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# An Environmental Biography of Bde Ihanke-Lake Andes: History, Science, and Sovereignty Converge with Tribal, State, and Federal Power on the Yankton Sioux Reservation in South Dakota, 1858-1959

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AN ENVIRONMENTAL BIOGRAPHY OF *BDE IHANKE*-LAKE ANDES: HISTORY,  
SCIENCE, AND SOVEREIGNTY CONVERGE WITH TRIBAL, STATE, AND FEDERAL  
POWER ON THE YANKTON SIOUX RESERVATION IN SOUTH DAKOTA, 1858-1959

by

David A. Nesheim

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

in Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: History

(Great Plains Studies)

Under the Supervision of Professor John R. Wunder

Lincoln, Nebraska

August, 2009

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SCIENCE, AND SOVEREIGNTY CONVERGE WITH TRIBAL, STATE, AND FEDERAL  
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David A. Nesheim, Ph. D.

University of Nebraska, 2009

Adviser: John R. Wunder

Lake Andes sits at the center of the Yankton Sioux Reservation in south-central South Dakota and might be described as a prairie pothole, except it encompasses nearly 5,000 acres when full of water, stretching twelve miles long by a mile to a mile and a half wide in a quasi-crescent shape. Originally carved out by a receding glacier during the Wisconsin glaciations, for its entire history the lake has gone dry during low precipitation -- a cycle interrupted after the Bureau of Indian Affairs (BIA) commissioned several artesian wells beginning in 1896. As the lake expanded, the U.S. Fish Commission stocked the lake with 600 largemouth bass. For the next thirty-seven years a recreation fishery thrived, crashing in the 1930s when drought and carp eliminated the "bass bonanza."

Artesian wells and largemouth bass formed an unlikely association in the campaign to re-order Lake Andes, acting as the most effective agents in an arsenal of technologies employed by governments, individuals, and organizations laboring to extend the American national project. Scientists featured prominently in the effort, as geologists, mathematicians, ichthyologists, horticulturalists, and ornithologists appeared in turn, though frequently the realm of "pure science" arrived filtered through layers of interpretation. In particular, the federal government supported knowledge creation and employed that research in transformative initiatives.

By the end of the 1930s, the lake was significantly altered. Coinciding with the massive public works projects of Franklin Delano Roosevelt's New Deal, a carp eruption fomented a local groundswell for federal intervention, culminating in a National Wildlife Refuge and the legal and physical partitioning of the lake. At the

same time, John Collier's Indian New Deal petulantly denied Yanktons a democratic government, thereby excluding them from critical management decisions that reverberate to the present day.

This biography of *Bde Ihanke*-Lake Andes serves to remind that there are many ways to order the world. In the United States, science has served as a crucial adjunct to governmental power in the active campaign to wrest wildlife management authority from Native Americans, abrogating tribal sovereignty as the power shifted from tribes to states and ultimately to the federal government.

## Acknowledgments

My first visit to Lake Andes occurred in May of 2007, when my daughter Cassidy and I stopped over briefly on our return to Lincoln, Nebraska from Rapid City, South Dakota. We wrapped a whirl-wind trip to attend my brother Bob's graduation from the S.D. School of Mines and Technology by driving around the lake, stopping every few minutes to take pictures. Later that day when we stopped for fuel, Cassidy, who was two years old at the time, asked if I was going to take a picture of the building, assuming that the O'Neil convenience store was also worthy of my scholarly consideration. Cassidy has always supported my dissertation writing, even as she wished I would stop working on it. As I was finishing the last chapter, my son Myles, who was then two, reminded me that I might be spending too much time with Lake Andes, sidling up one fine morning to bite me on the side while I typed away oblivious to his needs. For that, I thank him. Kymm, my wife, valiantly handles these two wonders when I must travel and proves the adage that success begins at home. Although traditionally relegated to the concluding paragraphs of the acknowledgments, my family is deserving of first mention in any accounting of this endeavor.

Later in the summer of 2007 while vacationing back in Rapid City, my dear friend Jason Fenner related that his co-worker said of Lake Andes, "that's about a piece of shit lake." Jason was looking up Lake Andes on a map, curious about this odd place I managed to interject into nearly every conversation. His colleague volunteered this insight based on bypassing Lake Andes on his way to the more

impressive Lake Francis Case, a reservoir created behind Fort Randall Dam on the Missouri River, one of several large dams created under the Pick-Sloan Plan authorized by the Flood Control Act of 1944. Had the exchange occurred a century earlier, Lake Andes would have likely been the destination, as it was famous for bass fishing and one of the largest lakes in the area. As I spoke to locals during further research, I frequently heard the opinion that someone needs to write a grant and "fix" Lake Andes. I have tried to understand why the lake once famous for fishing is now such a disappointment to so many. As I spent far too much time over the past few years thinking, reading, and writing about this place, numerous individuals and organizations have generously supplied time, information, and emotional, academic, and financial support.

No one deserves more praise for the timely completion of this project than John R. Wunder, who masterfully guided the trajectory of this dissertation and my tenure at UNL. I join a coterie of over twenty who have finished the Ph.D. under John's tutelage, no doubt all sharing in his focused attention and persistent urgings. I am equally confident that each student received a unique display of the suite of skills Dr. Wunder utilizes in moving his students from candidacy to hooding. Personally, the treatment ran the gambit from threats to gentle chiding, ultimately settling on kind words and editorial restraint. Even though I struggle to articulate a single thesis for this project, if not for my mentor I would still be looking for "structures of wildness" somewhere on the Northern Plains.

Andrew R. Graybill sits comfortably in the second chair on the dais of acknowledgments, having added to the project at nearly every level, frequently by disabusing the author's sillier notions. Upon reading the first draft of the proposal for this dissertation, Andy cautioned that if after twelve pages he was not really sure what I was trying to express, he did not have high hopes for it being any clearer after 300. In countless other ways, conversations with Dr. Graybill have shaped the broad contours and specific turns that follow.

David J. Wishart served as outside reader for this dissertation, selflessly agreeing to yet another committee in the history department. When I considered attending UNL, Dr. Wishart ranked in the first tier of scholars under whom I anticipated studying. My first semester on campus also saw the publication of *The Encyclopedia of the Great Plains*, and it was my pleasure and edification to hear David speak on several occasions prior to enrolling in his seminar on the historical geography of the Great Plains. Dr. Wishart's support and critical insights likewise pushed this project in positive directions.

Waskar T. Ari heroically joined the committee in the final days, as scheduling conflicts threatened the viability of a summer completion. Dr. Ari was hired by UNL in my first year, and I hoped to have him on my committee proper. Unfortunately, the Department of Homeland Security felt threatened by his scholarship and refused to grant Dr. Ari's re-entrance to the U.S. for the fall of 2005. Thankfully, cooler heads have prevailed in Washington D.C., and Dr. Ari's questions and comments during the

defense helped to clarify the fuzzy edges of the dissertation and its underlying thesis.

Other individuals stand out in my graduate education, either as formal instructors, willing collaborators, or admired colleagues. At UNL I either took classes or served in some other official capacity under Mark Awakuni-Swetland, Fran Kaye, Rick Edwards, Margaret Jacobs, Carole Levin, Victoria Smith, Jessica Coope, Will Thomas, Doug Seefeldt, Pete Maslowski, Tim Mahoney, Tim Borstelmann, Vanessa Gorman, Amy Burnett, and Ken Winkle. I was also fortunate to serve a two-year research assistantship learning a bit about university-wide assessment in the Office of the Dean of Undergraduate Studies, during which time many of these ideas germinated (on my own time, of course). More importantly, Rita Kean, Jessica Jonson, Laura Damuth, Gail Hackworth, Joann Moseman, and Jeremy Penn displayed a level of professionalism, dedication, and collegiality that will forever serve as a model of best practices. I received my Master of Arts at Northern Arizona University, and since I never got around to writing acknowledgments then, it behooves me to thank Professors Susan Deeds, Mike Amundson, George Lubick, Eric Meeks, Scott Reese, Sanjam Ahluwalia, Bob Baron, Charles Connell, and Val Avery.

While at NAU it was my great fortune to meet David Diamond, and although the special paragraph may make him uncomfortable, it is well deserved. David finished his Ph.D. as I was completing my M.A. and has remained a steadfast friend and co-conspirator in the ongoing project to make a place for non-human agency in historic scholarship. Beyond his willingness to pursue theoretical problems at great



depth, David's scholarship also underscores the necessity of combining scientific literature with historical analysis when investigating environmental concerns. Although he was reluctant to continue our friendship by phone, I shudder to think what this dissertation might have become without our irregular but always substantial conversations.

The graduate student community at UNL was strong during my tenure, planning conferences, attending the Western Historical Association annual meeting en masse, and creating ample other occasions for professional development and genuine camaraderie. Although the list could be much longer and many of the following are now former graduate students, Kurt Kinbacher, Chris Rasmussen, Jason Denzin, Shayla Swift, Nathan Sanderson, Sean Kammer, Rob Voss, Matt Deepe and Chris Steinke helped to make Friday afternoons my favorite hours of the week. Other graduate students less inclined to build community over drinks at Duffy's made the rest of the week nearly as enjoyable, including Brenden Rensink, Aaron Wilson, Jason Heppler, Michelle Tiedje, Brent Rogers, Shannon Meyer Jones, Leslie Working, Sam Herley, Matt Garrett, Joann Ross, Lisa Schuelke, Mark Rueter, and Tonia Compton.

When I travel beyond Lincoln for academic enrichment, I am happy to claim a brilliant collection of friends including (in no particular order) Joe Lamb, Jay Precht, Brian Collier, Brad Gills, Marcus Burtner, Neil Prendergast, Nic Mink, Robb Campbell, Elaine Nelson, and Kent Blansett. Likewise, Jon Coleman, Jennifer Price, Harriet Ritvo, Colleen O'Neill, Deborah Fitzgerald, Sterling Evans, Paul Fees, Louis

Warren, Elliott West, and Mark Fiege have all been generous with their time either in commenting on my work or in fielding my naive queries.

Without the financial support of the following groups the timeline for completion would have been much longer. The Center for Great Plains Studies awarded two research grant-in-aids which proved critical, the UNL Graduate College supplied an Othmer Fellowship during my first three years and several smaller fellowships as I completed writing, the UNL History Department supported my research and writing with two Addison Sheldon Fellowships and in countless other ways, and the Agricultural History Society generously helped cover the costs to present at their conference in Ames, Iowa.

The task of researching at Lake Andes and on the Yankton Sioux Reservation was made much more pleasant and rewarding due to the kindness and generosity of Mike Bryant, Mary and Larry Snyder, Darryl Deurmier and the Charles Mix County Lake Restoration Organization, Moncia Waldren, Ed Staudenmier, Mark Winkler, John Rouse, Frank Sanchez, Sam Weddell, Dennis Rucker, and Bernadette Drapuaux. Jackie Meisenheimer and Meg VanNess each forwarded documents from an important court case saving me a costly research trip. Brent Loflin and Randi Smith made my stay at the D.C. Booth Historic National Fish Hatchery a profitable one. Kurt Hackemer graciously assisted my research by waiving fees at the South Dakota Oral History Center at the University of South Dakota.

I would be remiss to not mention a few friends that predate my infatuation with wildness and environmental history: Troy and Joleen Zoller, Paul and Lori Dickinson, Jason and Jessie Fenner, Todd Peterson and Genevie Durano, Craig and Malinda Greene, and Scott and Dani Cornella are just the tip of the iceberg of an amazing group of people that coalesced in Rapid City, South Dakota in the late 1980s agreeing on Punk Rock and little else. Nearly thirty years later, the bonds of friendship remain strong even as "the scene" has drifted across the United States.

Beyond my wife and kids, my extended family has been solidly behind my studies. No one is prouder of my accomplishments than my father, Don Nesheim, and the loving memory of my mother Alene continues to encourage me to be a better person. My grandparents Mel and Marjorie Nesheim and Al and Florence Kochersberger have also passed on from this mortal coil, but my fidelity to South Dakota extends from their lives. My sister and her husband, Deb and Paul Alexander, and my brother and his wife, Bob and Elissa Nesheim, are all that anyone could ask for in siblings. Thanksgivings are a special time of the year thanks to the selfless hospitality of Larry and Phyl Kochersberger, my uncle and aunt, and the wonderful company of their children and spouses, Alan and Tina Kochersberger and Amy and Scott Kittleson. On my wife Kymm's side of the family, Len and Pam List (father and step-mother), Brian Douglas List (brother) and Abby Elder (significant other), Jerlene List (aunt) and Bobbie Fairleigh (significant other), George and Linda Kirklin (aunt and uncle), and the cousins Shawn Cates, Chris Babich, Mary and Dan Turner,

and Trish and Brad Ward have welcomed me into the family and put up with most of my nonsense.

Returning to where we began, Kymm, Cassidy, and Myles sustain everything I undertake. Kymm has been through it all. Her love, patience, and compassion as I morphed from an iconoclast punk rocker to a blue-collar tile setter and finally into an ivory-tower academic defy words. She is the love of my life and the mother of my children; I am lucky to be in her world. Cassidy and Myles fill my days with laughter and screaming, and I would not have it any other way. Hopefully someday they will forgive my absentmindedness.

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## **Introduction: The Lake Today**

All through my life I never did believe in human measurement. Numbers, time, inches, feet. All are just ploys for cutting nature down to size. I know the grand scheme of the world is beyond our brains to fathom, so I don't try, just let it in. I don't believe in numbering God's creatures. I never let the United States census in my door, even though they say it's good for Indians. Well, quote me. I say that every time they counted us they knew the precise number to get rid of.

Taken from *Love Medicine*  
by Louise Erdrich<sup>1</sup>

Billboards situated strategically on each of the four roads entering the town of Lake Andes remind motorists that Fish Days occurs the first weekend in June. This is true whether one approaches from the south or east on U.S. Highways 18 and 283, which share the same blacktop for a few miles as they converge to cross the Missouri River at Fort Randall Dam to the southwest, or if travelling along South Dakota Highway 50 entering from the west. There is also a billboard on the county road heading into town from the north, although it would seem that locals would need no reminder. The existence of the Lake Andes National Wildlife Refuge is featured less prominently, with a single brown sign positioned almost as an afterthought along a frontage road just north of the main highways. The perceptive traveler will realize that a concerted effort exists to make sure "Fish Days," a celebration of largemouth bass, is not forgotten.

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<sup>1</sup> Spoken by the character Lulu Lamartine, Louise Erdrich, *Love Medicine: A Novel* (New York: Holt, Reinhardt and Winston, 1984), 221.



Although this dissertation started out asking very different questions, Fish Days refused to be ignored. What began as a mediation on the different ways in which tribal, state, and federal authorities disputed and occasionally agreed on the meaning of "wild," quickly morphed into an extended discussion of how an intermittent prairie depression became "famous for fishing" and what happened when the bass quit biting. Lake Andes sits at the center of the Yankton Sioux Reservation in south-central South Dakota and might be described as a prairie pothole, except it encompasses nearly 5,000 acres when full of water, stretching roughly twelve miles long by a mile to a mile and a half wide in a quasi-crescent shape. Originally carved out by a receding glacier during the Wisconsin glaciation period, for its entire history the lake has periodically gone dry during times of low precipitation -- a cycle briefly interrupted after the Bureau of Indian Affairs (BIA) commissioned several artesian wells beginning in 1896. As the lake gradually expanded, another arm of the federal government, the U.S. Fish Commission, stocked the lake with 600 largemouth bass.

Artesian wells and largemouth bass formed an unlikely association in the campaign to re-order Lake Andes, acting as the most effective agents in an arsenal of technologies employed by a multitude of individuals and organizations laboring to extend the American national project. The two forces hardly worked in isolation and compiling the list of adjuncts aiding the process comprises the bulk of what follows, requiring journeys to places and times far removed from the late nineteenth and early twentieth century United States West. The logic of re-ordering remains

remarkably consistent despite the variety of occupations engaged in the transformation. Scientists feature prominently in the effort, as geologists, mathematicians, ichthyologists, horticulturalists, and ornithologists appear in turn, though frequently the realm of "pure science" arrives filtered through several layers of interpretation applied by many different intermediaries. In particular, the federal government stands at the forefront by both supporting knowledge creation and employing the products of that research in specific transformative initiatives.

In 1803, when Napoleon Bonaparte of France sold what was known as the Louisiana Purchase, Yanktons stood on the edge of the United States' imperial advance into the Northern Plains. Yanktons understood the lake in terms equally sophisticated, based on empirical observation with verifiable results, even as American scientists dismissed Native knowledge as folklore. Most importantly, Yanktons understood the long-term fluctuations of the lake following variable accumulation of rain and snow. The significance of *Bde Ihanke*, as Yanktons call the place, emerges from the physical and mental landscapes Yanktons cultivated and recorded throughout the ages. Until very recently, Yankton knowledge has been excluded from the bounds of science by academics, a distortion partially offset in this study.

Today, Lake Andes is a remnant of its former self. This is true when speaking of the lake, or the town on its southern shore. The two transformations are inter-related, but the causal links are obscured to most. The artesian wells quit flowing at rates sufficient to keep the lake full long ago, while sediment from the adjacent

agricultural fields has quite literally filled in the lake and reduced its possible depth and the potential habitat for bass (though it offers prime refuge for carp).<sup>2</sup> The town has suffered population declines like so many others on the Great Plains and as of 2007 claimed 761 residents.<sup>3</sup> Instead of looking to the distant past for its future, ala Frank and Deborah Popper's *Buffalo Commons*, most residents of Lake Andes hearken for the return of the bass bonanza, symbolized by Fish Days.<sup>4</sup>

When founded in 1904, the town represented an intrusion on the Yankton Reservation fostered by a corrupt Indian Agent named John Harding. While the number of white residents has experienced marked declines over the years, Yanktons now comprise nearly half of the town's population. For the lake, the obverse is true, and today few Yanktons own land on its shores, though in 1895 Yanktons owned nearly all the surrounding land. The creation of the reservation and the allotment of tribal land provide a main theme of this study, as surveyors and land agents proved indispensable to the re-ordering process. Today, the straight lines of the rectangular cadastral survey are one of the most obvious residues, influencing the location of roads, the size of fields, and even where one can hunt and fish on the lake.

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<sup>2</sup> South Dakota Division of Water Resources Management, Department of Environmental and Natural Resources, "Sedimentation Survey Report, South Unit, Lake Andes, Charles Mix County, South Dakota," May 1993, on file at Lake Andes National Wildlife Refuge Headquarters, Ravinia, South Dakota, copy also in possession of author.

<sup>3</sup> "Lake Andes, South Dakota," <http://www.city-data.com/city/Lake-Andes-South-Dakota.html> (accessed 6-12-2009).

<sup>4</sup> Anne Matthews, *Where the Buffalo Roam: Restoring America's Great Plains* (New York: Grove Weidenfeld, 1992).

What follows is largely a narrative history, a biography of a lake, though the twists and turns of the investigation owe much to three approaches to scholarship. James C. Scott's *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed* interrogates how the specific goals behind "high-modernist" government sponsored initiatives invariably led to failure. According to Scott, governments attempt to make landscapes "legible," removing local variety and knowledge while substituting a uniform overlay of names and categories, thereby making them easier to quantify, qualify, and control. This official accounting tends to ignore, and in some cases actively suppress, aspects that are perceived to impede the progress of the improvement programs, or what Scott refers to as "bracketing" the landscape. The process of making places "legible" by "bracketing" off aspects integral to the systems they desired to transform blinds officials to the unintended consequences that ultimately capsize their initiatives.<sup>5</sup>

However, Scott's approach is predicated on two fundamental principles that themselves are especially suspect regarding environmental and Native American history. The notion of control implies that officials intended the results following from their ventures, and unduly focuses on the failure of government officials to implement their plans, itself a form of bracketing that gives short shrift to the active participation of significant non-humans actors. The designation modern performs a

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<sup>5</sup> James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University, 1998), 18, 20.

more dangerous omission, denying the accumulated knowledge, expertise, and humanity of so-called non-moderns, Yanktons in the case of Lake Andes.

Bruno Latour offers a corrective to the exclusions necessary in high-modernist investigations, as he questions the concept of modernity itself. Latour is a sociologist of science and has further articulated this approach as Actor-Network-Theory. In contrast to the mitigated structuralist approach popularized by Anthony Giddens, which sees modernity residing in certain technologies like precision clocks, steam-powered railroads, and machine guns, for example, Latour contends that the idea of modernity, or what he terms "the Modern Constitution," is based on a complex and nearly invisible series of intellectual gymnastics consisting of simultaneous acts of purification and translation.<sup>6</sup>

Collectively, the Modern Constitution separates humans as outside the natural world (purification), while creating new categories called hybrids where human influence is seen to alter the natural world (translation). The lethal component of this arrangement involves those peoples classed as pre-modern, who are seen as having a spiritual connection with nature that renders them somewhere outside (beneath) the strict community of modern humanity.<sup>7</sup> By collapsing pre-

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<sup>6</sup> What follows is a simplification of the Modern Constitution. See Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter, (Cambridge: Harvard University Press, 1993); Anthony Giddens, *The Consequences of Modernity* (Stanford, CA: Stanford University Press, 1990); Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory*, trans. Catherine Porter, (New York: Oxford University Press, 2005), 9,

<sup>7</sup> Latour, *We Have Never Been Modern*, 10-11.

moderns into the domain of the natural world, the Modern Constitution lethally denies the humanity of most indigenous peoples.<sup>8</sup>

Actor-Network-Theory (ANT) takes deconstruction of the Modern Constitution one step further, by refusing to grant either society or culture any *a priori* explanatory power. Rather than accepting society or culture as givens, ANT encourages any explanation to begin at the local, tracing the actors involved in the story and the connections that allow their presence and profusion. Beyond the usual cast of humans, governments, and institutions, actors also include a whole host of agents usually excluded from historical studies, which in this project includes water, fish, insects, plants, and birds, to name just a few of the non-human forces at work.<sup>9</sup> The networks connecting these actors include physical and metaphysical connections, and extend across space and back into deep time.

The Annales School, as it is known, provides the final theoretical foundation for this dissertation. Fernand Braudel developed a three-tiered conception of time to describe the complex of arrangements undergirding any location or event, which

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<sup>8</sup> One example of this line of thinking categorizes *Bison bison* as wild animals, despite thousands of years of human influence. Beyond denying the humanity of Indians, a lethal byproduct of academic inquiry, the modern constitution elevates the status of moderns as the only actors able to influence the natural world. According to the myth, moderns are responsible for transforming formerly wild bison into semi-domesticated creatures, a condition that now is seen to also require the intervention of moderns to undo the destructive transformation and save the "wild" bison. The notion of lethal scholarship derives in part from John R. Wunder and Pekka Hämäläinen, "Of Lethal Places and Lethal Essays," *The American Historical Review* 104(Oct. 1999): 1229-1234.

<sup>9</sup> Latour, *Reassembling the Social*, 4-5, 70-72, 219-221.

describe different phenomena while their impact is felt simultaneously. Most historians restrict themselves to the "event," or individual time, roughly the fifty years leading up to or surrounding a particular historical moment. Braudel advocated two additional layers: the history of groups, or social time, which considered the period of a few hundred years previous to the event, and finally the *longue duree*, or geographical time, an interlude of thousands or even millions of years when change was slow, almost imperceptible, and measured in geographic, climatic, or geologic divisions.<sup>10</sup>

Despite the influence of French thinkers in this study, James Malin also serves as a sort of intellectual godfather for this project. Malin was a contemporary of Braudel and Marc Bloch, another early Annalist; though it is doubtful Malin read their work. Like Bloch, Malin also studied agricultural history and approached the subject utilizing the prism of deep time while including non-human factors like soil composition, water, plants, and animals. Malin utilized the insights of science in his analysis, while maintaining a faith that science could help provide answers to the vexing questions of his day. At the same time, Malin was highly suspicious of orthodoxy. Where others were content to agree with the assessment that

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<sup>10</sup> Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Phillip II*, trans. Sian Reynolds, abridged by Richard Olland, (New York: Harper and Row, 1992), xiv.

agriculture caused the dust storms of the 1930s, Malin cast his gaze much farther back in time and determined that dust storms were nothing new to the region.<sup>11</sup>

Taken together, the insights of these four scholars inform nearly every page of what follows. Their influence is felt in the research agenda and the narrative composition, without unduly burdening the actual text. The closest thing to a neologism is the term "re-ordering," here referring to a process of transformation, sometimes directed and sometimes not, sometimes the product of human agency and sometimes not. By tracing Latour's networks, mindful of Braudel's chronology and Malin's skepticism, the story caroms far afield from Lake Andes, deep into geologic time while traveling across the continent and the globe.

Chapter two begins with geology, artesian wells, and the 1858 Treaty of Washington that created the Yankton Sioux Reservation. Geology is treated as a set of beliefs about the earth and consideration is given to federal science and Yankton science, as each attempted to explain the world based on observation. The BIA commissioned two wells at Lake Andes in 1896, but the understanding of the artesian basin and the mechanical and technological knowledge to tap the Dakota aquifer derived from a mix of governmental, commercial, and private efforts. The Yankton Reservation has its own story, and some consideration of how the 1858

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<sup>11</sup> Malin authored eighteen books and over 100 articles. Unfortunately, his reticence to suffer the criticism of editors resulted in many of his works being self-published during his lifetime. A good introduction is James C. Malin, *History and Ecology: Studies of the Grassland*, ed. Robert P. Sweirenga (Lincoln: University of Nebraska Press, 1984).



Treaty of Washington came to be animates the chapter, as Lake Andes is at the geographical center of the reservation.

Chapter three traces the extension of rectangular cadastral surveys, the General Allotment Act of 1886, and the opening of the so-called surplus lands of the Yankton Reservation to homesteading. The Treaty of Washington imposed the broad exterior boundaries of the reservation, but the rectangular cadastral survey extended the logic of property lines and individual ownership into the heart of the reservation. When coupled with the General Allotment Act, BIA officials hoped the two measures would accelerate the process of turning Yanktons into idealized American citizens. However, the project also entailed alienating the "surplus" lands remaining after tribal members claimed their individual allotments. Yanktons contested this process at nearly every turn, as corrupt officials sought to subvert the process and dictated the terms of the 1892 document. Ultimately, the BIA agent assigned to the Yankton Reservation completed the fleecing, ushering the creation of the town of Lake Andes.

Chapter four centers on the arrival of black bass, the profusion of fishing resorts, and the expansion of roads that allowed anglers to come from points far and wide to reap the harvest of the "bass bonanza." The U.S. Fish Commission stocked hundreds of lakes across the United States in 1899, though it is unlikely that any other introduction produced such remarkable change. The explosion of bass coincided with the growth of the town of Lake Andes and a recreation-based economy. By 1915, locals had cemented the fish at the base of their civic identity,

holding the first Fish Day celebration. Yankton dispossession went hand in hand with the fisheries' ascension, as fishing resorts displaced the families that had claimed allotments around the lake twenty years earlier. When the federal government began to fund highway construction, the state of South Dakota formed a highway commission as part of the requirements to receive federal construction funds, dovetailing the interests of state and federal officials. In the 1920s, the state of South Dakota constructed a fish hatchery at Lake Andes, assuming responsibility for fish culture in the area.

Chapter five looks at the growth of scientific agriculture and the different ways it was applied to Yankton and non-Indian farmers, including the duties of the BIA farm agent and the 1927 Alfalfa Special. The effort to implement the principles of scientific agriculture on the lands around the lake represented just another program designed to re-order the landscape, though this effort was coordinated to a much greater extent than any before. A 1927 campaign to increase the cultivation of alfalfa reveals the extent of government, commercial, and grassroots cooperation, while a campaign to eliminate chinch bugs suggests the biological imperatives of monoculture. Yanktons felt the coercive imperatives of scientific agriculture most severely, as the BIA farm agent attempted to transform Yankton behaviors and beliefs in addition to changing the plants growing on their land.

Chapter six witnesses the arrival of the federal government in a new guise, first as the Bureau of Biological Survey and after 1940 as the U.S. Fish and Wildlife Service, unifying ongoing efforts to protect ducks, geese, and other migratory

waterfowl. Coinciding with the massive public works projects of Franklin Delano Roosevelt's New Deal, a carp eruption fomented a groundswell for federal intervention, culminating with the legal and physical partitioning of the lake. At the same time, John Collier's Indian New Deal petulantly denied Yanktons a democratic government, thereby excluding them from critical management decisions that reverberate to the present day. Unfortunately, the exclusion perpetrated by Collier is all too common in other works of environmental history.

Elsewhere, environmental and agricultural historians have approached similar topics and ideas employing aspects of the Modern Constitution as described by Latour. Mark Fiege uses the term hybrid to describe irrigation canals in Idaho, explicitly maintaining the works of purification and translation in Latour's constitution. Deborah Fitzgerald analyses the extension of industrial technologies into agriculture, viewing the transition as another example of what she presents as a nearly universal transformation from the traditional to the modern. Frieda Knobloch examines agriculture in the American West as an inherently colonial act, as a host of experts and technocrats employed "patterns of domination" to create their progressive vision, turning the land from "the wild to domesticated, the natural to the cultural." Of the three, Knobloch appreciates the coercive effects of these processes on Native Americans most closely, yet Indians are still relegated to the margins of her tale.<sup>12</sup>

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<sup>12</sup> Mark Fiege *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999); Frieda Knobloch, *The Culture of*

William Cronon once observed that environmental history is especially adept at telling stories with a moral component, advocating for stories not just about nature, but “stories about stories about nature.” He argues that narrative is the best way of organizing our experience, judging our actions and making us care about the world, and that by focusing on human stories about nature, historians are able to superimpose beginnings, middles, and endings on ecological processes. Yet Cronon also observes that narratives derive much of their power from what they exclude.<sup>13</sup> The problem with placing humans at the center of the tale is that the interests of non-human actors fall by the wayside, which tends to overstate the power of humanity to direct biological change. A more insidious tendency in environmental history involves the erasure of Indians from the land altogether, or at best, including them at the beginning of a tale, whereby Natives soon retreat in the irresistible advance of “modern” technology and state power.

As this story unfolds through eons of the deep past and across continents, the lake provides the narrative’s center, though it is a lake that refuses to behave in an orderly manner. As it fluctuates from prairie to lake and back again, Lake Andes provides habitat that supports some species while reducing the viability of others, all the while humans assign radically different values to the various non-human

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*Wilderness: Agriculture as Colonization in the American West* (Chapel Hill: The University of North Carolina Press, 1996), 16; Deborah Fitzgerald, *Every Farm a Factory: The Industrial Idea in American Agriculture* (New Haven: Yale University Press, 2003).

<sup>13</sup> William Cronon, “A Place for Stories: Nature, History, and Narrative,” *The Journal of American History* 78, No. 4 (1992), 1350, 1369-70.

residents. There is no one story of the lake, and in understanding how various peoples and creatures have sought to re-order the landscape, we can begin to see how hybrid spaces become lethal places.

**Chapter One: Geology, Artesian Wells, and the Reservation**

On May 21, 1853, the steamboat *Robert Campbell* disembarked from St. Louis carrying over 300 tons of freight and more than 100 passengers up the Missouri River. Although a banner inscribed simply "P. Chouteau" announced the steamer's main purpose as an instrument of the American Fur Company, the passenger manifest suggested that the upper Missouri country was by then a land of more than just furs and buffalo robes. U.S. Indian Agent Alfred Vaughan was on board to execute his mission that entailed distributing annuities totaling \$30,000 to the various tribes that inhabited the region. A group of soldiers bound for Fort Union in present day North Dakota represented the military arm of the U.S. government, an indispensable component of federal Indian policy. Other passengers included a St. Louis merchant seeking to restore his ill-health and a German prince and his retinue in search of adventure. Rounding out the passenger list were several scientists, most importantly Ferdinand Vandever Hayden, whose quest for knowledge of the country's natural history straddled the objectives of the federal officials and the independent adventures.<sup>1</sup>

None of these individuals would stop at Lake Andes that summer, but the lake was transformed through their combined efforts and those who followed them

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<sup>1</sup> John E. Sunder, *The Fur Trade on the Upper Missouri, 1840-1865* (Norman: University of Oklahoma Press, 1965), 151; Neatly untangling the networks of geographic, geologic and paleontological knowledge creation, commercial development and federal domination can be difficult; the soldiers were officially attached to Gov. Stephens' surveying party for the Northern Pacific railroad survey and consisted of five or six soldiers and three or four topographical engineers. see F.B. Meek to James Hall, 22 May 1853, in George P. Merrill, *The First One Hundred Years of American Geology* ( New York: Hafner Publishing Company, 1964), originally published by Yale University Press 1924, 699-701.

up the river in the coming decades. In 1853, Lake Andes existed on the southwestern flank of Yankton Sioux territory. Yanktons knew the lake as *Bde Ihanke*, though its roughly 4,000 acres was a very small portion of the 11 million acres under Yankton control. More important was the valley below the lake, known as *Pte-ta tiyopa*, or gate of the buffalo, which was prized as a hunting area and acted as a funnel for bison directing them to the Missouri River.<sup>2</sup> Following the Treaty of 1858, which established the Yankton Sioux Reservation, the lake grew in importance as the Yanktons' land base shrunk to just over 400,000 acres and bison ceased to be found east of the Missouri River.

The continuing advance of American settlement from the east mirrored Sioux advances onto the Northern Plains. Yanktons and their northern Yanktonai compatriots, collectively known as Nakota, occupied a middle position between the western Lakota and eastern Dakota bands. Yanktons enjoyed hunting privileges across the Missouri stretching into the Black Hills, and increasingly through the first half of the nineteenth century found themselves ranging farther and farther west to find game. By 1855, the village of Yankton headman Struck by the Ree included extensive plantings of corn, beans, pumpkins and other crops. In addition to relying more and more on agriculture, Yanktons also eagerly anticipated Indian Agent Vaughan's distribution of treaty annuities.<sup>3</sup>

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<sup>2</sup> Beth Ritter, "Dispossession to Diminishment: The Yankton Sioux Reservation, 1858-1998," PhD. Dissertation: University of Nebraska – Lincoln, 1999, 155, 57.

<sup>3</sup> Stephen E. Feraca and James H. Howard, "The Identity and Demography of the Dakota or Sioux Tribe," *Plains Anthropologist* 8(20):80-84; Alan R. Woolworth,



Multiple factors aligned to create the reservation, though the crushing advance of American settlement factors prominently in the story. Routes of transportation provided another vector of federal power, first with steamboats and later with railroads. For Lake Andes, the most striking changes in the nineteenth century came from two unlikely sources, both represented on the *Robert Campbell*. Cartography and geology aligned in the attempt to transform an intermittent prairie pothole depression into a permanent feature of the Dakota landscape - though like most "schemes to improve the human condition," this effort proved elusive.<sup>4</sup> The culmination of geological investigations over the course of the nineteenth century resulted in the development of numerous artesian wells in eastern Dakota Territory and after 1889, the states of North and South Dakota. In 1896, the first of several artesian wells were drilled along the shores of Lake Andes to maintain its water level during times of drought. The American advance onto the Plains was not content to simply take possession of the land, but sought to impose a new vision, to place a new order on the arrangement of the physical and mental landscapes. This re-ordering left indelible markings, and artesian wells are just one example, though the tendency of these wells to not conform to the wishes of those drilling the wells, frequently failing to flow in the desired quantity or quality. This chapter reveals how

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*Ethnohistorical Report on the Yankton Sioux* (New York: Garland Publishers Inc., 1974), 162-64; Richard White, "The Winning of the West: The Expansion of the Western Sioux in the Eighteenth and Nineteenth Centuries," *The Journal of American History* 65(Sept. 1978): 322, 329, 331.

<sup>4</sup> Here I use James C. Scott's language explicitly, see James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed* (New Haven: Yale University Press, 1998).

geological surveys served as a critical adjunct in the process of re-ordering Lake Andes.

Ferdinand Vandever Hayden and his associate Fielding Bradford Meek followed a growing contingent of scientists seeking individual renown while increasing the general knowledge of American natural history. Having read Dr. John Evans' 1849 White River Badlands survey of Dakota, they aspired to discover for themselves the "fossil treasures" described therein. Evans wrote that "[e]mbedded in the debris, lie strewn in the greatest profusion, [are] organic relics of extinct animals. All speak of a vast fresh-water deposit of the early Tertiary Period, and disclose the former existence of most remarkable races that roamed about in bygone ages high up in the Valley of the Missouri."<sup>5</sup> An early historian of American Geology, George Merrill, marks the "systematic account" contained in the Evans report as the beginning of vertebrate paleontology.<sup>6</sup>

During the 1850s, scientific expeditions repeatedly visited the Badlands of the White River. The Smithsonian Institution sent T.A. Culberson to the area in 1850. Dr. John Evans returned to the region collecting fossils in 1853, reprising a trip made four years earlier under the direction of U.S. Geologist, Dr. D. D. Owen. That same year, Ferdinand Hayden, along with F.B. Meek, traversed the region collecting

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<sup>5</sup> Merrill, *American Geology*, 275-76; William H. Goetzman, *Exploration and Empire: The Explorer and the Scientist in the Winning of the American West* (New York: Alfred A. Knopf, 1967), 320.

<sup>6</sup> George Merrill listed two studies from 1847 that predated Evans' report: Joseph Leidy's study of a fossil horse and Dr. H.A. Prout's article on the jaw of a gigantic pachyderm, Merrill, *American Geology*, 276.

fossils for geologist James Hall. Hayden returned the next year alone, collecting more specimens. The following year a military expedition under the command of General William S. Harney covered the same area laying out roads between Army posts. When the project continued in 1856 under the direction of Lieutenant G.K. Warren, Hayden served as the expedition's naturalist and geologist. Three years later Hayden returned as geologist for expedition bound for Yellowstone under the command of Captain W.F. Reynolds.<sup>7</sup>

In his first trip to the Badlands, Hayden encountered numerous examples of ancient bones that the Sioux knew so well. Although the fossils were easily found scattered on the ground, Hayden and Meek chose the more difficult task of extracting fossils embedded in rock strata. Scientific observation demanded precise association between specific fossils and the accompanying strata. In the early stages of natural history, as it was then referred, the cognate fields of paleontology and geology worked together to establish the ages of rocks and creatures.<sup>8</sup>

One of the first to publicize the fossil treasures found in the upper Missouri Valley was Prince Maximilian, an independent adventurer and a German prince, like Meek and Hayden's traveling companion aboard the *Robert Campbell*. Maximilian's travels up the Missouri River in 1832 provide an example of the far reaching potential of observations from the non-scientific community, as he brought back

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<sup>7</sup> James G. Cassidy, *Ferdinand V. Hayden: Entrepreneur of Science* (Lincoln: University of Nebraska Press, 2000), 3-4.

<sup>8</sup> *Ibid.*, 39-49.

fragments of fossils embedded in cretaceous rocks that unleashed a veritable army of geologists in the coming decades. In 1843, Edward Harris ascended the Missouri to the mouth of the Yellowstone River collecting geological observations for the Academy of Natural Sciences in Philadelphia. An 1847 article published by Dr. H. A. Prout in the *American Journal of Science* detailed the specimens and fossils collected by trappers and hunters in the Badlands region of the White River.<sup>9</sup>

The beginning of American paleontology begins in the eighteenth century with an initial reference to North American fossils. Cotton Mather receives credit for the first written account of fossils in 1712 in a letter subsequently published in a London scientific journal. Throughout the 1700s, examples of ancient bones were recognized along the Ohio River, in the Carolinas, and in Virginia. During Jefferson's term as Governor of Virginia, he questioned a delegation of Indians on their knowledge of fossils found along the Ohio River. A few years later in 1781, he asked George Rogers Clark to acquire fossils, though Clark was largely unsuccessful.<sup>10</sup> In *Notes on Virginia*, published the same year, "the Great Northern bones" served as Jefferson's most important evidence in refuting the claims made by Georges-Louis Leclerc, Comte de Buffon, of American inferiority to Europe.<sup>11</sup> In Jefferson's

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<sup>9</sup> Ibid., 3.

<sup>10</sup> As Jefferson was then faced with significant threats from the British military, his explicit instructions to Clark are all the more stunning. Silvio A. Bedini, *Thomas Jefferson: Statesman of Science* (New York: Macmillan Publishing Company, 1990), 96-97, 99.

<sup>11</sup> W.J.T. Mitchell, *The Last Dinosaur Book: The Life and Times of a Cultural Icon* (Chicago: The University of Chicago Press, 1998), 112-113.

instructions to Lewis, this interest appears under the category of "other objects worthy of notice," including "the animals of the country generally, & especially those not known in the U.S. the remains of & accounts of any which may be deemed rare or extinct."<sup>12</sup>

Perhaps credit for the first documented vertebrate fossil of the Missouri Valley belongs to Lewis and Clark. During their journey up the Missouri in 1804, the Corps of Discovery stumbled upon a forty-five foot long backbone which expedition member Joseph Whitehouse described as "a monstrous long fish," and experts since that time believe to have been a plesiosaur, though the fossil itself has long since disappeared.<sup>13</sup> However, the most intriguing aspect of their "discovery" is not that it occurred, but that it was recorded with such little notice. The captains failed to inquire among their Native informants about the bones. Thomas Jefferson, whose interest in North American fossils predated the Corps of Discovery by twenty years,

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<sup>12</sup> At the time, Jefferson seriously considered the possibility of encountering live examples of the fossil creatures still roaming the western United States. "Jefferson's Instructions to Meriwether Lewis," <http://ejefferson.org/jefferson/lewisandclark/instructions.html> (accessed 28 July 2008).

<sup>13</sup> University of Nebraska Press / University of Nebraska-Lincoln Libraries-Electronic Text Center, *The Journals of the Lewis and Clark Expedition*, "September 10, 1804, [Whitehouse]," <http://lewisandclarkjournals.unl.edu> (accessed 28 July 2008); Adrienne Mayor, *Fossil Legends of the First Americans* (Princeton: Princeton University Press, 2005), 383 (fn. 6).

made adding to the growing corpus of American scientific knowledge one the main tasks of the expedition.<sup>14</sup>

It should not be surprising that the captains neglected to devote much attention to Sioux knowledge of the bones, even though Jefferson's instructions included gathering information of Indian views of the natural world. Their complete instructions represented an impossible laundry list of research priorities. It is also entirely possible that the subject of the bones was discussed, but did not find its way into the journals. Perhaps the greatest reason for the lack of investigation was a simple matter of timing. The fossil was encountered after leaving a Yankton council and before the first encounter with Teton Sioux. Given the tense situation and hostile negotiations that followed, it is little wonder that Lewis and Clark did not delve into Sioux geology or paleontology.<sup>15</sup>

Until very recently, Native oral traditions have fallen well outside of mainstream scientific geology. In 1961, A.G. Galanopoulos published an article that connected a Bronze Age volcanic eruption to the story of Atlantis. Five years later, Dorothy Vitaliano conceived of the term *geomythology* as she was explaining that publication to her professional colleagues. Vitaliano made a living as a geologist, but mythology and folklore had remained a passion of hers since childhood. Following a lecture given to the Geology Colloquium at Indiana University expounding on the

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<sup>14</sup> Mayor, *Fossil Legends*, 224-25; James P. Ronda, *Lewis and Clark Among the Indians* (Lincoln: University of Nebraska Press, 2002), 2-4.

<sup>15</sup> Ronda, *Among the Indians*, 25, 28.

connections between legend and science, she was invited to print her findings in a folklore journal. In 1973, Vitaliano published a full-length monograph that approached "myths and legends in terms of actual geological events that may have been witnessed by various groups of people."<sup>16</sup>

Geomythology failed to immediately revolutionize the study of the earth's past. In the decade following the publication of Vitaliano's book, a total of two articles appeared using her term.<sup>17</sup> Writing twenty years later, Indian scholar Vine Deloria, Jr. offered a cynical but unfortunately accurate assessment for that lack of academic traction. Citing the potential practical application of geomythological investigations to present problems, Deloria chided that "this ability to provide additional data for the solution of real problems will perhaps keep geomythology from emerging as a popular field of study for several more generations."<sup>18</sup> Deloria's

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<sup>16</sup> Dorothy Vitaliano, *The Legends of the Earth: Their Geologic Origins* (Bloomington: Indiana University Press, 1973), xi, 1.

<sup>17</sup> This statement is based on a search of the online search engine GeoScience World, established by the American Geological Institute and containing over 2.8 million references.

<sup>18</sup> Vine Deloria Jr., *Red Earth, White Lies: Native Americans and the Myth of Scientific Fact* (New York: Scribner, 1995), 187. Deloria failed to anticipate the impact of global warming on the appeal of geomythology. A recent article in the British periodical *The Observer* quoted geologist Patrick Nunn as saying, "If you had asked me ten years ago if there was value in local myths I would have said 'not a lot.' Since then I have had a Pauline conversion." see Robbie McKie, "Ancient legends give an early warning of modern disasters," *The Observer International* online edition, 4 December 2005, <http://observer.guardian.co.uk/international/story/0,,1657262,00.html> (accessed 28 July 2008).

other trenchant criticism reveals the unstable mooring that scientific geology utilizes to justify its exalted place above oral traditions.

Perhaps the greatest obstacle to reconciling Native traditions with scientific geology is a failure to recognize similarities between the two -- an artificial distinction according to Deloria. Typically, definitions of myth and legend operate as qualifiers for any and all beliefs passed down orally by a people. These categories are generally divided into various sub-genres, made up of three categories. H.J. Rose uses legends as his umbrella term and differentiates between myths ("results of imaginative reflection"), sagas (based in historical events), and marchen (stories intended to amuse). J.H. Brunvand enlists folklore as his overall descriptor with myth, legend and folktale serving as his sub-categories. In Brunvand's usage, myths are sacred stories set in the ancient past with gods or animals as the main characters, and legends consist of historic tales populated mainly by humans that may be sacred or secular. Folktales, for Brunvand, are roughly the equivalent of Rose's marchen, which both agree are not even believed to be factually true by their tellers.<sup>19</sup> Deloria simplifies the debate a bit, using the terms euhemerism to describe stories relating to the sacred which are "wholly constructed by primitives," and etiological myth to designate tales that originate with observed phenomenon or artifacts. Deloria concludes that "most of modern science is, in fact, etiological myth."<sup>20</sup>

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<sup>19</sup> Vitaliano, *Legends of the Earth*, 3.

