North Dakota Studies

Volume 2, Issue 2 Fall 2010

NORTH DAKOTA'S BOOMING ENERGY INDUSTRY

Agriculture has long been North Dakota's number one industry. But North Dakota also has abundant natural resources in the form of oil, coal, natural gas, and wind, and the state has the ability to convert these natural resources into economical and efficient energy for the citizens of the state and nation. As a result, North Dakota has become an important energy provider to millions of people across the nation.

Thanks to North Dakota's booming energy industry, homeowners, landowners, and businesses have benefitted from property tax relief. The economic impact of energy resources has also resulted in increased funding for education, human resources, and the state's infrastructure needs.

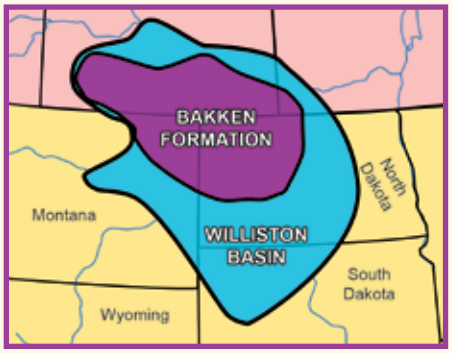
Nationally, economists expect budget difficulties to linger for most states during 2010 and 2011. However, North Dakota is one of just seven states (ND, SD, WY, IA, AR, WV, NH) expected to lead the nation into economic recovery beginning in fiscal year 2011.

For North Dakota, the emerging energy industry has provided the state with another economic engine to complement the existing strong agricultural and tourism industries. North Dakota's strong labor market, diversified economy, and healthy state reserve balances puts the state in an enviable position among states.

Rock'in in the Bakken

On April 4, 1951, a great discovery was made in North Dakota. In that year, the Amerada Petroleum Corporation brought in North Dakota's first oil well, the Clarence Iverson No. 1 well, near Tioga in Williams County. Over the next 28 years, the well produced more than 585,000 barrels of oil. Prior to 1951, 64 wells had been drilled in North Dakota dating back to 1910. Since 1951, more than 16,000 wells have been drilled in the state.

In the first six months of 2010, North Dakota oil wells have produced an average of more than 280,000 barrels of oil per day. At the current pace, more than 105 million barrels of oil will be produced during 2010. Since 1951, crude oil production in North Dakota has totaled nearly 1.7 billion barrels.



The Bakken Formation in western North Dakota has the potential to produce billions of barrels of oil.

There are currently more than 5,000 wells capable of producing oil and gas in North Dakota. The average North Dakota well produces approximately 47 barrels per day. During 2009, 92.5 billion cubic feet of natural gas was produced and 56.4 billion cubic feet of natural gas was processed in North Dakota.

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Maps–Maps–and More Maps!

Maps can be an invaluable resource when teaching social studies classes.

Check out the host of maps available for Grades 4, 8, and high school North Dakota Studies.

See Pages 8–13.

Recent developments have made the Bakken Formation the focus of much of the oil activity in western North Dakota. It is estimated that the formation holds billions of barrels of oil. When the Bakken Formation was first discovered in 1953, the technology of the time didn't allow for drilling to be cost effective as the oil is nearly 2 miles deep. In recent years, however, the advancement of new drilling technology has increased the potential for the Bakken Formation and that is creating a great deal of excitement in the oil industry.

NORTH DAKOTA ANNUAL OIL PRODUCTION	
YEAR	BARRELS OF OIL
1951	26,196
1960	21,993,603
1970	22,006,300
1980	40,446,550
1984	52,658,396
1994	27,693,359
2000	32,713,018
2007	45,121,960
2008	62,780,871
2009	79,706,495
2010	105,000,000*

Source: Oil and Gas Division, North Dakota Industrial Commission. *Estimate based on the first six months of 2010.

