why we brought them with us from the east, why we work so hard to kill some and keep others alive today. It’s a journey through the state, with some of the best guides, through questions as tough and knotted as the branches of the bristlecone pine.