<sup>20</sup> Deloria, *Red Earth, White Lies*, 185-86.



For Lake Andes, scientific geology and Yankton geology offer different explanations, albeit both based in observed phenomena. Yankton geology highlighted the intermittent qualities of the lake, explaining its tendency to periodically dry up. Scientific geology focused on the subsurface strata of rock formations and the underground aquifers that offered hope of maintaining water levels during times of drought. Both traditions sought to explain the world and make sense of conditions encountered in the course of daily life.

Yanktons have maintained a tradition about the cyclical nature of Lake Andes since at least the early eighteenth century.<sup>21</sup> Once, long ago, massive tracks emerged from the lake, heading off for miles to the northeast in the direction of *Canum Oke*, or the Pipestone Quarry. These tracks resembled a modern set of tractor treads, though most believed the perpetrator was *Unktéhi*, the legendary underwater panther. The tracks continued on, ultimately disappearing into a spring very near the Quarry. Soon afterward, Lake Andes went dry. Later, Yanktons camping at the Quarry heard a strange sound like tapping on a stone.<sup>22</sup> Although other Sioux incorporate *Unktéhi* into their geology, Yanktons are unique in describing the creature as a panther. The connection between Lake Andes and Red Pipestone Quarry suggest that Yanktons understood the lake spirit continued to exist even when the lake was dry. An underground refuge for *Unktéhi* during periods of

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<sup>21</sup> Nancy L. Woolworth, Affidavit Civil No. 76-4066, *Yankton Sioux Tribe v. Nelson et al.*, p.1.

<sup>22</sup> James H. Howard, "Notes on the Ethnogeography of the Yankton Dakota," *Plains Anthropologist* November 1972 17(58, part 1): 302.

drought is strikingly familiar to scientific notions of aquifers. Other Sioux traditions suggest that their geological knowledge is much more than "imaginative reflection."

During the first age of the earth, the age of stone, Yanktons believe *Unktéhi* ruled over the world. In this time before humans, insects and reptiles comprised all the forms of life. There were creatures with legs and tails, others that slithered along the ground or swam in the waters, some had hard armor shells and others soft skin; an incredible variety of form and function roamed the land and seas. Over time, these creatures developed unending appetites and cold blood coursed through their bodies. They started to consume all forms of life, upsetting the balance. The Thunder Beings decided to set this right, to restore and thereby save the world. The Thunder Beings cast down lightning bolts and killed the water monsters, turning them into stone. Today the bones are still found mixed together, especially in the Badlands. Moreover, the lightning bolts, *kangi tame*, remain as dark pointed stones mixed among the fossilized remains.<sup>23</sup>

It may be too easy to dismiss the stories of water monsters and lightning birds as fanciful tales drawn from empirical observations, known to folklorists as etiological stories, but other tales suggest a much deeper knowledge of the earth's history. Father Louis Hennepin was one of the first Europeans to record stories about water monsters. He witnessed Dakota Sioux worshiping what he described as "the great deity called *Oanktayhee*" which lived under St. Anthony Falls on the Mississippi River and appeared as a giant buffalo. Despite Hennepin's labored

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<sup>23</sup> Mayor, *Fossil Legends*, 221, 231.

spelling, the similarities to *Unktéhi* are unmistakable. Some two hundred years after he recorded his account, mammoth tusks and teeth were recovered at the site.<sup>24</sup>

The spiritual significance of geological features appears in sharp relief at Pipestone Quarry. One of the earliest Europeans to encounter Yanktons, Pierre-Charles Le Sueur, contacted a village or group of villages established near the Quarry in 1700 to mine the stone for pipe construction.<sup>25</sup> If written documents offer no earlier use, Sioux oral traditions maintain that the pipe has been *wakan*, or sacred, since the standing people have been on the earth.<sup>26</sup> Pipestone Quarry held a special position as perhaps the most important single *wakan* location for all Siouan people.<sup>27</sup>

The great variety of explanations for its distinct coloration reinforces Pipestone's ubiquity on the Northern Plains. Some Sioux hold that gigantic bison, ancestors of the current smaller animals, long ago stained the rock with their blood.<sup>28</sup> A Santee elder told of a great flood caused by *Unktéhi* that forced all the people to gather at a high point, seeking refuge from the deluge. Eventually, the waters became too great and all of the people were crushed by falling rocks. Their

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<sup>24</sup> Ibid., 233.

<sup>25</sup> Thomas C. Markoukis, *Peyote and the Yankton Sioux: The Life and Times of Sam Necklace* (Norman: University of Oklahoma Press, 2004), 24.

<sup>26</sup> James R. Walker, *Lakota Belief and Ritual*, Raymond J. DeMallie & Elaine A. Jahner, eds., (Lincoln: University of Nebraska Press, 1986), 148.

<sup>27</sup> W.J. McGee, "The Siouan Indians: A Preliminary Sketch," in *The Sioux Indians: A Socio-Ethnological History* (New York: Sol Lewis, 1973), 32.

<sup>28</sup> Mayor, *Fossil Legends*, 232.

blood pooled together and coalesced at Pipestone Quarry, so the rock found there today is the flesh and blood of the ancestors.<sup>29</sup>

Pipestone also reveals the insidious and nearly invisible routes traveled by the re-ordering process. Today, scientists refer to the rock as catlinite, named after the artist George Catlin. Catlin traveled in the West in search of "real Indians" several times during the 1830s. His first journey up the Missouri in 1832 was followed two years later in a trip up the Mississippi and another up the Arkansas the following year. His final voyage to the interior occurred in 1836, a quasi-quest to experience the legendary Pipestone Quarry. Catlin first learned of the Quarry's existence at the home of William Clark in 1830.<sup>30</sup>

According to Clark, Pipestone Quarry held a special place as a permanent neutral ground for Native tribes. Clark maintained a small menagerie of Indian articles, known as Clark's Indian Museum, the most numerous collection consisting of forty-five pipes. In his role as Superintendent of Indian Affairs based in St. Louis, Clark received many gifts which he placed on display. In Catlin's subsequent journeys, he encountered pipes made from the same stone everywhere he went, all from the same source somewhere west of Fort Snelling on the Coteau des Prairies.

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<sup>29</sup> Richard Erdoes and Alfonso Ortiz, eds., *American Indian Myths and Legends* (New York: Pantheon Books, 1984); 93-94.

<sup>30</sup> Brian W. Dippie, *Catlin and His Contemporaries: The Politics of Patronage* (Lincoln: University of Nebraska Press, 1990), 22.

The tribes all also related that the sacred quarry could not be visited by whites, no doubt increasing Catlin's desire to visit.<sup>31</sup>

Catlin received fair warning from Indians that his journey to the Quarry amounted to appropriation and theft, but he felt himself above reproach. At Traverse de Sioux along the St. Peters River, about 150 miles from the Quarry, a group of Santee Sioux threatened and cajoled Catlin and his traveling partner, an Englishman named Robert S. Wood. A Santee warrior menacingly waved a pipe in Catlin's face and informed the two that "this pipe is a part of our flesh. The red men are a part of the red stone. If the white men take away a piece of the red pipe stone, it is a hole made in our flesh, and the blood will always run." Catlin, though opposed to others exploiting and degrading Indians, felt himself inextricably drawn to this sacred place.<sup>32</sup>

The Quarry exceeded Catlin's expectations, both in the immediate visit and in his lasting legacy. Upon examination of the unpolished stone at the quarry, Catlin anticipated that Pipestone belonged in a geologic class unto itself. Violating yet another taboo, he broke off several pieces with his hammer. In his literary account of the pillaging, Catlin waxes romantic, calling the place "truly an anomaly in nature"

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<sup>31</sup> Ibid.; Marjorie Catlin Roehm, ed., *The Letters of George Catlin and His Family: A Chronicle of the American West* (Berkeley: University of California Press, 1966), 91, 100-101.

<sup>32</sup> Santees and Yanktons both made claims to the quarry during the eighteenth century; it was eventually included in the 1858 Yankton Treaty. Dippie, *Catlin and His Contemporaries*, 41-42.

as he and Wood pondered the "splendid orrery of the heavens."<sup>33</sup> To be fair, Charles Thomas Jackson committed the ultimate act of scientific appropriation, christening the stone Catlinite in the artist's honor.<sup>34</sup> All the same, the Santee's warning proved prophetic and since that time the "official" Pipestone has been re-ordered and linked to an interloper.

Not all Sioux geological knowledge had a direct spiritual quality, as a story of the rabbit and the bear reveals. The story begins with rabbit preparing for his fall hunt with an empty quiver of arrows. He possessed plenty of arrow shafts, but no arrowheads. His grandmother told him to visit the old bear chief, for at that time all the flint in the world was in the bear's body. When rabbit reached the bear village, he stayed the first evening with an old woman who showed him great kindness and generosity. The next day rabbit entered the lodge of the bear chief, where he was again welcomed as a guest. After sharing a smoke, the chief laid aside his pipe and asked rabbit what he wanted. Hearing rabbit's request for flint, the chief pulled back his robe to reveal that half his body was flesh and the other half flint.

The old bear chief gave rabbit a hammer to break off some of the flint. At first he warned rabbit to not strike too hard, but then goaded him into harder and harder blows. As the bear grew impatient, rabbit finally struck a very hard blow that split the bear's body in two. The rest of the bear village rose up and chased rabbit, who

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<sup>33</sup> quotes come from Dippie, *Catlin and His Contemporaries*, 42-43.

<sup>34</sup> Charles Thomas Jackson, "Catlinite, or Indian Pipe Stone," *American Journal of Science and Arts* (1839) 35(2):388.

caused a great snow to fall as he fled. Rabbit, being light of foot, ran on top of the snow. The bears could not move so freely, and rabbit killed a great many of them with his club. The story ends with the line, "That is why we now have so few bears." Although easily dismissed as a fairy tale, or what some would class a marchen tale, this story offers several important lessons. On one level it reinforces the importance of generosity as a Sioux value, as displayed by both the old woman and the bear chief. It also suggests the deep interconnections between human, animal and material domains.<sup>35</sup>

Another story places spiders at the center of arrowhead creation. Two Sioux friends - one thoughtful and reflective, the other rash and headstrong – were out walking one day, boasting of their love making exploits. They came upon *Unktomi* making flint arrowheads out of rocks. The impulsive one threw an arrowhead at the spider, hitting him in the side. As the two young men walked on, the rash one fell in a fit - coughing up blood, first small bits and then a great amount - finally dying on the spot. The other man returned to his village, where a council convened and sent for the *Unktomi* chief. The spider chief responded that he could do nothing to his spider, as he acted in self-defense. Furthermore, the spider chief had dispatched several spiders to go out and make arrowheads for the humans as he knew they were nearly out of them. After smoking the pipe, the spiders agreed to make plenty

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<sup>35</sup> Marie L. McLaughlin, *Myths and Legends of the Sioux* (Lincoln: University of Nebraska Press, 1980), 31-33.

of arrowheads and the humans agreed they would not disturb the spiders.<sup>36</sup> Other Sioux stories stretched further back into the earth's history, covering the same events described by scientific geology.

Sioux storytellers also spoke of an ancient time when huge animals roamed vast plains unbroken by mountains. Before the Black Hills came to be, large vultures preyed on land animals, and huge insects the size of eagles struck their quarry with long stingers that could paralyze and kill. The Sioux called these creatures *unkche ghila*, roughly comparable to dinosaurs; these oddly shaped animals moved across the land in great numbers and then disappeared. The massive bones of these now extinct creatures can be found in the badlands south and east of the Black Hills. It is not clear when the *unkche ghila* went extinct, but Sioux geology maintains they were still around when the Black Hills rose from the earth.<sup>37</sup>

It was during the time of the *unkche ghila* that man and animals agreed to have a great race. The world was a chaotic and turbulent place, as animals killed men and men in turn killed animals. *Wichasha akantu* were the words used to describe man in opposition to the animals and the spirits, a distinction necessary because the three shared a common language. Man and the animals agreed to a great race that would settle many issues and bring order and tranquility to the world. The message went out to the whole world, and all sorts of animals assembled

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<sup>36</sup> Ibid., 77-79.

<sup>37</sup> James LaPointe, *Legends of the Lakota* (San Francisco: The Indian Historian Press, 1976), 17-19.



for the race – two-legged and four-legged, those that flew in the air and those that trod the earth. A huge circular track marked with guideposts provided the site of the race, and the contestants continued running day and night for one hundred laps.

Soon the racecourse was an uninterrupted ribbon of animals while overhead the birds raced with equal abandon. Great screams of agony rang out as the slower and weaker animals succumbed under the hoofs of the faster and stronger animals. Birds fell out of the sky, either from exhaustion or from mid-air collisions. As the days dragged on, the dust rose in clouds obscuring the flocks above as the earth dried out and shook and rumbled. The earth then began to sink under the combined weight of the racers, and inside the racetrack the earth began to rise. A small mound at first, it soon grew higher and faster until it burst open.

The race ended as the earth belched a fiery cataclysm. It was said that in the air the magpie held the lead and the *unkche ghila* ran first along the ground. No creature stood a chance as the mountain inside the racetrack spewed fire and rock. Thick smoke rose overhead as ash and lava rained down upon the racers. When the sky finally cleared, *Paha Sapa* towered majestically over the plains. The hills were encircled by the remnants of the great racetrack, still visible today. The ground is also littered with the bones of these creatures, including the huge skeletons of the *unkche ghila*.<sup>38</sup> In fact, it was curiosity over what they called dinosaurs that brought the first American geologists

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<sup>38</sup> Ibid., 17-19.

As the military and industrial forces of American empire extirpated bison and other game from the area, another element of the nation's advance sought to classify and qualify the land underneath. No one proved to be more important in this quest for scientific dominance than Ferdinand Hayden. He first described sections of Charles Mix County in 1861 in an article on the geology of Nebraska Territory. The Territory – soon to become a state – of Nebraska provided the immediate justification for Hayden's initial foray; his larger purpose consisted in unlocking the secrets of the American West's ancient history. As Hayden discovered early in his career, his quest for subsoil knowledge and personal fame and fortune could be very useful to powerful political and business interests whose goals rested on dominion of the land itself.<sup>39</sup> The physical command of the land began under the guise of treaties with Native peoples, a process that began with Lewis and Clark in 1804.

While the impact of the Corps of Discovery's fossil find would not materialize in importance until the middle of the nineteenth century, their initial council with Yanktons council began a cascade of meetings leading to the reduction of Yankton territory. The initial talks of 1804 were formalized in St. Louis the following year into a treaty stipulating trade and intercourse between the two nations, and reaffirmed a decade later in the 1815 Treaty at Portage des Sioux. The first cession of Yankton land occurred in 1830 at a council held at Prairie du Chien. Two treaties resulted from this council, a "treaty of peace and friendship" and a treaty of land

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<sup>39</sup> Lynn S. Hedges, *Geology and Ground Water Resources of Charles Mix County, Part I: Geology* (Vermillion, SD: University of South Dakota Science Center, 1975), 1; Cassidy, *Ferdinand V. Hayden*, 81-82.

cession. In the first, Yanktons agreed to peaceful relations among several tribes of the region, including the Sac and Fox, Winnebago, Menominee, Omaha, Iowa, Otoe and Missouriia. The land cession ostensibly encouraged nonviolent exchanges by creating a buffer zone free of competing Native claims. For Yanktons, the end result was the loss of more than 3.3 million acres of their homelands in exchange for an annual annuity of \$3,000 over ten years and the services of a blacksmith as well as agricultural tools and instruments. Following two more agreements and land cessions in 1836 and 1837, the eastern border of Yankton territory was formally established. This line would later correspond to the eastern border of Dakota Territory following its establishment in 1861.<sup>40</sup>

The treaties of the 1830s offered Yanktons a preview of the nearly insatiable appetite for Indian land gripping Americans. In the 1840s, gold-seekers bound for California, farmers destined for Oregon, and Mormons headed to the Great Salt Lake Basin all traversed along the Platte River. Tensions among Indians and whites increased and in an effort to forestall conflict, the US government called for a massive treaty council at Fort Laramie in 1851. Yankton headman *Mato Sabi Ceya* (frequently translated as Smutty Bear, though this is a poor rendering of Nakota, a closer translation is he who marks himself like a bear) signed this agreement, along with dignitaries and leaders from several Plains nations, including Teton Lakotas, Cheyennes, Arapahos, Crows, Assiniboines, Gros Ventres, Mandans, and Arikaras. The structure of this treaty resembled the Treaty of Prairie du Chien, with the

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<sup>40</sup> Ritter, "Dispossession to Diminishment," 42, 44-46.

notable addition of the United States receiving the right to built roads and forts on Indian lands.<sup>41</sup>

Three years later, the death of a wandering cow set off a series of events that led to the permanent entry of federal power near Lake Andes. In August of 1854, a cow became separated from a Mormon immigrant party near Fort Laramie in Wyoming and strayed near a Brulé Lakota village, where it was killed and butchered. Lieutenant J.L. Grattan led a detachment of U.S. military charged with apprehending the cow's butcher. As the soldiers approached the village a party of warriors led by Conquering Bear advanced to meet the command. The chief refused to turn over the alleged "criminal." Lt. Grattan then ordered his men to fire on the Sioux, killing Conquering Bear. In return, Sioux warriors immediately terminated Grattan and his entire command in a fierce exchange. The following year General William S. Harney and a force of nearly a thousand men staged a punitive expedition into Sioux territory north of the Platte River and west of the Missouri River.<sup>42</sup>

General Harney's punitive expedition led to the first permanent U.S. Army fort on the upper Missouri River. Needing a supply base to augment the existing bases of Fort Laramie and Fort Kearney, located in present day Nebraska, Army officials purchased Fort Pierre from fur traders Chouteau and Company for \$45,000. Having been in service as a fur post since 1832, the site at Fort Pierre proved

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<sup>41</sup> Ibid., 42, 44-46.

<sup>42</sup> Herbert S. Schell, *History of South Dakota* (Lincoln: University of Nebraska Press, 1975), 66.

incapable of supporting a new post, and weeks after arriving General Harney dispatched a detail to scout for a more suitable location for another new post.<sup>43</sup> The Missouri River had long been viewed as an artery to better control the activities of Yanktons. Pierre-Antonine Tabeau, a trader operating thirty miles south of present day Pierre, South Dakota, commented in 1804 that if Yankton bands could be induced to move from the Des Moines River in present day Iowa to the mouth of the James River on the Missouri, the trade with them might be better controlled.<sup>44</sup> For the period between 1795 and 1832, an annual Sioux trade fair brought together Sisseton and Yanktonai groups who traded goods acquired from European traders on the Mississippi River. Teton and Yankton bands supplied horses, buffalo robes and leather goods. These exchanges kept Tetons relatively independent of Missouri River trade and allowed them considerable flexibility in responses, a fact that Lewis and Clark learned to their disappointment.<sup>45</sup>

In March of 1856, General Harney convened a treaty council at Fort Pierre. Several Lakota bands attended, including Hunkpapas, Two Kettles, Sans Arcs, Blackfeet and even Brulés, though Oglallas were conspicuous by their absence. Yanktons also attended, including Struck by the Ree and Smutty Bear. During discussions, Harney informed the leaders that in the future annuities would only be

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<sup>43</sup> Schell, *South Dakota*, 67-68.

<sup>44</sup> With the establishment of Fort Randall, very near the spot of Handy's Post and later Trudeau's House, the issue of control by the U.S. military reinforced this early conclusion. Woolworth, *Ethnohistorical Report*, 41.

<sup>45</sup> *Ibid.*, 52-53.

distributed at military posts and that if they decided to raise stock and begin farming, as he suggested they should, that they should select "some good place near a military post."<sup>46</sup> The treaty agreement stalled in Congress and was never ratified, though the main points of Harney's declaration remained in effect for future negotiations.

Harney platted a new fort in June of 1856 near the mouth of the Niobrara River and the following spring construction began on Fort Randall, some fifteen miles south of Lake Andes.<sup>47</sup> Previously, two different fur trading posts were located on the same spot, and in 1855, Struck by the Ree's village was also located nearby. While at Fort Pierre, the Yankton leader successfully lobbied Harney to build the fort at that site.<sup>48</sup> Fort Randall had several advantages in addition to the Yankton leader's recommendation. Steamboats could easily navigate the Missouri River and off-load cargo directly at the fort, an option not available at Fort Pierre. The surrounding area provided ample timber, including stands of oak, elm, cottonwood, and also stone in the form of blue limestone. Its location allowed access to Poncas to

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<sup>46</sup> Message of the President of the United States, communicating a report of the proceedings of a council held at Fort Pierre by General Harney with a delegation from nine tribes of the Sioux Indians, accompanied by other papers upon the same subject, with a recommendation for an appropriation to carry into effect the stipulations there agreed upon. July 28, 1856. -- Read, referred to the Committee on Indian Affairs, and ordered to be printed. Serial Set No. 823, session vol. no. 14, 34th congress, 1st session, Sen. Executive Document 94, 1, 3-4.

<sup>47</sup> Schell, *South Dakota*, 67-68.

<sup>48</sup> Woolworth, *Ethnohistorical Report*, 162-63; Leonard R. Brugier, "The Yankton Sioux Tribe: People of the Pipestone, 1634-1888," (PhD. Diss., Oklahoma State University, 1993), 156.

the southeast, Lakotas to the west, and Yanktons to the northeast, and it afforded protection for white settlers in Nebraska, Iowa and Minnesota as well as tribes from unauthorized settlement on Indian land.<sup>49</sup>

While the military arm of American power wrapped tighter around western South Dakota, the civilian advance pressured the eastern half. Several different streams of settlement converged on the area between the Big Sioux River and the James River. One of the most influential of these groups, officially known as the Upper Missouri Land Company, consisted of a former Army officer and member of Harney's command, Captain John B.S. Todd. Todd mustered out of the military in September 1855 at Fort Pierre and partnered with D.M. Frost, who was then operating several licensed trading posts north of Sioux City.<sup>50</sup> The Western Town Company, organized in Dubuque, Iowa, and the Dakota Land Company, based in St. Paul, Minnesota, fielded town-site parties into Yankton territory during the years 1856 and 1857, though each incursion met Indian resistance and was forced to turn back. In addition to the unauthorized entries of the Iowa and Minnesota companies, various trading posts and ferries were established by licensed traders with federal approval.<sup>51</sup>

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<sup>49</sup> The following is referenced in Brugier's dissertation: Wm. S. Harney to S. Cooper, 20 January 1856, South Dakota Historical Collections, Vol. 1 (Pierre: South Dakota State Historical Society, 1902), 416-18.

<sup>50</sup> Schell, *South Dakota*, 70.

<sup>51</sup> Harold E. Briggs, *Frontiers of the Northwest: A History of the Upper Missouri Valley* (New York: Peter Smith, 1950), 350-59.

Despite the failure of Congress to ratify the agreement transacted by General Harney in 1856, repeated urgings for a new treaty with Yanktons to acquire their land spurred the Indian Department into action. In the spring of 1857, the Bureau of Indian Affairs sent A.S.H. White to arrange a delegation of Yanktons to negotiate a treaty in Washington, D.C.<sup>52</sup> White was unsuccessful, but a few months later John Todd enlisted the aid of Charles Picotte, a Yankton tribal member and interpreter. Together they assembled a sixteen-member treaty delegation of Yanktons which departed for Washington, D.C. on December 11, 1857.<sup>53</sup>

The Yankton delegation represented many points of view, though some important leaders did not take part. Charles Picotte was born in 1830 to Honore Picotte, a French fur trader, and Eagle Woman, a Yankton woman and relative of Struck by the Ree. He received an education in St. Louis, but returned to live among his mother's people. In addition to his influence with Struck by the Ree, Picotte signed the 1858 treaty as proxy for three leaders of upper bands: White Medicine Cow, Little White Swan and Pretty Boy.<sup>54</sup> Feather Necklace and Mad Bull, headmen of other upper bands, were away on a buffalo hunt and did not journey to

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<sup>52</sup> Weston A. Godspeed, ed., *The Province and the States: A History of the Province of Louisiana Under France and Spain, and of the Territories and States of the United States Formed Therein* (Madison, WI: The Western Historical Association, 1904) Vol. 6, 208-09.

<sup>53</sup> Frances Chamberlain Holley, *Once Their Home, or Our Legacy from the Dakotas: Historical Biographical and Incidental from Far-off Days, Down to the Present* (Chicago: Donahue and Henneberry, 1890), 55.

<sup>54</sup> Renee' S. Flood and Shirley Bernie, *Remember Your Relatives, Yankton Sioux Images, 1851-1904* (Marty, SD: Marty Indian School, 1985), Leonard R. Bruguier, ed., Introduction by Herbert T. Hoover, 7.



Washington, nor did Black Bear, who was then in Utah. Black Bear was the older brother of Smutty Bear, one of the most vocal critics of the treaty though he eventually signed.<sup>55</sup>

Both the journey to Washington and the negotiations that followed were difficult. The journey east required three weeks, most spent traversing Iowa in the middle of winter by stage. After arriving in the nation's capital on January 1, 1858, the next four months were spent in heated negotiations. It seems that most of the delegation did not want to cede their land, but Picotte and Struck by the Ree argued that the tide of settlement would continue and without some agreement conflict and perhaps even war were imminent. Oral tradition maintains that Smutty Bear in particular was subjected to repeated threats in an effort to obtain his consent to the treaty, including being drowned in the Atlantic Ocean, forced to walk home from Washington, D.C., and being "blown to smithereens" by a large cannon.<sup>56</sup>

Despite being signed under coercive conditions, the treaty did offer some compelling inducements for Yanktons. The inclusion of Pipestone Quarry in the 1858 treaty provided one main reason why the treaty came to be signed. As earlier treaties by Santee Sioux had failed to reserve the Quarry, Yanktons were especially keen to have the sacred site included in their agreement. Other areas within the

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<sup>55</sup> Flood and Bernie, *Remember your Relatives*, 16, 10; The upper bands tended to rely more on hunting and less on trade and agriculture and resisted contact with whites. see Thomas Constantine Maroukis, *Peyote and the Yankton Sioux: The Life and Times of Sam Necklace* (Norman: University of Oklahoma Press, 2004), foreword by Leonard Bruguier, 38-40.

<sup>56</sup> Ritter, "Dispossession to Diminishment," 54.

main reservation were valued by Yanktons. The *Pte-ta tiyopa*, or gate of the buffalo, was a valley that funneled into the Missouri River and served as a prized hunting area. The banks of Chouteau Creek provided a source for salt. *Ihuga Paha*, a hill west of Lake Andes, was important spiritually as a site for vision quests and practically as an observation point for defensive and hunting purposes.<sup>57</sup> However, Yanktons lost most of their former lands.

The Treaty of 1858 effectively opened the eastern half of South Dakota to settlement. The boundaries of the cession stretched from the confluence of the Big Sioux and Missouri Rivers in the southeast, following the course of the rivers' northern and western courses, up to the Missouri River to the East Medicine Knoll River, tracing it upstream to the Snake River and then downstream to the James River. The Big Sioux River boundary extended north to Lake Kampeska and across to a point on the James River. In exchange, the U.S. government promised \$1,600,000 in annuities over a fifty-year period, with an additional \$25,000 relocation allowance and construction of reservation infrastructures (home construction, stock purchases, and agricultural implements) and \$10,000 for school construction. The government reserved the right to withhold annuities if Yanktons refused to send their children to school or if they consumed intoxicating liquors or facilitated their purchase by others. In a fittingly ironic twist, the treaty negotiations

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<sup>57</sup> "Dispossession to Diminishment," 52, 58; Howard, "Ethnogeography of the Yankton Dakota," 295.

were at least partially assisted through the liberal application of whiskey by Todd and Picotte.<sup>58</sup>

With the opening of Yankton lands to white settlement, the transition of Dakota from territory to statehood was only a matter of time, occurring in 1889.<sup>59</sup> From the standpoint of geology, the creation of South Dakota as a state introduced another bureaucracy intent on discovering the land's natural riches and turning their use toward profit and settlement. For the eastern half of the state, no aspect of this quest proved more important than artesian well development and a drought in the 1890s reinforced the governmental commitment to geological surveys.

In 1896, the first steady flow of water surged to the surface on the southern shore of Lake Andes rising from a depth of over 700 feet – passing through fifteen different layers of shale, limestone, clay, sand and gravel representing over 100 million years of the earth's history. Trapped between two impervious strata of shale, contemporary geology held that the water suspended in Dakota sandstone had begun its subterranean journey several hundred miles to the west in the Black Hills. The sandstone previously formed the bottom of an ancient lake that predated the rise of the Black Hills, which were the result of a geologic event that also created the artesian pressure forcing the water to the surface. An eight-inch diameter well drilled by A.E. Swan allowed its passage, though the seventy degree water flowed at

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<sup>58</sup> Ritter, "Dispossession to Diminishment," 50; Holley, *Once Their Land*, 56.

<sup>59</sup> Howard R. Lamar, *Dakota Territory, 1861-1889: A Study in Frontier Politics* (New Haven: Yale University Press, 1956).

1,500 gallons a minute under seventy pounds of pressure propelled by artesian force – quite independent of human intervention. The Bureau of Indian Affairs had commissioned the well's construction, signaling a new era in Lake Andes' history.<sup>60</sup>

In the years previous, drought conditions had reduced Lake Andes to a fraction of its average size. Before the sinking of the well, the lake relied on rainfall and runoff for all of its water. It would periodically revert to pasture at roughly twenty-year intervals. Between 1885 and 1897 the region experienced drought conditions of below average precipitation, with 1889 and 1894 the most severe dry years. The drought served as a catalyst for expansive federal intervention to relieve struggling farmers, spawning several different studies of artesian wells' irrigation potential. Building on studies in paleontology and geology, the federally-funded investigations united the various forces of the national project seeking to dominate the lands once controlled by Yanktons and other Sioux.<sup>61</sup>

The science of geology reveled information that had a wide range of uses, a fact not lost on South Dakota's first state geologist. J.E. Todd, in the first bulletin of the Geology and Natural History Survey of South Dakota published in 1894,

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<sup>60</sup> John Paul Gries, *Roadside Geology of South Dakota* (Missoula, MT: Mountain Press Publishing Company, 1996), 3, 7-9; Kathleen M. Neitzert, *Records of Wells and Chemical Analysis of Ground Water in Charles Mix and Douglas Counties, South Dakota* (Rapid City, SD: U.S. Geological Survey, 1995), 34; Nelson H. Darton, *New Developments in Well Boring and Irrigation in Eastern South Dakota, 1896* (18 Geol, Pt 4-36), 570-71.

<sup>61</sup> Herbert S. Schell, "Drought and Agriculture in Eastern South Dakota during the Eighteen Nineties," *Agricultural History* 5(Oct 1931): 162-180; Walter Rusinek, "Western Reclamation's Forgotten Forces: Richard J. Hinton and Groundwater Development," *Agricultural History* 61(Summer 1987): 18-35.

surmised that his report would “be of value, not only to the teacher and scientist, but also to the capitalist, who may be seeking investment in mines, quarries or manufactures, and also to the farmer and citizen, who wishes to learn reliable information concerning facts coming to his notice.” Todd specifically noted interest in “coal, artesian waters and various minerals,” an oblique reference to gold, silver, copper, manganese, and tin found in the Black Hills. A secondary aim was encouraging the growth of scientific networks, spurring the average citizens to become “practical and helpful observer(s)... contributing to the sum of human knowledge, and thereby to the welfare of mankind.”<sup>62</sup>

In the 1890s, well driller’s logs represented the main contributions of the average citizen to geological investigations commissioned by South Dakota and the Department of Agriculture. An early report lists seventy-five wells noting detailed information about the conditions of their construction and use. Though not comprehensive, these wells reveal much about artesian well development in eastern South Dakota at the time. The larger story of how several different major investigations funded by both federal and state governments overlap highlights multiple connections between individual citizens, businesses and governments.<sup>63</sup>

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<sup>62</sup> J.E. Todd, *A Preliminary Report on the Geology of South Dakota, 1894*, *South Dakota Geological Survey Bulletin No. 1* (Sioux Falls, SD: Brown & Sanger, State Printers, 1894) 2-3, 148-49.

<sup>63</sup> What follows is an analysis from data contained a table for the following report. Edwin S. Nettleton, *Artesian and Underflow Investigation, Part II: A Final Report of the Chief Engineer, Edwin S. Nettleton, C.E., to the Secretary of Agriculture, with Accompanying Maps, Profiles, Diagrams, and Additional Papers*, Senate Executive Document No. 41, Fifty-Second Congress, First Session (Washington DC: GPO, 1893).

Despite the fact that irrigation justified the report, little of the water generated by artesian wells directly benefited plant growth. Cities and towns created the greatest demand by far – next came business interests, then irrigation, and lastly domestic use by individuals. Usage statistics, as opposed to simply the number of wells, also reinforce the higher demand placed by cities, towns and businesses. The average cost for a well was just over \$3000 – over \$64,000 figured in today's dollar values. Initially the expense and uncertainty associated with these wells restricted their use to those with considerable capital or credit. Occasionally, industrious and resourceful individuals managed to drill their own wells, but of seventy-five wells surveyed in 1892, drilling companies completed all but ten, and two firms accounted for over half of all wells.

During the 1880s, drilling companies enjoyed a near monopoly. Between 1882 and 1889, professional drillers completed all twenty-seven wells recorded by Edwin S. Nettleson, Chief Engineer of the U.S. Department of Agriculture. Cities and towns owned twenty-one of the wells, including Aberdeen, Yankton, Mitchell, and Huron. The Chicago, Milwaukee and Saint Paul Railroad owned wells at Aberdeen, Ashton and Andover. Miner & Walker, a Yankton company, powered their mill with a well. The U.S. Government installed a well at Fort Randall in 1886, while Dakota Territory equipped the Territory Asylum at Yankton with an artesian well a year later. Individuals did not start to drill wells until 1890, when W.H. Schlund of Mount Vernon completed his own well in October of that year.

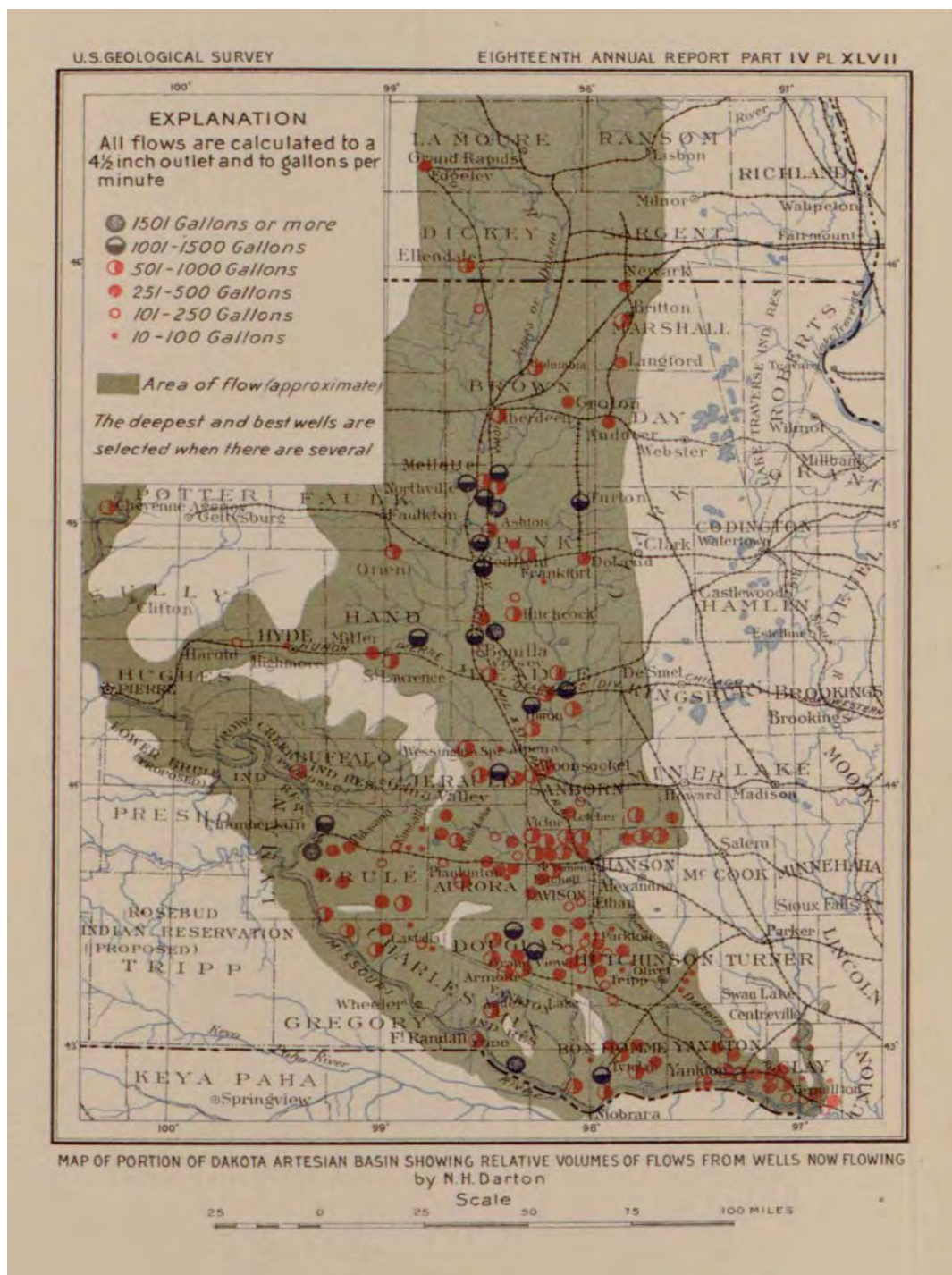


Figure 1.1: Map of Dakota Artesian Basin. Source: Annual Reports of the Department of the Interior for the Fiscal Year ended June 30, 1897. Eighteenth Annual Report of the United States Geological Survey, Charles D. Walcott, Director. Part IV. Nelson Horatio Darton. New developments in well boring and irrigation in eastern South Dakota, 1896. Serial Set Vol. No. 3646, Session Vol. No.18, 55th Congress, 2nd Session, Plate XLVII.

When individuals began to bore wells as either owner-operators or as small time contractors, the nature of the business began to change. The average price per foot dropped by nearly a dollar, falling from \$4.06 to \$3.08. Schlund's well, in addition to being the first completed by an individual, located water several hundred feet above those sunk by the companies. His well was 398 feet compared to an average depth of 901 feet between 1882-1889. Most wells still required significant depth to reach water. The average depth of thirty-three wells sunk between 1890 and 1892 was 837 feet, with only six under 600 feet. Figured over the entire period from 1882-1892, the difference in cost per square foot paid by individuals and larger entities, either companies or governments, was more striking. Individuals averaged \$2.16 per foot, while municipalities, governments and companies paid \$3.89, \$4.24, and \$4.32 a foot, respectively.<sup>64</sup>

In 1882 the Chicago, Milwaukee and Saint Paul Railroad experienced frustration with the first well drilled in the Dakota artesian basin. The water proved far too hard for use in steam engine boilers as originally intended and was discontinued when excessive foam built up inside the boilers. Following its completion, the well threw up large chunks of stone. Reports of live fish rising from the well may seem more difficult to believe, but made sense at the time to those

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<sup>64</sup> The preceding paragraphs are based on a single table appearing at the end of Edwin Nettleton's 1892 report.



convinced the Missouri River helped charge the underground reservoir. Despite its failure for the railroad, the well met the domestic needs of the city of Aberdeen.<sup>65</sup>

By 1895, over 400 artesian wells permeated the Dakota Sandstone underneath eastern South Dakota. The profusion of wells should not obscure the uncertainty that accompanied a new bore. The water might not be under enough pressure to reach the surface, its mineral content might make it unsuitable for its intended purpose, or more fundamental structural problems might occur. Occasionally, the results exceeded expectations as when the city of Iroquois well produced clear, soft water of good enough quality to sell back to the railroad for use in boilers. The first Huron well encapsulates the potential for disappointment and surprise. The well initially provided water for domestic use and fire suppression plus watering lawns and shrubberies. Furthermore, the pressure drove a motor for power purposes, including running printing presses and spice and coffee mills. But then, soon the water corroded the bottom section of the casing, requiring its replacement.<sup>66</sup>

The artesian pressure frequently carried large amounts of soil and rock along with the water. Huge sinkholes could develop on the surface if the exterior casing failed, as happened at Fort Randall. The water, always high in mineral content and never used for human consumption, caused the casing to corrode, and as it flowed to the surface on the outside of the pipe it began to develop a sinkhole. The

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<sup>65</sup> Nettleton also offers brief narratives of each well. Nettleton, *Final Report*, 46-47.

<sup>66</sup> *Ibid.*, 42.

government desired to stop the flow, as it had already created a hole twenty feet wide and sixty feet deep around the well.<sup>67</sup> Other wells produced sand, shale, and mud along with water. In most cases the aggregate flow increased when the water was allowed to run unrestricted. In some instances, the flow of rock, sand and mud clogged wells, necessitating their repair or abandonment.

A typical artesian well passed for several hundred feet underground reinforced with metal pipe called casing. The size of the anticipated flow and/or use dictated the size of the bore. Large wells, like those drilled near Lake Andes, utilized an eight-inch exterior casing, followed by a six-inch casing at the bottom of the hole. An individual farmer supplying his domestic and stock needs might employ a two-inch casing for the entire depth. By 1890, multiple size casing proved the rule, as it was felt they helped to offset the destructive qualities associated with high artesian pressure. Several 1/2 inch to 3/4 inch holes in the final few feet of the casing provided another method of allowing water to pass while restricting the larger chunks of rock.<sup>68</sup>

Drilling companies charged nearly twice what a frugal individual or small-time entrepreneur might, but their results warranted the added expense. Professional drilling companies produced wells that averaged 754 gallons per minute. The individual owner-drillers, contractors, and one town that drilled their

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<sup>67</sup> Ibid., 64.

<sup>68</sup> Nelson Horatio Darton, *A Preliminary Report on Artesian Waters of a Portion of the Dakotas* (Washington DC: GPO, 1896), 89-92.

own wells combined for an average of 178 gallons per minute. Hidden behind the statistics are stories of wasted effort and time, not to mention destroyed and lost equipment. E. Brum of Melette experienced all phases, as his planned irrigation well never produced sufficient water for his land. The flow could have been reduced by his own incompetence, as a drill bit and 85 feet of drill pipe remained in the bore, lost forever to the depths of the Dakota Sandstone - adding to the injury was a constant flow of sand with water.<sup>69</sup> Even experienced drillers could be thrown by the artesian pressure, as when J.C. Weston halted drilling near Huron after a flow of water struck at 900 feet lifted his 2,000 pound drilling rig into the air.<sup>70</sup>

Despite the risks involved, individuals purchased drilling machines and set out to strike the artesian flow. H.P. Lason purchased a drilling outfit in 1890, abandoned his first bore at 400 feet and tried again starting in October. By April of 1891, Lason struck water at 1,057 feet, although with underwhelming results. The flow was about a gallon a minute, by far the lowest artesian pressure encountered in the Dakota Basin. Despite disappointing results, his cash outlay was \$1,885.36 for both bores.<sup>71</sup> Frank McCurdy contracted with a neighbor to dig his well. McCurdy could boast of a better rate of flow, seventy gallons a minute, and a bargain rate of \$700. McCurdy was by far one of the most successful entrepreneurial drillers,

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<sup>69</sup> Nettleton, *Final Report*, 61-62.

<sup>70</sup> Ibid., 43-44.

<sup>71</sup> Ibid., 45-46.

though compared with the average flow of nearly 800 gallons a minute the drilling companies could boast of superior product in that regard.<sup>72</sup>

Artesian development came to Charles Mix county in 1891 when A.A. Hamner commissioned a well for his own use. No record survives of who drilled the well, but given its relative low cost of \$1500- and low rate of flow at 30 gallons a minute, it was not likely an established company. As Hamner relied on the well to supply his immediate household and to irrigate a 1/2 acre garden, the rate of flow likely met his needs.<sup>73</sup> There may have been other artesian wells in the area, but none made it onto Nettleson's survey. Five years later, Nelson Horatio Darton, another federal geologist, reported only three more wells completed for individuals in the county. The future success of one resident of Charles Mix County suggests more experimentation occurred outside the view of government officials.

Peter Norbeck first operated a drilling machine after his father brought one home from a trip to nearby Clay County. Norbeck's father was a minister and never has much interest in the rig, so he turned it over to his eldest son. The machine needed serious repair, and the younger Norbeck began a nearly complete refurbishing, relying on publications distributed by manufactures and his own experience watching rigs in action. Norbeck replaced or repaired missing and broken parts in part from pillaging junk piles. With the help of his cousin Peter

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<sup>72</sup> Ibid., 44, 58.

<sup>73</sup> Ibid., 53.

Ericson, the reconditioning proved successful in increasing their rig's power but did not guarantee success.<sup>74</sup>

Similar to other would-be drillers, Norbeck and Ericson met with initial failure in coaxing water to the surface. In 1892, they piloted two bores which produced no significant water. After weeks of drilling, the first attempt was abandoned at a depth between 200 and 300 feet. Seeking better prospects, the pair began another drill on a neighbor's place, though it also failed to produce artesian flow. Failure and frustration led to a two-year hiatus, but a returning drought encouraged Norbeck to seek water at lower depths. By refining existing techniques, Norbeck was able to deliver more force and increase his range. Beginning his quest in Davison County, Norbeck met with success at 420 feet. Word spread to the surrounding area and in 1896, Norbeck drilled ten wells and returned home to Charles Mix County.<sup>75</sup>

Following his return, Norbeck started a partnership with Charles and Oscar Nicholson that would revolutionize not only well drilling but also increase the value of eastern Dakota farm lands. After purchasing a second drilling rig, disaster struck as a prairie fire burned Norbeck's rig. He seized the opportunity and had a custom rig built by American Well Works in 1899 from his own drawings and specifications. The new machine targeted small farmers and delivered a two-inch bore to depths of

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<sup>74</sup> "Peter Norbeck: Well Driller, Statesman," *Water Well Journal* 28(October 1974):35.