It is well-known that the drilling rig count is a barometer for measuring new oil and gas activity. In the first half of 2010, there was an average of 105 rigs operating in North Dakota. The peak year for drilling rigs was 1981, with an average monthly rig count of 119. The all-time high was in October of 1981 with 146 rigs operating.

During fiscal year 2008–2009, the state averaged more than 5,508 North Dakotans at work in the oil patch of western North Dakota, with the expectation that the number will grow. Peak oil field employment occurred in late 1981, when more than 10,000 people were working in the oil patch.

Each drilling rig results in approximately 120 direct and indirect jobs. Other sectors of the petroleum industry include refineries, gas plants, pipelines, retail gasoline stations, wholesalers, and transporters. The industry altogether employed 12,747 people in North Dakota in fiscal year 2008-09.

Job Service North Dakota reports that in fiscal year 2008-09 the average yearly wage in the oil and gas extraction industry was $82,803. That wage was 132.5% above the statewide average wage of $35,970!

NORTH DAKOTA ENERGY

- North Dakota is the fourth largest oil producing state behind Texas, Alaska, and California.
- There are 17 counties in the state with commercial oil production. The leading counties include Mountrail, McKenzie, Dunn, Bowman, Williams, and Billings.
- Oil and gas exploration has occurred at some point in every county in the state except Traill County.
- Western North Dakota has enough lignite reserves to supply the state's generating plants for more than 835 years.
- North Dakota has the potential to produce 1.2 billion kilowatt hours of electricity from wind energy per year—more than any other state.
- The electricity generated from North Dakota's lignite-based power plants is used by more than 2 million customers in the Upper Midwest.

QUICK FACTS

Production tax revenues for 2009 were more than $392.9 million All-time oil tax revenues to the state have been approximately $3 billion. The average production and extraction tax paid on crude oil in 2009 was 9.87%. The tax rate on crude oil varies between 5% and 11.5% depending upon the type of well.

Over the past 57 years, the State of North Dakota has received more than $791 million from oil and gas leases, bonuses, royalties and rentals on state land. During 2009, more than $36.4 million went to the Lands and Minerals Trust and more than $120 million to the Board of University and School Lands Trust.

Enough Coal to Last 835 Years

North Dakota is rich in another great energy source—coal. Although railroad companies and individuals mined coal long before statehood, the recorded history of lignite mining goes back to 1873. Beginning with the 1970s and a worldwide concern for new energy, however, North Dakota's lignite coal took on new importance.

The coal found in North Dakota is called lignite. The state has the single largest deposit of lignite coal in the world. It is estimated that North Dakota has 25 billion tons of coal that can be mined. This means that the state has enough lignite to last more than 835 years at today's rate of production.

North Dakota is one of the country's top 10 coal-producing states. Coal production in North Dakota primarily takes place in the three western counties of Mercer, Oliver, and McLean.

In 2008, lignite production was 29.7 million tons. North Dakota lignite mines have produced approximately 30 million tons for the past 20 straight years.

About 79% of lignite coal is used to generate electricity, 13.5% is used to generate synthetic natural gas, and 7.5% is used to produce fertilizer products such as anhydrous ammonia. A very small percentage is used as home heating fuel, for use as fertilizer and for use as oil well drilling mud.

The electricity generated from lignite is used by over 2 million consumers and businesses in the Upper Midwest, while the Great Plains Synfuels Plant at Beulah supplies synthetic natural gas made from lignite to 225,000 homes and businesses in the East.

For years, North Dakota's three coal counties—Oliver, Mercer and McLean—have ranked among the state's top six for highest average annual wages. These lignite mining counties have some of the best-paid workers in the state according to Job Service North Dakota. Among North Dakota's 53 counties, Job Service figures show coal-rich Oliver County, in west-central North Dakota, had the highest average annual wages in 2009—$60,202. Mercer County is ranked second with an average annual wage of $52,384. The average statewide annual wage in 2009 was $35,970.

More than 4,000 North Dakotans are employed in the lignite industry. For every direct job provided by the lignite industry, another five jobs are needed to supply the industry with goods and services.