<sup>75</sup> Gilbert Courtland Fite, *Peter Norbeck: Prairie Statesman* (Pierre: South Dakota State Historical Society Press, 2005) 1948, 18.

1700 to 1800 feet, more than doubling the capacity of other small bore rigs then in operation. Significantly for the company's success and that of area farmers, Norbeck and his company charged a quarter of the price of competing firms, guaranteeing a flowing well for between \$300 and \$500, depending on conditions. Moreover, the new rig worked much faster than any previous efforts, delivering an 800-foot well in four days. In the later half of 1899, armed with the improved machinery, Norbeck and Nicholson sunk over fifty wells in Charles Mix and Brulé counties.<sup>76</sup>

The new firm expanded operations rapidly in the following years. Seeking more lucrative areas of operation, operations moved north to Redfield in Spink County, deeper into the heart of the Dakota artesian basin. By 1901, Norbeck and Nicholson commanded fifteen drilling rigs and filed articles of incorporation with an initial stock offering of \$60,000. Two years later, the firm was appraised at just over \$73,000 with twenty-five machines in the field. Norbeck's personnel assets amounted to nearly \$44,000, wealth he would later utilize as he entered state and federal politics. In the immediate future, Norbeck concentrated on expanding his drilling empire, starting a branch company in North Dakota. The North Dakota firm drilled 710 artesian wells between 1905 and 1909. During the same period, the firm was valued at over \$300,000, and Norbeck's own worth was estimated at between \$100,000 and \$200,000.<sup>77</sup>

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<sup>76</sup> Ibid., 19-21.

<sup>77</sup> Ibid., 22-24, 27, 34.

Norbeck's incredible increase in wealth mirrored the stunning trajectory of artesian development in the Dakota basin. On one level, this technology allowed federal officials to ensure a more consistent level for Lake Andes and thereby benefited Yanktons. Judged from the perspective of the increased irrigation and agricultural production for eastern Dakota, artesian wells could claim more limited success. Yet, viewed more broadly as an effective tool of the American state, artesian flows supplied many cities with water, in many cases powering industrial machinery. Although J.E. Todd, South Dakota Geologist, maintained in his first official report that the citizens of the state stood to benefit from the knowledge generated by his department, the obverse was also true, as drillers' logs provided federal geologists and engineers data from hundreds of core samples of the artesian basin underground strata. The feedback loops refused to travel along lineal, progressive pathways, undermining the precise claims of the advance of increasing scientific mastery.

Vine Deloria's trenchant critique that western science amounted to little more than etiological explanations received compelling corroboration from the development of artesian knowledge. Yankton beliefs about the geology of Lake Andes explained that periodically the lake went dry, but that it would also once again fill with water. The fact that *Unktehi* waited out the dry years at Pipestone Quarry in an underground spring reinforces a deeper understanding of the earth's history and geology, just as Yankton beliefs regarding the uplift of the Black Hills and the mammoth fossil behind St. Anthony's Falls reinforce how that knowledge

was much more than myth. Furthermore, the stunning failure of artesian wells to perform as consistently as hoped reinforces how western science falls short of control. Yankton geology explained the world as Yanktons utilized it admirably well, but by the time of the first well at Lake Andes, a new regime was beginning to re-order the land, culminating a process started several decades earlier.

Just as the passenger manifest on the steamboat *Robert Campbell* suggested the connections between private citizens, the U.S. military, federal Indian agents, railroad survey parties, scientists, and the fur trade, the artesian wells drilled at Lake Andes portended a new set of relationships. Artesian wells increased the value of Dakota agricultural lands and federal Indian policy enlarged the availability of those increasingly valuable lands to non-Indians. With the passage of the Dawes Severalty Act in 1887, Congress paved the way for another reduction in Yankton land holdings. The Yankton Reservation was allotted to individual Yanktons and following an 1892 agreement the “surplus” lands were open to white settlement. This transformation did not immediately alter Yankton’s relationship with Lake Andes, as tribal members chose allotments bordering the lake. When the railroad entered Charles Mix County in 1900, it ushered in a new progression of events leading to the disintegration of Yankton possession of the lands surrounding the good lake.



## **Chapter Two: Cadastral Surveys, Allotment, and Town Building**

When a cadastral survey party attempted to enter the Yankton Sioux Reservation in 1887, Andrew Jones and a contingent of about forty Yankton men halted their advance, informing the surveyors that Yanktons desired to have the land surveyed into 480 acre plots (or the equivalent of twelve plots of forty acres each) and voicing a consensus among tribal members regarding the proper size of an individual allotment. The survey party continued to drive marker stakes into the ground, so Yanktons ripped the stakes out of the earth and absconded with the surveyors' tripod.<sup>1</sup> A month later, Feather Necklace led a group that stopped another survey party at the edge of the reservation. Eventually, a cavalry regiment from nearby Fort Randall arrived to escort the surveyors as they measured and mapped the reservation.<sup>2</sup> Explicitly and implicitly, Yanktons resisted every aspect of the national project known as allotment.

When the provisions of the Dawes Severalty Act (also known as the General Allotment Act of 1887) were applied to the Yankton Sioux Reservation, Yanktons rapidly claimed the land surrounding Lake Andes for their individual allotments of tribal land. Descendents of headmen both in favor and opposed to the 1858 Treaty of Washington all grouped around the lake, and several extended families settled in plots adjacent to each other. The lake occupied a position at the geographical center of the reservation and during this period also served as a social and economic center

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<sup>1</sup> J.F. Kinney, "1887 Annual Report Yankton Agency," in *Annual Report of the Commissioner of Indian Affairs*, 1887, 58.

<sup>2</sup> Renee' Sansom-Flood, Shirely A. Bernie, and Leonard R. Bruguier, *Remember Your Relatives: Yankton Sioux Images, 1858-1904* (Marty, SD: Yankton Sioux Elderly Advisory Board, 1989) Vol. II, 27, 30.

for many Yanktons. Voting with their feet, Yanktons subverted the intent of the Dawes Act and used it to consolidate tribal life.

In resisting the extension of cadastral survey lines, Yanktons pushed back against a system of re-ordering the land with roots in the Roman Empire and beyond. In its simplest use, a cadastral map is a graphic representation of real, or landed, property. Babylonian and Egyptian officials recorded the boundaries and sales of landed properties as early as four thousand years ago. With the Roman Empire surveys of entire regions becoming common, the first cadastral map was ordered over two thousand years ago.<sup>3</sup> The term cadastral derives from the French, *cadastre*, which itself comes from the Latin, *capitastrum*, the tax register of land units, *capita*, in Roman provinces.<sup>4</sup> The specific form under which the cadastral survey entered Yankton lives reflected two inter-related, larger trends in United States history: the distribution of the public domain, made up of lands formerly claimed by Native Americans; and the relationship between the nation and the dispossessed Native Americans.

In the closing decades of the nineteenth century, federal officials and private citizens searched for solutions to what they termed “the Indian problem.” Propelled by a faith in the righteousness of the American system, various individuals and

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<sup>3</sup> Roger J. P. Kain and Elizabeth Baigent, *The Cadastral Map in the Service of the State: A History of Property Mapping*, (Chicago: University of Chicago Press, 1992)1-3.

<sup>4</sup> Cadastre, in Oxford English Dictionary online edition, [http://0-dictionary.oed.com.library.unl.edu/cgi/entry/50030971?query\\_type=word&query\\_word=cadastral&first=1&max\\_to\\_show=10&single=1&sort\\_type=alpha](http://0-dictionary.oed.com.library.unl.edu/cgi/entry/50030971?query_type=word&query_word=cadastral&first=1&max_to_show=10&single=1&sort_type=alpha) (accessed 26 August 2008).

groups of reformers attempted to remove the last vestiges of tribal life and convert all Indians into facsimiles of the idealized American citizen. A group calling itself the “Friends of the Indians” led the charge, in conjunction with the Lake Mohawk Conference, an annual meeting of reformers in upstate New York. Indian reservations, once viewed as a sort of waiting room for the inevitable transition from savagery to civilization, fell out of favor among these would-be humanitarians and increasingly were considered obstacles to Indians’ progress.<sup>5</sup>

Efforts at breaking up reservations and creating individual Indian landowners began in a piecemeal fashion by the 1870s. The first congressional effort to extend the perceived blessings of individual land tenure to Indians, albeit one of little lasting impact, came in 1875 when the provisions of the Homestead Act were extended to Indians under the urging of then Secretary of the Interior Columbus Delano. Later, Utes in Colorado and Omahas in Nebraska were the recipients of specialized legislation in 1880 and 1882, respectively. The former case resulted from intense pressure by Colorado whites seeking Ute land, while the later act was partially driven by a petition submitted by fifty-five Omaha men (though in conjunction with the efforts of Alice Fletcher, an ethnologist working among the tribe) seeking secure title to lands they cultivated.<sup>6</sup>

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<sup>5</sup> Francis Paul Prucha, *The Great Father: The United States Government and the American Indians Vol. II* (Lincoln: University of Nebraska Press, 1984), 609-10, 656.

<sup>6</sup> Prucha, *Great Father*, 660-63; Alice C. Fletcher and Francis La Flesche, *The Omaha Tribe Vol. II* (Lincoln: University of Nebraska Press, 1992), 624, 636-37.

The issue of Indian allotment repeatedly appeared in Congress during the 1880s. The first general allotment bill entered Congress in 1879, drafted by Commissioner of Indian Affairs Ezra Hayt and supported by Secretary of the Interior Carl Schurz. The 1879 bill was introduced in the House and the Senate, but never made it to a vote. Similar bills followed in 1880, 1882, and 1884, occasionally receiving extended debate in the Senate but never quite able to pass through both houses. Critics of the general allotment plan held that such a measure had the process of civilization in reserve, that land holding could not on its own transform Indians into Christian citizens and hastening land tenure could only lead to mass alienation of Indian lands. When Senator Henry Dawes introduced the measure again in 1885, it passed the Senate with relative ease but stalled in the House. In passing the bill in December 1886, the House added several amendments to the Senate bill, requiring a conference committee to iron out the differences between the two acts. In that committee, a provision requiring tribal consent for instigating the allotment process was dropped.<sup>7</sup>

The General Allotment Act of 1887, or Dawes Act, proved to be “a mighty pulverizing engine for breaking up the tribal mass,” dramatically and inexorably diminishing Indian land holdings. Signed by President Grover Cleveland on February 8, 1887, it empowered the chief executive to have reservations surveyed and the land dispersed to individual Indians, granting trust patents which would be transferred to fee-simple patents after an adjustment period of twenty-five years, at

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<sup>7</sup> Prucha, *The Great Father*, 663-67.

which time Indians would officially become American citizens. Each tribal member would be granted a parcel at the time of allotment, 160 acres for heads of households, 80 acres for single adults and orphaned children, and 40 acres for children under 18 with living parents (if the land was suitable only for grazing, the plots were doubled). If Indians did not select a parcel voluntarily within four years, the Interior Secretary or the Indian Agent in charge could assign a parcel. Furthermore, it authorized the Secretary of the Interior to negotiate the purchase of the unallotted “surplus” lands, pending Congressional approval of an agreement reached between each tribe and federal officials.<sup>8</sup>

The implementation of the Dawes Act contradicted and even mocked its humanitarian impetus. In 1881, all tribal lands in the United States totaled over 155 million acres. Three years after the Dawes Act became law, over 50 million acres had passed out of tribal hands; and by the end of the nineteenth century, the tribal land base had shrunk to just under 78 million acres, a reduction of nearly half. More ominously, only 5,409,530 acres were allotted to Indians. The obvious benefactors of this legislation were western speculators and prospective settlers, though the underlying push for its passage came from the eastern humanitarians, self-styled as “Friends of the Indian.” Another provision of the act forbidding the leasing of allotments served to compound the misery, as many Indians due to age, illness, or lack of tools or resources were unable to produce agricultural products from their land. Congress rectified this deficiency in 1891, allowing leasing in cases where “age

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<sup>8</sup> Merrill E. Gates, President of the Lake Mohawk Conference, made this statement in 1900. Quote in Prucha, *The Great Father*, 667-68.

or other disability” disallowed individuals from being able to improve their land. When the phrase “inability” was added in 1894, the impact proved devastating for the development of Indian agriculture. By 1898 on the Omaha and Winnebago Reservations, for example, white farmers leased 112,000 acres out of the 140,000 allotted to Indians.<sup>9</sup>

The push for individual allotment came to the Yankton Sioux Reservation well in advance of the national drive. In 1864, Walter Burleigh, Yankton Indian Agent, reported that he was having the reservation boundaries resurveyed in response to encroachments by nearby settlers. The first extension of survey lines occurred in 1860, as the eastern edge of the reservation served as the terminus of a survey headed by a party based out of Dubuque, Iowa.<sup>10</sup> Burleigh hoped that with “the boundaries definitely established,” the trouble with unauthorized settlement would cease.<sup>11</sup> Six years later, a new agent, J.M. Goodhue, related that an unnamed surveyor completed work on subdividing a section of the reservation into 80-acre lots. The Secretary of the Interior contracted for that survey under the terms of Article Ten of the 1858 treaty, which granted the Secretary authority to give title to individuals for farms which they might pass on to their heirs or descendents. The

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<sup>9</sup> Prucha, *The Great Father*, 671-73.

<sup>10</sup> Michael J. Foley, *The Opening and The Development of the Yankton Tribal Lands - An Historical Analysis 1849-1869* (Washington DC: March, 1978) Indian Claims Commission Docket No. 332-C, Yankton Sioux Tribe v. United States of America, Plaintiff's Exhibit H-1, 131.

<sup>11</sup> Burleigh tops the list of most corrupt Yankton agents during the nineteenth century, so there is no small irony in his statements. See Walter A. Burleigh, “1864 Annual Report of Yankton Sioux Agency,” in *Annual Report of the Commissioner of Indian Affairs*, 1864, 285

logic of allotment appears later in Goodhue's report as he estimates that after distribution, Yanktons would be best served by dispensing with 200,000 acres of the unallotted lands and placing the proceeds into "safe securities for the benefit of the Indians."<sup>12</sup>

The first survey made of Lake Andes coincided with the extension of the Homestead Act to Indians. In 1874, the federal government surveyed Lake Andes and established a meander line at 1433 feet above sea level, while the lake ranged from seven to three and half feet deep at its maximum extent.<sup>13</sup> The meander line is not a boundary line, however.<sup>14</sup> It is a description of a riparian contour that is subject to change over time, and the boundary actually begins at the water. Under federal law, different standards apply to navigable and non-navigable lakes. Navigable bodies of water are considered public highways and unless reserved by the federal government ownership of their beds pass to state governments at the time of statehood. For non-navigable lakes, whether covered with water or relicted, ownership of the lakebed is retained collectively by the individual landowners. For

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<sup>12</sup> J.M. Goodhue, "1870 Annual Report Yankton Sioux Agency," in *Annual Report of the Commissioner of Indian Affairs*, 1870, 212-13.

<sup>13</sup> The survey also marked the north end of the lake at 1429.25 feet above sea level, the center of the lake at 1427 feet above sea level and the south end at 1426. Affidavit of Robert D. Schroeder, Civil No. 74-4066, *Yankton Sioux Tribe of Indians v. Nelson et al.*, 1-2.

<sup>14</sup> Riparian law specifically applied to rivers, but aspects helped to quantify and qualify the lake. In the first instructions issued by the Surveyor General in 1815, lakes receive no mention. Over the next forty years the standards become more exact, and in 1850 all lakes over forty acres were included for survey. Matt Gotham, "Meander Lines," [http://btcsure1.ferris.edu/Gotham/My%20Work\\_files/Meander%20Lines.pdf](http://btcsure1.ferris.edu/Gotham/My%20Work_files/Meander%20Lines.pdf) (accessed 28 August 2008), 4-5.



most surveys of non-navigable lakes, potential surveyors were advised that “ingenuity will be required to divide the lake bed in such a manner that each shore proprietor will receive an equitable share of land in front of his holding.”<sup>15</sup>

Three years later Agent John Gassman requested a copy of the 1874 survey as many Yanktons were moving onto “claims or lands of their own” and he felt “that before another year is ended they will generally be thus located upon individual lands or farms.”<sup>16</sup> By 1884, another new agent, J.F. Kinney, offered a similarly hopeful assessment of Yanktons' desire to undertake allotment, though he lamented that the reservation needed to be resurveyed yet again, as the mounds marking the corners of the township and range lines needed repair.<sup>17</sup> Kinney felt that “this is all that is in the way of issuing allotment certificates,” though his optimism was misplaced.<sup>18</sup>

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<sup>15</sup> At Lake Andes, the issues of land ownership during times of no water reverberate to the present day and present the major issue in *Yankton Sioux Tribe of Indians v. Nelson*, 521 F. Supp. 463 (D.S.D. 1981). Bureau of Land Management, *Restoration of Lost or Obliterated Corners & Subdivision of Sections: A Guide for Surveyors* (Washington DC: GPO, 1975), 38-39.

<sup>16</sup> Gassman had served as Yankton Agent since 1872. John Gassman, “1877 Annual Report Yankton Agency,” in *Annual Report of the Commissioner of Indian Affairs*, 1877, 76.

<sup>17</sup> The practice of correcting “lost or obliterated corners” was so wide spread that the Department of the Interior issued regulations in 1883 on the proper methods to reestablish such corners. See U.S. Department of the Interior Bureau of Land Management, *Restoration of Lost or Obliterated Corners and Subdivision of Sections* (Washington DC: GPO, 1974), iii.

<sup>18</sup> J.F. Kinney, “1884 Annual Report Yankton Agency,” in *Annual Report of the Commissioner of Indian Affairs*, 1884, 58.

As the cadastral survey subdivided the Yankton Reservation, most Yanktons resisted the allotment process. In 1886, a handful of Yanktons agreed to individual claims, though most were opposed or indifferent to the plan. Kinney envisioned 300,000 “surplus” acres, but Yankton leaders insisted on the twelve-forty plan of 480 acre plots that would leave no extra land for sale.<sup>19</sup> After the official passage of the Dawes Act, special agent Henry R. West arrived on the Yankton Reservation to begin allotment. In August of 1887, Yanktons, this time led by Struck-by-the-Ree, impeded the surveying parties’ progress; and again troops from Fort Randall forced the issue. The use of coercion and armed force elicited only fifty allottees, and errors riddled the entirety of West’s work necessitating its later revision. West continued as special allotment agent until 1889, when both he and Agent Kinney were replaced.<sup>20</sup>

The problem of limiting errors to create accurate surveys had plagued would-be nations for hundreds of years. During the middle ages, cadastral surveys fell out of use in Europe, but their revival in the sixteenth century proved crucial for the rise of the modern nation state, including England.<sup>21</sup> The British system of mapping property received a great push forward in 1538 when Henry VIII dissolved nearly 400 monasteries and placed their collective landholdings up for sale. For

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<sup>19</sup> Michael F. Foley, *Allotment and Its Aftermath: The Course of Dealings Between the United States and The Yankton Tribe, 1887-1922* (Indian Claims Commission Docket No. 332-D, *Yankton Sioux Tribe v. United States of America*, Plaintiff’s Exhibit H-1450), 8-10.

<sup>20</sup> Foley, *Allotment and Its Aftermath*, 14-17.

<sup>21</sup> Kain and Baigent, *The Cadastral Map*, xvii, 265.

centuries previous, land was measured based on how many people it could support. In William the Conqueror's 1086 survey of England in the *Doomsday Book*, a *vigate* is defined as the land that could support one person while a *hide* provided for a family - the size of each plot varied depending on its productivity. Henry's massive land grab coincided with a general movement for enclosure of former feudal lands across Britain and is best seen as providing a catalyst for a process already undergoing significant revision. With the sudden influx of land available for sale, accurate measurement of standard sized plots became paramount. Land started to be assigned a cash value based on the rent it could command, in opposition to its former value based on the number of people it could support.<sup>22</sup>

Precise measurement required new systems and technologies. Gemma Frisius, a Dutch mathematician, elucidated the principles in his 1533 *A Method of Delineating Places*, which instructed surveyors on how to determine the distance between two objects using trigonometry and a process known as triangulation. Triangulation allowed the computation of the lengths of two sides of a triangle if the third side's length and the opposite angles were known. If one wanted to know the distance between an object close at hand and another in the distance, the surveyor created an imaginary triangle by selecting a third reference point and establishing its distance from the closer landmark and then measuring the angles between the

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<sup>22</sup> Andro Linklater, *Measuring America: How an Untamed Wilderness Shaped the United States and Fulfilled the Promise of Democracy* (New York: Walker and Company, 2002), 10-12.

points. The idea was simple, but the computations required a working knowledge of advanced mathematics, including the logarithms for sine and cosine.<sup>23</sup>

Englishman Edmund Gunter sought to bridge the gap between geometrical theory and the practical world of surveying territory. Although officially he studied divinity, Gunter's interest lay in mathematics and invention. He devised an early form of a slide rule to assist in sine and cosine calculations, adapted the nautical quadrant and cross-staff for surveyors, and designed a new implement for measuring distance. The Gunter chain combined the traditional methods of measuring land with the newer system of decimals. Gunter's chain consisted of 100 links each just under eight inches long for a total length of twenty-two yards, or four *perches* to use the traditional term. Like all measurements at the time, a *perch* varied based on the quality of the land but became standardized at sixteen and a half feet in the sixteenth century. This seemingly arbitrary length was based on the dimension of a *daywork*, the amount of land one person could work in a day, or an area two perches by two perches. An *acre* was the area a farmer with a team of oxen could work in a day and consisted of 40 dayworks. Gunter's chain bridged the traditional and the decimal systems by inserting a brass ring every tenth link, allowing for much simpler computations.<sup>24</sup>

Although considerable local variation existed, Britain sent two different approaches of surveying to its North American colonies. Reflecting their geographic

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<sup>23</sup> Linklater, *Measuring America*, 9-10, 13-14.

<sup>24</sup> *Ibid.*, 16-18.

proliferation, the two became known as the New England and the Virginia methods. The Virginia method, also known as *metes and bounds*, developed from landowner practices of defining individual plots and referenced topographical features or natural landmarks. The New England model employed the township system that eventually became adopted in the United States. The lots were laid out consecutively in six or ten mile squares known as townships, and they progressed orderly across the landscape without reference to local features. Despite the different frameworks for organizing the countryside, by the end of the seventeenth century Britain's colonial settlements remained along the coast, nowhere extending inland more than a couple hundred miles.<sup>25</sup>

The different approaches reflected different settlement patterns. In New England, the development of communal religious settlements facilitated the spread of adjacent properties with common boundaries. In Virginia, the practice of granting a headright of fifty acres to anyone who arrived in the new world, or to the individual who paid for the passage of an individual, required the surveying of one's land to claim title. Initially, the standard lot was a rectangle bordering a river on one side and extending back into the woods for a mile. Using Gunter's chain, the river border was equivalent to six chains and 25 lengths, or the seemingly bizarre 137 yards, one foot and six inches. The genius of Gunter's chain is that this odd length represented fifty acres if the other side of the rectangle was one mile. The difficulties

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<sup>25</sup> Ibid., 36-41.

ensued when trying to fill-in the map with later arriving claimants. The plots might overlap, or markers established in the woods may no longer exist.<sup>26</sup>

When Thomas Jefferson designed a new system of land measurement for the United States, he hoped to rid the new nation of traditional measurements and create a simple system easily understood by average citizens. In his draft of the Land Ordinance of 1785, Jefferson called for a rectangular structure based on a decimal system with meridians every ten miles, further divided into hundreds of ten square miles and each hundred subdivided into one square mile sections.<sup>27</sup> Ultimately, the appeal of Gunter's chain carried the day, and the cadastral survey which redefined America retained some British distances. Jefferson's vision of consecutively numbered squares extending across the continent survived, but not its decimal structure. The hundreds proposed by Jefferson became in the final ordinance townships of six square miles, further divided into thirty-six one square mile sections. It was no coincidence that six miles equaled 480 lengths of Gunter's chain.<sup>28</sup>

The great advantage of the township approach utilized in New England was its ability to extend across the horizon.<sup>29</sup> Theoretically, the square grid repeated

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<sup>26</sup> Ibid., 40.

<sup>27</sup> Paul Wallace Gates, *History of Public Land Law Development* (Washington DC: GPO, 1968), 61.

<sup>28</sup> Linklater, *Measuring America*, 69-73.

<sup>29</sup> In practice, the original New England townships were not perfectly square, nor was there much uniformity inside the grid, with different sized plots quite common.

itself endlessly, and two lines could provide the basis for all subsequent American cadastral surveys. In practice, this precision proved difficult, and multiple sets of meridians (running north/south) and base lines (running east/west) guided the surveys across the country. The first official base line predated the first principal meridian by some fifteen years and followed an experimental period of sorts as the first surveyors marched across the soon to be state of Ohio.<sup>30</sup>

On September 30, 1785, Thomas Hutchins, first official Geographer of the United States, marked the first base line of the nation's public domain, a line running due west from a point on the north bank of the Ohio River where it crossed the western border of Pennsylvania.<sup>31</sup> The first surveys quite literally blazed a line across the countryside, with a sizeable group of axemen serving as necessary adjuncts to the mapping process, clearing the forest of trees and marking boundaries, known as corners, on trees left standing.<sup>32</sup> A group of eight surveyors set out to trace seven "ranges" across Ohio, but two years later only four were completed primarily due to Miami, Wyandot, and Delaware warriors' harassment of the surveyors. The Battle of Fallen Timbers in 1794, when General Anthony Wayne defeated a coalition of Algonkian nations, extinguished Indian resistance in Ohio.<sup>33</sup> Following the appointment of Jared Mansfield as U.S. Surveyor General in 1803,

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<sup>30</sup> Linklater, *Measuring America*, 74-75.

<sup>31</sup> Ibid., 2,

<sup>32</sup> Ibid., 74-75, 160-62.

<sup>33</sup> Ibid., 140-41; Kain and Baigent, *The Cadastral Map*, 290-91.

Jefferson's systematic vision began to unfold. In 1812, Congress established the General Land Office to oversee the cadastral surveys; and Mansfield established the First Principal Meridian on the other side of Ohio, a line that also serves as the border with Indiana.<sup>34</sup> As the country expanded westward, new principal meridians were laid out. Lake Andes lies within the Fifth Principal Meridian, overlapping four townships at 96 and 97 North and 64 and 65 West.

As the allotment process slowly ground forward, factions developed among Yanktons. Struck-by-the-Ree died in 1888, and the twelve-forty plan lost a key supporter as a result. Meanwhile, special agents came and went, issuing new allotments and correcting the work of their predecessors. James G. Hatchitt replaced Allotment Surveyor West in 1889, and the following year E. W. Foster replaced Agent Kinney. At the same time, South Dakota politics played an increasing role, as federal Senator Richard F. Pettigrew struck an alliance of sorts with William T. Selwyn, leader of a Yankton faction ostensibly comprised of the "old, non-progressive portion of the tribe."<sup>35</sup> In 1889, Selwyn orchestrated a petition signed by 300 Yanktons to President Benjamin Harrison requesting the appointment of a Republican Agent. The following year, in an apparent though unproven *quid pro quo*, Selwyn served as a delegate to the Republican South Dakota state convention. Felix Brunot led the opposing faction, delivering a petition in 1891 alleging that Agent

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<sup>34</sup> Linklater, *Measuring America*, 161.

<sup>35</sup> The assessment of the Selwyn faction comes from Daniel Dorchester, who the Commissioner of Indian Affairs dispatched to investigate charges against Agent Foster in July 1891. Foley, *Allotment and Its Aftermath*, 26.



Foster favored the “old foggies (sic) known as chiefs,” and calling for more attention to the “farming, working element.”<sup>36</sup>

The alliance between Senator Pettigrew and the “non-progressive” Yankton faction led by Selwyn appears contradictory at first glance. Pettigrew and his supporters wanted nothing more than the opening of unallotted Yankton lands, an idea that met with strong resistance from the older faction just a few years earlier. In January of 1890, Selwyn convened a “Council of Yankton Sioux Indians,” complete with a declaration and constitution committed to the promotion of civilization and the eradication of “heathenism.” Selwyn, using his father Medicine Cow as a conduit, was attempting to consolidate the power base formerly held by Struck-by-the-Ree. It seems that Selwyn's power grab came a bit too early, and the contradictions of trying to lead Yanktons where they did not want to go eroded his support.<sup>37</sup>

Political machinations aside, Yanktons established allotment claims, though the BIA recorded no official claims until 1890. The constant change-over in agents provided one reason for the delay. The lack of permanence for the various surveys - caused either by official neglect, poor surveying practices, or both - explains another reason for the nearly twenty-year delay between the first survey and eventual allotment. Yankton resistance to issuing land in severalty, especially on the formula devised to generate the maximum amount of so-called surplus land, loomed large in the lengthy interval.

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<sup>36</sup> Ibid., 21-22, 25-26.

<sup>37</sup> Ibid., 28-29, 60, 76-79.

The first recorded Indian allotments enter the official ledger on May 8, 1891. Given that over 1,000 individual allotments were recorded at once, this date surely reflects a bureaucratic nicety, eliding a much more confusing and diverse process.<sup>38</sup> By that date, however, Yanktons had voted with their feet and selected Lake Andes as one of the most desired parts of the reservation.

Yanktons chose to live around Lake Andes in family clusters, maintaining some of the “tribal mass” so repellant to the Indian Office and the humanitarian reformers. Along the southern shore, the Vandall, Irving and Dion families selected adjacent plots. On the eastern edge of the lake, the Picotte, Stricker and Shield families clustered together. The Cournoyer and Reynolds families claimed multiple entries on the north end of the lake. More Picottes and quite a few of the Dezera clan settled on the western shore, along with several smaller groups of families.<sup>39</sup> It is striking that Picottes and Strickers lived so close together, given that the former descended from Charles Picotte, who favored the 1858 treaty, while the Stricker family name traced back to Smutty Bear, who resisted the terms of the treaty.<sup>40</sup>

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<sup>38</sup> The list is extracted from a collection of all land records for Charles Mix County, available online at <http://ftp.rootsweb.ancestry.com/pub/usgenweb/sd/chasmix/land/> (accessed 19 August 2008).

<sup>39</sup> Centennial Atlas Limited, Charles Mix County, Howard, White Swan, Goose Lake, and Plain Center township maps, photocopy in author's files, received from Monica Waldren, Register of Deeds, Charles Mix County, South Dakota.

<sup>40</sup> Renee' Sansom-Flood, Shirely A. Bernie, and Leonard R. Bruguier, *Remember Your Relatives: Yankton Sioux Images, 1858-1904* (Marty, SD: Yankton Sioux Elderly Advisory Board, 1989) Vol. I, 8, 11.

Despite the assignment of individual plots, Yanktons continued to regard the lake as a tribal possession.<sup>41</sup>

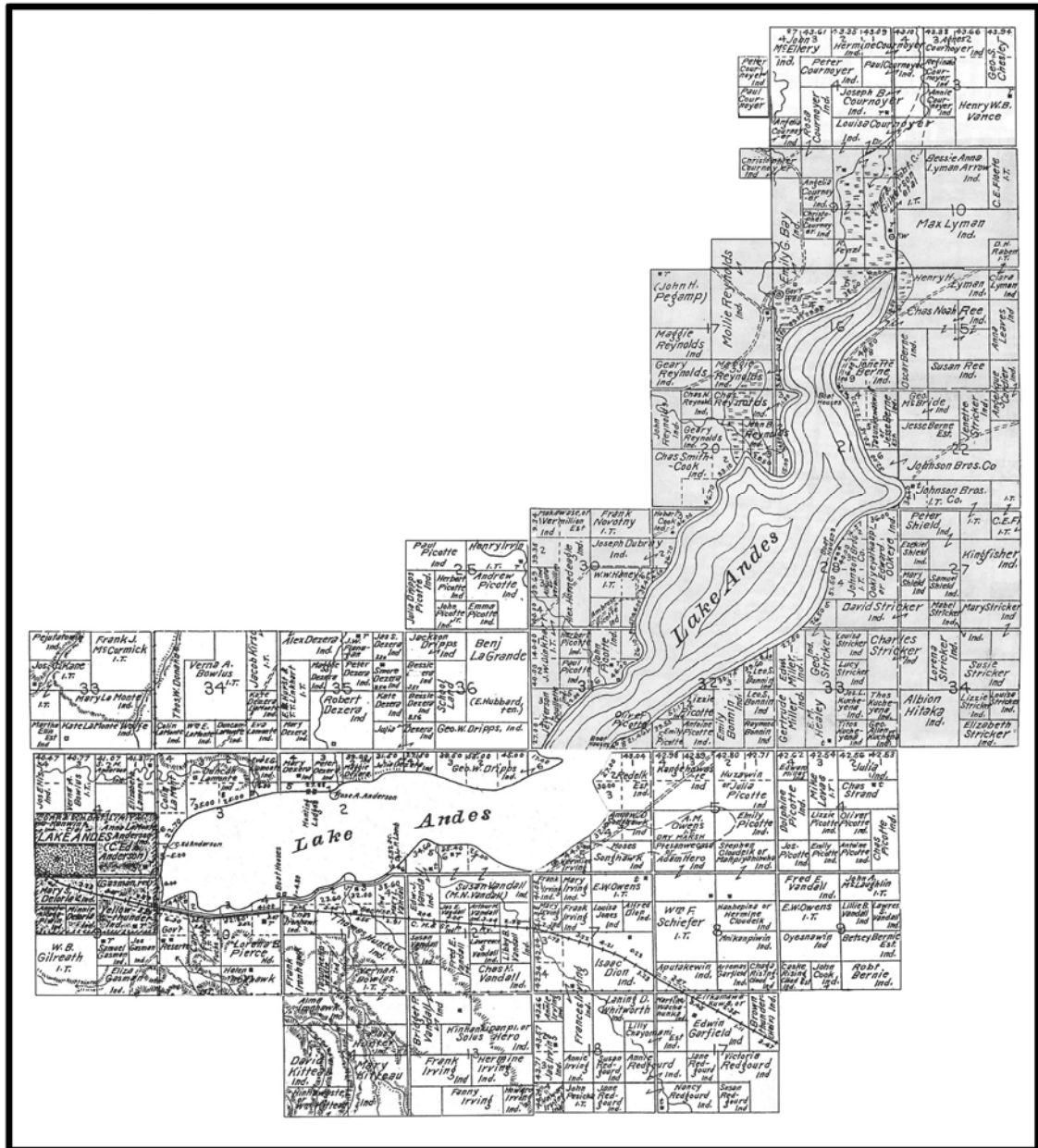


Figure 2.1: Plot Map of Lake Andes, 1906. Source: Photocopies from Monica Waldren, Charles Mix County Register of Deeds, copies in possession of author. Map aggregated by author.

<sup>41</sup> Affidavit of Paul Picotte, Civil No. 74-4066, *Yankton Sioux Tribe v Nelson, et al.*, Exhibit J, p 1.

Though all Yanktons continued to enjoy Lake Andes, those who received allotments around it were “the happiest.” Joe Rockboy recalled shooting ducks, geese and mud hens, and harvesting duck eggs. The lake also provided several kinds of game, including turtles, coyotes, bobcats and muskrats. Yanktons who came of age during the early twentieth century recall fishing in Lake Andes, providing a significant portion of their diet even during winter. At summer large parties would camp along the lake, sharing in fellowship and food.<sup>42</sup> In addition to game and fish, Yanktons harvested wild plant foods, while they used wood, willows and other plant materials in baskets, clothing and medicine.<sup>43</sup>

The Stricker family claimed a total of 1040 acres on the eastern side of Lake Andes and provides an example of the ways Yanktons applied provisions of the Dawes Act to their benefit. The combined holdings of three brothers and their families stretched east from the lake’s shore for nearly two miles and south in a backward-shaped L. The eldest brother, George, bordered the lake with just under 120 acres. David Stricker’s 120 acres connected to his elder brother’s land on the west and his younger brother Charles held 160 acres just south of David. Wives and daughters filled in the family holdings with 40 and 80 acre claims.

Despite consensus on Lake Andes as a desirable location, deep fissures developed among Yanktons over the sale of “surplus” lands. The rise of disagreements within the Yankton tribe presented problems for federal officials

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<sup>42</sup> Affidavit of Joe Rockboy, Ibid., Exhibit M, 1; Affidavit of William O’Connor, Ibid., Exhibit L, 1-2; Affidavit of Melisse Minicopa, Ibid., Exhibit K, 1.

<sup>43</sup> Unidentified clipping, Ibid., page 3 of expert testimony.

committed to opening the reservation for non-Indian settlement, a process that required at least the appearance of Yankton consent. The death of Struck by the Ree in 1888 had left a void at the top of Yankton government, a development Selwyn's unsuccessful attempt at creating a council failed to rectify. In a pre-emptive move, the Yankton Land Commission, dispatched by the federal government to negotiate the sale of unallotted lands, established a Yankton Committee of 24 in October, 1892 to operate as mediator between the commission and the tribe. During the course of the negotiations, it became clear that the Land Commissioner's Committee offered few advances over the style of "representative" democracy attempted by Selwyn and was intended to deliver an approval of whatever terms the Land Commission dictated.

Despite instructions from the Interior Secretary John Noble advising the Commission that some Yankton land was extremely valuable and the agreement should provide for an appraisal of individual tracts and their sale to the highest bidder, the Land Commission refused to adopt the preferences of Yankton leaders. John J. Cole of Saint Louis, J. C. Adams of South Dakota, and Dr. W. L. Brown of Chicago served as the three commissioners. Dr. Brown had previously served as Agency Physician and his appointment was viewed with distrust by Yanktons both opposed to and in favor of the sale. These opinions were substantiated by a letter sent by Dr. Brown attempting to bribe Felix Brunot, a leader of the faction opposed

to the sale. It soon became clear that the other commissioners shared Brown's desire to force the issue of the sale.<sup>44</sup>

Following the first meeting on October 8, 1892, a nearly two-month lapse occurred as one of the Commission members returned home following the death of his son. At that first meeting, the Commission set the tone by unequivocally stating that the land was not as valuable as Yanktons believed and that the federal government was doing the tribe a favor in arranging for the purchase, as the land was only valuable if sold. During the next meeting on December 2, the issue of whether to sell by direct purchase or to the highest bidder (referred to as appraisement during the discussions) appeared briefly, but the Commissioners never seriously considered the appraisement method, ignoring the opinions of not only the Secretary of the Interior but several Yanktons as well.<sup>45</sup>

In one of the few instances of open debate among Yanktons and the Commissioners, many spoke out against the sale of the unallotted lands regardless of the method. At the beginning of a December 3 meeting, the 212 Yanktons assembled received an invitation to speak from both the Land Commission and Felix Brunot, the Chairman of the Yankton Committee of 24. Several opposed the sale based on the past record of the federal government in failing to respect the terms of treaties and the belief that the Commissioners operated with the interests of the government and non-Indians overriding any Yankton concerns. Peter St. Pierre, a

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<sup>44</sup> Foley, *Allotment and Its Aftermath*, 66, 68-69, 75.

<sup>45</sup> *Ibid.*, 89-90, 74-75.

member of the Committee of 24, informed the Commissioners that during tribal debate over the past two months a clear consensus developed opposing the sale at that time, and that the Commissioners should accept that decision and not waste any more time. St. Pierre also derided the commissioners' threats that the present opportunity was the last chance for Yanktons to influence a land sale, as he was confident that more Commissions would follow should the present attempt fail to extract an agreement.<sup>46</sup>

Over the next few meetings, the appraisement method fell by the wayside and direct purchase proved to be the only option entertained by the Commission. On December 9<sup>th</sup>, Commissioner Cole announced that Congress would likely approve a direct sale for \$500,000, and the following day he increased the figure to \$600,000. Felix Brunot responded to the higher sum by reiterating that the tribe was opposed to the sale, but the commissioners could "stay and talk more if that is their interest." Some Yanktons then spoke in favor of accepting the direct sale, but the majority remained opposed. The Commissioners again attempted to convince Yanktons through threats and flattery, though with little success. Felix Brunot, in an act of brilliant political theater, again addressed the crowd stating, "I move all the people in favor of selling their land keep their seats, and those who do not want to sell get up and go outside." The majority followed Brunot's motion, leaving Commissioner

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<sup>46</sup> Ibid., 76-77.

Cole angrily to adjourn the meeting by shouting, "This action will not decide anything.... We cannot recognize this action."<sup>47</sup>

As feckless and inept as the Land Commission proved to be in garnering support during the councils, it ultimately prevailed in opening the reservation. Following Brunot's powerful display, the Commissioners held two more public meetings, the last occurring on December 17, well in advance of the official document date. At the final meetings, the Commissioners again resorted to a council to try and break the disagreements, calling for a council of six with three pro-sale members and three members opposed to the sale. The plan never materialized, though the commissioners drew up a document all the same.<sup>48</sup> The Commissioners spent the next three months gathering Yankton signatures to ratify the document, while the Interior Department sent two different independent investigators to the Yankton Reservation to probe charges of coercion, threats, and unscrupulous dealings by the Land Commissioners. Neither investigation substantiated the charges, though both reported that Yanktons felt the price for the land was too low. Faced with official indifference to their plight, by November of 1893 the majority of Yanktons acquiesced to the 1892 document.<sup>49</sup>

The terms of the 1892 exchange offer more tantalizing evidence that the bargain favored certain interests, yet also addresses specific concerns likely shared

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<sup>47</sup> Ibid., 80-86.

<sup>48</sup> The term document will be used here to refer to what appears elsewhere as the 1892 agreement, even though swindle is a more appropriate term.

<sup>49</sup> Foley, *Allotment and Its Aftermath*, 86, 88, 92, 94, 99.



by all Yanktons. The document provides that in exchange for \$600,000 the Yankton tribe did "cede, sell, relinquish and convey to the United States all their claim, rights, title, and interest in and to all unallotted lands within the limits of the reservation." The lump sum was divided into a \$100,000 payment to be made immediately and distributed all Yanktons, while the remaining \$500,000 would be set aside in trust for twenty-five years at five percent interest with annual distributions of the accrued interest made biannually on June 30 and December 31 of each year. Article seven of the document grants a twenty dollar "double eagle" gold piece to each Yankton signatory, a stipulation that smacks of bribery, especially as the sum translates to over \$400 figured at recent dollar valuations. Beyond matters of remuneration, the document contained several other provisions that suggest the interests of certain groups received closer attention.

Other aspects of the document seemed designed to gain the assent of fairly narrow blocks of Yanktons. Article fifteen finally settled the issue of payment for fifty-one Yanktons who served as scouts for General Alfred Sully during the 1864 campaign against the Minnesota Sioux, a long-standing issue between the tribe and the United States, compensating them an addition \$225 within 90 days of the ratification of the document, to either the scouts or their heirs. Another provision stipulated that any recognized tribal members with allotted lands on the Yankton Reservation, "including mixed-bloods, whether the white blood comes from the paternal or maternal side ...shall be entitled to all the rights and privileges of the tribe enjoyed by full-blood Indians." These two provisions addressed very real concerns of certain segments of the tribe, but also served as specific inducements

that might have encouraged Yanktons unhappy with the general terms of the lump sum sale provision to sign the document anyway.

Finally, the document stated the terms under which ratification would occur. For Yanktons, the document would become binding when signed by a majority of adult members of the tribe, defined as any male eighteen years of age or older. It would not become binding for the United States until ratified by Congress, though would be "fully operative from that date." Congress ratified the document in August 1894, and the following year President Grover Cleveland's proclamation opened the lands to homesteading. Around the same time that Congress accepted the 1892 document, it also expanded the provisions of the Dawes Act regarding the land assigned to widows and children and the adjustments to Yankton allotments necessitated the year delay before President Cleveland's signature. In the meantime, drought conditions increased the value of hay, causing non-Indians to hurriedly sign leases for Indian hay lands.<sup>50</sup> In the spring of 1895, Agent J.A. Smith reported that such a large number of squatters had descended in anticipation of the Presidential proclamation that he was powerless to remove them. By 1896, only 66,000 acres remained unclaimed in Charles Mix County, the majority of the remaining being school lands controlled by the state of South Dakota.<sup>51</sup>

The speculation in Indian land collided with the idea of turning Yanktons into prosperous citizens, ironically mirroring a process that occurred during the United

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<sup>50</sup> The same drought caused *Bde Ihanke* to go dry, leading to the artesian wells wells discussed in Chapter One.

<sup>51</sup> *Ibid.*, 103-06.

States' founding. One long held belief in the United States considered an individual landowner uniquely suited for democratic citizenry - a person Thomas Jefferson termed a yeoman farmer. The powerful myth of land ownership creating a virtuous republic had earlier been codified into law under the Land Ordinance of 1785, which first established the procedures to transfer lands from the public domain into private hands. Later under the Homestead Act of 1862, any citizen, or individual intending to become a citizen, could claim 160 acres of the nation's public domain and receive a fee-simple patent after five years of cultivating or otherwise improving the land.<sup>52</sup>

The founder's supreme faith in agriculture serving as the foundation for a virtuous republic had several sources. French physiocrats and luminaries of the Scottish Enlightenment subscribed to a four-stage theory of civilization development, progressing from hunting to pastoral economies and then agricultural to commercial economies. Significantly, Native Americans perfectly encapsulated the lowest stage on the ladder - hunting - and the advances were value-laden with the lower rungs seen as inferior. According to the myth, the universal process occurred for all peoples at some time, though this also meant eventual decay for every civilization, as the final stage brought corrupting and debasing passions leading to the downfall of civilization. The great promise of the United States resided in the expanse of territory in the West, offering the hope that the new republic

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<sup>52</sup> Everett Dick, *The Lure of the Land: A Social History of the Public Lands from the Articles of Confederation to the New Deal* (Lincoln: University of Nebraska Press, 1970), 6, 139.

would develop through space and thereby delay the decline inevitably accompanying the passage of time.<sup>53</sup>

As Yanktons discovered during the meetings preceding the sale of the "surplus" lands remaining after allotment, the specter of speculation and venality did not wait in the wings as the founders had hoped. Commerce and trade dominated the final stage of development and the concomitant reverence for property and luxury associated with that economy spelled the demise of public virtue, or so the story went. Benjamin Franklin, among others, recognized that overseas trade would necessarily follow as America spread and created agricultural surpluses, but he felt that measures should be taken to minimize the power of commerce.<sup>54</sup>

The young American republic faced an uncomfortable necessity to balance the practical need for revenue with the idealism of democratic practice. Speculators seeking to profit from rising land prices complicated the equation; and given that George Washington owned 49,000 acres of western lands, the debate remained firmly in the political arena. The question of how best to dispose of the public domain received an answer over time as two interrelated factors coalesced. First, the practice of selling large tracts produced very little in terms of revenue for the nation or land passing into private hands, at least in the early nineteenth century. Second, as western lands were settled and started to receive representation in the

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<sup>53</sup> Drew R. McCoy, *The Elusive Republic: Political Economy in Jeffersonian America* (Chapel Hill: University of North Carolina Press, 1980), 18-19, 62.