The "Saudi Arabia of Wind Energy"

The power in wind is obvious to anyone living in North Dakota. North Dakota has enough energy from good wind areas to be number one in the potential for wind electrical production. In fact, the state has been identified by the U.S. Department of Energy as having the greatest wind resource of any of the lower 48 states.

Using wind is not a new idea. For hundreds of years, people have mechanically harnessed the wind's energy. Before the introduction of electricity to the rural areas of North Dakota, farmers depended on windmills for pumping water. The blades on the windmill were turned by the power of wind and, in turn, pumped the water.

Surface mining lignite coal in western North Dakota. *(ND Game and Fish Department)*

Today, wind energy development is happening all over North Dakota. Wind farms are being built from Richardton to Grafton and from Velva to Kulm. North Dakotans are quickly learning that the state has an excellent wind resource and the potential for more wind development than any other state in the nation.

The wind towers that are beginning to dot the North Dakota landscape are also local products. DMI Industries in West Fargo is a major producer of wind towers in North America. LM Glass Fiber, in Grand Forks, is the producer of the wind turbine blades.

The benefits of wind energy, the fastest growing energy technology in the world, are many. Since North Dakota's potential for wind is so great, it is important to harness this clean, renewable resource to help future energy needs and boost the economy of the state.

North Dakotans Benefit

The impact of the state's energy industry has contributed to North Dakota's bright economic outlook. According to State Tax Commissioner Cory Fong, "North Dakotans are enjoying a high level of employment, a growing wage base, and a healthy overall economy that is the envy of much of the nation. Because of the tax revenues generated by growth industries, state lawmakers have been able to keep overall tax rates moderately low, while continuing to fund the state's priorities. Our economic strengths are due to vibrant sectors such as the oil industry in our state."

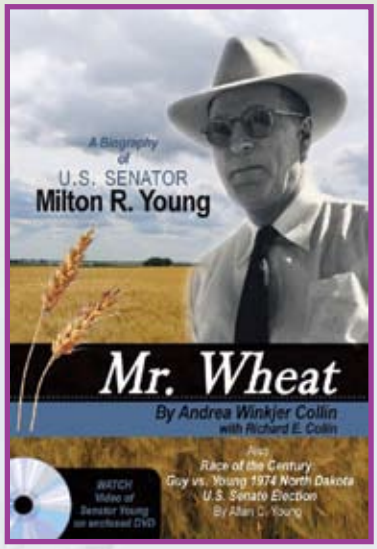
Wind turbines are becoming a common feature of the North Dakota landscape. *(Neil Howe)*

TO LEARN MORE ABOUT NORTH DAKOTA ENERGY:

- North Dakota Lignite Council
  www.lignite.com
- North Dakota Petroleum Council
  www.ndoil.org
- North Dakota Industrial Commission, Oil & Gas Division
  www.dmr.nd.gov/oilgas

MR. WHEAT: A BIOGRAPHY OF SENATOR MILTON YOUNG

A new book chronicles the life of North Dakota's longest-serving U.S. Senator. *Mr. Wheat: A Biography of U.S. Senator Milton R. Young* was written by Andrea Winkjer Collin and Richard E. Collin of Bismarck. Both longtime North Dakota journalists and writers, she is editor of the state magazine, *North Dakota Horizons*, and he is the Communications and Education Director for the State Historical Society of North Dakota (SHSND).



New book chronicles the life of former Senator Milton R. Young.

Prominent throughout the 560-page book are direct quotations by Senator Young from extensive oral interviews conducted by then-University of North Dakota History Professor D. Jerome Tweton in 1979 and 1980, shortly before Young left office.

Also featured are 32 pages of photographs, most from the Institute for Regional Studies at North Dakota State University. Included with the book is an 11-minute DVD featuring video clips of Senator Young, from the video archives collection of the SHSND.

Young was born December 6, 1897, and raised on his family farm in Berlin, North Dakota. He spent 12 years in the North Dakota Legislature before being appointed to the U.S. Senate on March 12, 1945, by Governor Fred Aandahl to fill the vacancy left by the death of Senator John Moses. He served as U.S. Senator just under 36 years, and was the last member of Congress born in the 19th Century.

In his 56 years of public service, Young was never defeated for re-election. In the closest U.S. Senate election in state history, he prevailed in the race against former Governor William Guy by 186 votes out of nearly 240,000 cast. The book includes a University of North Dakota master's thesis written by Allan Young of Grand Forks on *Race of the Century: Guy vs. Young 1974 North Dakota U.S. Senate Election*.

A lifelong Republican, Young consistently opposed the party's Nonpartisan League faction, supporting instead more moderate candidates. He was one of the founders of the Republican Organizing Committee in 1942, and for three decades he and William Langer campaigned against each other and the candidates they supported. In one of the ironies of North Dakota political history, they served alongside each other as Senators for 14 years.

Young was appointed to the Senate Agriculture Committee immediately upon taking office and upon retirement in 1981 was its longest-serving member. He gained his nickname of "Mr. Wheat" for looking out for the best interests of wheat farmers in the Upper Midwest, forming a strong alliance with southern Democrats on the Agriculture Committee to do so. He was the architect of the target price concept in the 1973 Farm Bill, which continues to be used today. "Every other Senator knew that if you were talking about wheat and agriculture, you had to talk to Milton Young," said U.S. Senate Historian Donald Ritchie.

During Milton Young's 36 years in the Senate, eight Presidents occupied the Oval Office. Here he meets with President Kennedy in the early 1960s. *(Institute for Regional Studies, NDSU, Fargo)*

Young also partnered with North Dakota native and prominent Washington, D.C., Democrat Melvin Hildreth, Jr., to tirelessly promote the successful restoration of Ford's Theatre, where President Abraham Lincoln was assassinated.

Young died in Sun City, Arizona on May 31, 1983, a little more than two years after retirement from the Senate. He was 85.

Mr. Wheat is published by Smoky Water Press, a regional press located in Bismarck. It retails for $29.99, and is available at regional bookstores and retail outlets, as well as online at **www.dakotabooknet.com**.

THE 3 RS IN NORTH DAKOTA: EDUCATION FROM 1951 TO 2010

22nd Annual Governor's Conference on North Dakota History

By Kylie Blanchard

Education has played a significant role in the development of North Dakota; over the last 140 years, it has undergone many changes to create the system of today. At the 22nd Annual Governor's Conference on North Dakota History titled *The 3 Rs in North Dakota: Education from 1951 to 2010*, scholars, residents, and educators will examine how education has evolved and impacted the state today. The conference is scheduled for October 29 and 30 at the North Dakota Heritage Center in Bismarck.

The event builds on last year's conference, which explored changes in education from 1870 to 1950, and examines the impact education had in shaping the state over the last half of the 20th Century and the early part of the new millennium.

"This year we are going to study part two of education in North Dakota," says Dr. Marilyn Snyder, conference coordinator. "There have been many changes in North Dakota education because of factors with federal aid and federal legislation."

Snyder says the conference will cover trends in education from 1951 to 2010 including alternative methods of education. "Some of the biggest changes are the choices in how you want to be educated," she notes. "In the 1950s, there was no home schooling or federal rules and regulations tied to funding."

Conference sessions begin Friday, October 29 with keynote speaker Dr. Mary Harris, chair of education at North Texas State and a former dean of education at the University of North Dakota. Her presentation, *What Happened to Education?: 1951 to Present*, will highlight major legislation and changes that affected the state's educational system over the last 60 years.

On Saturday, October 30, Harris will also cover specific events that shaped the state's educational system in her presentation *Changes in Education: 1951 to Present*. Events include the 1969 Minot teachers' strike, the 1980 legislation requiring all North Dakota teachers to take a course on the American Indians of North Dakota, and others.