<sup>54</sup> *Ibid.*, 75.

federal government, their representatives' pleas for more liberal land policies compelled a re-thinking of minimum purchases.<sup>55</sup>

Initially, the federal land law only allowed for the sale of one section of a township, an entire square mile. This figure put land ownership out of reach for nearly all would-be yeoman, though huge land companies benefited from federal largess at the same time. Over time, the promise of a virtuous agricultural society found expression in laws that allowed purchase of smaller and smaller amounts of land. Half sections were sold beginning in 1800 and 160-acre quarter sections became available four years later. The democratic vision of Jefferson became more likely as half-quarter sections (eighty-acres) were sold beginning in 1820 and finally quarter-quarter sections - the fabled forty-acre plot - extended the possibility of landownership to the masses after 1832.<sup>56</sup>

Free land for citizens remained the ultimate expression of the nation's democratic promise, even as it eluded fulfillment. The Homestead Act of 1862 fell short of its egalitarian implications, as many of the best agricultural lands were not covered under the law. The railroads received massive land grants for each mile of track constructed, while individual states retained possession of an even greater amount of land. After the Dawes Act, huge tracts of Indian land offered would-be settlers many choices. Chances were good the lands available to homestead lacked

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<sup>55</sup> Benjamin H. Hibbard, *A History of the Public Land Policies* (New York: Peter Smith, 1939), 209-210; Roy M. Robbins, *Our Landed Heritage: The Public Domain, 1776-1970* (Lincoln: University of Nebraska Press, 1976), 10-11.

<sup>56</sup> Kain and Baigent, *The Cadastral Map*, 293-94.

easy access to transportation, timber, and water, leading one land company in Iowa to claim its lands were "better than a homestead," unless the settler was willing to travel "far out into the wild and unsettled districts, and for many years be deprived of school privileges, churches, mills, bridges, and in fact of all (sic) the advantages of society."<sup>57</sup> If it failed immediately to create a nation of independent farmers, the Homestead Act indirectly established 160 acres as the ideal size of a farm, at least as Congress applied the notion to Native Americans. However, abuses from within the system undermined that potential and resulted in Native dispossession.

Appointed Yankton Indian Agent in 1898, John Harding oversaw the wholesale fleecing of Yanktons in the negotiation of leases, transfer of allotments, and signing of easements for a railroad right of way. Harding owed his appointment to the South Dakota Republican political machine and counted local businessmen and realtors among his boosters. Harding's reputation as a political operative and his speculative ventures in real estate and other businesses set the stage for his three-year tenure. Harding managed to set a new benchmark for greed and unethical behavior among Yankton Agents, and rumors of his corruption instigated several investigations and ultimately led to his dismissal. The practice of leasing Yankton lands offers an encapsulation of Harding's tenure, as the number of leases increased from nine when he arrived in 1898 to over 700 just three years later, and he occasionally arranged leases without the knowledge or consent of the Yankton landowner. Not surprisingly, the real benefactors of these agreements were white

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<sup>57</sup> Paul Wallace Gates, "The Homestead Law in an Incongruous Land System," *The American Historical Review* Vol. 41, No. 4 (July 1936): 662-663.

farmers and ranchers, as Yanktons received one of the lowest per acre rates found on any Indian Reservation in the nation, despite Yankton lands being among the best in quality and among the most coveted.<sup>58</sup>

Another mechanism of rapid change entered the Yankton Sioux Reservation beginning in 1900 as the Milwaukee Railroad Company extended rail track from Napa in nearby Yankton County through Charles Mix County to the new town of Platte. The eighty-two mile trunk line followed along the southern shore of Lake Andes, passing through the allotments of Issac Dion and several members of the Irving and Vandal families. The Milwaukee Land Company, an agent of the railroad, oversaw the establishment of four new towns within a year of the extension: Wagner, Geddes, and Platte in Charles Mix County and Avon in Bon Homme County, which sits between Yankton and Charles Mix Counties. The tracks bypassed five existing towns all in the western half of Charles Mix, including Wheeler on the Missouri River and Edgerton, Castalia, Bijou City, and Bloomington farther up on the Missouri Coteau. Lake Andes appeared on the map in 1904, developed by a private company headed by former Agent John Harding. Five more towns followed along the line after 1905.<sup>59</sup>

Viewed in the aggregate, the railroad's impact was stunning and permanent. Total population in Charles Mix County increased thirty-two percent between 1900 and 1905, from 8498 to 11,212. Much of this growth accreted into the new

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<sup>58</sup> Foley, *Allotment and Its Aftermath*, 121, 128, 134-135.

<sup>59</sup> James Fredric Hamburg, *The Influence of Railroads upon the Processes and Patterns of Settlement in South Dakota* (New York: Arno Press, 1981), 254.

municipalities; by 1905 the end of the line was home to 700 in the town of Platte, Geddes had 616, Wagner 513, and Lake Andes boasted 401 citizens just one year after its founding. At least some of these new residents simply moved from towns bypassed by the road. Of the five towns in existence before 1900, only Wheeler survived. Its position as a crossing point on the Missouri River and more importantly as the county seat bolstered its longevity.<sup>60</sup> Railroads served as a transformative vector, but they alone could not re-order the landscape.



Figure 2.2: Map of Charles Mix County, ca. 1922. Source: A.F. Hassan, State of South Dakota, Department of the Interior, U. S. Geological Survey, Compiled in 1920 and 1921.

<sup>60</sup> Wheeler persevered after Lake Andes successfully rested the county seat in 1916. Both cities benefited from a bridge across the Missouri River in 1925, which is discussed in Chapter three. Wheeler's end came with the rising waters from the Fort Randall Dam, one of the first Pick-Sloan Plan dams on the Missouri River. Construction began on the dam in the 1940s. Hamburg, *The Influence of Railroads*, 135-36.



With the extension of the Chicago, Milwaukee and St. Paul railroad, the panoply of Harding's talents for self-enrichment and abuse of his position of trust came into bold relief. On June 19, 1899, the Commissioner of Indian Affairs granted Harding the authority to negotiate "right-of-way" easements between the railroad and individual Yankton landowners along the proposed route. However, Harding also received financial consideration for his efforts from the railroad in the form of a tract of land worth \$3,000. Never content to skim off the top, Harding engaged in a more ambitious scheme involving the illegal transfer of allotments, the misappropriation of agency funds, and the time-honored Western practice of town site speculation and development.<sup>61</sup>

The route of the railroad passed along the southern edge of Lake Andes, presenting an ideal spot for a new town. As early as May 1889, in response to rumors that the reservation would soon be open to white settlement, a South Dakota newspaper reported that Lake Andes "is already known far and wide as a magnificent summer pleasure resort."<sup>62</sup> Harding wrote his superiors in August of 1899 asking for clarification of several policies regarding the transfer of allotments and town site development. He stated that several fraudulent allotments assigned to non-existent individuals remained on the books, and he wanted to cancel those allotments and reassign them to Yanktons willing to "exchange" their existing allotments along the route of the new railroad. There is no record of the BIA's

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<sup>61</sup> Foley, *Allotment and Its Aftermath*, 135-36.

<sup>62</sup> quoted in Foley, *Allotment and Its Aftermath*, 55.

response to Harding's brazen dispatch; but given the investigation that followed, it seems that the office took a dim view of his creative management.<sup>63</sup>

By the time the first investigator arrived, the fledgling town of Lake Andes claimed a hotel and store, both built by Harding but funded in part with federal government money. Earlier in 1894, the Bureau of Indian Affairs had divided the reservation into two farming districts, with the northern district station at Lake Andes. The farm station consisted of an 80-acre plot on the southern end of the lake on which Harding oversaw the construction of a few buildings. <sup>64</sup> Harding entered the real estate business after inducing Sophia Ironhawk to transfer her allotment to Lorena Pierce, Harding's niece. Pierce filed a homesteading claim on the former Ironhawk allotment, and Harding set to work on building a personal fiefdom. In addition to a railroad siding, a hotel and store belied the true purpose of the ostensible homestead. Inspector William Graves, sent to investigate charges against Harding, reported back on the "mercantile institution" then doing brisk a business, including "traffic in merchandise, lumber and other building material, machinery and implements, purchasing and shipping grain, hay, cattle and hogs, etc."<sup>65</sup> Graves found corroborating evidence from white merchants who complained that they could not compete against Harding. Harding provided more damaging testimony against himself when he asked the Commissioner to allow his purchase of materials

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<sup>63</sup> Ibid., 54-55, 136.

<sup>64</sup> Hoover, *The Yankton Sioux*, 46; Foley, *Allotment and Its Aftermath*, 131-32,

<sup>65</sup> Ibid., 140.

on the "open market," as he could secure the goods for less than any of the bids submitted.<sup>66</sup>

When news of the investigation against Harding reached the South Dakota congressional delegation, they immediately came to his defense. Congressman E. W. Martin informed the Interior Department that he possessed several letters offering favorable assessments of the agent, and he forwarded one from Attorney John Lindsay. Subsequent investigations revealed that Lindsay amassed immense profits from sales of inherited Yankton allotments. Senator Robert Gamble, even in the face of considerable evidence presented by Interior Secretary Ethan Allen Hitchcock, pressed for further deliberation, either in a "formal hearing" or another investigation. Gamble achieved his goal, and Inspector James E. Jenkins conducted a second investigation during the summer and fall of 1901. Senator Gamble's tactics allowed Harding to stay in office a few months longer, though in the end Harding was dismissed from his duties as Yankton Agent.<sup>67</sup> Before his removal, Harding managed to amass a small fortune and clear the way for the founding of Lake Andes the town.<sup>68</sup>

Previous to the arrival of the railroad, Yankton land owners blanketed Lake Andes. With the exception of the 80-acre plot on the southern end claimed to the federal government, large areas around the lake were in the control of large extended family groups intermixed with smaller claims of individuals. By late spring

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<sup>66</sup> Ibid., 139-142.

<sup>67</sup> Ibid., 142-44, 145-46.

<sup>68</sup> Sansom-Flood et al, *Remember Your Relatives Vol. II*, 36.

of 1904, all the pieces for a new town were being assembled. In March 1904, Arnolds and Andrews filed paperwork with the South Dakota Secretary of State for the Lake Side State Bank. The partners had previously sold out their interests in the Bank of Platte in late February and planned on starting a new institution in the town of Lake Andes later that spring.<sup>69</sup> A related story buried on page four of the local newspaper announced that Arnold and Andrews received a one-half interest in the new town as “part consideration for the Bank of Platte,” and that T.E. Andrews would serve as town site agent for the new municipality.<sup>70</sup> A few weeks later, J. R. Arnold announced that lot sales would be held between April 20 and May 2, following the completion of surveying the streets and lots. John W. Wallace again received the contract to survey the new town site, having already administered the subdivision of the other towns established along the Milwaukee extension into Charles Mix County.<sup>71</sup>

The first official sale of town lots occurred on May 18, 1904. The Lake Andes Townsite Company hoped to maximize their return by auctioning every lot, with minimum starting bids.<sup>72</sup> Bidding for business lots began at \$200 for a corner lot and \$150 for an interior tract. Residential parcels started at \$125 for a corner and

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<sup>69</sup> Untitled Article, *The Wheeler Courier*, 3 March 1904, 1.

<sup>70</sup> Untitled Article, *The Wheeler Courier*, 3 March 1904, 4.

<sup>71</sup> Untitled articles from *The Geddes Record* and *The Platte Enterprise*, appeared in *The Wheeler Courier*, 24 March 1904, p 5.

<sup>72</sup> This is the exact method preferred by most Yanktons during the negotiations for the 1892 document. This might be ironic if it was not so blatant an example of the fleecing of Yanktons during the period and its consequences were less dire.

\$100 for an interior lot. John Harding brazenly served as the company president and T.E. Andrews performed the duties of secretary, in addition to agent. Cash payment brought a five-percent discount, or terms could be arranged for 1/3 down, 1/3 due in a year and the balance due in two years, which carried an eight percent interest payment.<sup>73</sup>

The story of allotment and the 1892 "document" on the Yankton Sioux Reservation offers a different version of the usual tale of dispossession of Indians unaware of what was at stake. Yanktons understood the process all too well, from the entry of surveying parties, the size of individual plots of land, to the method of land sales. The twelve-forty plan more closely resembled the original strictures of American land law, which granted far larger tracts of land. The refusal to listen to Yankton wishes by federal officials charged with a trust relationship poisoned every aspect of the allotment process. The contrast between the lump sum method under the 1892 document and the auction of individual plots during the founding of the town of Lake Andes underscores the basic injustice and fraud of the 1892 document. However, Yanktons were not unaware of the issues at stake and fought to maintain their land and way of life. They were not the hapless dupes envisioned by critics of the Dawes Allotment Act, but they suffered manifold injustice all the same at the hands of federal officers officially appointed with a trust relationship. When the railroad extended into the reservation, Yanktons could expect no better treatment at the hands of their new white neighbors.

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<sup>73</sup> Advertisement, Lake Andes Townsite Company, lot sale, *The Wheeler Courier*, 14 April 1904, p 4.

The town lots sold in May of 1904 relied on the same technology utilized in the cadastral surveys employed to subdivide the rest of the Yankton Reservation. Whether culminating in a single-family home, a sole-proprietorship business, a cooperative grain elevator with multiple investors at the new town, or a cluster of allotment plots united an extended family of Yankton citizens, triangulation and Gunter's chain superimposed a new logic upon the land. The transformation remained an incomplete project in 1904, as Yanktons still owned most of the land surrounding the fledgling town and the municipal lots remained undefined by fences or sidewalks. But just as federal geology and artesian wells began to re-order *Bde Ihanke* into an undeviating feature of the landscape, cadastral surveys and the associated legal systems supported the emergence of the town of Lake Andes. The arrival of the railroad facilitated the process, but arteries of transportation were not sufficient to effect lasting change.

Following the establishment of the town, new waves started to appear on Lake Andes. Captain J.E. Latham piloted the "Belle of Andes" on its August 19, 1904, maiden voyage. The gasoline-powered excursion boat symbolized a new era on the lake as white tourists and pleasure seekers helped to transform the lake into a destination resort over the next twenty years.<sup>74</sup> Several events transpired to allow non-Indian access to the lake's shores, though perhaps the most important catalyst came in 1899 when the U.S. Fish Commission first stocked the lake with black bass. For most of its ten thousand year history, few fish lived in Lake Andes as they could

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<sup>74</sup> Untitled article, *The Wheeler Courier*, 18 August 1904, 4.

not survive the dry periods when the lake dried up, which happened at roughly twenty-year intervals. While the stockings thrived and generated a “bass bonanza,” the effects of the Dawes General Allotment Act and the questions of Indian citizenship it raised ushered in a period of Native dispossession around the lake itself.

### **Chapter Three: Black Bass, Fishing Resorts, and Highways**



The cold, refreshing water of Lake Andes no doubt invigorated the weary travelers. They had ridden in a custom-made railcar for most of the nearly thousand mile journey that started a few days earlier in Neosho, Missouri, at the U.S. Fish Commission station there. The last stretch provided much less comfort, jostled by wagon from the Chicago, Milwaukee and St. Paul Railroad station at Armour to the northern shore of the lake. Another party from Neosho left at the same time but arrived at Greenwood, on the southern end of the lake. The lake also provided welcome space, for the travelers were live fish and had spent the last few miles tightly packed inside converted milk-cans. All total, 600 large-mouth bass (*Micropterus salmoides salmoides*), known at the time as black bass, entered Lake Andes in 1899, evenly divided between the two shipments. Of all the immigrants arriving after 1894, none more profoundly altered Lake Andes than the black bass.<sup>1</sup>

The fish proved to be extremely successful colonizers, in part due to their biology and in part because of the value assigned to them by Yanktons and whites alike. While the bass dominance of the waters was relatively short-lived, the ripples from their introduction helped to transform the lake from a Yankton possession in the physical sense, to a body of water surrounded by white and "almost white" Eastern European immigrant settlers. The story of just how Lake Andes became a "bass bonanza" which was "famous for fishing" -- as early boosters frequently termed the area -- illuminates several important themes in American history

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<sup>1</sup> W. de C. Ravenel, "Report on the Propagation and Distribution of Food-Fishes," *1899 Report of the U. S. Commission of Fish and Fisheries* (Washington: GPO, 1900), cxv.

including the failures of the Dawes Allotment Act, the transformative reach of federal science, and the impact of the automobile transportation revolution.

The growth of the Lake Andes bass fishery coincides with major changes in transportation history. Following the Federal-Aid Highway Act of 1916, automobiles increasingly displaced rail travelers, though vehicular traffic tended to increase overall visitors to the lake.<sup>2</sup> The federal legislation jump started a fledgling Good Roads Movement in South Dakota, accelerating a process of greater governmental involvement consolidating authority for highways at the state and federal levels, removing it from its traditional role as a local concern. The improvement of roads coincided with the proliferation of resorts along the lake's shores, increasing from three in 1916 to sixteen by 1926. The future of the lake as a tourist destination seemed confirm in 1926, when the U. S. Bureau of Roads announced that the newly created U.S. Highway 18 would run along the lake's southern shore.<sup>3</sup>

For the lake's Yankton residents, the twenty years following the Burke Act of 1906 proved devastating. This federal legislation allowed the Secretary of the Interior to grant fee-simple titles to all Indians, at the same time granting full U.S. citizenship. The ambiguous legal status of Native Americans, straddling between tribal and federal jurisdictions, but fundamentally by-passing states provided the law's origins, and it was devised to clarify a difficult enforcement issue. Once the

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<sup>2</sup> The peak year of railroad passenger travel was 1920, although troop movement and gasoline and rubber rationing brought a brief spike during the 1940s. See John B. Rae, *The Road and the Car in American Life* (Cambridge: The Massachusetts Institute of Technology Press, 1971), 89.

<sup>3</sup> "A New Federal Road for Lake Andes," *Lake Andes Courier*, 2 December 1926, 1.

trust authority was removed, Yanktons were free to sell their land to any willing purchaser; and many chose to do just that. The rising status of the lake as a public pleasuring ground added to the appeal of already desirable agricultural lands. By 1931, few original allotments around Lake Andes survived in Yankton hands.

For much of Lake Andes's post-glacial history, it likely held very little fish life. There is admittedly little to base an estimate of the lake's aquatic life on, and most records come from the last two hundred years. The Yankton *Unktéhi* belief suggests that the lake experienced periods of no water with some frequency. Even with augmentation of artesian water, they occurred in the 1860s, 1890s, 1930s, and 1950s, or about every twenty to thirty years. Fish could have survived intervals of less than a year by burrowing in the mud, but longer spells would have denuded the lake of fish. It is likely that *Bde Ihanke* supported much fish life during an unusually wet period between 700 and 1200 CE, but archeology has not suggested any clues as to the specific aquatic environment at this time.<sup>4</sup> Of course, if one considers deep time, the land that is today Lake Andes was home to a host of creatures, both familiar and bizarre.

Before the rise of the Rocky Mountains, the Great Plains consisted of a large inland sea. Known today as the Cretaceous Interior Seaway, the period found the most diverse collection of aquatic life ever assembled on the Northern Plains. The sediment deposited at the bottom of the massive sea also formed Dakota Sandstone, which contains an artesian aquifer tapped to fill Lake Andes. During the Cretaceous,

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<sup>4</sup> Elliot West, *The Contested Plains: Indians, Goldseekers and the Rush to Colorado* (Lawrence: University of Kansas Press, 1998), 27-28, 31.

nineteen species of sharks called South Dakota home, in addition to other fossilized oddities, including the mososaur, a giant sea lizard that fed on fish, birds and other mososaurs; the bulldog fish (*Xiphacectinus audax*), which grew to ten feet in length and was notable for having teeth in sockets, as opposed to most fish with teeth that attached directly to the jawbone; and the *Enchodus*, which paleontologists informally christened the “saber-toothed herring.” Only the paddlefish and lamprey exist both in the waters of South Dakota today and the fossil record of the Mesozoic Era (the Cretaceous being the last period).<sup>5</sup> All of which suggests that when one discusses “native” fishes of South Dakota, a more important question is native to when?

Biologists consider ninety fish species native to the state, though the archeological record only offers significant occurrences of twelve families. The minnow family boasts the most number of species, thirty-five. The most reviled of aquatic immigrants, the common carp (*Cyprinus carpio*), is a member of the minnow family, though it is not represented in the native species of South Dakota. Likewise, the black bass so prized by anglers, benefits from few archeological records, but its family, sunfish (*Centrarchidae*), has scales that are distinct; and closer investigations may reveal a greater range. The other major game fish for South Dakota, the walleye (*Sander vitreus*), appears in the archeological record with considerable frequency, though it is unclear if it survived the Wisconsin glaciations. More recently, genetic evidence suggests that walleyes did indeed persist in the region during the Ice Age,

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<sup>5</sup> Charles R. Berry Jr., et al., *History of Fisheries and Fishing in South Dakota* (Pierre: South Dakota Department of Game, Fish and Parks, 2007), 21-27.

though it could also have easily re-colonized over the last 14,000 years. All the same, the South Dakota legislature designated the walleye as the State Fish in 1892, and it was found in Choteau Creek (just east of Lake Andes) during an 1894 fish census taken in advance of fish introductions by the U.S. Fish Commission.<sup>6</sup>

The U.S. Fish Commission began in 1871 and, like geology and artesian wells, provides another example of the profound connections between federal science, local knowledge, and settlement patterns. Declining numbers of ocean fishes on the Atlantic Seaboard presented Congress with the initial motivation to establish the commission; but under the leadership of Spencer Fullerton Baird, the institution played an integral role in nearly every stream, river, and lake in the nation. Baird focused two strains of endeavor formerly held rather distinct, the science of ichthyology and the practical field of fish culture. The former primarily concerned itself with collecting, classifying and cataloguing the wonderful panoply of fish life in both fresh and salt waters across the globe. Fish culture restricted its pursuits to rearing fishes in small ponds under controlled conditions, usually with an economic motive at the forefront.<sup>7</sup>

Spencer Fullerton Baird stands as one of the great figures in nineteenth-century American science. Before ascending to the heights of administrative power at the nation's capital, Baird built a reputation as a collecting and publishing pioneering ornithologist that led to his appointment at the Smithsonian Institution.

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<sup>6</sup> Ibid., 32-35.

<sup>7</sup> E. F. Rivinus and E.M. Youssef, *Spencer Baird of the Smithsonian* (Washington: Smithsonian Institution Press, 1992), 141-144.

There he first served as an Assistant Secretary between 1850 and 1878, after which time he became Secretary until his death in 1887. While Assistant Secretary, Baird published descriptive works on most of the vertebrate fauna of North America, a task facilitated by receiving and classifying collections sent to the nation's premier scientific institution, many by scientists trained by Baird himself. Congress appointed him U.S. Fish Commissioner in 1871, largely as a result of Baird's efforts, and he also served in that capacity until his death. One example of his influence can be found in the number of species named after him, including an entire genus and more than a dozen species of fish. Likewise, several birds, mammals, mollusks, reptiles and other invertebrates and fossils of extinct creatures all bear witness to Baird's influence and the respect shown to him by his peers, not to mention the totalizing reach of federal science.<sup>8</sup> As a federal administrator, he recognized the important need to curry favor of Congressmen and the districts and states they represented.

Over time, the mission of the U.S. Fish Commission featured fish culture in an increasingly prominent role. The creation of the American Fish Culturists Association by sportsmen in 1871 reflected a general interest in fish culture. The initial Congressional authorization for the fish commission had a term of years and limited its investigations to off-shore fisheries, but in 1872 Congress made it a permanent body and increased the commission's mandate to include propagation of

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<sup>8</sup> Many of the original designations are now recognized as races or subspecies, but eight species and eight subspecies of birds still have *bairdii* in the scientific nomenclature. Rivinus and Youssef, *Spencer Baird*, 56, 114, 127, 183, 187.

fishes for interior rivers and lakes. Under Baird's direction, fish culture accounted for 78 percent of the commission's budget; and following his death, the figures increased. During the first year of Marshall McDonald's tenure, Baird's successor and strong proponent of fish culture, the budget jumped from \$178,000 to \$248,000.<sup>9</sup> Increased budgets also saw a proliferation of the species in cultivation, an expansion that necessitated collaboration with ichthyologists.<sup>10</sup>

In August 1892, Congress authorized investigations into the best location for two new fish culture stations, one for the state of South Dakota, Nebraska and Iowa, and another for Wyoming. Upon consideration of the general terrain and topography, the fish commission decided that "pond and river fishes" constituted the primary need "so far as fish-culture is concerned." The streams which could support trout were restricted to the Black Hills and a few isolated streams Iowa and Nebraska, while those streams in Wyoming fit for trout could be best stocked from the hatchery then under construction at Bozeman, Montana. Therefore, the commission instigated an investigation of the stream and rivers of the "north-

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<sup>9</sup> Joseph E. Taylor III, "Making Salmon: The Political Economy of Fishery Science and the Road Not Taken," *Journal of the History of Biology* Vol. 31, No. 1 (Spring 1998): 38, 40; Donald J. Pisani, "Fish Culture and the Dawn of Concern over Water Pollution in the United States," *Environmental Review* Vol. 8, No. 2 (Summer 1984): 118.

<sup>10</sup> In his analysis of the Pacific salmon fisheries, Joseph Taylor posits a distinct fissure between science and fish culture, though this is not as apparent in the case of interior fisheries. See, Taylor, "Making Salmon," 44-45.

central States west of the Mississippi River” with a focus on the “species of fishes... indigenous to the region,” noting potential sites for a new hatchery.<sup>11</sup>

During the field investigations of 1893, the scientists, led by Professors Barton W. Everman and Ulysses O. Cox, visited Choteau Creek, just a few miles east of Lake Andes. Significantly, they did not report on Lake Andes, because at that time it was more a pasture than a lake due to drought. The creek, however, boasted ten different species that the scientists deemed “valuable,” including “the wall-eyed pike, bullhead, channel cat, black sucker, redhorse sucker, and buffalo. Several other species of less importance were also taken.” The party arrived on June 27, 1893, and observed a creek that was fifty feet wide at its inlet to the Missouri and averaged three feet deep, reaching fifteen feet at the deepest point. In total the investigation revealed seventy-four species and subspecies in the Missouri River Basin, twenty-eight of which had not been previously described. The professors concluded their report with a recommendation for future propagation.<sup>12</sup>

Within three years of the Missouri River Basin study, the Fish Commission established a new multi-purpose hatchery for the Northern Plains at Manchester, Iowa. Following the recommendation of Professors Everman and Cox, the Manchester hatchery was designated with supplying the warm-water streams, rivers and lakes of the Northern and Central Plains (except North Dakota and

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<sup>11</sup> Barton W. Everman and Ulysses O. Cox, “A Report on the Fishes of the Missouri River Basin,” in *1894 Report of the U. S. Commission of Fish and Fisheries* (Washington: GPO, 1896), 325-326.

<sup>12</sup> Everman and Cox, “Fishes of the Missouri River Basin,” 327, 340.



Montana) and included facilities for cold water trout and fishers better suited to warmer water. At the same time, a station at Bozeman, Montana, assumed the lion's share of trout propagation for the region, while an additional station at San Marcos, Texas, supplied the Southern Plains with similar species to the Manchester station. More specifically, the professors reinforced the mission of fish culturists stating that "[n]o better work can be done than to make liberal shipments of buffalo, suckers, catfish, bullheads, black bass, sunfish, crappies, etc., to the suitable waters in western Iowa, Kansas, Nebraska, South Dakota, and Wyoming." They qualified their advice, reserving the first three for streams, while designating the later species for ponds and lakes.<sup>13</sup>

Despite the rapid implementation of the report's recommendations, success in rearing black bass did not arrive quickly for the Manchester station. In its first year of operation, two attempts at rearing black bass failed, the first when the brood fish acquired from a station at Quincy, Illinois, "developed fungus shortly after their arrival and died." The Manchester staff was then able to collect fifty adult bass from the Maquoketa River and release them into one of the station ponds; but it was too late in the season, and the fish did not spawn.<sup>14</sup> Between the summer of 1897 and the spring of 1898, considerable construction occurred at Manchester, with three

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<sup>13</sup> Everman and Cox, "Fishes of the Missouri River Basin," 429; John J. Brice, "Report of the Commissioner," *1897 Report of the United States Commissioner of Fish and Fisheries* (Washington: GPO, 1898), V; W. de C. Ravenel, "Report on the Propagation and Distribution of Food-Fishes," *1897 Report of the United States Commissioner of Fish and Fisheries* (Washington: GPO, 1898), LXII.

<sup>14</sup> Ravenel, "Propagation and Distribution of Food-Fishes," *1897 Report*, LXII.LXII-LXIII.

large stock ponds, seven large rearing-ponds (eighty by twenty feet), and twenty-four small rearing-ponds (seven by twenty-two feet) excavated and graded. Additionally, the rearing-ponds' sides were lined with hemlock planks, while the bottoms were covered with clay over which four inches of "muck" was then spread. Twelve existing ponds received similar upgrades. The black bass taken from the Maquoketa River did not survive the winter well due to injuries received in transport, though 180 were released into two of the ponds. Despite the effort, the Manchester station did not contribute any black bass to 76,064 distributed by the Fish Commission in 1898.<sup>15</sup>

To be fair to the Manchester staff, the great majority of the bass distributed in 1898 came not from commission hatcheries, but from collections of fish stranded in temporary ponds created during spring flooding on the Mississippi River. Building on a program started by the superintendent of the Illinois State Fish Commission, the U.S. Fish Commission started "rescue" operations along the Mississippi River during the spring flood of 1888. As the flood waters receded, remnant ponds teemed with pockets of fish that Fish Commission workers captured in large seines, dragging the pond bottoms and removing all the wayward fish. Invariably some black bass would escape the enclosure, jumping out of the nets and back into the water. In parts of Kentucky, locals referred to bass as jumpers, a

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<sup>15</sup> The Manchester station was not a total failure, as it was responsible for some rainbow and brook trout and several hundred thousand lake trout. W. de C. Ravenel, "Report on the Propagation and Distribution of Food-Fishes," in *1898 Report of the United States Commissioner of Fish and Fisheries* (Washington: GPO, 1899), LXXXII-LXXXIV; George M. Bowers, "Report of the Commissioner," in *1898 Report of the United States Commissioner of Fish and Fisheries* (Washington: GPO, 1899), XII.

reflection of its proclivity for leaping far above the water. This characteristic endeared the fish to anglers, who valued the challenge offered by the feisty fish, but hampered rescue operations.

Finally in 1899, Manchester station reported success in bass propagation, albeit modest advances only benefiting anglers within the state of Iowa. The 685 black bass distributed by the Manchester station was a paltry addition to the 208,938 distributed across the nation that year by the Fish Commission. For Manchester, the procedures followed in 1899 mirrored those of previous years, and the results would have been even more rewarding except for lack of natural food. The station attempted to remedy the situation by gathering natural food from the Maquoketa River, though they were unable to acquire enough to supply the hatchlings. By the time the natural food was supplanted with chopped beef and liver, the fry were not able to recover due to their weakened state, resulting in the disappointing total of 685 shipped within Iowa that fall.<sup>16</sup>

For the previous decade, the Fish Commission had struggled producing black bass at several other stations. Wytheville station in Virginia first began experimenting with bass propagation rather accidentally in 1888. A year earlier the station had captured some 500 black bass from the nearby streams to fulfill the “occasionally urgent demands” received for the fish. Surprisingly, a few fish that escaped capture and remained in the Wytheville ponds spawned the following year,

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<sup>16</sup> George M. Bowers, “Report of the Commissioner,” in *1899 Report of the United States Commissioner of Fish and Fisheries* (Washington: GPO, 1900), XVI; W. de C. Ravenel, “Report on the Propagation and Distribution of Food-Fishes,” *1899 Report of the U. S. Commission of Fish and Fisheries* (Washington: GPO, 1900), LXXXIV.

though when Tate's Run, the stream supplying the station's water, overflowed through the hatchery, the young fish were swept downstream. A concerted effort to breed black bass commenced in 1889, which resulted in 810 fingerlings in 1891 but only 215 the following year. Also in 1891, Neosho station, Missouri, began black bass propagation efforts with 600 breeding fish arriving from Quincy, Illinois. Neosho met with remarkable success producing over 9,000 fry and yearlings distributed in 1892. The success is all the more impressive considering that it was produced by only 33 breeding fish, as 175 had been sent to Washington, DC, in December of 1891. If the results at Wytheville and Neosho offered mixed testimony of the efficacy of black bass propagation, the Washington, DC, ponds created a new expectation for impressive growth.

Housed at the base of the Washington Monument, the fish ponds at the nation's capital got their start as a showcase for carp propagation. The experiment in carp breeding proved incredibly successful, and by 1892 the Fish Commission Superintendent expanded operations into black bass. Those few fish transferred from Neosho in late 1891 exceeded past efforts elsewhere; and in the first year the Washington, DC, fish ponds produced over 34,379 bass for distribution. Only fifteen fish produced the incredible bounty, though the station workers added considerably to the take by augmenting the fish's diet with fifteen pounds of ground fish daily, doubling that amount every other day.<sup>17</sup> The following year the voracious appetite of bass exhibited itself through cannibalism, as breeder fish began eating the

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<sup>17</sup> S. G. Worth, "Report on the Propagation and Distribution of Food-Fishes," *1893 Report of the U. S. Commission of Fish and Fisheries* (Washington: GPO, 1895), 97.

hatchlings, complicating the challenge of providing adequate food for the fish. Notwithstanding the carnage, the Washington, DC, station accounted for 12,330 bass in 1892, surpassing the previous totals at Neosho and Wytheville.<sup>18</sup>

Rudolph Hessel could claim much credit for the immediate success in black bass breeding at the Washington fish ponds, building on his successful carp program. Before taking charge of operation there, Hessel achieved fame as a fish culturist in his native Germany. When Spencer Baird began a carp breeding program, Hessel accompanied the first shipment to the United States in May 1877, subsequently accepting Baird's offer to stay in America and supervise the carp project. Baird lobbied Congress to establish twenty acres of permanent carp ponds on the grounds of the Washington Monument, as Baird passionately believed that carp offered the greatest hope at increasing the nation's food supply. Initially his hopes seemed reasonable, as when in 1882 the commission received requests for carp from 298 of the 301 congressional districts. By the 1890s, however, carp was falling out of favor with the American public due to a widespread belief that the fish tasted "muddy or rank" and its tendency to out-compete other more desirable fish.

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<sup>18</sup> Tarleton H. Bean, "Report on the Propagation and Distribution of Food-Fishes," *1894 Report of the U.S. Commission of Fish and Fisheries* (Washington: GPO, 1896), 36.

<sup>19</sup> Previous to the successful 1877 importation, Baird had earlier made two attempts at shipping carp across the Atlantic, though the both broods died in transit. Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U. S. Fish Commission* (New York: Arno Press, 1978), 147, 272-73.

In 1896, under orders of new commissioner John J. Brice, the distribution of carp was discontinued. Hessel still raised 600,000 carp at the Washington carp ponds, though now destined for the bellies of black bass, not as food for humans. In the 1896 Fish Commission annual report, an interesting inversion appears whereby both the new commissioner and the veteran fish culturist refuse to employ proper names for the objects of their scorn. Brice, for his part, refers only to "certain coarser species" when announcing the stoppage of carp propagation and distribution. Hessel, in his report on the "Carp Ponds," wrote to the "the Commissioner," listing the three different varieties of carp -- leather, scale and blue - - raised by the station, noting the continued effort "to hatch and rear large numbers of them for food for the young bass."<sup>20</sup> Despite some apparent animosity over the species being cultivated, there was no disagreement on the general direction of the Fish Commission's work.

The year 1897 marks a watershed in the history of fish culture in the United States. During the tenure of Baird, the U.S. Fish Commission moved steadily in the direction of fish culture, increasing both the budget and the number of employees committed to its pursuit. This commitment had grown under the second commissioner, Marshall McDonald, even if the species under propagation changed. Baird emphasized carp as a solution to national concerns and felt that fish like black bass and trout were best left to state fish commissions. Prior to assuming the commissionership, McDonald headed operations at Wytheville station in Virginia, an

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<sup>20</sup> *1896 Report of the U.S. Commission of Fish and Fisheries* (Washington: GPO, 1897), 1, 42.

early leader in trout and black bass propagation, and he continued his emphasis on game fish as Commissioner. John Brice, successor to McDonald, continued this trend toward game fish and a general increase in the variety of species subject to artificial cultivation with the publication of "A Manual of Fish-Culture," which appeared in the 1897 annual report, and the completion of aforementioned hatcheries at San Marcos, Texas; Manchester, Iowa; and Bozeman, Montana.<sup>21</sup> The fish stocked at Lake Andes arrived in the first wave of bass introductions into South Dakota.

Lake Andes provided an ideal environment for the recently transplanted black bass. The deepest sections of the lake gave the fish a safe haven from the freezing winter months, while the shallow edges of the lake provided ideal spawning grounds and a supply of food for the young bass, including *Cyclops*, *Daphnia*, young *Corixa* and other small invertebrates. As the summer sun raised the temperature of the water, the juvenile bass rapidly acclimated. The species of bass tolerated a wide variety of water temperatures, ranging from 33 to 98 degrees Fahrenheit - a factor in its profusion throughout the lakes of North America under the Fish Commission's program. However, the parental tendencies of the fish proved the biggest asset in the colonization of Lake Andes.<sup>22</sup>

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<sup>21</sup>Allard, *Baird and the U. S. Fish Commission*, 262; *1886 Report of the U.S. Commission of Fish and Fisheries* (Washington: GPO, 1889), XLI; *1897 Report of the U.S. Commission of Fish and Fisheries* (Washington: GPO, 1898), V.

<sup>22</sup> "A Manual of Fish Culture, based on the methods of the United States Commission of Fish and Fisheries, with Chapters on the Cultivation of Oysters and Frogs," in appendix to *1897 Report of the U.S. Commission of Fish and Fisheries* (Washington: GPO, 1898), 166-169.

In the spring, a male and female bass pair work together to raise their young. In water ranging from as little as a foot deep up to three feet in depth, the pair builds a nest for their young by sweeping the bottom of the lake with their tail fins. The nest itself varies in size from eighteen to thirty-six inches in diameter, and the breeding begins once the water has warmed sufficiently, usually sometime during May in the northern half of the United States. The pair swims back and forth across the nest with their bellies close together, the female slightly in the lead. As the female bass releases her eggs, the male simultaneously secretes his milt. In less than a minute the union is complete, and the eggs drift to the bottom, attaching to the nest.<sup>23</sup>

After spawning, the expectant parents tend carefully to their progeny. One fish will hover over the nest, gently sweeping its fins to keep the eggs free of dirt and sediment. The other fish establishes a perimeter patrol, guarding the waters surrounding the nest at a distance from eight to ten feet. Under controlled conditions at Fish Commission hatcheries, one bass leapt from the water and "viciously" bit the hand of an attendant who ventured too close to the fishes' liking, while another attacked and killed a snake three times its body length in defense of its brood. Black bass have a reputation for being "voracious and pugnacious," devouring rats, frogs, and worms, not to mention minnows and occasionally

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<sup>23</sup> Ibid., 170, 172-73.



vegetables - it is easy to imagine that at Lake Andes the fish were able protectors of their offspring.<sup>24</sup>

The size and number of eggs varies by the age and the size of the mother, but an average nest will produce between 2,000 and 10,000 fry. Likewise, the hatching period varies greatly, from as short as seven days to as long as three weeks, though usually lasting between eight and ten days. The fry, as the hatchlings are known, linger on the nest until the sac is absorbed, whence they form a school hovering around the nest for the next few days. During this time the parents shift their duties, circling the school and "whipping back truants and driving off intruders," until hunger beckons the fry toward the edge of the pond. After delivering their brood to the water's edge, the parents abandon their young to fend for themselves on "minute crustacea, larvae and insects." Eventually, the parents adopt a more adversarial stance toward their offspring, as many of the fry become food for adult bass later in the summer.<sup>25</sup>

The careful nurturing of their offspring coupled with the later tendency to consume the juvenile bass supplies one of the keys to bass profusion once released into the nation's waters and the primary obstacle faced by fish culturists at the commission hatcheries. For the hatchery staff, bass cannibalism diminished the effectiveness of the artificial propagation program, a factor compounded by the lack of natural forage at the breeding and rearing ponds. For bass living in waters subject

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<sup>24</sup> Ibid., 164, 173.

<sup>25</sup> Ibid., 174.

to less intensive management, the availability of natural food surely offset the rate of cannibalistic feeding, while the significantly higher number of breeding pairs increased the overall success rate of the entire population.

Lake Andes covered nearly five thousand acres, giving the 600 bass introduced in 1899 ample space in which to grow. At Neosho station, the fish commission kept thirty pairs of breeding bass per acre and acknowledged that higher densities could be supported. For Lake Andes, if twenty percent of the water was of a sufficient depth to allow nest construction, the number of potential breeding pairs the lake could support exceeded 28,000. Assuming each pair produced 5,000 fry, a conservative estimate, the annual bass spawn of the lake under these conditions would result in 144 million fry. Rampant cannibalism of ninety percent would still culminate in 14 million new bass at the end of the summer. Such a scenario would take years to develop, but if 300 of the introduced bass survived with decent reproductive health and figuring the same rates of reproduction and mortality, the first year's spawn would accrue 150,000 bass fry.<sup>26</sup> Whatever the actual numbers, a bass bonanza was well on the way at Lake Andes.

In the beginning, Yanktons primarily benefited from this bounty. Paul Picotte spent his youth living along the western shore of Lake Andes and spent much time fishing, especially for bass. Paul was born in 1879 and the southeast corner of his forty-acre allotment in section thirty of Howard Township bordered the lake. His brother, Herbert, claimed another forty-acre parcel directly north of Paul's and their

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<sup>26</sup> Ibid., 172.

father, John, possessed approximately 120 acres that abutted his son's land on one side and was bounded by the lake's shores on the south and west. Paul recalled all Yanktons fishing in the lake, from the banks and from boats, not just those fortunate enough to have allotments near its shores.<sup>27</sup> Other Yanktons also recalled fishing for bass at the lake. William O'Connor, born in 1902, remembered fishing once or twice a week with his father, frequently catching the family's supper. O'Connor also attested that fish provided a major part of many Yanktons' diet during the early twentieth century. Melisse Minicopa, born in 1908, did not mention bass by name, but emphasized how important game and fish were to all Yanktons and included ice fishing along with fishing by boat and from the shore.<sup>28</sup>

Given the importance to Yanktons of fishing at Lake Andes as witnessed by Picotte, O'Connor, and Minicopa, perhaps bass lived in the lake prior to the introduction by the Fish Commission. Joe Rockboy, another Yankton born around 1900, also recalled the importance of the lake to Yanktons. Significantly, however, he does mention fish in his recollections. Rockboy carefully tended the history of his people, stating he "always listened to what my elders said about what happened on our reservation." He agreed that "the whole tribe kept the Lake for the purpose of survival of our people," calling it *Bde lhanke*. Specifically, he listed ducks, geese, mud hens, muskrat, turtles, coyotes, bobcats and "all kinds of game," but never mentions

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<sup>27</sup> Affidavit of Paul Picotte, Civ. No. 76-4066, Yankton Sioux Tribe of Indians v. Kenneth Nelson Et Al., Exhibit J.

<sup>28</sup> Affidavit of William O'Connor, Ibid., Exhibit L; Affidavit of Melisse Minicopa, Ibid., Exhibit K.

fish. Rockboy also mentions “a large animal was the lord of the Lake,” and three fasting places within a few miles of the lake that were important for his people’s spiritual lives, indicating his knowledge extended previous to reservations days as well. Rockboy was as knowledgeable of the long history of the lake as any living Yankton, but did not mention fish.<sup>29</sup>

Likewise, scholars who have studied the history of Yanktons and Lake Andes provide mixed testimony on the presence of fish in Lake Andes. James Howard, an anthropologist, asserted that Yanktons used the lake as “a source of fish and duck eggs as were other bodies of water,” and surmised that they used bullboats in those pursuits. Herbert Hoover, a historian, agrees with Howard that Yanktons fished in the area, though more closely follows the testimony of Rockboy when considering the lake itself. Hoover mentions duck eggs and “migratory birds,” turtles, muskrats (a source of meat and tallow), and skunks (the musk used as a remedy for respiratory ailments). Furthermore, Hoover stated the lake was important for both the northern and southern clans as an important site during the autumn to smoke meat and prepare for the long winter months ahead. Like Joe Rockboy, Hoover exhibited a very specific knowledge of Yankton practices around the lake, but did not mention fishing prior to the 1900s.<sup>30</sup>

The existence or non-existence of fish in Lake Andes prior to federal intervention amounts to much more than a biological curiosity. Of all the federal

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<sup>29</sup> Affidavit of Joe Rockboy, Ibid., Exhibit M.