Additional conference sessions include *How Federal Laws and Funding Impact Schools*, *Indian Schools in North Dakota*, *Changes in Technology: 1951 to Present*, and *Beyond the Book: Extracurricular Activities*.

An *Update of the Historic Country Schoolhouse Survey Project*, launched at the 2009 history conference as a volunteer-based project, will also take place during the conference. "Education has been a key factor in North Dakota. Some of the first institutions put in place after people settled were schools," says Snyder, noting at one time there were over 10,000 schools in the state.

Snyder says the conference creates a common ground between participants through educational experiences. "Education is something everyone has in common. What we don't understand is how it has changed," she notes. "Education has made North Dakota what it is today."

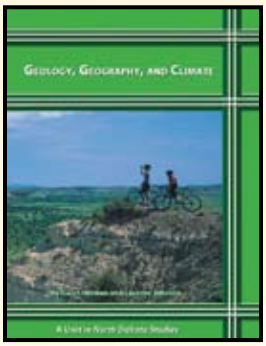
For additional information contact the State Historical Society of North Dakota at 701-328-1476 or **rcollin@nd.gov**.

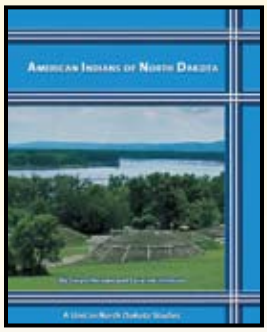
The historic Ingersoll School, near Washburn, represents the thousands of one-room country schoolhouses that dotted North Dakota in the early 1900s. The 2009 conference focused on early North Dakota education and these country schoolhouses. *(Photo courtesy of Neil Howe)*

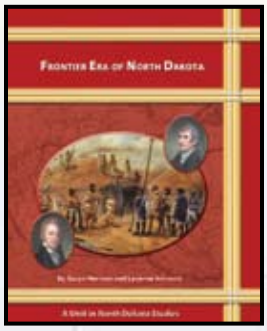
My—How things have changed! This Fargo Central High School teacher uses a filmstrip to teach his typing students, 1965. *(Institute for Regional Studies, NDSU, Fargo, rs004767)*

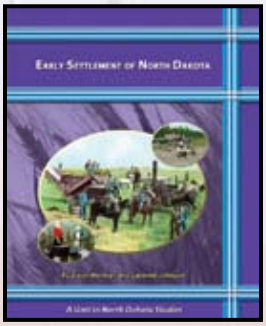
Epping High School Band prepares to perform at the annual Band Day in the Williston High School Gymnasium, 1960s. *(William Shemorry Photograph Collection, SHSND 1-57-13-4)*

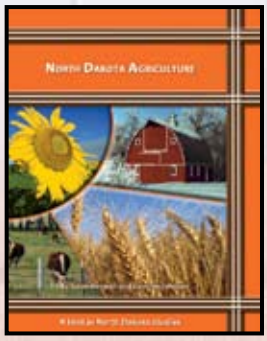
4TH GRADE NORTH DAKOTA STUDIES











Geology, Geography, and Climate

Students are introduced to North Dakota's geological past, the three major geographical regions, as well as the weather and climate of the state.

American Indians of North Dakota

Students study the history and culture of the Mandan, Hidatsa, Arikara, Chippewa, and the Great Sioux Nation.

Citizenship

Students learn about national, state, and local governments. Students also learn about rights and responsibilities of young citizens, voting, state symbols, and Theodore Roosevelt Roughrider Award recipients.

Frontier Era of North Dakota

Students learn about the Lewis and Clark Expedition, fur trade on the Red and Missouri Rivers, and early frontier military history.