<sup>30</sup> Affidavit of James H. Howard, Ibid., Exhibit A, 2; Affidavit of Herbert T. Hoover, Ibid., Exhibit C, 2.

impositions on the lake -- from creating the reservation, mapping and allotting the terrain, drilling the artesian wells and augmenting the lake's water -- the addition of fish seems at first glance to be the most innocuous. Fish live in water, and it is only "natural" that would be found at Lake Andes. But one important byproduct of bass profusion was it created a new incentive for whites to dispossess Yanktons of their lands. The bass bonanza coincided with passage of the Burke Act, adding a legal pathway for dispossession made more appealing by the presence of fish.

When the first resort opened on the shores of Lake Andes in 1908, a pattern of steady expansion from modest beginnings began. Albert Amundson capitalized on his land being between the town of Lake Andes and adjacent to the lake by building a boathouse and renting boats. Christened "Amundson Acres," Amundson later expanded what began as a single home to include cabins and a dance hall that doubled as a roller skating rink. The combination of boats, cabins, and a large pavilion became a template for other operators in the area that eventually achieved greater prominence, including Rest Haven and Bass Beach.<sup>31</sup>

C.W. Pratt pioneered a different model, subdividing his land into individual plots. The official date for his resort was May 20, 1911, though it never quite lived up to Pratt's hopes. A local history refers to this development with some disdain, stating "the enterprise was a failure.... It never made the term 'Resort.'"<sup>32</sup> Pratt

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<sup>31</sup> Adeline S. Gnirk, *Epic of Papineau's Domain* (Gregory, SD: Plains Printing Company, 1986), 214

<sup>32</sup> "Geddes News," *Lake Andes Wave*, 11 May 1911, 8; Gnirk, *Papineau's Domain*, 214.

never expanded into other recreational avenues, while his operation remained a collection of individually-owned summer cabins, reaching its peak between 1915 and 1930, roughly following the trajectory of the rest of the lake's boom years.<sup>33</sup> Regardless of the socio-economic status of the visitors, all were drawn in by tremendous tales of bass fishing.

In the middle of June in either 1910 or 1911, John Engelland, Allie Newell, and Win Coddner set out from Armour for a day of fishing at the lake. Engelland kept a sixteen-foot boat in a grove of trees on the eastern shore. The trio anchored the skiff about one hundred yards off shore in six-foot water. By 8:30 in the morning the anglers were casting with Wilson Wobbler lures, which had "three gangs of hooks." Nearly every cast returned at least one bass, and on several occasions two fish were reeled in on the same line. Soon the men were forced to stand on the seats, as their catch lined the bottom of the boat making it too slippery to stand. After exhausting the boat's capacity, the men stacked the fish in the back seat of their car and road three abreast in the front back to Armour. They counted nearly 300 bass, most weighing between two and four pounds with some as large as seven pounds, and they spent the afternoon driving around the town distributing their bounty to local residents. Later that evening, Engelland returned to lake for more fishing. Having heard of the wild success, the mayor of Armour, Tom Farthington, decided to try his hand at fishing. With a newly purchased rod and reel, Farthington proved to be a quick study and the duo added 72 more fish to the day's total. Lest this

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<sup>33</sup> Ibid.

particular tale seem too good to be true, stories of incredible catches abounded for the lake between 1910 and 1923.<sup>34</sup>

In 1914, Henry Z. Miller launched Rest Haven Resort, which he built into one of the premier resorts of the lake. Originally the resort consisted of a few cabins serving as either weekend retreats or summer cottages for pleasure seekers attracted by fishing and swimming in the lake. Miller soon completed a dance pavilion which jutted out into the lake supported by pilings and accessed by a boardwalk. Rest Haven took the previous model and expanded it many times over. The dance pavilion increased the appeal of the resort as a destination, as bands performed nearly every weekend. A young Lawrence Welk reigns supreme as the most famous to grace the stage, but even local acts attracted large crowds.<sup>35</sup>

On June 11, 1915, nearly 3,000 spectators crowded the Lake Andes City Square, lining up for a free fish dinner. Nearby in the Engel butcher shop, townspeople had been frying 4,000 bass in preparation of the welcome guests. The evening before the ladies of the town prepared mountains of bread and butter sandwiches, and sliced kegs of dill pickles. Gus Buche was especially gratified at the turn out, as he had publically proposed the idea of "Fish Day" a few weeks earlier. Heavy rains had pounded the area for the previous three days, though the muddy roads delayed the arrival of some of the visitors. Late comers missed a free concert

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<sup>34</sup> Henry Williamson, "Bass Bonanza: The Life and Death of Lake Andes," *Lake Andes Wave*, 3 March 1960, 1; Henry Williamson, "Bass Bonanza: The Life and Death of Lake Andes, continued," *Lake Andes Wave*, 10 March 1960, 1

<sup>35</sup> Gnirk, *Papineau's Domain*, 216.

by the Tripp band and a baseball game between Greenwood and Ravinia that morning, but the afternoon's events were all well-attended.

Fish Day offered a full slate of activities lasting far into the night. An afternoon baseball game saw teams from Geddes and Wagner struggle for eleven innings. In addition to the nation's pastime, track events included a free-for-all foot-race, a ladies free-for-all foot-race, and girl's and boy's foot-races. Equestrian contests featured a horse back potato race, an Indian pony race and a running horse race. On the lake itself, a one-man rowing race and a free-for-all and boy's swimming race were staged, though choppy water kept the tub race from happening. A merry-go-round offered thrills for those not so athletically inclined, while the "Royal Neighbors," a local social club, ensured everyone's comfort by providing a supervised rest room. As night fell, the revelers had their choice of two dances, one on Main Street and another at the western edge of the lake at Rest Haven Resort in the recently constructed pavilion.<sup>36</sup> Fish Days continued as an annual event, growing in popularity alongside the resorts.

In 1918, bass fishing at the lake received national exposure from an article in *Forest and Stream*. The piece recounts a fishing trip taken by four companions, again with a Mayor in the group, this time E. H. Whelan of O'Neill, Nebraska, Mike Horisky, a mail clerk for the Burlington Railroad, Mike Kirwin, an artist, John Bernard O'Sullivan, the author. Like any good fish story, this account teems with factual inaccuracies, untruths, and exaggerations. It also offers some interesting testimony

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<sup>36</sup> Ibid., 206.



not found elsewhere in the historical record. And importantly, it corroborates other aspects of the lake's history that are matters of record in many different sources. As for the fishing, we might trust O'Sullivan's account. He reported "thousands of strikes" during their three-day stay though "[a]ll the fish that struck let loose of the prong like domesticated lightning," limited their catch to 123 bass.<sup>37</sup>

O'Sullivan makes several erroneous claims about the lake, though none are too major. He incorrectly locates it in Bon Homme County, not Charles Mix. He states the first wells were drilled in 1890, not 1896, which leads him to list 6 wells filling the lake, not the four that existed as of 1918 (two drilled in 1896&1897, and two more in 1907). O'Sullivan characterizes the lake as a "stagnant slough" before the first wells, which leads him to term the lake an artificial body of water. Contrary to the U. S. Fish Commission records, he claims that the federal and state governments have "dumped millions of black bass into the sheet."<sup>38</sup>

O'Sullivan's description of the lake's natural and built environment more closely resemble other accounts. He described "a sheet of water" eighteen miles long and from one to three miles wide with a maximum depth reaching twenty feet. According to his estimate, two thousand visitors, "whose homes lay to the four winds, were ducking and dodging and slipping and sliding in skiff and canoe and bark and launch." Renting a gas-powered launch from a "country tavern," the four

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<sup>37</sup> John Bernard O'Sullivan, "Lake Andes in the Prairie Valley: A Story of the Transformation of a Stagnant Slough on an Indian Reservation into a Mighty Artificial Body of Water Teeming with Black Bass," *Forest and Stream: A Journal of Outdoor Life...* Vol. 88, No. 6 (June 1918), 344.

<sup>38</sup> *Ibid.*, 344, 345.

set out for tour where they were shocked to discover the dance pavilions and live music emanating from shore. Impressed by the variety of "hamlets, hills, council retreats and camping grounds," the group found their accommodations "inviting" and commented that the fishing was free and the cottages within the reach of the average citizen.<sup>39</sup>

O'Sullivan intended to sing the praises of Lake Andes as a fishing retreat, but inadvertently foretold of the lake's demise as a bass fishery. Lack of effective enforcement of game policies brought danger from over-fishing by "thousands of anglers who annually come from every state in the union," and from violation of the proscription against using minnows as bait, which could result in the introduction of carp from escaped minnows of the carp family. The fish caught by the party presented another major concern, as their stomachs were devoid of food, though they still weighed an average of three pounds. The lack of sufficient food received further testimony from the taste of the fish, which rivaled the most pungent carp with its flavor of "well-cured mud." O'Sullivan also reported an abundance of bullheads, another species of bottom feeders that likely gave the carnivorous bass their rank flavor. The group still reported an average fish of three pounds; the fishery still produced healthy, if less flavorful, bass.<sup>40</sup>

Another reason for the continued success of the bass fishery came from the increasing size of the lake. During the drought of the early 1890s, Lake Andes

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<sup>39</sup> Ibid., 345.

<sup>40</sup> Ibid., 344-345.

dissipated from a lack of moisture and went completely dry. Following the drilling of two artesian wells, the waters began to rise, so that by 1900 it was six or seven miles long and a half mile wide. Then in 1907, two more wells were commissioned, at which point the water level was four feet nine inches below the meander line. Steadily over the next few years the water level rose, reaching the meander line in 1912, and by 1917 the water crested just over four feet above the meander line. O'Sullivan estimated that the lake was over eighteen miles long when his party visited in 1918, suggesting that at least some of his account was accurate. The expanding acreage resulting from above average precipitation and the four artesian wells provided space and food sources for the burgeoning bass population, in addition to providing ideal spawning ground for the fish.<sup>41</sup>

The growth in fishing at Lake Andes coincided with an increase in the state of South Dakota's involvement with fishing and fish culture. The South Dakota Game and Fish Commission program of fish culture started in 1909, following a similar pattern to the federal program established twenty years earlier. Between 1909 and 1915, no attempts at breeding occurred and stockings were limited to fish netted from existing populations and then transferred to targeted lakes and streams. In 1916, Frank Purcell accepted a call to begin artificial propagation of walleye and northern pike at the Lake Kampeska State Fish Hatchery at Watertown. Results remained mixed for a number of years, as issues of water temperature and the

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<sup>41</sup> U.S. Congress. House. Committee on Indian Affairs. *Maintaining the Level of Lake Andes: Hearing before a Subcommittee of the Committee on Indian Affairs on H.R. 243*, 67th Cong., 2nd Sess., 5 November 1921, 3, 12; O'Sullivan, "Lake Andes in the Prairie Valley," 344.

timing of releases diminished returns. An expansion into trout hatching began in Rapid City in 1918, but when a fire destroyed the first attempt, the new hatchery was constructed following the specifications of a regular house, in case the operation was abandoned. The state persevered, and in 1923 the Game and Fish Commission purchased seven acres on the grounds of Rest Haven at Lake Andes for a black bass hatchery. The commission had reason to be more optimistic with the bass venture based on the already productive fishery at Lake Andes; though like the rest of the commission's early efforts, success proved elusive.<sup>42</sup>

Lake Andes seemed to present an ideal location for a black bass hatchery. The adjacent lake offered a twenty-year history as a prolific fishery and a ready source of parent fish for breeding. Artesian wells ensured a constant supply of water for the hatchery ponds. In addition to digging the pond, hatchery workers planted shrubbery around the hatchery grounds and alongside the pond to improve the overall appearance and to provide food for the fish. A cottage was also constructed as a residence for the keeper in charge.<sup>43</sup> And perhaps most importantly, the new hatchery's location on a state highway made distribution by truck possible, an option "cheaper and more satisfactory than all-rail distribution."<sup>44</sup>

State highways in South Dakota had only recently been established, and here the state lagged behind national developments in road building, despite a

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<sup>42</sup> Berry Jr., et al., *History of Fisheries and Fishing in South Dakota*, 272-276.

<sup>43</sup> *Fifteenth Annual Report of South Dakota Department of Game and Fish* (Pierre, SD: State Publishing Company, 1924), 5-6; *Sixteenth Annual Report of South Dakota Department of Game and Fish* (Pierre, SD: State Publishing Company, 1925), 6.

<sup>44</sup> *Fifteenth Annual Report of South Dakota Department of Game and Fish*, 6.

proliferation of cars. Between 1913 and 1919 the number of automobiles in South Dakota increased more than fivefold, from 15,000 to over 100,000. Over the next fifty years, ownership increased at less geometric rates, but by 1966 the number of cars within the state crested 280,000. The story of the roads that these early automobiles traveled upon is less well known, partly because the Interstate system envisioned in the 1940s and implemented beginning in the 1950s has largely eclipsed the two-lane roads both as thoroughfares of transportation and in the popular imagination.<sup>45</sup>

The drive for better rural roads predated the popularity of automobiles by several decades; as muddy, impassable roads affected horses, wagons and bicyclists alike. In the mid-1880s, North Carolina and Iowa passed laws that allowed counties to include a road levy in property taxes on urban and rural residents, eliminating a lack of finances as the main obstacle to better roads. The national movement received impetus from bicycle enthusiasts, who created a national League of American Wheelmen by amalgamating local clubs in 1880. The Wheelmen diversified into magazine publication with *Good Roads* in 1892. That same year the National League for Good Roads formed, and then absorbed into governmental service in 1893 with the creation of the Office of Road Inquiry under the

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<sup>45</sup> The logical connection between more cars and more roads obscures the original push for the first federal highway act – rural free delivery of mail. Elizabeth Eiselen, “The Tourist Industry of a Modern Highway: U.S. 16 in South Dakota,” *Economic Geography* 21 (July 1945): 222; Herbert Schell, *History of South Dakota* (Lincoln: University of Nebraska Press, 1975) 3<sup>rd</sup> edition, 364; U.S. Federal Highway Administration, *America’s Highways, 1776-1976: A History of the Federal-Aid Program* (Washington D.C.: GPO, 1977), 80, 157-58, 196.

Department of Agriculture. It was tasked with providing advice on road building and fostering public awareness through informational publications.<sup>46</sup>

With the implementation of Rural Free Delivery in 1896, the abysmal state of the nation's roads received indisputable confirmation and justification for their improvement. The Post Office Department instituted a policy in 1899 that rural routes would only be established along passable roads, initiating road improvements by private citizens and county and state governments alike. The rural mail carrier became the de facto point person for road inspection, as encounters with bad roads made his job more difficult and threatened his livelihood as his pay could be docked if he failed to complete his route. His complaints to the local postmaster or road authorities often brought quick results. The bureaucratic overlap became official in 1905 when an agreement between the Postmaster-General and the Secretary of Agriculture committed the Bureau of Public Roads (formerly the Office of Road Inquiry) to inspect rural roads and offer advice on their repair.<sup>47</sup>

The direct association between rural roads and postal routes finally removed one of the greatest obstacles to federal involvement in the nation's road system. The role of the federal government in road construction had largely been a dead letter since President Andrew Jackson had vetoed the Maysville Road bill in 1830. Jackson, and President James Monroe before him, found no constitutional authority for

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<sup>46</sup> *America's Highways*, 41-42, 80; Wayne E. Fuller, "Good Roads and Rural Free Delivery of Mail," *The Mississippi Valley Historical Review* 42(June 1955):69.

<sup>47</sup> Fuller, "Good Roads," 70-72.

government aid for internal improvements, a position that held, with a few exceptions, for the rest of the nineteenth century and placed the responsibility with the states. In turn, the states adopted a similar stance on internal improvements, relegating road work to county and even township governments. However, the constitution explicitly granted Congress authority over postal roads. Even with constitutional footing, legislation still required public support, and between 1902 and 1911 a spate of road bills were introduced but never made it out of committee. As long as the good roads movement remained a rural concern, the chances of national legislation remained small.<sup>48</sup>

Paradoxically, the profusion of automobiles after 1900 created a lobby with aims quite different from the rural good road movement. By 1910, Americans owned nearly half a million cars and trucks, a marked increase from the 8,000 just a decade earlier. With the new vehicles came legislation restricting emissions and speed and requiring registration, impediments exacerbated by variations among municipalities and states. The American Automobile Association formed from a collection of local and state organizations of motorists in 1902 to combat abuses and to urge the standardization of laws within and across states. The AAA also supervised long-distance motor tours between 1904 and 1910 that publicized the woeful state of the nation's highways. In 1912, Charles G. Fisher provided a coherent focus to these efforts when he proposed the idea of a "coast-to-coast rock highway," solidified the following year when the Lincoln Highway Association formed to bring

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<sup>48</sup> Ibid., 68, 78-79.

the notion to fruition. The Lincoln Highway achieved the greatest success of any of its competitors, but was only one of several different attempts at creating interstate highways before large-scale governmental involvement.<sup>49</sup>

Congressional debate surrounding a national aid for postal road construction bill in 1912 revealed the tensions between the two interest groups. Missouri Representative Dorsey W. Shackleford, the bill's sponsor, summarized the argument for passage by stating, "These roads will enable our farmers to get their products to market more promptly and cheaply, thus giving to the consumer his food fresher and at lower cost. These roads will give to our rural communities better schools and churches. These roads will give our farmers more opportunities for the benefits and joys of social intercourse." And his colleagues in the House agreed, passing the bill 240 to 86. In the Senate, these seemingly noble agrarian sentiments were attacked as the schemes of "knights of the dirt roads" who advocated "a road system without any plan or purpose," one that started "nowhere and ended nowhere." A better use of federal money allowed its citizens to "see America first,"<sup>50</sup> by constructing a system of roadways extending across state boundaries, stretching from sea to shining sea. The Senate defeated the measure but allowed a concurrent resolution

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<sup>49</sup> Ibid., 77; *America's Highways*, 59-61, 83.

<sup>50</sup> The "See America First" campaign blossomed after American tourists' access to Europe was restricted following the outbreak of World War One, see John A. Jakle and Keith A. Sculle, *Motoring: The Highway Experience in America* (Athens: University of Georgia Press, 2008), 27.



allocating \$500,000 for a study of road construction methods and the relative merits of federal aid to postal roads.<sup>51</sup>

The Federal Aid Road Act of 1916 appealed to the proponents of local roads and interstate highways and indirectly spoke to the fear of an over-reaching federal government. The urban/rural divide was bridged by an apportionment system, whereby funds were distributed “one-third according to area, one-third according to population, and one-third according to rural post mileage.” The original agrarian component of the good roads movement continued as the Office of Public Roads remained under the Department of Agriculture, but during debate the original language of the bill requiring the roads to extend from “cities, towns and railroad stations into the adjacent farming communities,” was replaced by the stipulation that projects were “substantial in character.” The bill allocated a maximum of \$25 million annually, and guaranteed that each state would receive a minimum of \$65,000. The legislation required that in order to receive funds, states had to create highway departments by 1920, but that all construction and maintenance of the roads would remain under state control. Federal aid would provide fifty percent of the cost of any project up to \$10,000 per mile, though if a state failed to maintain the improvements its future funding would be jeopardized.<sup>52</sup>

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<sup>51</sup> Fuller, “Good Roads,” 79-82.

<sup>52</sup> In 1916, Congress only authorized \$5 million, but increased the total appropriation by \$5 million each year, reaching the \$25 million maximum in 1921. *America's Highways*, 86-87.

South Dakota lagged behind the rest of the nation in the development of public roads. In 1903, Governor Charles N. Herreid unsuccessfully urged the state legislature to address the inadequacies of a system that had no centralized planning. Where roads developed along section lines of the public land survey, characterized by historian Doane Robinson as "haphazard, wasteful and almost worthless," most were constructed by "working out the tax." Four years later South Dakota legislator Joseph W. Parmley introduced a bill which required all roads to be supervised by the county commissioners and county engineers, and road taxes should be paid in cash, as opposed to by providing labor in kind. Even after the bill was amended to allow counties to opt out of the requirements, it was defeated 43 to 37. Later, the legislature approved an act requiring cash payments of road taxes, but no real progress occurred until the South Dakota Constitution was amended in 1916 to allow the state to build public roads, a duty formerly under the purview of counties. The following year the legislature created a state highway commission.<sup>53</sup>

In order to comply with the terms of the Federal Aid Road Act of 1916, the South Dakota Highway Commission underwent a complete re-organization. The new commission divided the state's roads into four categories: township, county, state, and federal aid. The State Highway Commission oversaw the last two categories, jointly with the U.S. Bureau of Public Roads in the case of federal aid roads. The reorganization was completed in 1919, and by 1925 it had completed 3,542 miles of new roads. Only a third of this total was graveled, though all were built following

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<sup>53</sup> Doane Robinson, *Doane Robinson's Encyclopedia of South Dakota* (Pierre: Doane Robinson, 1925), 350.

surveys and planned by engineers with grading and draining to improve their year-round viability. Originally county commissioners were responsible for road maintenance, but after 1923 the state commission took on this duty to ensure uniform standards and that South Dakota continued to qualify for federal aid. Township roads had previously been the primary method of road construction, but under the new regime township supervisors mainly oversaw emergency repairs on side roads. County roads included all section lines, which were officially considered legal highways, even though most were not improved at all, especially in the western half of the state. In the five years following the 1919 reorganization, South Dakota's roads received a total of \$19 million in improvements, with \$7.5 million coming from federal aid.<sup>54</sup>

Lake Andes benefited from improvements within the state and similar efforts across the nation. Not all roads improved immediately, as a section of road near Lakeview Inn harassed travelers with standing water and extremely muddy conditions even in the summer months of July 1922. Despite some inconveniences, guests at the resort reported favorably on their experience. Three men from Hamburg, Iowa, returned with 300 pounds of fish and raved not only about the bass fishing, but the hospitality they encountered and the reasonable prices charged by Frank Jerman, the proprietor. Another party from Ewing, Nebraska, spent the 1924 Fourth of July holiday at Rest Haven, likewise praising the black bass fishing, camping, boating, and dancing. During the summer of 1925, visitors to Lake Andes

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<sup>54</sup> Robinson, *Encyclopedia of South Dakota*, 350-352.

hailed from Nebraska, Iowa, North Dakota, Montana, Washington, Kansas, Oklahoma, Illinois, Missouri, Pennsylvania, New Jersey and even from England.<sup>55</sup>

Despite the appeal of bass fishing, one the biggest assets for travelers into Lake Andes was a bridge across the Missouri River to the southeast at the town of Wheeler. The first Missouri River bridge open to motor vehicles resulted from the combined efforts of the city of Yankton in conjunction with the Meridian Highway Association beginning in 1919, and a combination railroad and automobile bridge opening there in October 1924. At the urging of Governor Peter Norbeck, the South Dakota legislature authorized the construction of five bridges across the Missouri in 1921. From north to south, Mobridge, Forest City, Pierre, Chamberlain, and Wheeler were selected as locations based on existing traffic patterns. Only three of the bridges received federal aid funds, with the U.S. Bureau of Public Roads contributing forty-two percent of the costs for the Chamberlain, Pierre and Forest City Bridges. The rest of the over \$1.9 million came from a specially created state bridge tax.<sup>56</sup>

The Lake Andes Community Club took an active role in promoting the Wheeler Bridge and the highway that crossed it. On May 8th, 1925, about sixty men from ten towns gathered at Rest Haven resort to discuss plans for the bridge

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<sup>55</sup> Earl Dewey, "Editorial Comments," *Charles Mix County Courier*, 6 July 1922, 2; "Had Great Fishing Trip," *Charles Mix County Courier*, 13 July 1922, 1; "Enjoy Outing at Lake Andes," *Charles Mix County Courier*, 17 July 1924, 1; "Has Interesting Tourist Register," *Lake Andes Courier*, 23 July 1925, 1.

<sup>56</sup> Robinson, *Encyclopedia of South Dakota*, 530-533; "Missouri River Bridges of South Dakota, 1920 to 1980," page 1-2, State of South Dakota Bridge Design, South Dakota Department of Transportation website ([http://www.sddot.com/pe/bridge/docs/Missouri\\_River\\_Bridges\\_1920.pdf](http://www.sddot.com/pe/bridge/docs/Missouri_River_Bridges_1920.pdf), accessed 24 November 2008).

dedication ceremony and to form an organization dedicated to the promotion of the highway and the towns along its route. Colome, Bonesteel, and Burke from west of the Missouri were represented, while citizens from the east river towns of Armour, Geddes, Avon, Tripp, and Yankton joined residents of Lake Andes. Representatives of the proposed Wilson National Highway, running from Canton on the state's eastern border to the Wheeler Bridge and passing through Lake Andes, were also in attendance.<sup>57</sup> The days of privately organized highways were on the wane, as elsewhere a new system of federal roads was being planned.

In an announcement made in early December 1926, federal and state officials designated the road passing over the Wheeler Bridge as U.S. Highway 18. Lake Andes boosters rejoiced that the route passed through their town, even if they were somewhat perplexed by the particular path it traversed across the state. U.S. 18 entered the state at Canton, following the route of South Dakota Highway 44 briefly. It followed existing section lines through Lincoln and Turner Counties, including the hard ninety-degree turns dictated by the rectangular survey, before tracing due west across Hutchison County and the southeastern corner of Douglas County. U.S. 18 then turned due south in Charles Mix County, where it joined South Dakota Highway 50, jogging south to Lake Andes before turning south again to link up with the Wheeler Bridge. Although it might appear that the Wilson National Highway boosters prevailed in the new federal highway's routing, the federal board responsible for the new federal system of numbered roads made their

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<sup>57</sup> "Entertain Guests at Rest Haven with Fish Dinner," *Lake Andes Courier*, 14 May 1925, 1, 4.

determinations in closed door sessions, barring the entrance of hundreds of road lobbyists.

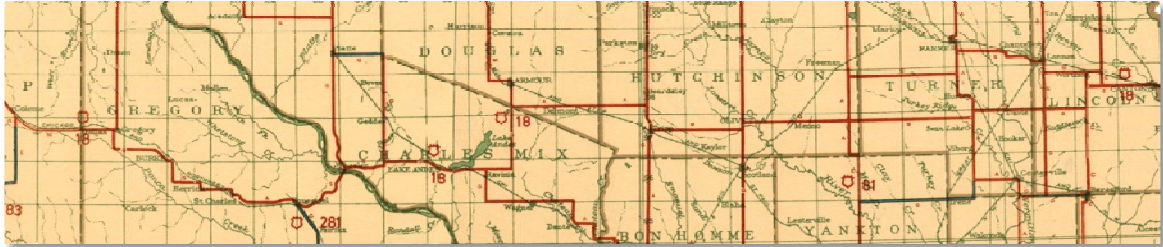


Figure 3.1: U.S. Highway 18 from Canton to Colome, South Dakota. Source: The Federal Aid Highway System Progress Map, Eastern and Central South Dakota, Federal Works Agency Public Roads Administration, Data corrected to August 1, 1939.

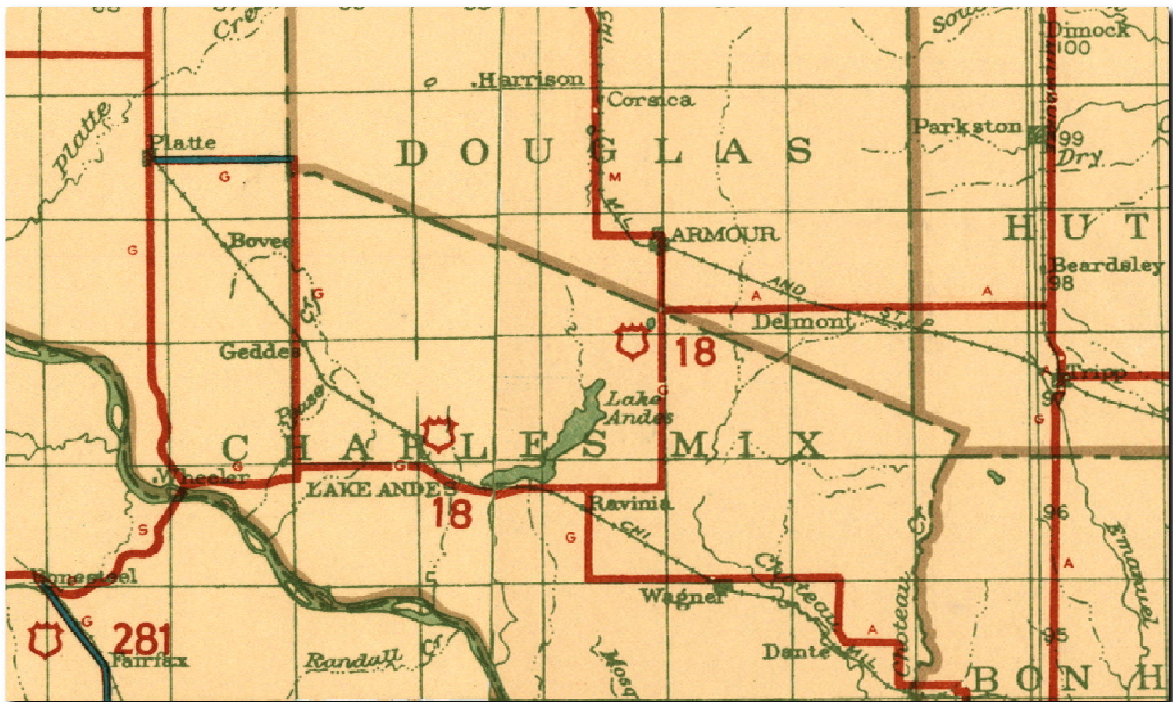


Figure 3.2: Close-up of Federal Aid Highways, U.S. 18 and U.S. 281 intersecting at Lake Andes. Source: The Federal Aid Highway System Progress Map, Eastern and Central South Dakota, Federal Works Agency Public Roads Administration, Data corrected to August 1, 1939.

Just one month after the announcement of the federal highway, the local Lake Andes paper printed a letter from a promoter of the Washington Highway, which also ran through Lake Andes, sent to a local resort owner asking for donations for sign painting. However, unlike the trail associations, the federal highway did not solicit donations or subscriptions for its signage. Today routes like the Meridian Highway and Washington Highway are nearly forgotten, and even the most famous of the named highways, the Lincoln Highway, survives at isolated monuments along its former route.<sup>58</sup> Many at the time lamented the passing of the more nostalgically named routes, but the increased quality of roads ensured their permanence. Unfortunately, the increased ease of access to Lake Andes brought a decrease in the quality of the fishing.

During the May opening weekend of the 1926 fishing season, there was fishing for pike, crappies and bluegill -- though bass did not make the list. An official survey finalized a month later confirmed what the local paper could not bring itself to print. Two professors from the University of South Dakota confirmed that overzealous anglers had "largely fished out" the bass by the end of June 1926. They offered an equally dire forecast for the rest of the lake, estimating that within another five years the same fate would befall crappie and bluegill. According to

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<sup>58</sup> One prominent monument can be found at a rest area between Cheyenne and Laramie, Wyoming, along Interstate 80, which includes a large bust of Lincoln. Richard F. Weingroff, "From Names to Numbers: The Origins of the U.S. Numbered Highway System," U.S. Department of Transportation Highway Administration, Infrastructure webpage (<http://wwwcf.fhwa.dot.gov/infrastructure/numbers.htm>, accessed 24 November 2008); "A New Federal Road for Lake Andes," *Lake Andes Courier*, 2 December 1926, 1; Untitled Article, *Lake Andes Courier*, 6 January 1927, 1; Eiselen, "U.S. 16 in South Dakota," 221-222.

Warden Harry Piner, the professors believed that a shorter fishing season with lower catch limits – in conjunction with the new hatchery – could offer the “salvation of the lake as a fishing resort.”<sup>59</sup>

Despite the ideal location and past history of the fishery, the hatchery failed to deliver as hoped. Two years after operations commenced, the Lake Andes hatchery produced meager returns with distribution limited to the adjacent lake. In 1928, Lake Andes received 2,000 adult and 6,160 fingerling black bass stockings. The following year, the Lake Andes Hatchery produced around 8,000 fingerling, its greatest annual harvest to date. In an effort to increase the take, construction started in 1929 on a new larger pond designed to “serve as a nursery for the young bass produced in the old pond.”<sup>60</sup> Another state hatchery outside of Huron produced 45,000 fingerling bass that year, nearly nine times the production from Lake Andes. The change in operations at the hatchery followed the appointment of a new Director of Fisheries for South Dakota, Robert Ripple.<sup>61</sup>

When Robert Ripple assumed the leadership of the Department of Fisheries, he found a program in disarray. His hire signaled that the Game and Fish Commission actively sought to improve the operation, as Ripple oversaw a successful restocking effort for whitefish as superintendent of Salmo Bay Hatchery

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<sup>59</sup> “Completes Lake Andes Survey,” *Lake Andes Courier*, 24 June 1926, 1.

<sup>60</sup> quote appears in *Twentieth Annual Report of South Dakota Department of Game and Fish* (Pierre, SD: State Publishing Company, 1929), 33.

<sup>61</sup> *Nineteenth Annual Report of South Dakota Department of Game and Fish* (Pierre, SD: State Publishing Company, 1928), 30; *Twentieth Annual Report of South Dakota Department of Game and Fish*, 6, 33.



for the Wisconsin game department. Before his career as a fish culturist, Ripple had spent 27 years as a landscape gardener, skills he maintained on hatchery grounds adding to the appearance of a well-groomed and organized hatchery. His flair for public presentation extended to his treatment of the press, and at least part of his fame resulted from his knack for self-promotion. The publicity also helped to educate the public and increase support for the Fisheries division.<sup>62</sup>

In his first annual report, Ripple cautioned that the road ahead would be long and difficult, while employing an agricultural metaphor promising good returns from wise husbandry. Ripple compared a lake to a field on two separate occasions, once in reference to suckers, carp and other so-called rough fish and again when discussing black bass. Both times he cautioned that lakes could not produce unlimited bounties of an infinite variety of species, but the fish culturist needed to recognize what species best suited the lake and specifically target their propagation. For rough fish this meant removal or eradication to produce more opportunities for game fish, though the same biological processes that allowed the rough fishes expansion thwarted any efforts at their removal, especially for carp. For black bass, the immediate threat came from the efforts of Ripple's predecessor and the practice of stocking too many "panfish," more generally perch, crappies, sunfish, and

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<sup>62</sup> "State Fish Hatchery at Salmo Bay: Native Whitefish Saved from Extinction and Salmon Tock Put in Lakes," *The Milwaukee Journal*, 30 September 1923, 1, FF FISH 250 1 of 1 Clippings, Von Bayer Museum of Fish Culture, D.C. Booth National Historic Fish Hatchery, Spearfish, SD.

bluegills. Panfish preyed on the hatchling and fry bass, and thereby diminished the success of that fish. Ripple felt it best to select whether a lake would primarily be home for panfish or game fish, specifically black bass and wall-eyed pike, and stock accordingly.<sup>63</sup>

No single factor accounted for the growth of Lake Andes as bass fishing haven. And despite Ripple's claim that fishery managers could dictate the fundamental qualities of a lake, it seems that coincidence as much as any factor facilitated the early success at Lake Andes. The bass were stocked as an afterthought following the addition of artesian wells. It took time for the reputation of the fishery to develop, and that period allowed the bass to establish a significant foothold without undue competition from either other fish or an army of anglers. The bass provided a welcome addition to the diets of Yanktons, but soon accelerated the process of dispossession instigated under the terms of the Burke Act by adding another incentive for whites to purchase Yankton land around the lake.

The history of road building and fish culture fracture any appearance of a unified conspiracy to transform the lake. In the case of bass propagation, nearly the same mistakes were made by federal managers and state managers nearly twenty years apart. Even with the publication of a federal manual, the knowledge of effective practices did not filter to South Dakota. The reach of federal science

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<sup>63</sup>Ripple felt that black bass and wall-eyed pike would reach a sort of stasis, as the pike preferred deeper water than the bass. Panfish tend to only grow to about two or three pounds, while the game fish can easily double that size. *Twentieth Annual Report of South Dakota Department of Game and Fish* (Pierre, SD: State Publishing Company, 1929), 25, 27.

stretched far across the country, but did not always extend very deep. The road building movement resulted in a different exchange, as grass roots efforts gradually brought change to the nation, filtering back out from the capital and federal treasury. Counter intuitively, the proliferation of automobiles supplied the coda to the good roads movement, not its prelude. Ironically, the arrival of a nationally integrated system of roads coincided with the bass bonanza's waning days. The lake would continue to produce a harvest of fish, but increasingly one devoid of bass.

With resorts lining its shores and a U. S. highway connecting Lake Andes to a nation of anglers eager to try their hand at the bass bonanza, the agricultural qualities of the place easily can easily be overshadowed. Yet most of the residents of the surrounding countryside owed their livelihood to farming and ranching. The biotic struggles ongoing beneath the surface continued into the fields and pastures surrounding the water. Likewise, the push for Yankton land was accompanied by a desire to remake individual Yanktons into idealized American citizens -- primarily as farmers. The cultivation metaphor Ripple used to explain his work, and its implication of privileging certain species and economies, applied to the country around Lake Andes in ways he could never have anticipated.

**Chapter Four: Scientific Agriculture, Chinch Bugs, and the Alfalfa Special**

In September 1926, Peter Picotte received an unusual request for several ears of his Padanai corn from Yankton Reservation Superintendent Robert Daniels. The request was in marked contrast to the Bureau of Indian Affairs' five-year plan for Yankton agriculture, implemented three years earlier. The five-year plan established quotas and guidelines for the type and quantity of crops and livestock that the ideal Yankton farmer should tend. Because there had been little room for Indian agriculture in the government's plan, the sudden interest in his corn must have surprised Picotte. However contradictory they may seem, the five-year plan and the interest in traditional agricultural sprang from the same urge for scientific and systematic control of agriculture, an orientation that reached its maximum heights in the late 1920s for Lake Andes and, for that matter, all of the United States.

Picotte had grown this variety of corn since 1896, selecting his seed corn from the smallest ears of each year's harvest. The subsequent strain matured quickly and usually provided roasting ears by July 4<sup>th</sup> in time for a major annual celebration. By husbanding the products of a few seed ears that originally came from North Dakota, Picotte maintained his crop through careful selection. He explained that if he selected the larger ears he would have a variety comparable to the larger sized strains grown by his non-Indian neighbors within a few generations, a claim Daniels greeted with skepticism.<sup>1</sup>

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<sup>1</sup> Padanai, or Ree, Corn description, 12 October 1926, Record Group 75, Box 14, FF 31.1, National Archives and Record Administration, Central Region, Kansas City, MO (hereafter NARA-CR).

The corn held little appeal to Daniels, as most of his previous efforts encouraged Yanktons to abandon their own agricultural technologies and adopt “progressive” cultivation. In his report on Picotte’s corn, Daniels stated that no significant cultural aspects remained between progressive agriculture and pre-reservation practices, implicitly stating that his program was achieving results. Picotte’s engineering a mid-summer maturation for Padaini corn belied this claim and suggests that either wishful thinking influenced Daniels, or he indulged in bureaucratic omission, or a little of both. Only ten percent of Yanktons owned enough land to be self-sufficient, but the official version promulgated by Daniels and the five-year plans had little to say about Yanktons whose economies fell outside the strict categories idealized by the BIA.

Before the Bureau of Indian Affairs decided to turn them into agriculturalists, Yanktons had farmed for centuries, their ancestors for millennia. To be fair, Daniels frequently mentioned in his annual reports that Yanktons already knew how to farm; the challenge, in his opinion, consisted in altering their practices. Yet Yankton agriculture looked very different from the brand then in vogue throughout America – the pursuit of scientific agriculture. The biggest difference between twentieth-century practices and those of the previous centuries was the relative position of agriculture in Yankton economies. Since the advent of the horse, farming occupied a supporting role to bison for Yanktons. The transition from an adjunct role back toward a leading part happened by the late middle of the nineteenth century, with

Yanktons increasingly turning to farming as game became scarce and the hunt provided diminishing and uncertain returns.<sup>2</sup>

Like other agriculturalists on the Northern Plains, Yanktons planted corn, beans and squash as their main crops. Planting occurred in the spring, and the three crops were planted together, the corn in mounds, with beans and squash planted alongside. This arrangement maximized the nitrogen fixing qualities of the beans, while the corn provided shade for the beans and squash during scorching summer days. Most Yanktons would spend summers hunting buffalo, returning in the fall to harvest. This agricultural cycle, sustaining Yanktons for centuries, allowed for considerable mobility for most of the year. Viewed from the lens of the five-year plan, the continued movement of Yanktons during the summer months represented a threat.<sup>3</sup>

Although nominally focused on agricultural pursuits, the five-year plan necessitated pervasive cultural changes for Yanktons. The Bureau of Indian Affairs (BIA) first organized a five-year plan in 1922 under the leadership of Commissioner Charles Burke, who as a dutiful administrator called for more work with no additional funding. As he outlined in Circular Number 1819, Burke called for each reservation superintendent to submit a definite and “practical program covering all

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<sup>2</sup> Alan R. Woolworth, *Sioux Indians III: Ethnohistorical Report on the Yankton Sioux* (New York: Garland Publishing Inc., 1974), 203-06.

<sup>3</sup> R. Douglas Hurt, *Indian Agriculture in America: Prehistory to the Present* (Lawrence, University of Kansas, 1987), 57-62; Personal communication with Anthropologist Dr. Mark Awakuni-Swetland.

the activities on their respective reservations for the next five years.” Under this universal mandate, he cautioned against idealistic blueprints. Lest ambiguity result from his caveat, Burke explained that any plan requiring appropriations from Congress above the normal allocation would likely prove impractical. He also stressed that a definite program was “absolutely necessary if we are to make real progress toward the solution of the Indian problem.” Despite exacting instructions including two model plans from the Fort Hall and Pine Ridge Reservations, Burke never actually defined the Indian problem.<sup>4</sup>

Superintendent Harvey Meyer left no doubt he understood the scope of the “Indian problem,” which he considered making Yanktons into “members of their communities with all the rights, privileges, obligations and responsibilities of any other citizens.” His plan specified programs in four broad topics labeled industrial activities, law and order, schools and health. Officially labeled an “industrial program,” the five-year plan invaded Yankton homes in order to influence an “improvement in moral and social conditions.” Lack of formal marriage practices, peyote use, gambling, dances and celebrations each received special enumeration as obstacles to Yankton progress. But for all the antipathy he displayed toward Yankton customs, Meyer found more encouraging signs for introducing scientific farming. With several Yanktons already well established farmers, his plan targeted young Yankton men with acreage available to farm, ideally with funds in their

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<sup>4</sup> Charles H. Burke, “Circular Number 1819,” 10 October 1922, RG75, Box 16, FF 052.2, NARA-CR.



individual accounts, and equipped them with a team and the necessary implements to put their land under the plow. The program was short-lived.<sup>5</sup>

Unfortunately, Meyer's understanding did not produce lasting change; two years later, a new superintendent found that the Yankton Agency could not then, nor ever, claim an operational industrial program. Even without a systematic program, R.E.L. Daniels reported that his three agency farmers were "constantly at work among them (Yanktons), teaching and encouraging them." He went on to state that "a few profit by these efforts," but the majority did not. Daniels rendered a rather bleak assessment of Yankton farmers' material conditions, alleging that of those who had received agricultural equipment, "most of them have gotten rid of it, or allowed it to fall to pieces." However, Daniels recognized that for some it was lack of access to sufficient equipment and teams and resultant poverty that pushed them to "join the driftwood of human failure." He was less charitable for the forty percent of Yanktons who had, in his estimation, "squandered everything they had and (were) leeches upon the tribe." Not surprisingly, Daniels shared the general pessimism of his predecessor when it came to moral and social matters, and his relative optimism for farming.<sup>6</sup>

Despite the untimely demise of the first five-year plan, and in a nod to bureaucratic consistency, Daniels filed an updated five-year plan on schedule in

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<sup>5</sup> Harvey K. Meyer to Charles H. Burke, 13 December 1922, RG75, Box 16, FF 052.5, NARA-CR.

<sup>6</sup> R.E.L. Daniels, Industries Section: FY 1924 Annual Report of the Yankton Indian Agency, p 9, RG 75, Box 15, FF Annual Report FY1924, NARA-CR.

1927. Following a wetter than usual spring, the report displayed cautious enthusiasm for the coming harvest projecting an upswing in the market after three years of “starvation prices for farm products.” Yanktons already knew how to farm, Daniels stated, and just needed leading back to those pursuits. Rather than focus on machinery, his plan set quotas for a diversified crop and animal system, with targets for corn, beans, and alfalfa acreage and chickens, hogs and cows. Behind the pastoral front, the industrial program also called for far-reaching changes, both for Yankton people and the triad legal relationship between tribal, state and federal governments.<sup>7</sup>

His plan contained a fine display of bureaucratic double-speak, as Daniels at once chronicled the moral and social failings of his charges while vindicating his staff for their lack luster performance. He griped that Yanktons tended to ignore the value of a state sponsored marriage license, bringing the legality of domestic arrangements into question. Worse yet, the bonds of matrimony allowed for too much flexibility, according to the BIA officials, threatening the stability of the family. The most vexing problem came from what Daniels caustically termed “shiftless, worthless driftwood,” those who were apparently young unmarried men who moved from reservation to reservation preying upon unsuspecting women and committing the lion’s share of criminal activity. Daniels’ solution, after consulting with several lawyers and state and federal judges, was a complete overhaul of

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<sup>7</sup> R.E.L. Daniels to Charles Burke, 22 April 1927, RG 75, Box 17, FF 052.2, NARA-CR.

federal and state law so that one law applied to both Indians and whites living in the same place.<sup>8</sup>

Breaking rank with official BIA policy, Daniels felt Yanktons required a more individualized approach than currently in vogue. His logic was tortured, but he felt cooperative ventures, like chapter organizations then underway at Pine Ridge Reservation, were doomed to failure with Yanktons who reasoned they could raise more abundant crops on their land without organization.<sup>9</sup> Additionally, a large number of Yanktons recently received large cash payouts from land sales, this factor coupled with a general expectation of a settlement from the Black Hills land claim, presented considerable barriers to encouraging more Yanktons to farm. However accurate Daniels' assessment might have been, it admirably positioned him as a bureaucrat. The Yankton Agency was not hopeless - some progress could be expected, but without systemic adjustments, his administration could not reasonably be expected to affect meaningful change.

Daniels overall pessimism reflected a general feeling of exhaustion within the BIA. The BIA's five-year plan differed from most other plans of the time in one significant: a focus on diminished expectations. During the previous forty years, the BIA waged an aggressive campaign to assimilate the Indian into mainstream America. By 1920, this program was facing serious reconsideration. The final nail in

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<sup>8</sup> Ibid.

<sup>9</sup> This is a great example of the failing of centralized planning to account for regional variation. The rainfall differences between Lake Andes and Pine Ridge considerably lessen the benefits claimed by the Pine Ridge plan.

its coffin came with the publication of *The Problem of Indian Administration*, more commonly known as the Merriman Report, in 1928. It offered a pessimistic assessment of Indian life and the U.S. government's success in turning Native people down the white man's road. While the general view held that Indians remained too primitive for full inclusion into society and need more time, perhaps as long as a generation.<sup>10</sup> Thus, the five-year plan emphasized what can best be described as subsistence agriculture, calling for cultivation of a few acres of corn, wheat, alfalfa and similar crops for the market, and the creation of a small garden to provide potatoes and other vegetables for the table.

Elsewhere the architects of five-year plans imagined far fewer constraints, adhering devoutly to the gospel of rationalization and social planning. The Soviet Union under Joseph Stalin devised the most famous five-year plan in 1927, calling for massive forced collectivization of former peasant lands and a rapid transition to mechanized, industrial agriculture. As early as 1920, Soviet planners recognized that existing peasant agricultural practices, especially regarding periodic land redistribution, stymied modernization efforts. Their solution of collective agriculture shared many aspects of industrial American agriculture.<sup>11</sup> Surprisingly, in light of the "Red Scare" of 1919-1920 and American general anti-communist

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<sup>10</sup> Frederick E. Hoxie, *A Final Promise: The Campaign to Assimilate the Indians, 1880-1920* (Lincoln: University of Nebraska Press, 2001), 240-44.

<sup>11</sup> Peter Kenz, *A History of the Soviet Union from the Beginning to the End* (New York: Cambridge University Press, 2006), 82, 84-85.

feelings, multiple exchanges occurred between the two countries throughout the 1920s.<sup>12</sup>

Transfers of seed, engineers and technology flowed back and forth between the US and the USSR. Starting in 1924, American tractor manufactures supplied most of the mechanized power for Soviet farms. As late as 1930, over three-fourths of Russian tractors were American made.<sup>13</sup> Engineers from both countries envisioned huge crop yields by employing planting and harvesting machinery on extensive tracts of land. The bonanza farms of North Dakota and Montana provide the best example of this phenomenon in the United States. The Campbell Farming Corporation of Hardin, Montana, founded by Thomas Campbell in 1918, unleashed thirty-three tractors and an assortment of binders, threshers, combines and wagons over 65,000 acres its first year of operation. Soviet officials were so impressed on one visit to his farm that they offered him 1 million acres if he would relocate to the USSR. Campbell declined, but three Americans accepted a similar offer and established a 375,000-acre wheat farm near the Don River in southern Russia. At

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<sup>12</sup> The 1919-20 "Red Scare" hysteria, spearheaded by Attorney General A. Mitchell Palmer and following on the heels of the Bolshevik revolution, obscured lasting connections between Soviet and American agricultural planners. Overall, the scare resulted in a general distrust of radicalism, patriotism bordering on xenophobia, and strained relations between the US and USSR, see Robert K. Murray, *Red Scare: A Study in National Hysteria, 1919-1920* (Minneapolis: University of Minnesota Press, 1955), 191, 264, 267, 274.

<sup>13</sup> Dana G. Dalrymple, "Joseph A. Rosen and Early Russian Studies of American Agriculture," *Agricultural History*, 38(July 1964): 157-160; Dana G. Dalrymple, "American Technology and Soviet Agricultural Development, 1924-1933," *Agricultural History*, 40(July 1966): 187-206.

least in regards to the scale of agricultural production and planning, the experts could agree.<sup>14</sup>

Engineering hubris, with its urge to rationalize and systematize all aspects of daily life, was not limited to agriculturalists. The most well known applications appeared in business and industry, with Frederick W. Taylor's scientific management studies of time and motion and Henry Ford's assembly-line production systems the most obvious examples. Agricultural engineers shared the same desire to standardize the performance of and results from basic tasks. Science held great promise to improve the conditions on the farm, and educators at land-grant colleges, county extension agents, grassroots organizations and farm implement dealers all played a part in spreading the gospel of what Historian Deborah Fitzgerald has termed "industrial agriculture."<sup>15</sup>

Scientific agriculture describes the efforts focused on Yanktons. The Department of Agriculture's Bureau of Plant Industry desired Picotte's Indian corn as part of its general research project. When C.N. Collins contacted Superintendent Daniels, he specifically advised that specimens should be gathered regardless of their agricultural merits, as the plants' real value lay with archeologists and historians. Collins did allow that some aspects of the corn might have potential

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<sup>14</sup> James C. Scott, *Seeing Like a State: How Certain Conditions to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998) 197-201.

<sup>15</sup> Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven, Yale University Press, 2003), 10-11.

when combined with commercial corn varieties.<sup>16</sup> Picotte's corn succinctly encapsulated the prevailing view of Yankton culture, an interesting relic only salvageable when cross-pollinated with the dominant strain. The exchange between governmental bureaus suggests the multiple networks that intersected around agriculture in the 1920s, often coalescing for Yanktons in the roles performed by the farm agent.

The job of actually implementing the BIA five-year plan fell to farm agents, visiting individual Yanktons in their homes. The job description given by Fergus F. Cron, farm agent for the Lake Andes district included serving as a constable, counselor and overseer. With concerns running far beyond cultivation and harvest, farm agents served as one arm of federal control. In responding to a survey from the BIA as part of the five-year plan, Cron was asked to describe his duties and then for comment on how "...your work among the Indians differs from similar work in white communities." The two responses are quoted in their entirety:

The farmer has immediate supervision of all activities in his district, which includes enforcing law and order; supervision of construction and upkeep of buildings and improvements on Indian lands; inspection of livestock, machinery, etc., purchased for Indians; supervision of expenditures of trust funds; supervision of health and social activities; appraising land for sale and leasing of trust lands; settling controversies between whites and Indians; answering inquiries regarding Indians and activities on the district; writing wills for Indians, assist in probating estates; supervision of farming activities, which includes all duties of farm extension agents. There are no similar positions in white communities, which take in the scope

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<sup>16</sup> C. N. Collins to Robert E. L. Daniels, 30 August 1926, RG 75, Box 14, FF 31.1, NARA-CR.

covered by a Government Farmer and requires (sic) a working knowledge of as many different things.<sup>17</sup>

Cron's assessment of his duties was accurate in the most general sense, although his daily routine fell short of the autocratic implications described above. In particular, the legal, or "law and order" as Cron would phrase it, aspects of his job are overemphasized. The more mundane tasks, including washing windows and "scrubbing the office," escape mention, as does the considerable amount of driving required. Cron averaged nearly three hundred miles a week between May 1929 and January 1931, a period when most of his weekly reports survive.<sup>18</sup>

Fergus Cron left a detailed record of his duties over that year and a half, coincidentally the last days of a farm agent for the Lake Andes district on the Yankton Sioux reservation.<sup>19</sup> As farm agent, Cron spent over half his days serving as a desk-bound bureaucrat, making visits to Yankton homes and allotments and other related inquiries only forty-nine percent of the time. He divided his administrative duties between the farm station on the southern shore of Lake Andes and Yankton

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<sup>17</sup> F.F. Cron, Survey of Indian Affairs Personnel Questionnaire, Farmer, no date, likely 1927, RG 75, Box 16, FF 052, NARA-CR.

<sup>18</sup> In 1931, administrative oversight was transferred to the Rosebud Reservation, effectively terminating the Lake Andes district. Around the same time, Cron accepted a new position elsewhere for the Bureau of Indian Affairs.

<sup>19</sup> What follows is an analysis of farmer's weekly reports submitted between May 1929 and January 1931. The record is fairly complete, but there are some gaps of a week or two here and there and November 1930 has no records. What follows may under represent some visits, but it still gives a good impression of the daily activities of the farm agent.



Agency headquarters in Greenwood. He frequently made at least one trip to Agency headquarters a week and he held regular office hours at the farm station on Fridays. His field visits followed a seasonal pattern, with school related duties peaking in the autumn and lease related inquiries in the winter months. Cron's agricultural concerns increased in frequency over the spring and summer. Law and order and medical inquiries occupied a smaller proportion of his time, but remained constant throughout the year.

Cron was a regular visitor at several Yankton homes, but the great majority of Yanktons residing within the Lake Andes district might only encounter him once or twice. Cron visited over 170 Yanktons between May of 1929 and January of 1931, but just under three quarters saw him three times or less. Of these, the greatest majority were to individuals who leased their land but did not farm, with Cron stopping by to get leases signed, appraise the allotments, or to deliver checks. Surprisingly, a number of Yanktons who farmed large acreages infrequently hosted the official farm agent. Considering a few individuals reveals that Cron's duties encompassed a wide range of responsibilities.

Alex Horned Eagle held a 160-acre L-shaped tract on the west side of Lake Andes. He farmed a small amount of his land and also leased some. In 1924 he planted sixteen acres of corn and a large garden, kept thirty chickens and six horses. Two years later he planted only 3 acres of corn and three acres of alfalfa, with three horses, ten chickens and three hogs. Yet of all the Yanktons in the Lake Andes district, Cron visited him the most, nearly twenty times over a year and a half. Cron

made regular visits in May, June and July each year, checking on planting and the progress of the crops. He also brought leases to be signed in the fall or winter of each year. The other visits included inquiries about the health and financial condition of the Horned Eagle family, conducting a general "Clean Up" campaign, and getting a signature for a land sale application for the Rosebud Reservation. It seems likely that Horned Eagle and Cron enjoyed a cordial relationship, or perhaps it was a matter of proximity to the farm station and Horned Eagle's location on a section road that kept the two in such frequent contact.<sup>20</sup>

By 1930 Horned Eagle planted just four acres of corn and an acre garden plot. His animal husbandry had flourished, however. He owned nine horses and 260 chickens. Six years earlier Horned Eagle cared for a more modest barnyard of six horses and thirty chickens. Falling agricultural prices surely influenced his farm inventory in 1926, reducing his horses to three and chickens to ten, while adding three hogs that year. It is also possible that some carry over from the five-year plans is evident as well. In 1924, Horned Eagle sowed sixteen acres of corn and a small garden. For 1926, his corn planting fell to three acres, but he also planted three acres of alfalfa. Employing a system of subsistence production was a keynote of the

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<sup>20</sup> F. F. Cron, Farmer's Weekly Reports, 11 May 1929, 29 May 1929, 22 June 1929, 6 July 1929, 20 July 1929, 19 October 1929, 15 March 1930, 5 April 1930, 24 May 1930, 14 June 1930, 12 July 1930, 2 August 1930, 27 September 1930, 13 December 1930, 10 January 1931, 17 January 1931, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR.

five-year plan, and Horned Eagle's story is typical of Yanktons who chose to adopt limited aspects of the BIA's vision.<sup>21</sup>

Ostensibly, Alex Horned Eagle fit the ideal for the plan. He was a landowner, with a wife and three children. However, he was advancing in age, nearly sixty in 1930, and his seven and four year old sons were too young to help in the fields.<sup>22</sup> Many Yankton elders received more attention from Cron than their agricultural pursuits one might merit. Mary Kitteau, age 58 in 1930, never planted any crops, yet received fourteen visits – five regarding land leasing, three for medical inquiries, and two school related stops.<sup>23</sup> Rachael Patterson planted only a small garden, yet Cron stopped by six times on agricultural related calls out of sixteen total visits.<sup>24</sup> By contrast, the leading five Yankton farmers averaged 144 acres of crops and six visits total from Cron.<sup>25</sup>

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<sup>21</sup> F.F. Cron, Farmer's Condensed Reports, 1924, 1926, 1930, RG 75, Box 17, FF 052.2, NARA-CR.

<sup>22</sup> 1930 U.S. Federal Census Population Schedule, Enumeration District 12-31, Supervisor's District 5, Sheet 5B.

<sup>23</sup> F.F. Cron, Farmer's Weekly Reports, 20 July 1929, 3 August 1929, 19 October 1929, 30 November 1929, 14 December 1929, 22 February 1930, 8 March 1930, 15 March 1930, 5 April 1930, 27 September 1930, 10 January 1931, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR; 1930 U.S. Federal Census Population Schedule, Enumeration District 12-31, Supervisor's District 5, Sheet 6B.

<sup>24</sup> F.F. Cron, Farmer's Weekly Reports, 11 May 1929, 18 May 1929, 15 June 1929, 13 July 1929, 3 August 1930, 19 October 1929, 7 December 1929, 8 March 1930, 24 May 1930, 7 June 1930, 14 June 1930, 21 June 1930, 26 Junly 1930, 6 September 1930, 11 October 1930, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR.

<sup>25</sup> F.F. Cron, Farmer's Condensed Reports, 1924, 1926, 1930, RG 75, Box 17, FF 052.2, NARA-CR.

Cron visited William, Robert and Reuben Spotted Eagle a combined forty-two times between May 1929 and January 1931. Reuben Spotted Eagle, age 50 in 1930, provides another example of the higher rates of visitation for elderly Yanktons marginally engaged in agriculture. He planted only two acres of corn in 1930 but received fourteen visits. Yet, William and Robert, aged 61 and 51 respectively in 1930, sowed 42 and 16 acres of crops each with similar numbers of visits from Cron.<sup>26</sup> The Spotted Eagles each made individual decisions about planting, yet as a family they saw Cron about the same amount of time.

The Dion family offers a much different picture, as Cron visited the one member in his district once and another thirteen times. Issac Dion hosted Cron the most around 1930, although his peak planting year occurred in 1924 with ten acres of corn. By 1930, of the five Dions visited by Cron, only Bessie Dion was engaged in agriculture; Cron visited her only twice, one less than the three acres of corn she sowed. Land issues, including leasing, sales and heirship questions, dominated Cron's interactions with the Dion family. The same issues were second only to agriculture in generating field visits by Cron. Like agricultural visits, these exchanges also followed a seasonal pattern, with leases being signed generally in the fall. Advertising for open leases and land sales occurred in the winter months,

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<sup>26</sup> F.F. Cron, Farmer's Weekly Reports, 11 May 1929, 15 June 1929, 22 June 1929, 20 July 1929, 27 July 1929, 31 August 1929, 19 October 1929, 1 February 1930, 22 February 1930, 5 April 1930, 12 April 1930, 17 May 1930, 24 May 1930, 7 June 1930, 14 June 1930, 28 June 1930, 12 July 1930, 19 July 1930, 9 August 1930, 6 September 1930, 20 September 1930, 13 December 1930, 20 December 1930, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR; 1930 U.S. Federal Census Population Schedule, Enumeration District 12-31, Supervisor's District 5, Sheet 7A.

although Cron handled land issues throughout the year. Cron served as counselor and mediator during a dispute over heirship property between Issac and Sam Dion in 1929. Afterward, Cron returned frequently to “keep in touch with them,” although twice as often to the home of Isaac, aged 67, than to Sam, who was thirty-six years Issac’s junior.<sup>27</sup>

Joseph Atana received a large number of visits from the farm agent, including inquiries related to “law and order.” Cron stopped by regularly during the spring and summer to check on crop growth, brought leases to be signed in the winter months, and included Atana in his “Clean Up” campaign. Atana received some more unusual visits as well. In June of 1929 Cron assisted in starting a new cultivator, suggesting that Atana was using new mechanized equipment. A year later Cron drove him to the home of G.J. Kasulka to see a team of horses Atana wanted to purchase. Cron also wore his “law and order” hat, once checking to see if his wife had returned home from Rosebud Reservation, and another time settling a dispute in the family.<sup>28</sup>

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<sup>27</sup> F.F. Cron, Farmer’s Weekly Reports, 11 May 1929, 18 May 1929, 15 June 1929, 22 June 1929, 6 July 1929, 13 July 1929, 20 July 1929, 3 August 1929, 19 October 1929, 8 March 1930, 5 April 1930, 12 April 1930, 14 June 1930, 21 June 1930, 28 June 1930, 27 September 1930, 11 October 1930, 13 December 1930, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR; 1930 U.S. Federal Census Population Schedule, Enumeration District 12-31, Supervisor’s District 5, Sheet 5B; 1930 U.S. Federal Census Population Schedule, Enumeration District 12-31, Supervisor’s District 5, Sheet 7A.

<sup>28</sup> F.F. Cron, Farmer’s Weekly Reports, 18 May 1929, 25 May 1929, 22 June 1929, 20 July 1929, 31 August 1929, 11 October 1929, 5 April 1930, 12 April 1930, 17 May 1930, 14 June 1930, 21 June 1930, 28 June 1930, 19 July 1930, 27 September 1930, 13 December 1930, 24 January 1931, RG 75, Box 17, FF 052.2, NARA-CR; 1930 U.S.

Issues related to law and order occupied a small amount of Cron's time overall, but offer compelling evidence of his power as an agent of the state. At the most benign level, Cron served as an intermediary, as in the case of Joseph Atana. He also played a similar role in family disputes for Huto and Understanding Crow.<sup>29</sup> Occasionally he ventured off the reservation, as when he went to John Heffernan to retrieve a horse and wagon that Heffernan had borrowed from a Yankton and never returned.<sup>30</sup> Another time he traveled to Douglas County to investigate the marital status of Henry Sherman and Vera Handsome Elk.<sup>31</sup> Cron's local knowledge was also used to facilitate other probes, twice driving inspectors conducting investigations on and around the reservation.<sup>32</sup> His role as informant extended to school concerns, extending his reach to Yankton children.

In his roll as informant and investigator for the schools, Cron appeared at homes he normally never visited. He recorded five visits in his weekly reports where the only contact he had related to school concerns, either checking on attendance or facilitating attendance. Over eighty more visits are mentioned in his

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Federal Census Population Schedule, Enumeration District 12-31, Supervisor's District 5, Sheet 1A.

<sup>29</sup> F.F. Cron, Farmer's Weekly Reports, 14 December 1929, 12 July 1930, RG 75, Box 17, FF 052.2, NARA-CR

<sup>30</sup> F.F. Cron, Farmer's Weekly Reports, 7 December 1929, RG 75, Box 17, FF 052.2, NARA-CR

<sup>31</sup> F.F. Cron, Farmer's Weekly Reports, 3 August 1929, RG 75, Box 17, FF 052.2, NARA-CR

<sup>32</sup> F.F. Cron, Farmer's Weekly Reports, 17 August 1929, 23 November 1929, RG 75, Box 17, FF 052.2, NARA-CR

weekly reports, yet due to the number of homes visited, the individual names are not listed.<sup>33</sup> Much like in the case of his law and order visits, he acted as a local informant, making Yankton residences legible to school administrators and enabling them to conduct a census in one instance.<sup>34</sup> Another time he circulated a petition supporting the creation of a contract with the Santee School to provide education and care for Yankton children, effectively expanding the reach of that Nebraska-based institution.<sup>35</sup>

For Yankton parents, the BIA paradoxically denied state-sponsored education. Every winter South Dakota State College in Brookings held a weeklong course for farmers. SDSC officials extended invitations to white farmers and the farm agents, but not to Yankton farmers. For 1928, the theme of the course was “Producing Crops for Market Demands,” and featured speakers from the Potato Growers’ Association, the U.S. Department of Agriculture, and the South Dakota Crop Improvement Association. A special women’s program on Thursday featured “demonstrations and discussions on problems of the home,” in addition to a ladies

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<sup>33</sup> F.F. Cron, Farmer’s Weekly Reports, 22 June 1929, 7 September 1929, 6 September 1930, RG 75, Box 17, FF 052.2, NARA-CR.

<sup>34</sup> I borrow the concept of legibility from James C. Scott, *Seeing Like a State*.

<sup>35</sup> F.F. Cron, Farmer’s Weekly Reports, 1 June 1929, RG 75, Box 17, FF 052.2, NARA-CR.

crop-judging contest. Despite the many opportunities for individual Yanktons, the BIA deemed it best that the farm agents filter the information for their charges.<sup>36</sup>

Non-Yankton farmers living around Lake Andes heard a very similar message regarding agricultural improvement. The main difference occurred in the method of transmission. Unlike most counties in South Dakota, at least as early as 1921, Charles Mix County Commissioners left the position of county extension agent unfilled. Extension agents never held the coercive power of BIA farm agents, and rarely provided services beyond agricultural concerns. All the same, extension agents played important roles in the non-Indian community. And, they could assist BIA agents in transmitting their message.<sup>37</sup>

Even without an extension agent, farmers around Lake Andes received many opportunities to better themselves. Examples of programs presented to Lake Andes farmers include short lectures from visiting experts and dignitaries to two-day courses from South Dakota State College following a similar structure to Farmers Week. The arrival of an Alfalfa Special Train in 1927 marks the high tide of this trend and highlights the multiple and disparate interests that held a stake in the success of scientific agriculture.<sup>38</sup>

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<sup>36</sup> Press release for Farmers' Week, 12 January 1928, RG 75, Box 17, FF 052.2, NARA-CR.

<sup>37</sup> A.W. Leech to Commissioner of Indian Affairs, 4 October 1921, RG 75, Box 16, FF 052.2, NARA-CR.

<sup>38</sup> "Alfalfa Special Draws Good Crowd," *Lake Andes Courier*, 27 January 1927, 1.



Farmers pursued scientific agriculture by forming associations. When faced with issues larger than any individual could combat, farmers and their wives formed organizations to carry out improvements or lobby for policy changes. Some formed on an ad hoc basis, as when residents of town and country banded together to “burn out” chinch bugs in 1923.<sup>39</sup> Others operated as going concerns, including the Farmers Union and the C-M-D. Home Extension Clubs served the women of the community, channeling their homes to serve a greater national goal of a “...prosperous, happy, contented, intelligent family in every farm home.”<sup>40</sup>

In order for the homes to be prosperous, the crops needed to be bountiful, and an increase of chinch bugs in 1923 threatened that prosperity. Chinch bugs have long plagued wheat farms, first entering the annals of American agriculture in 1785. That year the insect made its first noticeable infestation in North Carolina wheat fields. Chinch bugs maintained the upper hand against farmers for the next decade, and then retreated for a time as a major menace. By 1840, chinch bugs spread along with American agriculture to the Midwest. The insects thrived in the new environment, and ten years later topped many lists as the number one insect threat to American crops. Chinch bugs represented a double threat, destroying wheat fields in the early stages of life and moving on cornfields as the summer draws long. The

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<sup>39</sup> “Farmers Meet to Discuss Chinch Bugs,” *Charles Mix County Courier*, 11 January 1923, 1.

<sup>40</sup> “Home Extension Clubs,” *Lake Andes Courier*, 26 May 1927, 1.

same biological adaptations that facilitated the insects' abundance were used to battle its diffusion.<sup>41</sup>

At key moments in the crop cycle, farmers were able to use chinch bugs' migratory behavior to target control efforts. In the winter, chinch bugs hibernate in clump grasses, like those found on the edges of roadways and fields especially in the moist prairies of the Midwest and eastern Plains. They live on and near the ground, drawing nutrients from the sap in stems and roots. In the spring, the adult females lay up to 500 eggs that hatch into small bugs that join with the adults and move to wheat fields. After wrecking havoc on wheat fields, they migrate to corn and sorghum fields in the summer, once again attacking the stems and roots of the plants. In the fall the bugs return to their grassy refuge to begin again the next year. The juvenile bugs were especially vulnerable when moving from the grasses to the wheat, as they had not yet developed the ability to fly.<sup>42</sup>

Knowledge of chinch bug life cycles came only after decades of scientific investigation, however. The first entomologists to study the issue worked during the 1840s and 1850s in Illinois and neighboring states. It was not until 1875 that Charles V. Riley unlocked the beginning, terrestrial period of the annual migration, setting the stage for more effective control. Previous attempts at locating a natural predator, parasite or disease to counter the bugs' advance proved ineffective, but

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<sup>41</sup> Conner Sorensen, "Uses of Weather Data by American Entomologists 1830-1880," *Agricultural History* 63(Spring 1989): 162-173.

<sup>42</sup> Ibid.; Thomas D. Isern, "How to Kill a Chinch Bug: The Folk Technology of the North American Plains," *The Journal of the West*, 31(4): 45-50, 48.

the physical movement of the bugs presented an opportunity. One solution was placing barriers on the edges of fields, including wooden fences coated with tar and kerosene and ditches filled with water. Entomologists also realized correlations between chinch bug surges during dry weather and retreats during wet seasons. Scientists hoped that farmers would heed their warnings and alter plantings accordingly. By 1923, the forecast called for an outbreak, but the control method proposed for South Dakota farmers applied a more direct approach.<sup>43</sup>

Following a large outbreak of chinch bugs the previous year, A.J. Sprecht, a Lake Andes farmer, took steps in January of 1923 to protect his and his neighbors' crops. In consultation with the State Entomologist at Brookings (home of SDSC), Sprecht arranged for A.L. Ford, a state extension worker known as the "bug man," to speak at the Charles Mix County Courthouse in an evening meeting. Ford had earlier addressed farmers in nearby Bon Homme County, and Sprecht ensured good attendance by announcing the talk via repeated telephone calls to his neighbors. Ford proposed burning the roadsides and fencerows to attack the brood before it could spread to the valuable fields. The farmers and townsfolk assembled agreed, appointing a committee to organize local efforts and choosing Sprecht as chairman.<sup>44</sup>

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<sup>43</sup> Sorenson, "Using Weather Data," 168; Isern, "Kill a Cinch Bug," 49.

<sup>44</sup> "Farmers Meet to Discuss Chinch Bugs," *Charles Mix County Courier*, 11 January 1923, 1.

Two weeks later, the Central Chinch Bug Committee announced good progress. In the areas surrounding the towns of Lake Andes, Ravinia and Wagner, proactive burning occurred along the majority of fencerows. The committee reported other more diffuse instances of burning, “but by no means enough for best results.” Employing a homespun yet modern admonition, the committee told farmers in Charles Mix County they were “equipped with a selfstarter (sic). Use it.” Unfortunately for the self-starting, chinch bugs that survived until late summer could fly from the fields of less motivated farmers, making partial eradication efforts much less successful.<sup>45</sup>

Any war against insects will ultimately face the problem of bug demography. Each female lays up to 500 eggs, no small part of the chinch bug’s advantage. However, she spreads her brood out geographically, moving from plant to plant, and chronologically, laying around twenty eggs a day over the span of a month. Weather conditions impact the time required for the eggs to hatch, varying from as little as seven to as long as forty-five days. It is not uncommon to have eggs hatch in August. By this time the first generation will have mostly died off, but the next generation remains strong.<sup>46</sup> As a result, burning fencerows continued for most of the 1920s.

The chinch bug campaign relied on voluntary compliance, but government mandated efforts also occurred. Under the provisions of a South Dakota act, the

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<sup>45</sup> “Chinch Bug Progress,” *Charles Mix County Courier*, 25 January 1923, 1.

<sup>46</sup> Edwin Way Teale, *The Strange Lives of Familiar Insects* (New York: Dodd, Mead & Company, 1962), 124, 127.

Howard Township Board of Supervisors ordered all landowners to destroy “all weeds of the kinds known as wild sunflower, Canada thistle, Cockle burr, Burdock (and) quack grass.” Although the list of species presented challenges, farmers could be thankful that the period of enforcement only lasted from July 1<sup>st</sup> to August 15<sup>th</sup>. Given that the announcement came two weeks into the campaign and the penalty for non-compliance was a vague threat of being “prosecuted in accordance with said act (the state statute),” we can doubt the effectiveness of the Howard Township Board of Supervisors in affecting significant landscape change.<sup>47</sup>

The full complement of forces with a vested interest in scientific agriculture occasionally worked in unison, as occurred with the Alfalfa and Sweet Clover Special of 1927, a special train running on the North Western and Milwaukee lines in South Dakota during January and February. The exhibition came from a meeting between the top management and the ownership of the *Dakota Farmer*, an agricultural newspaper published in the state. John T.E. Dinwoodie, editor, along with manager Walter J. Allen and publisher William C. Allen concocted a scheme to spread the good word about legumes utilizing the combined resources of business and university research, while attempting to appear free of “commercial and college contamination in the eyes of the farmers.” Dinwoodie feared that “farmers generally were tired of ‘advise’ from commercial interests and professional agriculturalists.”<sup>48</sup>

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<sup>47</sup> “Noxious Weed Notice,” *Lake Andes Courier*, 16 July 1925, 1.

<sup>48</sup> Rex C. Meyers, “Cultivating South Dakota’s Farmers: The 1927 Alfalfa and Sweet Clover Special,” *South Dakota History* 22(2):136-155, 142-43.

Regardless of the possible negative reaction, the special could not function without the presence of two obvious and powerful commercial interests – railroads and farm machinery. International Harvester Company agreed to extensive involvement, outfitting the third and final car of the train with planting, cultivating and harvesting alfalfa exhibits. The Northwestern and Milwaukee each donated a stripped passenger car, which contained multiple exhibits constructed by specialists from SDSC. A.L. Ford, familiar to some Lake Andes residents as the extension agent who spoke about chinch bugs, worked alongside Ralph Johnston showcasing planting and cultivation in one car and using alfalfa as livestock feed in the other. The final car displaying the necessary equipment and significant capital outlay hinted at a commercial aspect to the whole affair.<sup>49</sup>

On Dinwoodie's request, the South Dakota Crop Improvement Association agreed to "front the campaign," as they were "a purely farmer organization." The veneer of grassroots folksiness did not penetrate too deep, nor could it have covered up the stunning coalition behind the special. South Dakota State College President Charles W. Pugsley committed his institution and its extension agents to a multi-year effort at increasing alfalfa cultivation east of the Missouri River. Support from state officials included Governor Carl Gunderson and Secretary of Agriculture Louis N. Grill. Backing from organizations including several chamber of commences and

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<sup>49</sup> Ibid.

the South Dakota Farm Bureau, although they were not prominent in the advertising.<sup>50</sup>

Well over 300 attended the Lake Andes stop of the Alfalfa Special, which concluded with an evening meeting. The train arrived at one o'clock, and Mayor A. O. Steensland opened the event, handing off emcee duties to A.E. Anderson, director of the State College Extension Service. After short remarks from all of the major players, John Haney of International Harvester gave the keynote. Interestingly, in a surviving newspaper account Haney is described as simply a farmer from I-H-C farms of Aberdeen and Grand Forks; perhaps those letters were self-explanatory (like IBM today), or perhaps the organizers were trying to emphasize Haney's agricultural credentials. Haney himself told the assembled crowd "one problem with us today is we know how to spend money better than we know how to make it." His solution, not surprisingly, revolved around growing alfalfa, presumably with the expensive machines his company manufactured.<sup>51</sup>

The publicity for alfalfa in South Dakota reached its peak after 1900, though it had served as an important agricultural crop for nearly three thousand years. From its origins in present day Iran, alfalfa spread north to Russia, east to China and west to North Africa, then to Europe and finally to North and South America. The name derives from the Arabic *alfacfacah* translated as "the best fodder," itself an indication of the linkages between the spread of Islam and the diffusion of the plant.

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<sup>50</sup> Ibid.

<sup>51</sup> "Alfalfa Special Draws Good Crowd," *Lake Andes Courier*, 27 January 1927, 1.

In the middle of the sixteenth century, a new name to identify the plant, lucerne, began to see use in Europe, first in Switzerland or France. For farmers around Lake Andes, three strains of alfalfa proved best suited to the area.<sup>52</sup>

Appropriately, the first introductions of alfalfa to South Dakota were by individuals, truly working at a grassroots level. Independently, Sam Moore and Seth Bullock introduced two strains that originated in Central America in western South Dakota around 1880; these were combined and eventually called South Dakota No. 12. Wendelin Grimm, a German immigrant to Minnesota, literally carried almost twenty pounds of alfalfa seed across the Atlantic in 1857. Accounts differ as to how readily his strain adapted, but by 1900 Grimm's *ewiger Klee* (everlasting clover) displayed sufficient winter hardiness that Professor Willet Hays of the Minnesota Experiment Station had it tested at several stations, facilitating its increased diffusion.<sup>53</sup>

By the turn of the century, government played a much more active role creating agricultural science. South Dakota State College assumed an early leadership role, establishing the first dry-land farming experiment station at Highmore in 1896. Niels Ebbesen Hansen, a Danish immigrant educated in Iowa, led the charge, supporting his public appeals for importing plants suited to cold winter conditions with repeated trips to Europe and Asia searching for potential strains. In

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<sup>52</sup> J. L. Bolton, *Alfalfa: Botany, Cultivation, and Utilization* (New York: Interscience Publishers, Inc., 1962), 1-3; Meyers, "Alfalfa Special," 137.

<sup>53</sup> Bolton, *Alfalfa*, 6.



1906, he returned with a teaspoon of seed for a strain that would be known as Cossack alfalfa, which proved to be the best adapted of the three for South Dakota. The legislature supported his efforts, funding the distribution of plants to farmers and a trip to Russia. Between the introduction of Cossack alfalfa in 1906 and 1919, alfalfa acreage in South Dakota grew from sixty-six thousand acres to four hundred and sixty-two, a seven-fold increase.<sup>54</sup>

The benefits of alfalfa as a crop played an important role in its increased cultivation. As a legume, its cultivation could improve soil by fixing nitrogen, making it an ideal candidate for crop rotation systems. It provided excellent feed for livestock, thus facilitating strong economic returns in addition to good soil husbandry. The strains introduced into South Dakota had the added attributes of drought resistance and winter hardiness. The same characteristics that aided its spread across the globe provided Lake Andes farmers with persuasive evidence of the advantages of alfalfa. The process of plant diffusion was not new, but the methods utilized by the backers of the Alfalfa Special represented the high tide of scientific agriculture to that point.<sup>55</sup>

Standing in the middle of a Lake Andes cornfield in the 1920s, it would be very difficult to tell if a Yankton or another farmer tended it. Scientific agriculture amounted to a universal standard, applicable to any soil and any farmer. Under separate five-year plans, social engineers utilized its logic in attempts to turn

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<sup>54</sup> Ibid.

<sup>55</sup> Meyers, 136-37.

Yanktons into American citizens and peasants into Soviet citizens. That its tenets could bridge the divide between capitalism and communism is no small statement. Scientific agriculture consisted of a far more radical campaign than improving crop yields.

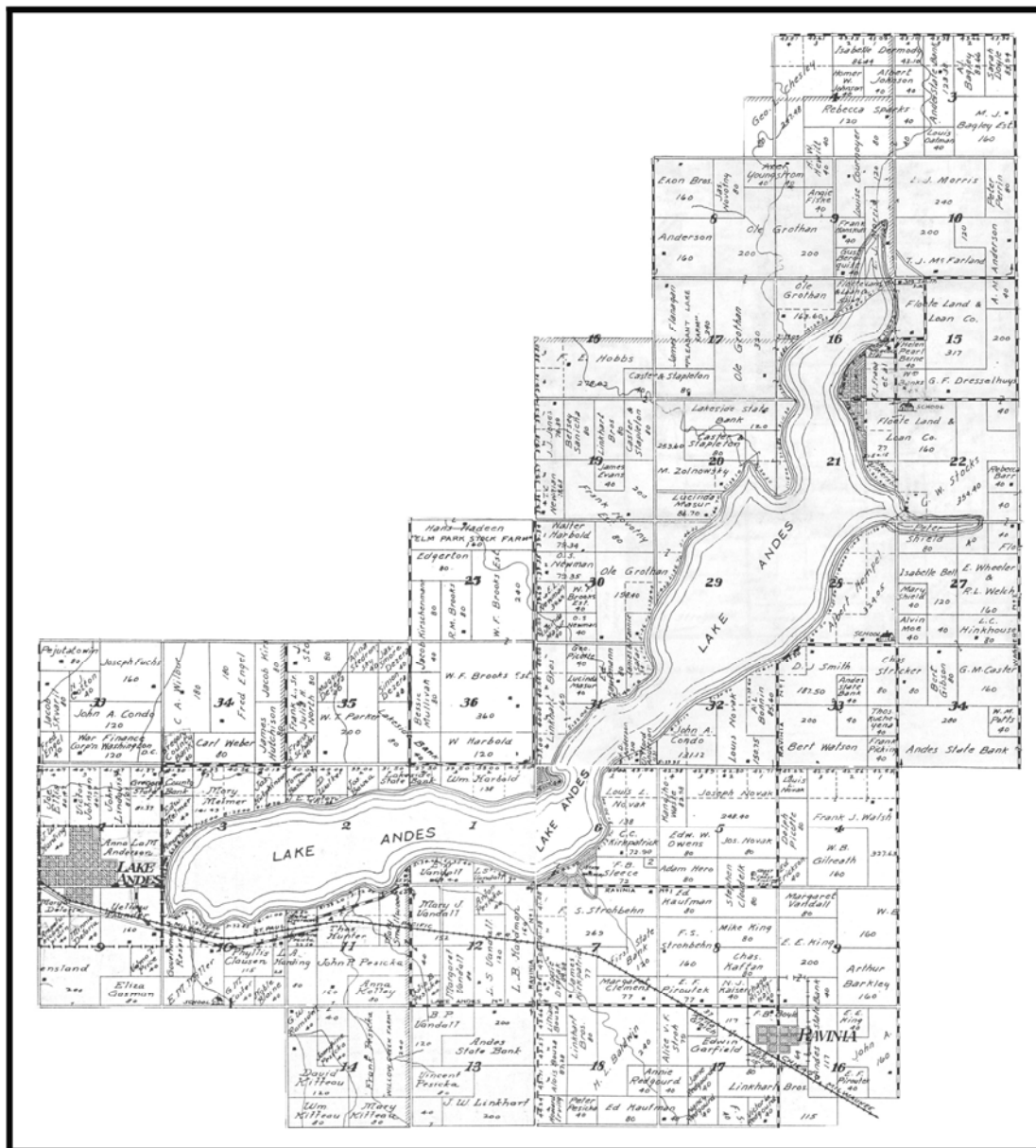


Figure 4.1: Plot Map of Lake Andes, 1931. Source: Photocopies from Monica Waldren, Charles Mix County Register of Deeds, copies in possession of author. Map aggregated by author.

From the scorched earth campaigns inflicted on chinch bugs to the pure seed drives focused on alfalfa, scientific agriculture left little room for organisms that existed outside of commodity production. Yanktons who chose to not engage in scientific agriculture also found themselves *personae non gratae*. The logic was simple and pervasive. As the Alfalfa Special reveals, the interests of the state, education, science and business communities all aligned behind agricultural production. The initiative was vertically integrated as well, garnering support from officials in the highest offices down to individual farmers and townspeople. On the surface, the drive for scientific cultivation may not appear as coercive at all.

Without alternate visions of how to structure the landscape, the world of row crops and pest control appeared quite reasonable, perhaps even natural. Humans need food to survive, and scientific agriculture offered the most efficient methods to generate adequate stocks. The resistance to their programs experienced by Farm Agent Cron and Editor Dinwoodie of the *Dakota Farmer* had origins in very different sources, but both speak to the existence of other possibilities for ordering the countryside. By the mid 1930s, a new set of priorities began to be articulated for another group of visitors to Lake Andes. The new directive emphasized migratory waterfowl that had used Lake Andes as a stopping place on a continental migration stretching back millennia. The legal, mechanical, and financial infrastructure supporting the initiative derived from another concerted effort similar to the drive for scientific agriculture, and would also entail the abridgment of local prerogatives and the attempted elimination of an undesired species.

**Chapter Five: Federal Flyways, Public Works and Carp Poison**

When J. N. "Ding" Darling visited Lake Andes in June of 1934, he was no stranger to the area having spent many enjoyable hours hunting and fishing there when he lived in western Iowa. And like many local residents, he found the present condition of the lake "deplorable," observing "what a crime," to see the nearly waterless slough invested with carp when it had so recently jumped with bass.<sup>1</sup> But as the recently appointed head of the Bureau of Biological Survey, Darling found himself in a unique position to bring significant federal resources in money, manpower, and legal authority to Lake Andes. The creation of a National Migratory Waterfowl Refuge in 1935 signaled a new episode in the history of the lake coinciding with a transformation in the federal government's role in national wildlife policy.

As the bass bonanza ended amid searing drought and a carp eruption, the itinerant residents of the lake for millennia, ducks and geese, became the new focus of governmental activity spearheaded by the Bureau of Biological Survey but bolstered by the efforts of the Civilian Conservation Corps and Works Progress Administration. As the action of shovels and drag-lines remade the physical landscape, the legal landscape shifted as well, when the state of South Dakota, by means of a 1939 easement agreement, and the Yankton Sioux Tribe, in voting down the provisions of the Wheeler-Howard Act, effectively cleared the way for federal ascendancy in the lake's management. Darling's arrival in 1934 signaled a new era

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<sup>1</sup> "Biological Bureau Chief Inspects Many Lake Projects Here," *Lake Andes Wave*, 14 June 1934, 1.

for Lake Andes with the federal government moving from the periphery to center stage, offering protection for ducks, geese and other migratory waterfowl. When carp returned in the late 1950s, the federal government responded by poisoning the unwanted visitors, with the justification that they had denuded the lake of plants used by ducks for feeding. This extension of federal power over hunting laws was a development years in the making with several different sources in the late nineteenth century.

Until the twentieth century, state governments held authority to determine hunting laws. In 1896, the U.S. Supreme Court in *Geer v. Connecticut* recognized the states' jurisdiction regarding wildlife, though the principle had been observed without specific legal sanction since the nation's founding. The scientific study of the distribution of birds, revealing their migratory patterns, coupled with concerns over dwindling populations of certain species forced a rethinking of the policy. The Lacey Act of 1900 took several steps in increasing the federal role in wildlife regulation, careful to select aspects that clearly fell under the interstate commerce clause of the constitution and therefore within purview of the federal government. With the passage of the 1913 Weeks-McLean Migratory Bird Act, Congress granted the Department of Agriculture's Bureau of Biological Survey the power to regulate the hunting of migratory waterfowl, though without the same clear constitutional mandate.<sup>2</sup>

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<sup>2</sup> The nebulous constitutional authority helps to explain why the bill was tagged onto an annual appropriation bill for the Department of Agriculture, a clandestine

The Bureau of Biological Survey (BBS) had originally received Congressional authorization to study an economic issue though scientific research played an equally important role in the agencies' creation, much like the U.S. Fish Commission. Originally chartered in 1885 as the "office of Economic Ornithology within the Bureau of Entomology in the Department of Agriculture" and charged with studying the relationship between bird migration patterns, eating habits, and insect control on farmer's crops, the impetus for federal funding came from the American Union of Ornithologists whose study of bird migration begun two years previous rapidly taxed the group's resources and demanded more funding. Spencer Fullerton Baird's membership in the Union partially explains the commonalities between the two federal agencies, as he had made a successful scientific career by tying his own research agenda with the greater interests of the American voting public as Director the Smithsonian Institute and the U.S. Fish Commission. Under the leadership of C. Hart Merriam, the new agency steadily expanded its research to include birds more generally and also added mammals to its investigations. By 1895, the office was rechristened the Division of Biological Survey, reflecting its added scope and importance; and soon became a full-fledged Bureau in 1907, all the while remaining in the Department of Agriculture.<sup>3</sup>

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measure that finally allowed for federal oversight first proposed in 1904. See Jenks Cameron, *The Bureau of Biological Survey: Its History, Activities and Organization* (Baltimore: The John Hopkins Press, 1929), 94-95.

<sup>3</sup> Keir B. Sterling, "Builders of the Biological Survey, 1885-1930," *Journal of Forest History* 33(Oct. 1989): 180-81. On Baird, see also Chapter 3.

One figure in particular marshaled biological knowledge to transform the nation's laws. Theodore Sherman Palmer joined the Biological Survey in 1899 after receiving his undergraduate education at the University of California and soon headed a branch of the survey that monitored hunting laws and other conservation issues related to wildlife. His professional networks included a thirty year involvement with the Audubon Society and an equally lengthy tenure with the American Ornithologists Union, where he earned the nickname "Tombstone Palmer," for his dedication to recording the passing of Union elders. As a bureau employee, he guided several states in creating their wildlife laws and monitored the status of laws across the nation.<sup>4</sup>

Many others advocated greater governmental involvement in the lives of birds. The Audubon Society formed in 1896 to address the danger posed to heron habitat in the southeast, a species being hunted to provide adornment for ladies hats. The Massachusetts Society organized following a meeting called by Mrs. Augustus Hemenway of Boston, at which time William Brewster was elected president. Pennsylvania responded with a chapter the following year and within two years fifteen state Audubon Societies rallied to restore bird habitat for song birds and other species trafficked in the millinery trade. Audubon members assumed the role of adjuncts to the Lacey Act after its passage, voluntarily patrolling markets for illegal goods. Historian Jennifer Price emphasizes the role women played in the Audubon Societies, which provided a space for women to expand their

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<sup>4</sup> Sterling, "Builders of the Biological Survey, 1885-1930," 182-83.



political activities as well as lobby for reform to the nation's bird laws. In a more direct linkage to the wider web calling for more oversight, William E. Dutcher, a prominent New York Audubon member, financially supported the lobbying activities by BBS biologist Palmer in states that lacked bird laws. If a state had no bird laws, it was effectively a breach of federal oversight, as there was no transfer of illegal game, because there was no illegally taken game. After receiving an endowment of \$100,000, Dutcher expanded the reach and mission of the society, becoming a vocal and effective multi-state advocate for more federal control.<sup>5</sup>

A projected partnership between the Audubon Society and Winchester Repeating Arms that failed brought another lobbying organization more closely aligned with the interests of sportsmen, the American Game Protective Association. T. Gilbert Pearson, Dutcher's successor, assumed a shaky financial kingdom despite the endowment and set out to stabilize the balance sheet. Pearson gladly accepted an offer in 1911 to increase Audubon activities on behalf of game bird protection from Harry Leonard of Winchester in return for a \$25,000 annual contribution from a group of gun manufactures. News of the bargain received much negative publicity and critics, including William Hornaday, noted conservationist and one of the founders of the American Bison Society, who portrayed it as a corrupt pact using "blood money." Once the Audubon Society terminated the agreement, Winchester led the arms manufactures group in creating the American Game Protective

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<sup>55</sup> Stephen Fox, *John Muir and His Legacy: The American Conservation Movement* (Boston: Little, Brown and Company, 1981), 152-54; Jenifer Price, *Flight Maps: Adventures with Nature in Modern America* (New York: Basic Books, 1999), 57-110.