Early Settlement of North Dakota

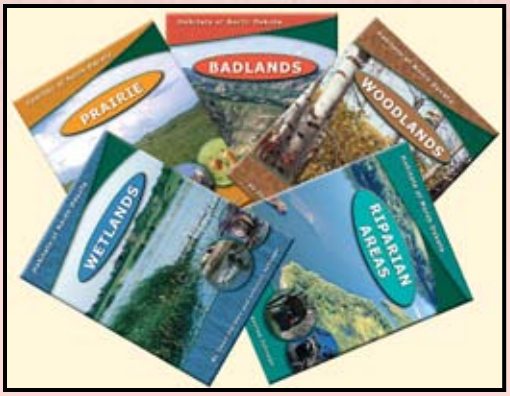
Students are introduced to early forms of transportation, including the Red River cart, steamboats, stagecoaches, and the railroad. Students are also introduced to bonanza farms and cattle ranching in the Badlands, immigration, and pioneer life between 1870 and 1915.

North Dakota Agriculture

Students learn about the historical background of agriculture, the Mandan as the first farmers, homesteading and early ranching, as well as modern production agriculture and the role it plays in today's state economy.

4th Grade ND Studies Costs:

Student Texts	$10.00 each
Teacher Resource Guide (Print version)	$35.00 each
Teacher Resource Guide (CD version)	$15.00 each



Habitats of North Dakota

The *Habitats of North Dakota* series promotes the teaching and learning about North Dakota's five habitats—*Wetlands*, *Prairie*, *Badlands*, *Woodlands*, and *Riparian Areas*. These five student texts help explain the significant features of each habitat and highlight the wildlife species that rely on that environment for existence.

NORTH DAKOTA Notable Documents Award Winner LIBRARY ASSOCIATION

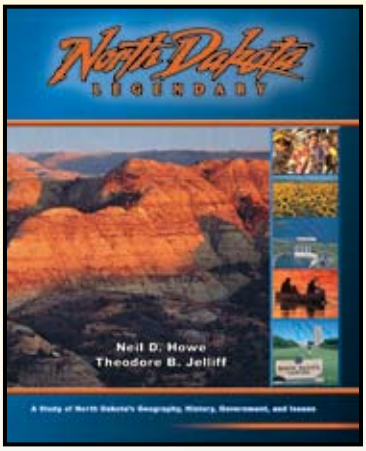
Habitats of North Dakota Costs:

Student Texts	$3.00 each
Teacher Resource Guide	$5.00 each

8TH GRADE NORTH DAKOTA STUDIES

North Dakota Legendary

North Dakota Legendary is an attractive and affordable 8th grade textbook designed to be a comprehensive discussion of North Dakota's geography, history, government, and current issues. *North Dakota Legendary* is divided into four units of study—geology and geography, history, government, and current issues. The divisions allow teachers the choice to use the textbook for nine weeks, a semester, or the entire year.



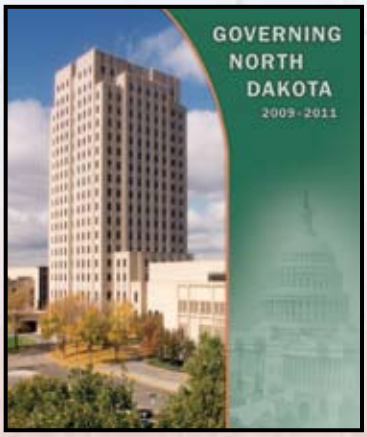
North Dakota Legendary Costs:

Student Text	$45.00 each
Teacher Resource Guide (Print version)	$35.00 each
Teacher Resource Guide (CD version)	$15.00 each

HIGH SCHOOL NORTH DAKOTA STUDIES

Governing North Dakota, 2009–2011

Governing North Dakota, 2009–2011 discusses the concept of federalism and highlights North Dakota's legislative, executive, and judicial branches of government. Local governments including counties, cities, townships, and special districts are introduced and discussed. The textbook is intended to provide up-to-date information about North Dakota's governmental system and is ideal for teaching high school government and civics classes.