Association, led by John B. Burnham, a protégé of George Bird Grinnell, founder of the Boone and Crockett Club and an original version of the Audubon Society.<sup>6</sup> The AGPA soon garnered the support of prominent figures of the day including Theodore Roosevelt, John Burroughs, and Grinnell, who worked to align the AGPA agenda with the interests of the Boone and Crockett Club of hunters.<sup>7</sup>

At Lake Andes in the early twentieth century, local hunters did not witness the same declines experienced elsewhere as the same water that allowed bass to thrive provided habitat for certain species. Canvasbacks, red-heads, and blue-bills, known as deep-water ducks, frequented the lake as it was one of the few places in the area where such habitat existed.<sup>8</sup> The abundance of ducks in the Dakotas and points further west provided evidence for those incredulous that waterfowl numbers were on the decline. According to the theory, the scarcity in the Midwest was a result of fluctuations in the migration patterns of ducks and geese, which had shifted further west. Clate Tinan, avid sportsman and newspaper editor, subscribed to this view, stating that in 1906 more ducks arrived in the region than at any time in the last twenty-five years. Tinan advanced another reason for the abundance, the unusually

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<sup>6</sup> Grinnell was the original founder of the Audubon Society but focused on magazine editor, see Fox, *John Muir and His Legacy*, 152, 156.

<sup>7</sup> Ibid., 152, 156; For a general overview on the role of hunters and fishers in the early conservation movement, see John F. Reiger, *American Sportsmen and the Origins of Conservation* (Corvallis: Oregon State University Press, 2000).

<sup>8</sup> Clate Tinan, "Tinan's Lake Andes, Only Lake in State Frequented by Deep Water Fowl," *Lake Andes Wave*, 9 November 1905, 1.

wet weather of the past two years and the natural inclination of birds to follow the best available habitat.<sup>9</sup>

Contrary to Tinan's assertions of natural fluctuations that needed no remedy, a nationwide campaign to eliminate spring hunting reached South Dakota in 1907. A 1906 article in *Outing* magazine, reprinted in the *Lake Andes Wave*, listed two steps that locals could take to ensure a bounty of ducks in the fall. First, hunters should respect a ban on springtime hunting, whether or not the state laws conformed to the notion, as the breeding season was crucial to maintaining avian populations. Beyond seasonal restraint, improving habitat by planting wild celery would sufficiently tempt "wild ducks of all kinds... that no amount of shooting will keep them from returning to these waters where this vegetable grows."<sup>10</sup> In 1907, new South Dakota game laws closed hunting on "any wild duck, wild goose, brant or wild crane" between the first of May and September, and also outlawed the use of any gun not fired from the shoulder, which intended to eliminate the worst abuses of market hunters using swivel guns. Likewise, the daily limit was limited to fifteen birds, which if enforced would curtail the formerly common practice of hunters returning from a day on Lake Andes with fifty or sixty ducks each. The risk of not respecting

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<sup>9</sup> Clate Tinan, "Just About Ducks," *Kimble Graphic* reprinted in *Lake Andes Wave*, 1 November 1906, 1.

<sup>10</sup> "How to Improve Duck Waters," *Outing* reprinted in *Lake Andes Wave*, 13 December 1906, 5.

the new limits, according to the editor of the *Wave*, was the elimination of duck and geese hunting altogether.<sup>11</sup>

Local citizens embraced the new ordinance and organized to guard its enforcement, though the protection was not extended to all birds equally. The Lake Andes Gun and Rod Club, established in April of 1908, listed the "protection of game and the enforcement of the state game laws" as its founding principle, offering a \$50 reward for information and evidence leading to the conviction of anyone found violating the proscription against shipping more than ten game birds.<sup>12</sup> The limits of avian altruism became apparent the following month when large numbers of pelicans arrived at Lake Andes. As the birds consumed "an enormous lot of fish" each year, locals were urged to begin shooting to kill or at least harass sufficiently to cause the pelicans to leave, which would benefit the fishery and therefore the local economy.<sup>13</sup> Meanwhile, the efforts at game bird protection seemed to be paying handsome rewards, as the fall provided the best hunting ever encountered.<sup>14</sup>

Striking a balance between appealing to the interests and desires of hunters and protecting the populations of ducks and geese proved difficult. For the 1911 hunting season, state regulations limited the length of the season, but increased the

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<sup>11</sup> "South Dakota Game Laws," *Lake Andes Wave*, 19 September 1907, 1.

<sup>12</sup> "Gun Club Organized," *Lake Andes Wave*, 2 April 1908, 1.

<sup>13</sup> Untitled Article, *Lake Andes Wave*, 7 May 1908, 5.

<sup>14</sup> Clate R. Tinan, "Duck Hunting at Lake Andes," *Kimble Graphic* reprinted in *Lake Andes Wave*, 28 January 1909, 1.

daily take. The season began on September 10 and continued until April 9, while the daily limit was set at twenty with hunters allowed a maximum of fifty birds in their possession at one time. The sale of any game was outright prohibited, as was hunting game birds with a rifle or after dark or before sunrise.<sup>15</sup> The following year, hunting was poor across the state, thought to be a result of lack of a precipitation causing lakes to dry up. However, artesian wells ensured that Lake Andes provided habitat, yet hunting there was also poor all season. Local sportsman Clate Tinan held fast to his belief that the return of precipitation would likewise bring back the ducks, which had again shifted their migration to more favorable habitat. He believed that "in spite of the incessant warfare against the duck tribe, there are still countless thousands left."<sup>16</sup> Despite Tinan's protestations, at least part of the credit for continued abundance came from expanding federal oversight.

The Lacey Act of 1900 marks the first federal legislative entry into the field of wildlife management, and it attempted to address the concerns of disparate interests groups. During the prior 55th session of Congress, three bills had tried separately and unsuccessfully what would be eventually combined in the 1900 act. One proposal called for the U.S. Fish Commission to be charged with managing and protecting game birds, another bill sought to reduce the traffic in illegal game across state lines (perpetrated by the loathsome "market hunter"), and a third addressed regulation of the booming business of the plumage trade, which harvested non-

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<sup>15</sup> "Game Laws," *Lake Andes Wave*, 7 September 1911, 1.

<sup>16</sup> Clate Tinan, "Poor Duck Shooting," *Kimble Graphic*, reprinted in *Lake Andes Wave*, 5 December 1912, supplement.

game birds for women's hats. The Lacey Act placed the authority to undertake the substance of the prior bills under the Department of Agriculture, and added the ability to regulate the importation of exotic species of birds or animals.<sup>17</sup> The Lacey Act stopped short of granting complete federal oversight, effectively excluding one important aspect of the equation, the movement of the birds. Continental migration provided the rationale for further federal expansion, as federal scientists produced evidence that international treaties offered the only real hope of stabilizing bird populations.

Partially in response to an impending Supreme Court review of the 1913 Weeks-McClean Act which granted hunting oversight to the BBS, and also in recognition that ducks and geese failed to respect national boundaries, the United States and Canada joined forces to enact an international treaty in 1916. The treaty addressed the issue of constitutionality by wrapping hunting laws into the treaty authority clearly delegated to the federal government. At the same time, it addressed the real concern of affording protection to avian life as it summered to the north and wintered to the south, migration patterns revealed by scientific study over many years.<sup>18</sup>

Congress ratified the 1916 treaty with passage The International Migratory Waterfowl Act of 1918. BBS biologist Theodore Palmer wrote the first draft of the

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<sup>17</sup> Cameron, *The Bureau of Biological Survey*, 69-70.

<sup>18</sup> Jared Orsi, "From Horicon to Hamburgers and Back Again: Ecology, Ideology, and Wildfowl Management, 1917-1935," *Environmental History Review* 18(Winter 1994): 23-24.

treaty entered into with Canada, though Great Britain, as Canada's sovereign was the official co-signatory. The treaty divided migratory birds into three classes: game, nongame, and insect-eating, setting the broad terms of hunting season on the first and eliminating hunting on the latter two with exceptions for Native Americans in some limited cases and for any birds that became "seriously injurious to agricultural or other interests in any particular community." For game birds, the treaty limited hunting seasons to 107 days between September 1 and March 10, either consecutively or broken into smaller sections, and it banned all hunting at other times. Quickly the subject of a legal challenge, the Supreme Court upheld the treaty in *Missouri v. Holland* in 1922, marking the beginning of increased federal wildlife authority.<sup>19</sup> As federal fiat increased, the popular support for conservation continued to expand as the need for the protection of habitat was gradually realized.

Political encouragement for yet more federal intervention received a significant boost with the 1922 formation of the Izaak Walton League in Chicago. Taking its name from the author of the *The Compleat Angler* over two centuries earlier in Scotland, the league cast a broader net than fishing alone. Its membership grew to 100,000 strong by 1925, helping to enact its agenda of reducing water pollution and halting the drainage of marsh lands.<sup>20</sup> Of the fifty-four original

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<sup>19</sup> Mexico became a party to the treaty in 1936. Sterling, "Builders of the Biological Survey, 1885-1930," 183; Jordan Curnutt, *Animals and the Law: A Sourcebook* (Santa Barbara: ABC-CLIO, 2001), 328-29.

<sup>20</sup> Fox, *John Muir and His Legacy*, 159, 162.

members, twelve worked in sales or advertising, most were of middle-income, and the majority resided in the Midwest. Will H. Dilg took the helm and began publishing two periodicals, the *Izaak Walton League Monthly* in 1922 and *Outdoor America*, starting in 1923. Under Dilg, the league articulated a philosophy of anti-modernism, promoting the notion of an idyllic fishing hole under siege, figuratively and literally, by the forces of agricultural, industrial and suburban expansion which drained, filled and obliterated the ponds that were felt to be the locus of significant American values. The Izaak Walton League organized at Lake Andes in 1925 and became an important organization in calling for federal governmental interventions.<sup>21</sup>

Hunting restrictions could not ensure rebounding waterfowl populations without supporting the ponds and marshes used by waterfowl on their annual migrations. The BBS began to amass a convincing case for the extent of migratory behavior from its bird banding program started in 1920 under the direction of Frederick C. Lincoln. The process involved netting groups of waterfowl, applying small metal tags with identification numbers, and collecting the numbers from dead birds that perished either from a hunter's gun or other causes. Lincoln's article "The Waterfowl Flyways of North America," published the current results of the ongoing study and established the idea of four relatively distinct major migration corridors utilized by North American birds in their annual cycles traveling north and south

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<sup>21</sup> Ibid., 159-61; "Izaak Walton League Receives Charter," *Lake Andes Courier*, 3 September 1925, 1.



across North America as a further management concept, though the idea was already well accepted within biological circles.<sup>22</sup>

An early effort to produce continental habitat management garnered Congressional approval for the purchase of land, but the funding to move proposals from plans to protected refuges was delayed. The Norbeck-Anderson Migratory Bird Convention Act of 1929 authorized the BBS to purchase lands for refuges. This law was co-sponsored by long time friend of Lake Andes, South Dakota Senator Peter Norbeck. The major hurdle to the legislation was the long term plans for the refuges, with one faction anticipating a time in the future when hunting might be allowed and another that insisting on "inviolable" sanctuaries. Peter Norbeck compromised on the issue of timeless refuges and gave in completely on trying to garner funding for habitat acquisition.<sup>23</sup>

With passage of the Migratory Bird Hunting and Conservation Act of 1934, Congress concluded a multi-year debate regarding the funding issue. The Duck Stamp Program, as it more informally called, required all hunters to purchase a one dollar stamp which was sold through the U.S. Post Office with the proceeds managed by the BBS. With a secure source of funding of over one million dollars annually for

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<sup>22</sup> F.C. Lincoln, "The Waterfowl Flyways of North American," Transactions of the American Game Conference; 1935, Vol. 21, p264-276; Robert M. Wilson, "Directing the Flow: Migratory Waterfowl, Scale, and Mobility in Western North America, *Environmental History* 7(Aril 2002): 251.

<sup>23</sup> Wilson, "Directing the Flow," 252-53; Eric Jay Dolin and Bob Dumaine, *The Duck Stamp Story: Art, Conservation, History* (Canada, Krause Publications, 2000), 34, 38-39.

wetland acquisition, the BBS was transformed from a relatively underfunded and "weak" element of the federal state.<sup>24</sup> When federal dollars arrived at Lake Andes, residents welcomed the portion of those revenues applied to the lake, though local concern for the status of waterfowl never reached the same level as the consternation over the demise of bass and the profusion of carp.

For most of the nineteenth century, carp enjoyed a reputation as one of the more desirable fish available for American streams, lakes and rivers. The first carp arrived in American streams one hundred and eighty years ago, placed in the Hudson River by a "Captain Robinson." Under Robinson's encouragement, the New York State Legislature extended legal protection in the form of a fifty-dollar fine levied against anyone who destroyed the prized and invited immigrant. In an effort to increase the food supply, the U.S. Fish Commission began shipping carp hatchlings in 1877 and within five years the number of requests grew to seven thousand. By 1896 the stocking program was discontinued when any further introductions were deemed unnecessary. It did not take long for the fish to overspread the continent, moving from the ranks of protected transplant to invasive menace by the 1920s.<sup>25</sup>

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<sup>24</sup> Dolin and Dumaine, *The Duck Stamp Story*, 38-40, 43; David Salvesen, *Wetlands: Mitigating and Regulating Development Impacts* (Washington, DC: The Urban Land Institute, 1994), 39.

<sup>25</sup> The U.S. Fish Commission was established in 1871 under the direction of Spencer Fullerton Baird. W. M. Smallwood & Mary L. Smallwood, "The German Carp, an Invited Immigrant," *The Scientific Monthly*, 29(Nov., 1929), 394.

When carp arrived at Lake Andes, conditions deteriorated so badly that at least one local called for the abandonment of the lake altogether. At the start of the 1933 fishing season, *Lake Andes Wave* editor G.F. Kane reported that no fishing whatsoever occurred at the lake that had degenerated into “a mud-hole full of carp.” He blamed “double-crossing” politicians from both parties for the calamity and despaired that the artesian wells should be capped and the lakebed turned over to “farmers, squatters, or homesteaders.” Kane averred that at least then the land could generate some tax revenue. The dismal status of the lake and neglect from politicians was more egregious because of the estimated \$10,000 annually added to the state coffers from fishing licenses sold for Lake Andes. Furthermore, the lake had previously attracted visitors from surrounding counties and states and their tourist dollars, and that revenue stream had evaporated along with the lake.<sup>26</sup>

As drought dried up the lake, the carp continued to prosper even under low water conditions. Previously over the winter of 1932-33, nearly 120,000 pounds of carp were removed by seining and an equal number were estimated to have died during a cold snap in February.<sup>27</sup> In April, South Dakota Deputy Game Warden O.J. Bailey oversaw the transfer of 500 crappies from Lake Andes to Beaver Lake as the shallow water at the former threatened fish life.<sup>28</sup> Yet in the middle of May thousands of carp remained, a fact more threatening to local fisherman as the

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<sup>26</sup> “Some More Double Crossers,” *Lake Andes Wave*, 11 May 1933, 1.

<sup>27</sup> “Wild Ducks and Geese Here, Carp Not Gone,” *Lake Andes Wave*, 23 March 1933, 1.

<sup>28</sup> “Crappies Taken from Lake Andes to Beaver Lake,” *Lake Andes Wave*, 13 April 1933, 1.

spawning season was about to begin.<sup>29</sup> Despite the fishermen's fears, the drought and heat resulted in an ever-shrinking lake causing the death of thousands of fish and creating "a veritable stink hole."<sup>30</sup>

Disgusted by a lack of governmental response, despite urgent and repeated requests, the local citizens of the town organized a regional meeting. In preparation, G.F. Buche, a Lake Andes businessman and civic leader, visited the state capital at Pierre to plead for assistance. He returned with assurances of action; in the meantime, the local Issak Walton League sent out a call to eighty cities and towns for a lake restoration meeting to be held on June 13 at Rest Haven, a prominent bass resort. Federal officials also received telegrams asking for a share of the impending public works programs.<sup>31</sup> One hundred seventy individuals representing twenty towns attended the meeting, where H.Z. Miller, Rest Haven's owner, outlined a plan to divide the lake into four sections by building three dikes across narrow stretches of the lake. The lake level could thereby be regulated with pumps and any future carp eruptions controlled by draining the offending section.<sup>32</sup> Miller's plan was bold and far-reaching, but the immediate assistance provided by South Dakota proved less transformative.

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<sup>29</sup> "Lake Still Infected with Myriads of Carp," *Lake Andes Wave*, 18 May 1933, 2.

<sup>30</sup> "Dead Fish and Low Water Make Mess of Lake" *Lake Andes Wave*, 8 June 1933, 1.

<sup>31</sup> "Will Hold Big Meeting to Get Aid for Lake," *Lake Andes Wave*, 8 June 1933, 1.

<sup>32</sup> "Delegates from Many Cities at Lake Meeting," *Lake Andes Wave*, 15 June 1933, 1.

South Dakota Game Department officials devised a plan to eradicate the carp by manipulating the artesian water flow. That November, the lake had dropped to its lowest level of the past two years, barely three feet deep at its maximum. As the lake decreased, the two wells supplying water to the lake remained at some distance from the shore. Under the plan, the north well, also known as the Spotis well, would be diverted away from the remaining lake bed into a depression formerly within the main lake. In preparation for the plan, during the fall of 1933 the water at the state fish hatchery was kept below normal levels. The other well, adjacent to the fish hatchery, would be diverted into the hatchery reservoir where it could be stored without adding to the remaining area still occupied by carp. A similar method had previously brought success in controlling a carp population at Lake Madison, another South Dakota lake. It was hoped that over the winter months, "cold weather would seal the lake tight and the nefarious carp would smother."<sup>33</sup>

Despite the diversion plan, continued drought finally dispatched the "last vestige of these (sic) unwanted carp." By the end of July 1934, an extremely hot period brought the lake to a depth of four inches. It seems the diversion plan never materialized, as the *Lake Andes Wave* reported that if the wells near the hatchery could be diverted for two days the water would evaporate completely, thereby destroying any remaining carp eggs and securing a carp-free future.<sup>34</sup> A few weeks

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<sup>33</sup> "Game Dep't Suggests Way to Dispatch Carp," *Lake Andes Wave*, 16 November 1933, 1.

<sup>34</sup> "Carp From Our Lake Have Completely Disappeared," *Lake Andes Wave*, 26 July 1934, 1.

later the heat remained so intense that water from the north well flowed onto the sun-baked earth and evaporated. Two other wells previously drilled to augment the lake had stopped flowing, either by the malicious intent of a human or by artesian pressure dislodging sand and other aggregate from below the surface clogging the bore. Two remaining wells near the hatchery continued to produce water, but none flowed into the now dry main body of the lake.<sup>35</sup>

At Lake Andes, the initial recipient of federal largess was a spillway project, which had first received congressional funding in the early 1920s. The original spillway effort stalled when land owners decided against releasing the federal government of all future claims against any future high water should it occur at Lake Andes. With all of the engineering studies for the pipeline complete, and landowners glad to see any economic growth, the spillway would be termed "shovel-ready" in today's debate. However, under the make-work philosophy of the early New Deal relief, the anachronistic metaphor was taken literally as human labor unwisely replaced more effective heavy machinery in the initial digging of the spillway trench. While the production of the drainage tiles stayed on schedule at an ad hoc plant constructed in the town of Lake Andes, the progress on the trench fell behind as the shovel-ready project stalled amid requirements for much more powerful earthmoving equipment.

The first work relief camp at Lake Andes appeared during the first months of FDR's New Deal, and the Forest Service handled administrative and budgetary

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<sup>35</sup> "Not First Time Our Lake Was Waterless," *Lake Andes Wave*, 2 August 1934.

responsibility for the project. The "Veteran Citizen Conservation Corps," as the local paper aptly mis-named the newest neighbor, Camp No. 1776 of Des Moines, Iowa, consisted of a cross-section of Iowan veterans of either the Spanish-American War or World War One, with 250 men and three officers aged between 31 and 53 years. Three quarters of the men were married, and represented pillars of the community, including "lawyers, doctors, bankers, college graduates, etc.... above the average of citizens (sic)."<sup>36</sup> The impact of the Bonus Army on the composition of the camp, and the suggestion that the Depression exacted hardships across class lines as evidenced by the occupations of the voluntary enlistees, reinforces the idea of a New Deal punctuated by improvisations and buffeted by deeply political concerns. Contrary to the image of the youth of America sending most of their paychecks back home to support the family, at Lake Andes over the summer of 1933, it was the bread-winners digging the ditches of progress. In an effort to not conflict with "normal employment," Civilian Conservation Corps (CCC) projects consciously strove to exemplify "simple work," an approach that proved costly at Lake Andes.<sup>37</sup>

The patriotically named Camp No. 1776 displayed their esprit de corps by succeeding in CCC contests, even though the spillway's completion eluded them. The Iowa enlistee's earned top honors for Region Seven in a national competition of CCC camps. The award considered infrastructural aspects including sanitation, mess

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<sup>36</sup> "Contingent of War Veterans Here to Build a Spillway," *Lake Andes Wave*, 13 July 1933, 1

<sup>37</sup> Neil M. Maher, *Nature's New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement* (New York: Oxford University Press, 2008), 79, 80, 82.

halls, bathing and housing, but also recognized the aesthetic improvements made for area recreation. At the camp proper, the enlistee planted cedar trees and flowers and created a lily pond. When work stalled on the spillway, laborers spelled out Lake Andes on a hill overlooking the town in "monster letters" made from large stones.<sup>38</sup> Luckily, the award did not reflect on the job performance, which produced less impressive results.

When work began on the spillway in July of 1933, officials expected that digging the ditch by hand would take some time, perhaps even several weeks. With 200 laborers tasked with excavating 40,000 cubic yards of earth, digging down to thirty-two feet in the most extreme case, it is no wonder the project encountered delays. Even if everything transpired according to plan, each individual would have been responsible for removing 200 cubic yards, or a mound of earth some 600 feet tall by 600 feet wide and deep. However, the digging did not go as planned and several cave-ins amplified the amount of excavation required. When the camp departed for the winter that November, two dredging machines that had been called in from Omaha continued work.<sup>39</sup> When government officials visited the spillway in

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<sup>38</sup> "VCCC, 1776, Wins First Place in 7th Corps Area," *Lake Andes Wave*, 7 September 1933, 1; "Prize Winning Conservation Camp," *Lake Andes Wave*, 14 September 1933, 5; "VCC Camp No. 1776 Preparing to Leave," *Lake Andes Wave*, 9 November 1933, 1.

<sup>39</sup> "VCC Camp No. 1776 Preparing to Leave," *Lake Andes Wave*, 9 November 1933, 1.



January of 1934, over 80,000 cubic yards had already been removed, and incredibly to complete the project it was estimated another 90,000 had to be removed.<sup>40</sup>

The failures of the ditch nearly terminated the project, and contrasted with the progress made on the drain tiles. The federally authorized project differed from the ditch as it used local labor and appropriate technology from the start. In August, work began on the massive tiles, which were actually concrete pipe six feet in outside diameter and five feet long. By November progress neared the half-way mark, as 470 of the 1,000 had been cast. In February of 1934, the last of 1,004 tiles were completed, using 1,700 cubic yards of crushed rock, 150,000 pounds of cement, and nearly 600 miles of steel wire, at an estimated cost of \$20,000. Meanwhile, work stopped on the ditch as funds ran out.<sup>41</sup> Local citizens kept the the spillway boondoggle in the minds of their elected officials and pressured for more funds. G.F. Buche, state senator and originator of the Fish Day celebration, received a telegram from South Dakota Congressman Fred Hildebrandt near the end of February promising additional funds, possibly as soon as the following week.<sup>42</sup> The ability to lobby effectively their government was not shared by the area's original residents.

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<sup>40</sup> "Government Officials View the Spillway Here Sunday," *Lake Andes Wave*, 18 January 1934, 1.

<sup>41</sup> "Tile for Spillway Completed Tuesday," *Lake Andes Wave*, 8 February 1934, 1.

<sup>42</sup> "Work on Spillway to be Resumed at Once," *Lake Andes Wave*, 22 February 1934, 1.

For Yanktons, the New Deal diminished both tribal sovereignty and the Bureau of Indian Affairs' presence despite several years of active political organization by tribal members. In 1924, Yanktons established their own tribal nine-member Claims Commission to preside over a dispute regarding the Pipestone Quarry. Officially constituted as a permanent body, the commission lapsed after resolution of the Pipestone claim and by 1931 four members had died and one had resigned. The crisis of the Great Depression with widespread deprivation and even starvation encouraged a movement to revitalize the commission, and in 1931 a petition presented to the BIA called for new elections to fill the vacancies on the commission and to update the membership. Commissioner Charles J. Rhoads found the motion acceptable and even recommended that a new constitution and bylaws be crafted, though he cautioned Yankton superintendent C. C. Hickman that any elected tribal body would serve only in an advisory capacity and all authority rested with the Department of the Interior. Despite this caveat, Yanktons drafted a new constitution and, following acceptance by the BIA, approved the document by a 230 to 125 margin. The new constitution allowed the creation of a new nine-member Business Committee, but said nothing of the 1924 Claims Commission.<sup>43</sup>

At a time when many Native peoples had no western-style democracy, Yanktons suffered from an abundance of elected tribal officials and dearth of actual power. Commissioner Rhoads ruled that Yanktons had two duly elected

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<sup>43</sup> Thomas Constantine Maroukis, *Peyote and the Yankton Sioux: The Life and Times of Same Necklace* (Norman: University of Oklahoma Press, 2004), 200-201.

commissions and the 1924 body acted as a claims committee, while the 1931 constitution provided for a tribal council. Factions aligned behind each council and Rhoads' determination satisfied no one, so on September 22, 1932, a meeting was held at the Yankton Agency headquarters in Greenwood to resolve the controversy. James Irving was elected to chair the meeting which resolved, for the moment, the contentious issues of Yankton representative democracy by abolishing the 1924 commission and drafting another constitution which created the Yankton Sioux Tribal Business and Claims Commission consisting of nine Yanktons serving two-year terms, effectively rescinding the 1931 constitution. Irving opened the floor to nominations for commissioners, and the new officials were chosen from a slate of twenty-one candidates. The following month Commissioner Rhoads accepted the newest constitution and certified the election results.<sup>44</sup>

Despite the apparent resolution, the political fallout from the constitutional struggle would not settle for over thirty years. Following the landslide election of Franklin Delano Roosevelt in November of 1932, sweeping changes in federal Indian policy began with the John Collier's appointment as the new Commissioner of Indian Affairs. Collier, a longtime critic of the BIA, immediately set out to replace assimilation as the primary goal of federal Indian policy by ending allotment and creating tribal councils, though Collier's vision had competition from plans articulated by other reformers and interested Congressmen. Collier did not receive all the changes he desired, most notably absent was the establishment of Indian

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<sup>44</sup> Ibid., 202.

Courts to adjudicate disputes, but in June 1934 Congress passed the Indian Reorganization Act (IRA), also known as the Wheeler-Howard Act, repealing the various allotment laws and setting up procedures for tribes to draft constitutions and establish tribal councils.<sup>45</sup> The assumption that tribes did not already have constitutions and tribal councils proved to make a contentious situation on the Yankton Reservation even worse.

A petition signed by 220 Yankton men and women calling for the removal of Superintendent Hickman and the elimination of the Yankton Agency and its reassignment as a subagency awaited Collier when he entered office. Originally presented to Senator Lynn J. Frazier, the petition charged Hickman with meddling in tribal politics by withholding federal relief from those who did not share his views. Collier obliged the wishes of the petitioners and on April 1, 1933, removed Hickman from office and downgraded Yankton to a subagency under the supervision of the Rosebud Agency. In August 1933, Collier received a request to abolish the 1932 Tribal Council, but did not take that further step, likely since such an action would have appeared counter to his proposed system of reform.<sup>46</sup>

The situation became more bizarre when Yanktons rejected the Indian Organization Act, which appeared just another directive from Washington forced on Indians. BIA officials presented the proposed IRA constitution, including the

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<sup>45</sup> Graham D. Taylor, *The New Deal and American Indian Tribalism: The Administration of the Indian Reorganization Act, 1934-45* (Lincoln: University of Nebraska Press, 1980), 12-18, 27-29.

<sup>46</sup> Maroukis, *Peyote and the Yankton Sioux*, 202, 223-4, 352 n.84.

preamble and bylaws, already drafted in full, allowing tribes to add amendments subject to the BIA's review. Before they voted to approve or reject the IRA, Yanktons held elections for existing tribal council in September of 1934, as the initial two-year terms had expired. After voting to approve the IRA in principle in October, Yanktons rejected the measure 299 to 187 when the official vote was held in 1935. Yanktons were one of the few tribes to reject the IRA, as the wording of the act counted non-votes by registered tribal members as yes votes, suggesting that Yanktons were especially organized and opposed to the IRA. Earning the enmity of Collier and the BIA, Yanktons entered into a netherworld of unofficial self-government, when the BIA refused to schedule the 1936 election for new council members. Undaunted, Yanktons held the 1936 elections anyway, a situation repeated in 1938, at which time Collier felt it necessary to inform Rosebud Superintendent C. R. Whitlock that the BIA did not recognize the recently elected council. The BIA would not recognize Yankton self-government for another quarter of a century.<sup>47</sup> The interruption of New Deal benefits experienced by the white community was considerably shorter, as work resumed on the spillway project in May of 1934.

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<sup>47</sup> The situation persisted until 1963 when Yanktons adopted a constitution that met with BIA approval. Four years later, Yankton Agency regained its position as a jurisdiction independent from Rosebud. Maroukis, *Peyote and the Yankton Sioux*; Paul Picotte interview, AIRP 00067, transcript, p 1-2, 7, American Indian Research Project, South Dakota Oral History Archive, University of South Dakota, Vermillion, South Dakota.

With funds authorized by the Emergency Conservation Work Act and supervised by the U. S. Forest Service, May saw the arrival of a "monster dredger" brought in from Kansas City. The Funkhauser dredger eliminated the possibility of cave-ins by driving pilings into the earth on the sides of the cut and then removing the earth with two 3-4 cubic yard buckets. When the ditch was sufficiently deep, the Funkhauser then lowered the drain tile into place, backfilled the earth, tamped it down, and finally removed the pilings before moving onto the next section. The machine required only two operators and worked fourteen-hour days from 5:00 in the morning until 7:30 at night, doubly flying in the face of the recognized wisdom of CCC projects which maximized the number of laborers by using manual labor and shorter hours, later using six-hour shifts at Lake Andes. Even with the more efficient technology, the project was expected to take another three or four months to complete.<sup>48</sup> The final sections were not completed for several more years, however.

Another Veterans CCC camp arrived on July 31, 1934, taking up residence at the camp constructed by the Iowa group the year before. Company 2759V consisted of mostly married men coming from all parts of South Dakota, though the company was organized at Camp F-17 in Tilford, SD. During their three-month stay, the veterans worked on three projects, including more work on the spillway, beginning a dike across the northern end of Lake Andes, and diverting the drainage of several streams into the lake. The dike, when completed, was eighteen-feet high and thirty-

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<sup>48</sup> "Forest Service Doing Its Best," *Lake Andes Wave*, 24 May 1934, 1; "Monster Dredging Machine at Work on Spillway," *Lake Andes Wave*, 10 May 1934, 1.

feet wide with a gravel road on the top connecting two section line roads that ran through Bass Beach Resort. It also gave local residents another avenue across the lake, lessening the traffic on the the road on the lake's southern end, which already served double duty as U.S. highway 18 and S.D. highway 50.<sup>49</sup> Rather unbelievably, this project would also flounder for years, not being completed until January 1942.<sup>50</sup>

The shaky progress made on the spillway and dike contrasted strikingly with the direct action taken on the federal waterfowl refuge. In January of 1935, John N. Ball, project director for the BBS in South Dakota, announced that federal officials "definitely approved" the refuge and that options on the land were then in final negotiation for purchase.<sup>51</sup> A month later a duck banding operation commenced at the Lake Andes state fish hatchery, with the BBS supplying the bands and South Dakota Game Warden Duffy Allgier and his assistant Merle Thompson manning the traps and applying the aluminum bands to the bird's legs. In the first ten days, over 300 ducks were banded, confirming Lake Andes as a prime spot on the Central flyway of North American waterfowl and ranking in the top three of banding stations in North America. The banding operation coincided with the announcement

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<sup>49</sup> "Building a Dyke and Road Across the Lake," *Lake Andes Wave*, 23 August 1934, 1.

<sup>50</sup> "Lake Andes Refuge Narrative Report, July 1, 1941 to June 30, 1942," 1, FF Narrative 1942, Lake Andes National Wildlife Refuge Headquarters, Ravinia, South Dakota [Hereafter LAHQ]

<sup>51</sup> "To Establish Migratory Water-fowl Refuge," *Lake Andes Wave*, 10 January 1935, 1.

that all land for the new refuge had been purchased and a CCC camp was scheduled to arrive in the spring to commence work.<sup>52</sup>

An amazing amount of earth shifted around Andes in the creation of the new refuge for waterfowl. The federal footprint increased by only 347 acres, but the transformation of an inlet of the lake into a lynchpin of a continental management system required multiple projects, first sealing off Owens Bay from the main lake by a dike, constructing three islands within the new bay for bird habitat, digging a new artesian well to supply the refuge, plus three related projects connecting the federal refuge with the larger Lake Andes water system.<sup>53</sup> All the projects anticipated a future when the federal refuge would suffer from want of water. When Company 2743 CCC arrived on May 25, 1935, little time was lost. The CCC enlistees, mostly young Nebraska men aged eighteen to twenty-four, anticipated staying until late fall.<sup>54</sup> Within a few weeks of their arrival, work began on the diversion ditch to transfer water from the state fish hatchery to Owens Bay, and six days later work commenced on the dike separating the bay from the main body of the lake. Working

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<sup>52</sup> "Our Sanctuary Third Largest on Continent," *Lake Andes Wave*, 21 February 1935, 1; "To Establish Refuge at Our Lake Soon," *Lake Andes Wave*, 21 February 1935, 1.

<sup>53</sup> "Bureau of Biological Survey. Migratory Waterfowl Refuge, Project BF1, Lake Andes, South Dakota, 1936." Record Group 22, Box 4, FF Lake Andes 39-1-A 1935-36, National Archives and Records Administration, Central Region, Kansas City, Missouri [hereafter NARA-CR].

<sup>54</sup> "C.C. Camp is Rapidly Getting Settled for Work," *Lake Andes Wave*, 30 May 1935, 1.



in two six-hour shifts and dividing time between the two assignments, the projects moved along quickly.<sup>55</sup>

The hatchery diversion ditch physically connected the state artesian well at the fish hatchery to Owens Bay and epitomized the ideal of CCC projects. Workers excavated the entire 2,850 foot trench by shovel, with trucks used to move the dirt. Of the 1720 cubic yards removed, more than half ended up in the Owens Bay dike, while the balance returned to protect the hatchery grounds as an overflow dike for storm precipitation and to encase 260 feet of pipe that transferred water from the state well to the head of the diversion ditch. CCC workers hand tamped the ditch and then lined it with rip-rap to reduce erosion. The diversion ditch benefited the hatchery by allowing excess water an outlet, as the artesian well constantly produced water, but the hatchery ponds had limited capacity. Owens Bay experienced a much higher rate of evaporation given its larger surface area, and an artesian well then being drilled by the Norbeck Drilling Company filled the bay on the eastern end, while the hatchery ditch flowed into the western end of the bay, which officials hoped would have the added effect of freshening water on that end.<sup>56</sup>

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<sup>55</sup> "Bureau of Biological Survey. Migratory Waterfowl Refuge, Project BF1, Lake Andes, South Dakota, 1936," Record Group 22, Box 4, FF Lake Andes 39-1-A 1935-36, NARA-CR.

<sup>56</sup> "Hatchery Well Diversion Ditch, Project No. 3," in "Bureau of Biological Survey. Migratory Waterfowl Refuge, Project BF1, Lake Andes, South Dakota, 1936," Record Group 22, Box 4, FF Lake Andes 39-1-A 1935-36, NARA-CR.

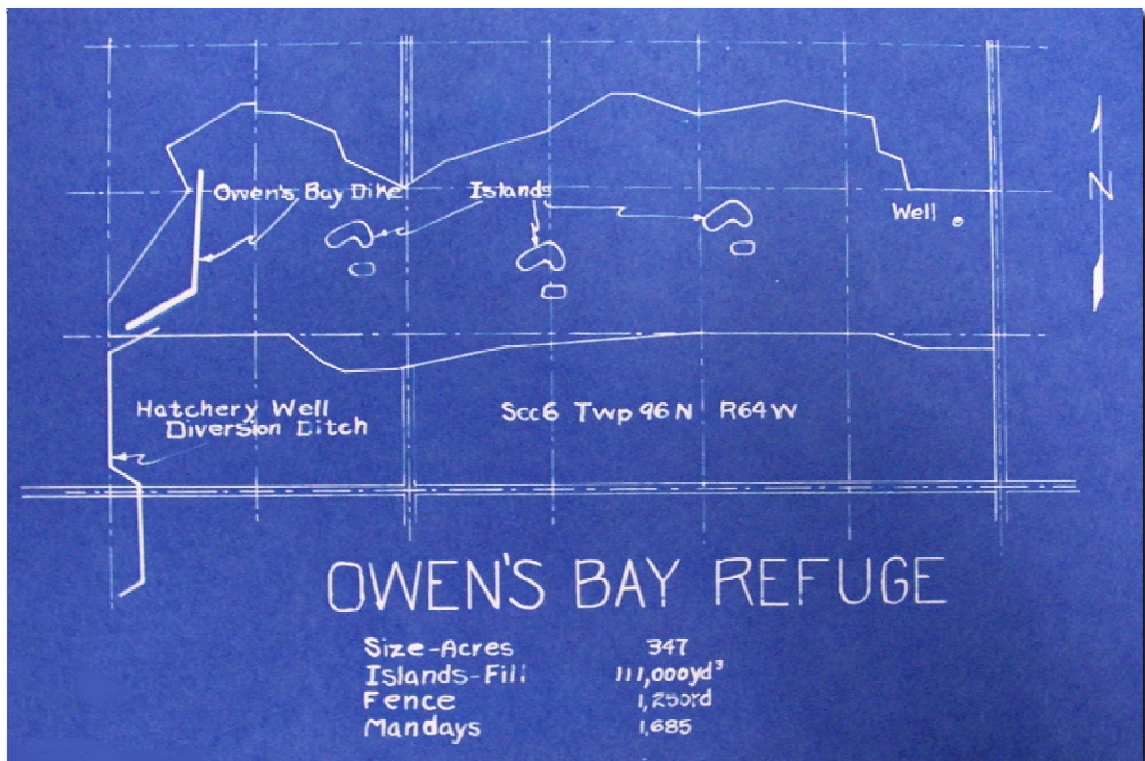


Figure 5.1: Blueprint for Owen's Bay Refuge. Source: "Bureau of Biological Survey. Migratory Waterfowl Refuge, Project BF1, Lake Andes, South Dakota, 1936," Record Group 22, Box 4, FF Lake Andes 39-1-A 1935-36, NARA-CR.

Within the bay, workers built three sets of two island clusters, for a total of six new islands. Construction required 1,685 man-days, though without the use of extensive heavy equipment the project would have consumed many times that amount of labor. Learning the lesson of the spillway fiasco, considerable heavy machinery was employed from the outset, including a 48 inch grader, two caterpillar tractors, a twelve-foot blade, ten three-yard dump trucks, a three-quarter-yard slackline excavator. The islands consumed a total of 111,000 cubic yards of dirt distributed over three sets, each consisting of a kidney shaped island some 500 feet long by 120 feet long and a smaller oval island 160 feet long by 90 feet wide. Soft stem Bulrush was planted on the islands' outer edges to provide

erosion control and feed for waterfowl, interspersed with spike-rush and three square Bulrush. On the centers of the islands, sweet clover, brome grass and barley furnished nesting cover and more feed, while also acting to secure the soil and deter the growth of weeds. Nine burrow pits were dug to provide the fill for the islands, which when completed covered about three and a half acres exposed above the water.<sup>57</sup>

The BBS designed the refuge as a "sanctuary for migratory waterfowl" and intended that most species would use it as a stopover on annual migrations in the fall and the spring, though it anticipated that mallards would live at the site year round. The Norbeck Drilling Company had already penetrated 200 feet into the earth with a ten-inch bore, which would be steadily reduced in size as the crew reached their ideal depth of 900 feet in order to strike an artesian flow sufficient to keep the bay filled with water.<sup>58</sup> A control structure in the main dike allowed the water to be maintained at about five feet deep, and a natural outlet on the north end of the dike served as an additional spillway should high water years overwhelm the control box. In addition to the Owens Bay artesian well and the diversion ditch from the fish hatchery well, a massive regulating canal diverted stream flow from adjacent lands into the bay. The West Diversion Canal required over 4,300 man-days and utilized the same heavy equipment as the island excavation, with the

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<sup>57</sup> "Owen's Bay Island, Project No. 2," in "Bureau of Biological Survey. Migratory Waterfowl Refuge, Project BF1, Lake Andes, South Dakota, 1936," Record Group 22, Box 4, FF Lake Andes 39-1-A 1935-36, NARA-CR.

<sup>58</sup> "Started to Drill Well, *Lake Andes Wave*, 30 May 1935, 1.

addition of an eight-ton packer to divert runoff from approximately 5,800 acres into Owens Bay. Elsewhere, two projects supervised by the BBS with laborers from the Works Progress Administration attempted to offset the worst periods of low water by partitioning the lake into three management units.

The lands draining into Lake Andes deposited runoff in unequal proportions, with the majority entering the northern section of the lake. Oversetting the imbalance of flow provided the official logic for the lake's partitioning, as isolating the Middle Unit would remove nearly half of the surface area. The surface area was critical, as annual evaporation reduced the water's depth by as much as two to three feet and was viewed as the most significant obstacle to keeping water in the lake during most years. From the perspective of the last thirty years of additional artesian flow, the recent drought was unique in its severity, but regardless the frequency of low water, if the lake had no water it could hardly support fish or more importantly waterfowl, at least from the standpoint of the BBS. Officials recognized that local cooperation and impetus for the plan extended from the premise that the lake would be restored for fishing. The North Unit covered 640 acres, the Center Unit 2240 acres, and the South Unit 1600 acres. The drainage basin covered covered 84,800 acres, with 62% flowing into the North Unit, 23% into the South Unit and only 14% into the Center Unit. With the dikes, it was hoped that the North Unit would always contain at least some water, which could then overflow into the

Middle and South Units if precipitation allowed.<sup>59</sup> Owens Bay, supplied by an artesian well, also could add to the South Unit by opening a control gate in its dike.

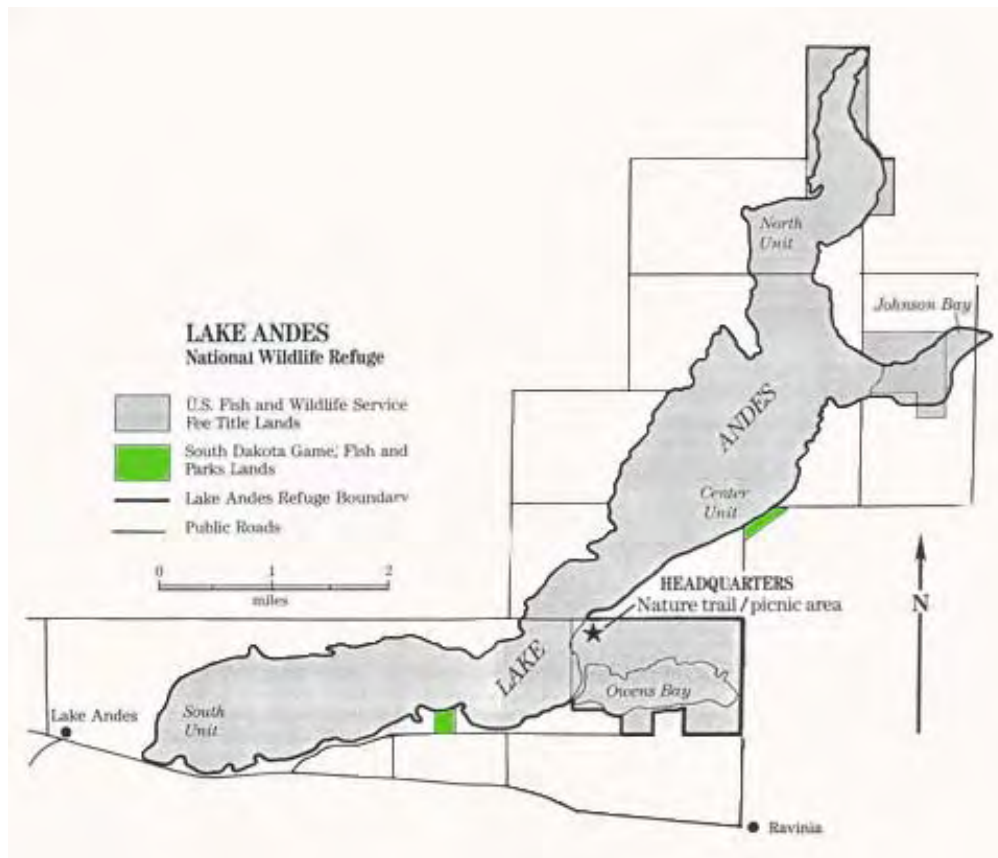


Figure 5.2: Lake Andes National Wildlife Refuge. Source: U.S. Fish and Wildlife Service, "Lake Andes National Wildlife Refuge and Wetland Management District" Pamphlet (Washington, DC: GPO, 1990). Adapted by author.

There was a certain karmic equilibrium in drilling another artesian well to supply water for the refuge, as the earliest ancestral species of ducks and geese date to the late Cretaceous, the same geologic era as the Dakota aquifer. Ducks, geese,

<sup>59</sup> John Decker, "History of Lake Andes," U. S. Fish and Wildlife Service, an unpublished manuscript created for in-house use at the refuge, copy in possession of author, also on File at LAHQ, appendix 23, Construction Proposal, Undated.

swans, along with the evolutionary distinct Magpie Geese, are all classed within the avian order Anseriform and share in their reliance on and adaption to water, with different species having evolved to thrive in stagnant and brackish marshes, fast-moving whitewater rivers, shallow and deep lakes, and saltwater seas and oceans. They are found across the world, even on islands in the middle of the Pacific Ocean (though not in Antarctica), and are the subject of more academic research and investigation than any other variety of avian life. Their ubiquity extends far back into the fossil record, and of all the birds alive today, Anseriformes can easily claim the longest evolutionary existence. Several modern species are indistinguishable from fossils over two million years old. Gadwall, Northern Mallard, Northern Shoveler, Ringed-neck Duck, and Bufflehead are contained within the latter group and are commonly found at Lake Andes, with Mallards, Gadwalls and Shovelers frequently abundant.<sup>60</sup>

From the standpoint of physiology, ducks may not have changed much over the course of deep time, but the conditions of the world certainly have. During the Cretaceous, seasons did not exist, which is to say that warm temperatures prevailed year-round, thereby removing any stimulus for migration. It was not until the Miocene, beginning 25 million years ago, that seasonal changes began to encourage migratory behaviors in avifauna, with seasonality most pronounced at mid and high

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<sup>60</sup> Janet Kear, "Introduction," in *Ducks, Geese and Swans Bird Families of the World Series* (New York: Oxford University Press, 2005) ed. Janet Kear, 3, 6; Des Callaghan and John Harshman, "Taxonomy and Systematics," in *Ducks, Geese and Swans Bird Families of the World Series* (New York: Oxford University Press, 2005) ed. Janet Kear, 19-21.

latitudes. Interestingly, given the current preoccupation with global warming, the last 1.8 million years (known as the Quaternary) represent the coolest period experienced by living species of birds, and perhaps in the entire evolutionary history of birds, including extinct species. During the last glacial maximum, some 22 to 18 thousand years ago, migratory patterns were considerably circumscribed, and it is likely that many birds now breeding far to the north in Canada would have concentrated in what is today Mexico. As the glaciers receded, vegetative changes further impacted the migratory behaviors of birds as new plant communities forced adaptations in migrations to maintain feeding requirements, initiating a more northward migration.<sup>61</sup>

Despite the deep past and global profusion of waterfowl, scientific knowledge of birds remained limited until recently. Aristotle provides the first recorded example of "western" interest, and he is credited with cataloging the first list of avian biodiversity, recording 140 species (whereas the current count rests at 8,700). Jumping forward to Linnaeus, the undisputed father of modern taxonomy, the tally advanced to 500, though rather than postulating migration, he believed that swallows spent their winters at the bottom of lakes. Charles Darwin, as in so many other fields, rightly deserves credit for expanding our perspectives on species diversity and distribution, though as late as 1884, when the first international

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<sup>61</sup> David W. Steadman, "The Paleoecology and Fossil History of Migratory Landbirds," in *Birds of Two Worlds: The Ecology and Evolution of Migration* (Baltimore: The John Hopkins University Press, 2005), eds. Russell Greenberg and Peter P. Marra, 6-9.

ornithological congress convened in Vienna, the compilation of data remained at the level of arrivals and departures of migratory species. The notion that birds themselves may somehow direct the patterns based on complex observations of the earth's magnetic fields and slight variations in the length of the day did not develop until the 1950s.<sup>62</sup> In the United States, the expansion of scientific knowledge proceeded with an increasingly unified approach to wildlife management reflected in an administrative reorganization plan.

The erosion of Yankton authority and the abdication by the State of South Dakota coincided with the consolidation of federal wildlife management. The creation of the U.S. Fish and Wildlife Service in 1940 united the two federal agencies most responsible for the biological changes occurring at Lake Andes during the twentieth century. The merger joined the Bureau of Fisheries, formerly the U.S. Fish Commission, with the Bureau of Biological Survey and placed the new Fish and Wildlife Service (FWS) within the Department of the Interior. Formerly, the Department of Commerce oversaw the Bureau of Fisheries, while the Department of Agriculture housed the Bureau of Biological Survey.

This bureaucratic realignment reflected a larger shift in scientific and philosophical approaches animating the two departments. Both the Fish Commission and the Biological Survey received Congressional approval and funding based on their contributions to the commercial interests of the nation. As the debate

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<sup>62</sup> Thomas Alerstam, *Bird Migration* (New York: Cambridge University Press, 1990), trans. by David A. Christie, 2-3.



over federal control of migratory waterfowl reveals, however, scientists and citizens began to call for government to use science to temper the destructive tendencies of unbridled commercial development. By the 1930s, the idea of a unified approach to conservation of the country's natural resources offered a powerful alternative direction for public policy, what today is known as ecology but at the time was likely referred to as a "balance of nature." Secretary of the Interior Harold Ickes and President Franklin Delano Roosevelt intended to create a new cabinet division known as the Department of Conservation, though that ambitious plan proved elusive in part because of negative reaction from those who viewed the move as undemocratic and a blatant power grab by a federal government obsessed with state planning and limiting the influence of the marketplace.<sup>63</sup>

At Lake Andes, the expansion of federal power had already intensified a year earlier when the BBS entered into an easement agreement with the state of South Dakota that allowed manipulation of the water level on the main body of the lake while keeping a closed preserve for migratory waterfowl at Owens Bay. This agreement also allowed hunting on the center section of the main lake, managed by the South Dakota Game, Fish and Parks commission. The North and South Units fell under the management of the BBS (assumed by the FWS after 1940), though South Dakota still managed fishing on the main lake. Owens Bay was closed to public fishing but served as an additional rearing pond for the nearby state fish hatchery.

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<sup>63</sup> For an excellent discussion of the larger debate surrounding FDR's reorganization plan, see Maher, *Nature's New Deal*, 181-210.

Although water still flowed between the sections during periods of high water, the physical separation was nearly as complete as the legal boundary.<sup>64</sup>

Despite the physical and legal reconfiguration during the New Deal, the actual conditions at Lake Andes did not justify some local fears of despotic federal overlords. The transformation was far from immediate, and for over a decade after construction closed on the dike projects on January 29, 1942, the refuge did not even have a year-round FWS official on site and was managed through the Fort Niobrara National Wildlife Refuge in Valentine, Nebraska, 160 miles to the southwest. Initially, the FWS relied on the local South Dakota Game Warden for information and enforcement with the Niobrara Manager occasionally making trips to Lake Andes to address pressing issues.

On May 18, 1945, Clifford Anderson began work as a temporary employee with the title of Laborer-Patrolman, and a backlog of routine maintenance engaged all his time and more, with many duties left unfinished when the meager budget for his salary ran out. When he resigned the following year, John D. Connors, Niobrara Manager, requested a seasonal full-time employee for Lake Andes for at least six months a year to perform mowing and burning operations on the diversion ditch, the three dikes, and the six islands on Owens Bay, not to mention the administrative duties of monitoring water levels on the four units and conducting duck counts

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<sup>64</sup> John Decker, "History of Lake Andes," appendix #25, State Easement, November 25, 1939.

periodically throughout the year.<sup>65</sup> The lack of accurate duck counts presented a much greater problem than just an administrative oversight, as providing habitat supplied the refuges main mission and its most promising hope for additional personnel. The intermittent nature of human labor at Lake Andes mirrored the rise and fall of water levels.

The drought conditions that precipitated the crisis at Lake Andes in 1933 continued largely unabated in the early 1940s, though the North Unit occasionally maintained a small amount of water. As anticipated, Owens Bay provided suitable habitat for geese and ducks over the winter months; and in March of 1941 geese outnumbered ducks for the first in Game Warden Duffy Allgier's recollection. The following year the warm water from the artesian well kept the bay from freezing, allowing an estimated 25,000 mallards and 1,600 Canada geese to winter at the refuge, even though the rest of the lake was without water. Heavy runoff from the spring melt and unusual precipitation in May and June filled the North Unit and raised the South and Center Units to four feet of water, with Sago Pondweed making a quick recovery. By September, the Center Unit had again gone dry, a development not surprising given its large area and small drainage. The Owens Bay well caved in at the same time, collapsing in on itself, leaving a sink hole 25 feet across and some 35 feet deep though with sufficient flow to fill the crater with water. Since the state of South Dakota used the bay as a rearing pond for fish from the hatchery, it was

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<sup>65</sup> Kenneth F. MacDonald to Director of Fish and Wildlife Service, 5 February 1942, FF Narrative 1942, LAHQ; May 1 - August 31, 1945, 1, FF Narrative 1945, LAHQ,; May 1 - August 31, 1946, 2, FF Narrative 1946, LAHQ.

hoped the state might fund the drilling of another well if that should become necessary.<sup>66</sup>

Abundant snowfall and spring rains returned the lake to a fishing destination, while at the same time ducks began to utilize the lake as a winter haven in record numbers. Fishing was reported to be good during 1944, and the next summer between 1,000 and 2,000 anglers lined the shores on peak weekends, taking an estimated fifty tons of fish over the year with good bass and bluegill fishing. Non-resident fishing licenses sold by the local game warden increased by 600 percent over the previous year, and in a display of misplaced optimism by the South Dakota Game and Fish Department, the highly intermittent Center Unit was stocked with fish. The fall duck migration also saw increasing numbers for nearly all ducks, with canvasbacks the noted exception, and a peak of 200,000 mallards were seen over the winter, with 50,000 staying over the entire month of December. Not surprisingly, the bounty of avian visitors brought complaints of crop depredations, as mallards and geese grazed in nearby fields causing twenty-four farmers to lodge complaints of losses totaling \$140,000. During 1946, fishing continued in its popularity and the aggregate catch remained at fifty tons, but was only considered fair and bullheads, a much less desirable fish, began to be caught with more frequency. The winter of 1946-47 amazed some locals who estimated 700,000 mallards congregating at the peak, though the official report disparaged this count

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<sup>66</sup> February 1941, 6, March 1941, 8, FF Narrative 1941, LAHQ; May 1 - August 31, 1942, 1, FF Narrative 1942, LAHQ; February 1941, 6, March 1941, 8, FF Narrative 1941, LAHQ; Sept-Dec 1943, 1 FF Narrative 1943, LAHQ.

as the best guess of "pool-room sportsmen" and recorded 225,000 as the maximum and 70,000 actually wintering at the lake, the largest assemblage since the refuge's creation.<sup>67</sup>

During the heat of the August sun, the growing convergence between the interests of fishermen and the National Wildlife Refuge began to emerge as water levels receded. Heavy rains in May and June brought the lake to its highest levels by June 16, and on the Fourth of July 577 cars were counted on the lake with similar congestion on most weekends. However, by the end of summer the fishing tapered off as water levels dropped and heavy moss growth tangled fishing lines. At the end of August, the Center Unit had again gone dry, which more profoundly affected the duck populations as they favored that section for breeding. Before the heat had evaporated the water, an estimated fifty pintails, 300 blue-winged teals, 2,000 coots, and 3,000 mallards hatched on the Center Unit, another peak level of production. Calamity struck on September 11, when botulism claimed 300 ducks, a disease outbreak the FWS blamed on high population density and lack of water.

To make matters worse, the Owens Bay artesian well failed during the same period, a development believed critical to wintering populations as the open water invited high concentrations. The cost of drilling a new well could have caused a serious budgetary crisis, given that the FWS was not even willing to pay for a full-time employee on the refuge, but South Dakota agreed to finance a new well as they

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<sup>67</sup> Sept 1 - Dec 31, 1944, 1-2, FF Narrative 1944, LAHQ; May 1 - August 31, 1945, 3, FF Narrative 1945, LAHQ; Sept 1 - December 31, 1946, 1-2, 4, FF Narrative 1946, LAHQ.

used the bay for a rearing pond for bass and other game fish. After entering into a cooperative arrangement with the FWS, South Dakota paid for two new wells, one at Owens Bay and another at the Fish Hatchery (as that artesian well had also recently failed), and by April 1948 the minor crisis at Owens Bay was averted when the new wells came on line and filled the bay to capacity.<sup>68</sup>

Huge numbers of ducks and geese in 1949 reinforced the decision to site a refuge at Lake Andes, even as FWS officials tarried in providing adequate staffing. The summer broods increased exponentially, with a total of 20,000 young born including over 11,000 mallards and the fall migration drew equally impressive flocks, when 80,000 ducks and 80,000 coots passed through in October. The wintering populations remained consistently large, with 5,000 Canada geese joining the 100,000 mallards.

In his official reports, John Connors tried to articulate the need for a full-time manager by cautioning the information concerning waterfowl populations remained meager, while at the same time attempting to justify the creation of a new position by noting the impressive occupation by all aspects of migratory species throughout the year. After attending a refuge managers conference, Connors reported that "it became evident that based on waterfowl use months, Lake Andes rates [are] well up the line as a waterfowl refuge." He further recommended expanding the "duck land

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<sup>68</sup> May 1- August 31, 1947, 1, 2, 9, FF Narrative 1947, LAHQ; September 1 - December 31, 1947, 1, 3, FF Narrative 1947, LAHQ; January 1 - April 31, 1948, 1, FF Narrative 1947, LAHQ.

at Lake Andes and put this refuge up in the major class where it belongs and provide it with the staff it deserves."<sup>69</sup>

The issue of providing adequate water to meet all the needs of the lake seemed to elude a simple solution as problems followed every advance. An unusually wet winter in 1950 deposited forty-nine inches of snow, filling the lake to its highest level since the drought of the 1930s, but the resultant waves revealed that the riprap placed on the dikes was insufficient to withstand high water conditions, an issue compounded by the habit of fishermen rearranging the rocks to create more comfortable seating or removing stones outright to serve as impromptu anchors for their boats. The abundant snowfall also indirectly decreased the number of ducks breeding at Lake Andes that summer, providing alternate habitat in numerous prairie potholes briefly sustained by the snowmelt. In another case of water's ambiguities, the warm temperature of the artesian water added to refuge bird counts by keeping some sections from freezing during the winter, but the water's alkalinity corroded the wells' metal casing which was believed to have led to the sinkhole created in 1943. More critically, the flow and quality of the wells fluctuated over time, occasionally discharging large amounts of sand and muddy, foul smelling water, raising fears that another artesian failure was eminent.<sup>70</sup>

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<sup>69</sup> January 1 - April 31, 1949, 1, FF Narrative 1949, LAHQ; May 1 - August 31, 1949, 1, FF Narrative 1949, LAHQ; September 1 - December 31, 1949, 1, FF Narrative 1949, LAHQ.

<sup>70</sup> January 1 - April 31, 1950, 1, FF Narrative 1950, LAHQ; May 1 - August 31, 1950, 1, FF Narrative 1950, LAHQ; Sept 1 - December 31, 1951, 1, 2, FF Narrative 1951, LAHQ.

Two years of above average precipitation unleashed an army of anglers while highlighting the difficulties of long-term planning for a highly variable environment. Spring rains were again heavy in 1951 and when fishing season opened at midnight on May 1st, lines of cars extended for an eighth of a mile on both sides of both dikes and as one car would leave after its occupants caught their limits, another would take its place. Even though most of the catch was bullheads, not uncommon at that time of year, the deluge of anglers continued the next day, when an estimated 5,000 men, women and children tried their luck in the newly revitalized locale long "famous for fishing."

In June, the spillway operated for the first time since it was first proposed over thirty years earlier. Somewhat surprisingly given the difficulties surrounding its construction, the outlet pipes were free of mud and obstructions, though soon serious questions arose as to whether it could accommodate any further precipitation. With water in the Center Unit higher than ever before, it was discovered that the original decision to not riprap the sides of the dikes which faced the usually barren section threatened the integrity of the structures, an oversight quickly remedied by bringing in 6,000 yards of sand and gravel on the southern end, where the wind driven waves exacted the greatest pressure. One bright side to the unexpected depth of the Center Unit was the revelation that breeding ducks, which



tended to favor that section, and fishermen could coexist, as the two species preferred different habitat.<sup>71</sup>

In another long overdue development, Charles Hughlett assumed the duties of manager of the Lake Andes National Wildlife Refuge on October 6, 1952 finally bringing a permanent FWS employee to the resurgent refuge. FWS Niobrara manager Connors' claim that migratory counts had previously only hinted at the activity at the refuge received ample confirmation with the new manager's first official report. Judged only from the columns of the triannual waterfowl reports, Hughlett oversaw the single greatest explosion of avian biodiversity ever witnessed, as the species of ducks recorded at Lake Andes during the fall migration more than doubled, while other whole classes of birds received reports where previously no sightings had occurred, adding herons, grebes, hawks, and bald eagles (among others) to the list of transients and residents. Over the last three months of 1952, Hughlett recorded a staggering 6,625,315 waterfowl days, to use FWS terminology, and the narrative report he submitted encompassed fifteen pages replete with details on the behaviors of nearly all wildlife found on and around the refuge, even detailing the activities of several non-avian species for the first time, including white-tail deer, mink, beavers, badgers, and skunks.<sup>72</sup>

Although encouraged by the diversity and vitality of wildlife on the refuge, Hughlett received a less spirited welcome from local farmers and sportsmen. Over

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<sup>71</sup> May 1 - August 31, 1951, 1, 2, FF Narrative 1951, LAHQ.

<sup>72</sup> September 1 - December 31, 1952, 2-8, 18-20, FF Narrative 1952, LAHQ.

October and November, FWS officials held a series of meetings across southeastern South Dakota outlining a new program to establish waterfowl management areas designed "to minimize crop depredations, protect the Missouri River goose flock, and provide public hunting grounds." The proposal met with favorable reaction from farmers and sportsmen in Chamberlain and Sioux Falls as well as from the Bon Homme County chapter of the Issak Walton League. A preliminary meeting at Lake Andes also garnered positive reaction, but a larger meeting was scheduled a month later to elicit the opinions of all those who would be "directly affected." On November 19, over 175 residents packed the Charles Mix County Courthouse to hear the proposal and offer their feedback, which Hughlett characterized as "bitter and heated but generally aimless." At the conclusion of the discussion, a voice vote returned a unanimous "no" to the question of a management area in the county. After further consultation with "local farmers, sportsmen, businessmen, law enforcement officers and any one (sic) else that would listen," Hughlett learned the proposal in the abstract met with some favor, provided it was sited somewhere else, as "[V]ery few people want to see land acquired by the government in this county."<sup>73</sup>

The current restrictions on duck and geese hunting seemed especially maddening, although government intervention was still deemed desirable given the alarming preponderance of bullheads within Lake Andes. As part of the 1939 easement allowing federal management of the rest of the lake, hunting was allowed

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<sup>73</sup> Ibid., p. 12-13.

on the Center Unit, but it was illegal to retrieve any waterfowl that landed either in North, South or Owens Bay Units. Beyond that seemingly arbitrary regulation, the hunting season was felt to close too early to allow capturing the greatest concentrations of the fall migration, while the daily limits on shooting hours also reduced the success of hunters. Hughlett acknowledged that the season might be extended into November without negatively impacting overall duck populations and might even reduce crop depredations by scattering mallards off farmer's fields. Likewise, he felt that extending hunting times by an hour later in the afternoon might also generate some goodwill at little cost, as the ducks would adjust to the later times rather rapidly by lingering on the refuge and delaying their evening feeding times. Meanwhile, resort owners clamored for state fisheries personnel to begin removing bullheads from the lake, as that species comprised an estimated seventy percent of all fish, a development that threatened the recreational appeal of the fishery, despite the continued appearance of 2,000 to 3,000 anglers every weekend.<sup>74</sup>

By the fall of 1953, continued high water levels at Lake Andes ironically began to be viewed as providing an environment detrimental for both fish and waterfowl. In part, the new perspective resulted from a change in personnel, as Hughlett transferred to Horicon Refuge in Wisconsin and Leo Kirsch, formerly junior manager at Lower Souris Refuge in North Dakota took over as manager of Lake Andes in October. The breeding population of ducks plummeted earlier that

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<sup>74</sup> Ibid., p. 14; May 1 - August 31, 1953, 6, 9, FF Narrative 1953, LAHQ.

summer, dropping to 310 hatchlings as the formerly marshy conditions necessary for nesting were overtaken by open water. Hughlett remained confident that when lower water levels resumed, an event he considered a certainty, Lake Andes would again "contribute heavily to the production of South Dakota's waterfowl." Kirsch recognized a different threat to the breeding potential, citing increasingly muddy and cloudy water as detrimental to the growth of food plants used by ducks, and he blamed the turbidity on a rapidly growing population of carp. The presence of carp once again significantly complicated an already precarious situation, as bullheads and crappie had displaced nearly all other fish life and whose small size reflected an unhealthy abundance. Kirsch hoped that a few years of low water would bring winter kills, which occurred in shallow water when low oxygen levels caused the death a most of a lake's fish population trapped under winter ice, thereby removing undesirable fish species and allowing the return of emergent vegetation to provide nesting habitat for ducks.<sup>75</sup>

Over the next three years, drought returned and all the units slowly evaporated away, though the unpopular fish proved more resilient than any imagined possible. During the spring of 1955, commercial fishermen removed one million pounds of bullhead from the lake, and while the seining operation revealed that carp were not as prevalent as most thought, the popularity of summer fishing dropped considerably as only very small bullheads were caught by hook and line.

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<sup>75</sup> May 1 - August 31, 1953, 2, FF Narrative 1953, LAHQ; September 1 - December 31, 1953, p. 2, 3, 9, 10, FF Narrative 1953, LAHQ.

The following year, commercial fisherman equaled their previous poundage, with carp heavily featured in the catch along with bullheads, while recreational fishing plummeted to 10,000 man-days, a fifth of the average for the past years. Severe drought over the summer reduced the lake to its lowest levels since the 1930s, while the artesian well at Owens Bay failed causing it to go completely dry by the end of August.<sup>76</sup>

The bullhead removal allowed the average size of the lake's bullheads to rebound a bit in 1957, which generated a few weeks of 200 to 300 anglers observed during May and early June, but summer fishing dropped off again as fishermen began to catch carp with alarming regularity. The North and Center Units were expected to go dry soon, but a new artesian well installed at Owens Bay returned it to a depth of 3.6 feet by year's end. As forecasted, low water produced higher breeding counts on the Center Unit, with an estimated 700 ducks hatching over the summer. Otherwise, the fishing fell to 3,000 man-days over the year and ceased almost entirely by the end of August, yet the South Unit likely still had enough water to sustain the population of carp.<sup>77</sup>

When the fish kill finally arrived at the South Unit, carp proved equal to the challenge. Over the winter, overflow from Owens Bay was not allowed to drain into

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<sup>76</sup> May 1 - August 31, 1955, 5, FF Narrative 1955, LAHQ; January 1 - April 31, 1955, 5, Ibid.; May 1 -August 31, 1956, 9, FF Narrative 1956, LAHQ; September 1 - December 31, 1956, 9, Ibid.

<sup>77</sup>January 1 - April 31, 1957, 4, FF Narrative 1957, LAHQ; May 1 - Augst 31, 1957, 2, 5, Ibid.; September 1 - December 31, 1957, 1, 4, 15, Ibid.

the South Unit, but still the anticipated winter kill did not occur. Another commercial removal netted 65,000 carp, yet still the fish maintained an abundant population, and a paltry 150 angler man-days placed little pressure on the population before fishing stopped completely after July. Over the summer, heat and drought combined to dry out completely the North and Center Units, and in the first week of August lack of oxygen finally delivered the long awaited fish kill in the South Unit. Even then many carp escaped the carnage by swimming up the spillway into Owens Bay to survive for another day. In addition to the damage they did to the sport fishery, the carp also removed all the Sago pondweed from the South Unit, which meant that they were bad for waterfowl.<sup>78</sup>

In September of 1958, Harry Woodward, Director of the South Dakota Department of Game, Fish and Parks, addressed a joint meeting of the Lake Andes Chamber of Commerce and the Laker's Club regarding the low water level.<sup>79</sup> Unlike the meeting in 1933, federal governmental officials and scientists attended and contributed to the discussion. In addition to the director of the South Dakota Game, Fish and Parks Department, Ed Johnson, the Federal Aid Coordinator based in Pierre, and Ted Shields, the Missouri River Impoundment Biologist, attended the meeting. A resolution was passed stating that the North and South Units of the lake should be developed primarily as fishing areas, reflecting a continued local

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<sup>78</sup> Jan 1 -April 31, 1958, 4, FF Narrative 1958, LAHQ; May 1 - August 31, 1958, p. 1, 4, 7, Ibid.

<sup>79</sup> "Game Director Addresses Lake Andes Group Wed. Evening," *Lake Andes Wave*, 2 October 1958, 1.

animosity toward waterfowl management. The group also requested that the state commission an engineering study of the feasibility of enlarging the watershed of the lake and/or adding water from any future irrigation projects developed in conjunction with the Fort Randall Reservoir on the Missouri River a few miles southwest of Lake Andes.<sup>80</sup> The results of the study were not encouraging for the fishing lobby.

A study by the Soil Conservation Service offered little hope for maintaining Lake Andes without irrigation development. According to the report, rainfall supplied adequate precipitation to maintain the lake only five to ten years out of twenty, a conclusion supported by the last sixty years of the lake's history. Artesian water was thought best reserved for domestic supply, while increasing the size of the watershed through diversion ditches or pumping water from the Fort Randall Reservoir were deemed too expensive. Only irrigation development was recommended as a possible solution to the low water levels.<sup>81</sup> The issue of carp control met with more immediate action.

Over 30,000 carp and bullheads washed ashore in late September 1958. The US Fish and Wildlife service contracted with Duane Sly of Chamberlain to spray Toxaphene over 2,000 acres of the South Unit of Lake Andes, the only area with water at that time. Toxaphene was originally developed as an agricultural insecticide, though it soon proved deadly to a host of organisms, including fish, birds

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<sup>80</sup> Ibid.

<sup>81</sup> "SCS Study Made on Lake Andes," *Lake Andes Wave*, 4 September 1958, 1.

and human children. Oddly enough, the local citizens were encouraged to collect the dead fish and feed them to hogs and chickens. It was even suggested that when properly cooked, humans could eat the fish. This rather bizarre and dangerous suggestion is made slightly less perverse by the recognition that the year before the Department of Agriculture had approved Toxaphene for use in protecting cattle from insect pests. The announcement of free carp went largely unheeded, though one farmer did collect a truck load to feed his hogs.<sup>82</sup>

During a "Save the Lake" meeting at the Charles Mix County Court House on December 8, 1959, 135 concerned citizens met to discuss the possibilities for the restoration of water levels. Harvey W. Miller, a FWS wildlife biologist recently assigned to the Lake Andes refuge, attended the meeting and rather despairingly remarked that "nothing of significance was accomplished." Had he been aware of the resounding rejection of federal intervention heard by his predecessor seven years earlier, Miller might have been even more caustic in his analysis, though his assessment that "local people seem to be pinning their hopes on two possibilities," suggested that he arrived with a healthy dose of cynicism. Those possibilities

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<sup>82</sup> "Carp and Bullheads Killed in Lake Andes," 2 October 1958, 5; George Post, "Effects of Toxaphene and Chlordane on Certain Game Birds," *The Journal of Wildlife Management* 15 (Oct. 1951) 381-386; William R. Hanson, "Effects of Some Herbicides and Insecticides on Biota of North Dakota Marshes," *The Journal of Wildlife Management* 16 (July 1952): 299-308; "Alert on Insecticides," *The Science News-Letter*, 62 (Jul. 26, 1952), 63; "Fish Streams Poisoned by Drained-off Insecticide," *The Science News-Letter*, 64 (Aug. 1, 1953), 69; Richard E. Genelly and Robert L. Rudd "Effects of DDT, Toxaphene, and Dieldrin on Pheasant Reproduction," *The Auk*, 73 (Oct. 1956): 529-539; "News and Notes," *Journal of Range Management*, 10 (Nov. 1957): 292-294; September 1 - December 31, 1958, 5, FF Narrative 1958, LAHQ.



involved governmental intervention, involving either the Bureau of Reclamation and/or the State of South Dakota and roughly followed the proposals discussed the year before of either enlarging the watershed through more diversion ditches, or by constructing an irrigation project that would contribute water to Lake Andes. If the FWS was asked to participate in the plan, Miller made no note in his official report on the proceeding.<sup>83</sup>

Carp provide a fitting, if ambivalent, coda to the first twenty-five years of the National Wildlife Refuge at Lake Andes. Low water and carp profusion united local citizens in their call for increased government intervention in 1933, and when the situation returned in the late 1950s, another meeting convened to petition for federal redress, although significantly seeking help from the Bureau of Reclamation, with a FWS official looking on with bemused detachment. Yet the application of several hundred gallons of highly toxic insecticide the previous year reinforced the fact that even as locals despaired at times of the federal presence, the FWS maintained highly effective and coercive tools to implement their vision on the landscape, no matter how imperfectly the plans were realized.

Irrigation development likewise offers an apt conclusion to the sixty year period following the first artesian well dug in 1896. Few, if any, in attendance at the 1959 "Save the Lake" meeting would have realized that irrigation provided the original justification for developing the Dakota artesian basin, or how those plans likewise fell far short of realizing the goal of eliminating the worst effects of annual

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<sup>83</sup> September 1 - December 31, 1959, 2, 8, FF Narrative 1959, LAHQ.

fluctuations of rainfall on agriculture in the region. When largemouth bass arrived in Lake Andes in 1899, a freakish convergence of several unrelated federally sponsored initiatives combined to transform the lake from a cornerstone of the evolving Yankton Reservation economy into a pleasuring ground "famous for fishing" and surrounded by predominately non-Yankton farmers and resort owners.

The public works projects of the New Deal, coupled with the hostility of John Collier and the BIA, contributed to a new physical and legal landscape predicated on saving the lake's most enduring residents. Ducks and geese almost certainly had frequented the area even before Wisconsin glaciations carved out the lakebed, and although their presence was valued by Yanktons, after the rise of the bass bonanza local management priorities shifted to favor the biotic communities within the lake. The creation of the National Wildlife Refuge reflected the culmination of decades of lobbying by scientists, hunters, and other concerned citizens, and although non-Indians bristled at the perceived federal injustices in the form of unfair hunting laws and damage to farmers' fields, Yanktons had long been aware of the chasm separating the democratic ideals of the United States and the reality of life at Lake Andes.

John Collier viewed his administration of the BIA as a repudiation of previous policies, implementing reforms designed to increase tribal sovereignty and self-determination. Yanktons actually lost power during his tenure, which proved to be a critical time in the history of *Bde Ihanke*. As federal and state authorities jostled over management, Yanktons were effectively shut out of the negotiations by repeated

refusals of the BIA to recognize duly elected Yankton tribal councils. The end result was similar to the discussions surrounding the 1858 Treaty of Washington and the 1892 document, although during those discussions federal officials maintained the pretext of listening to Yankton views. Despite apparent changes in federal Indian policy, Yanktons experienced a steady diet of coercion and indifference.

Untangling the meanings of the many different stories that flow from the lake promises no uplifting tale of progress or a pessimistic lament of biotic degradation. Rather, thoughtful consideration of Lake Andes' elusive history reveals a complicated, interconnected and highly dependent world where one organism's profusion may come at the price of another's existence, but where it is impossible to restore or save a place that refuses to stand still. Lake Andes demands diligence, but certainly not pity.

**Conclusion: A Moving Target**

... what was the use of my having come from  
Oakland it was not natural to have come from there yes  
write about it if I like or anything if I like but not there,  
there is no there there.

Gertrude Stein<sup>1</sup>

Gertrude Stein most likely never visited Lake Andes, yet her assessment of Oakland could easily apply. John Bernard O'Sullivan shared the opinion that Lake Andes was not natural, calling it "a mighty artificial body of water" in his 1918 *Forest and Stream* article. Stein's existential claim of "no there there" was literally true in the 1890s, 1930s, and 1950s, as drought and evaporation combined to eliminate the lake temporarily. Just as many would have good reason to dispute Stein's rather bleak characterization of Oakland, especially municipal politicians and real estate agents, the claim that Lake Andes was not natural and lacked any fundamental qualities worthy of note would also receive ample dispute, and not just from those seeking to promote civic pride. For Lake Andes, the issue is not the lack of "a there," but rather the profusion of multiple "theres," each one historically and biologically situated.

Lake Andes is a moving target, for reasons much more complicated than its tendency to go dry every twenty years. Even when artesian wells sustained the water level between 1896 and 1933, the biotic composition of the lake changed frequently, including the fish living within the water, the humans occupying its shores, and the plant communities growing on the lake bed and in adjacent pastures and fields. The same is likely true concerning the varieties of ducks and geese flying

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<sup>1</sup> Gertrude Stein, *Everybody's Autobiography* (New York: Random House, 1937), 289.

overhead throughout the years, though before the entrance of the Bureau of Biological Survey, the lake's avian residents received far less attention and enumeration. Perhaps the most startling changes over the first thirty years of the twentieth century occurred in the realm of sovereignty, as successive Supreme Court decisions, acts of Congress, and BIA policy determinations changed the legal landscape, reducing Yankton rights while elevating those of the federal government, while the state of South Dakota willingly acquiesced to the U.S. Fish and Wildlife Service by 1940.

Long before the paradoxes of the American republic became manifest, Yanktons chose to live around *Bde Ihanke*. Although the 1858 Treaty of Washington contains no reference to the lake, Struck by the Ree encouraged General William Harney to locate Fort Randall a few miles to the southwest. The physical location of *Bde Ihanke* at the center of the Yankton Sioux Reservation may have been an accident of cartography, but by the time of the 1892 document, many Yankton families had claimed their individual allotments on its shores. Yankton geology reaffirms the importance of the place, as *Unktéhi* beliefs are based on a long history of empirical observations regarding the lake's cyclical rise and fall and on knowledge of fossil remains from the deep past.<sup>2</sup> More importantly, Yankton history

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<sup>2</sup> The occupation of the lake by Native peoples for thousands of years has received confirmation from archeological studies, See Tim Church, Jeannie McCallister, and Roger Williams, "Lake Andes-Wagner Class III Cultural Resources Survey, Lake Andes-Wagner Project Area, South Dakota," Contract Investigation Series No. 104, Office of Cultural Preservation, Division of Education and Cultural Affairs, South Dakota Archeological Research Center, 13-17.

reveals a willingness and ability to adapt to these changing circumstances, as their economies gradually shifted from a reliance on bison to increased cultivation of corn and other crops, while harvesting small game and fish.

As Yanktons adjusted their economy to reflect the new conditions of reservation life, the coercive power of the federal government sought to transform their entire existence. By agreeing to the terms of the 1858 treaty, tribal leaders hoped to secure at least a portion of their land base in the face of continuing encroachments by American citizens. In the bargain, they also gained the permanent presence of the BIA. Unfortunately, the assimilationist policies of the BIA represented only a portion of the totalizing national project. The alienation of so-called surplus lands worked in tandem with the extension of the Chicago, Milwaukee, and St. Paul railroad, incursions facilitated by corrupt federal officials placed in a position of trust. Yankton Agent John Harding eclipsed the graft perpetrated by previous officials, as he negotiated the easements allowing for the railroad's construction and then further profited by establishing the town of Lake Andes. Significantly, Harding's administration also was present during the black bass introductions.

The admission of South Dakota as a state in 1889 and President Benjamin Harrison's opening of unallotted lands on the Yankton Sioux Reservation to homesteading six years later unleashed a new tide of settlement. Primarily reliant on an economy based in agriculture, the non-Indian immigrants initially found that the black bass swarming at Lake Andes provided a welcome form of recreation. As

time went on, the fish began to supply an important addition to the agricultural economy. The considerable federal interventions lurking behind the tracks of the railroad, the survey lines defining the lands open for homesteading, the artesian wells increasing the depth of the lake, and the presence of black bass were invisible to most of the new residents. If the governmental activity was largely hidden, the active efforts of the non-human actors remained altogether obscured.

Artesian pressure provides the first example, in the recent past, of a non-human agent actively re-ordering Lake Andes. The drilling rigs that allowed the water to pass through hundreds of feet of the earth's crust certainly must be considered an example of human intelligence, but the flow is no more artificial or hybrid than a stream rising out of a underground spring. The unpredictable qualities of the flow, including the amount of water delivered, the quality of the water, and the duration that any given well might deliver its bounty, are all quite outside the dictates of human control.

The next non-human introduction have stayed within the category ascribed to them, and black bass are seemingly secure in their designation as game fish (though are now more commonly known as largemouth bass). Early on in the history of the U.S. Fish Commission, Spencer Fullerton Baird considered their propagation best reserved to the states, choosing to restrict the Fish Commission to the business of increasing the nation's food supply. Yet people also ate game fish, so perhaps Baird's rationale stemmed more from his understanding of the limitations on federal power regarding hunting and fishing laws, which at that time was a right



maintained by the states, a prerogative later clarified by the U.S. Supreme Court in *Geer v. Connecticut* (1896).

For the first quarter century of bass in Lake Andes after the initial stocking, the majority of the fish resulted from reproduction occurring within the lake and outside the controlled ponds of the nation's fish hatcheries, with bass reproducing prodigiously in the relatively empty waters. Even the earliest efforts at bass propagation inside the U.S. Fish Commission ponds relied on the biological imperatives of the fish, as officials needed only to limit the tendency of bass to cannibalize their young.

Carp provided the solution to the bass' voracious appetites at the Washington D.C. fish station, marking a shift in federal fish culture and the diminished status of carp. Rudolph Hessel originally came to America with carp, both arriving as invited immigrants. Hessel was able to outlast the welcome extended to carp, using his knowledge of fish culture to vitalize efforts to breed bass under controlled conditions. Once unleashed into the rivers, streams, and lakes of North America, carp proved remarkable in their ability to colonize the continent. Carp were so successful that by the 1920s ichthyologists began to develop research agendas aimed at eliminating their presence.

Other non-human residents of Lake Andes reinforce that the methods by which organisms travel is not nearly as important as the values assigned to them by the human communities they encounter. Chinch bugs put a different spin on the

usual tale of introduced species run amuck, as the insects were native to North America but rather limited in their geographic distribution. As wheat and corn cultivation spread across the American republic, the insects hitched a ride, destroying fields in the process. By the 1840s they had reached the Midwest and eighty years later they plagued farmers' fields around Lake Andes, when a coalition of farmers and state-sponsored scientists combined forces to eliminate the insects from the landscape.

Alfalfa also arrived in fields around Lake Andes at about the same time as chinch bugs, with a similar alliance of scientists and private citizens arrayed behind the plant's cultivation. On one level, the alfalfa initiatives reflected a distinctly scientific, perhaps even modern, approach to horticulture, buttressed by repeated test plots at state extension farms. Moreover, state and federal officials, journalists, railroad companies, and agricultural implement manufacturers allied to boost the number of alfalfa acres sown in South Dakota. Despite the recent campaign, the plant had started its journey across the globe thousands of years earlier from its origin just east of the Fertile Crescent, utilizing conduits that predate even the loosest definition of modernity.

Although the 1927 Alfalfa Special arrived at Lake Andes on railroad tracks, innovations in transportation generally do not result in lasting transformations. Mental structures are often the enduring aspects of change, as the indelible imprint of the bass glory days at Lake Andes amply attests. The networks that led to the popularity of Lake Andes are not the consequences of some generic culture or

society working in the metaphysical ether, but extend from specific connections often separated by great spatial and chronological distance. The individual plots of land owned by Yanktons that became the sites of fishing resorts in one sense result from the Dawes Allotment Act, a specific event occurring in 1886. Yet the idea of landed property, its graphic representation and the tools used to survey the land all have antecedents far in the past.

The story of Lake Andes is also replete with examples of technologies limiting the ability of humans to re-order the landscape. Gunter's chain enabled surveyors with the most modest education to advance Thomas Jefferson's vision of a landed republic, though the impermanence of the corners marking the survey occasionally delayed its progress. Reliance on the chain contributed to the reduction of Jefferson's original township from ten to six square miles. Railroads and automobiles enhanced the speed of transformations, though neither could function effectively without a system of tracks and roads, developments made possible only after new legal arrangements.

The protection offered to ducks and geese at Lake Andes provides the most concise example of the far reaching impacts of mental structures working in conjunction with technology and non-human actors. A broad coalition of interests -- including ornithologists, sportsmen, ladies groups, and arms manufacturers -- successfully engineered a legal revolution that redefined the relationship of the federal and state governments resulting in federal ascendance over the states beginning with the Lacey Act of 1900. Federal scientists employed increasing

knowledge of the migratory behaviors of birds to further parlay that power into an international treaty, which in turn received the blessing of the Supreme Court and solidified the revolution with constitutional imprimatur. Armed with legal authority and ample funding, the Bureau of Biological Survey's effort to create a permanent refuge for migratory birds at Lake Andes unleashed a battalion of laborers with the requisite heavy machinery who divided the lake by constructing several dikes, creating new legal spaces in the process. Ducks and geese, for their part, continued in their migrations, occasionally responding as federal officials desired, and sometimes not. Local citizens bristled at the new hunting restrictions and perceived injustices that accompanied the National Wildlife Refuge, despite having lobbied for the entry of the federal government to "restore" the bass population and allow control of any future carp eruptions.

When Lake Andes locals spoke with one voice in 1953, rejecting any further intrusion by the federal government, it is doubtful that any considered the long history of federal intervention. Had any Yanktons been consulted, they might have had the same reaction, though for reasons far different than damage to crops or seemingly unjustified and arbitrary hunting regulations. Yanktons had witnessed the coercive power of the federal government for generations, having experienced the loss of cultural and spiritual autonomy, thousands of acres of tribal land, and the right to democratic self-government at the hand of officials in Washington, D.C., and their representatives around the lake. What was clear to Yanktons but lost to most

non-Indians was the long and varied history of re-ordering the human and non-human biota.

Given the considerable alterations in the hundred years following the 1858 Treaty of Washington, Lake Andes could understandably be called a hybrid landscape, as it reflects aspects of the natural world and man's "contriving brain and skillful hand," to use James Malin's evocative phrase.<sup>3</sup> Beyond the problem of effectively placing humans outside the bounds of the rest of the world, the term hybrid does a serious disservice to our ability to recognize the complex and often hidden residues of a contested past. Hybrid has little ability to differentiate relations of power, as it collapses the great varieties of human experience into an undifferentiated mass. And if it does account for disparities in the human condition, the distinction is often lethal, denying the humanity of those considered pre-modern.

Growing awareness over recent fluctuations in global climate has produced immense anxiety about humanity's role in contributing to that change and its ability and willingness to provide solutions to the perceived problems. Lake Andes presents another perspective on the concept of a dynamic natural world, albeit an incredibly destabilizing one. Prior to the imposition of rigid boundaries on the surrounding land, first with the Treaty of Washington and later with rectangular cadastral surveys, the fluctuating levels of water sounded no bells of alarm and did

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<sup>3</sup> quoted in Robert P. Swierenga, "Editor's Introduction: James C. Malin's Ecological Interpretation of the Grassland," in James C. Malin, *History and Ecology: Studies of the Grassland*, ed. Robert P. Swierenga (Lincoln: University of Nebraska Press, 1984), xix.

not result in ad hoc meetings to debate how to save the lake. Yanktons understood that *Bde Ihanke* occasionally went dry. Nearly all the plans formulated to re-order Lake Andes have failed to deliver on their promise, and ironically it was the largely unintentional creation of a bass bonanza that has animated the most intense conflicts over its management. The continuing presence of carp offers compelling testimony on the ability of the natural world to adapt to variable conditions, to say nothing of the duck species that have remained physiologically unchanged for two million years despite radical fluctuations in climatic conditions.

Other biographies could have also told a tale of Lake Andes. Peter Norbeck continually reappears in the story, and not due to any tortured attempts at providing a narrative thread. Likewise, any number of Yanktons might have anchored a story that attempted to present the lake's history through the eyes of a Native inhabitant. H. Z. Miller could have also provided a strong center for the tale, as he was one of the first visitors to the area, long before he returned and started Rest Haven, where he articulated a path for dividing the lake very similar to the partitioning that occurred under the direction of the BBS in the late 1930s. Ironically, no individual federal officials had a sustained presence at the lake, as BIA agents and FWS managers invariably transferred after a few years stay, either unceremoniously when blatant corruption was discovered, willingly in pursuit of more prestigious postings, or occasionally just as the normal course of events. One value of pursuing a biography of a lake is the ability to de-center human narratives.

*Bde Ihanke* and Lake Andes refer to the same spot on the planet, but reflect very different worlds. History, science, and sovereignty each describe some aspects of the multiple possibilities, though cannot account for the disparities of power necessary to either enact or stymie those visions. The long and winding road of this biography offers a moral tale, though one neither of redemption nor of declension. It is a tale of recognition and realization. Yanktons and millions of other indigenous peoples have long been excluded from a very select and suspect definition of the modern world, even as organizations like the so-called Friends of the Indians and the Bureau of Indian Affairs, to name only two, endeavored forcibly to bring them into the fold. Ducks, geese and a whole host of non-human organisms have at varying times also been subject to campaigns to save them, largely from the dangers imposed by the very same moderns offering redemption. Carp and chinch bugs have also been subject to intensive efforts, providing an example of the coercive power behind scientific endeavor.

Once again, the cries of alarm are ringing out, though now the imperiled party is the entire planet. The biography of *Bde Ihanke*-Lake Andes serves to remind that there are many ways to order the world. Modern science often disguises and privileges the narrow interests of a few, while proving lethal to people it deems outside its select group and species it classifies as detrimental to its programs of improvement. In the United States, science has served as a crucial adjunct to governmental power in the active campaign to wrest wildlife management authority from Native Americans, abrogating tribal sovereignty as the power shifted from

tribes to states and ultimately to the federal government. As new organizations with global reach attempt to re-order the world for the benefit of spaceship earth, it is time to consider not only the touted progress in their plans, but also the costs of their successful prosecution.



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