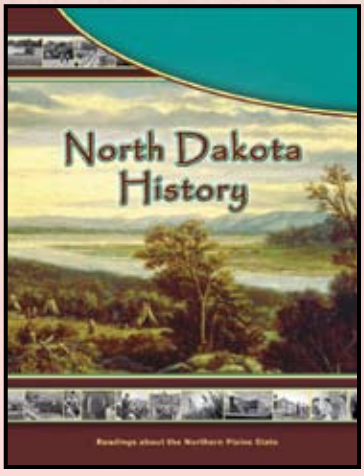


Governing North Dakota Costs:

Student Text	$10.00 each
CD Teacher Manual	$5.00 each

North Dakota History

North Dakota History: Readings about the Northern Plains State has been developed for the high school student and is designed to promote and encourage a better understanding of the state's rich history. The textbook is designed to be an investigative discussion of the prehistory and history of North Dakota. Teachers may choose to cover the entire text, or just one or two units, depending on the needs and time constraints of the individual classroom.



North Dakota History Costs:

Student Text	$50.00 each
Teacher Resource Guide	$35.00 each
Teacher Resource Guide (CD version)	$15.00 each

USING MAPS TO TEACH NORTH DAKOTA STUDIES

Using maps to teach social studies is one of the best ways to enable students to fully understand concepts related to geography and major historical events. Because geography has often been downgraded in elementary and high school curricula, many students in college classes can seldom identify even the most basic geographic sites. Many students cannot identify significant geographic locations relevant to their own local and state history, yet they are expected to know global sites.

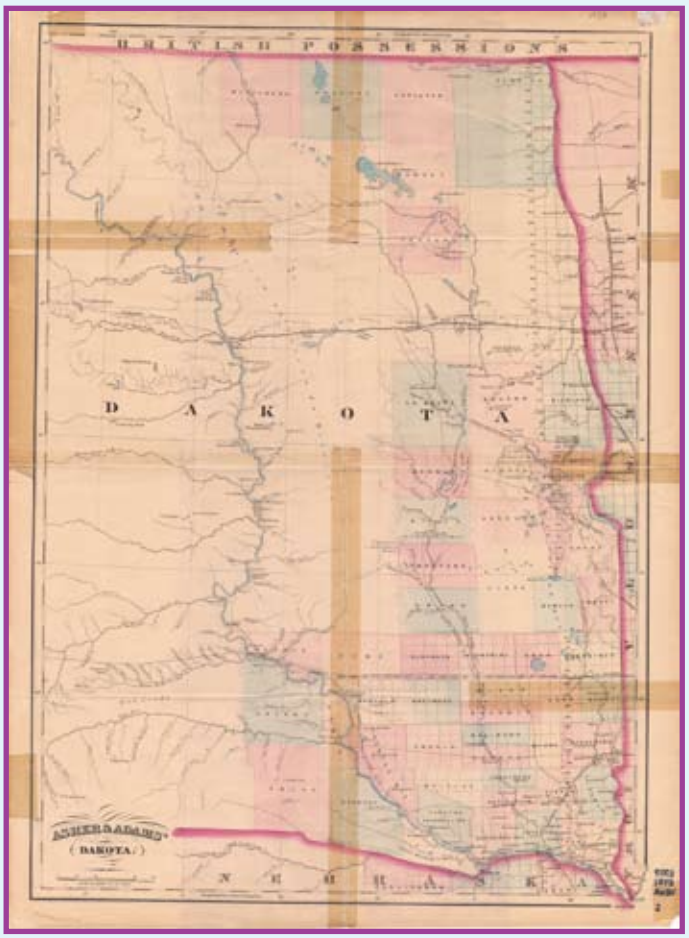
Good teaching requires the use of maps found in standard texts or projected from support technology. In teaching about the settlement of North Dakota, for example, teachers can demonstrate how the railroads impacted how and where immigrants settled parts of North Dakota.

When teaching about North Dakota's geography and history, maps should be used in all lectures and class discussions. Whether learning about the creation of the Dakota Territory, early settlement, North Dakota statehood, or the arrival of the railroad, students will never be able to fully appreciate the role of geography without a good map. Geography highlights and gives visual perspective to historical events. The "how" and the "why" is a vital part of geographic education.

To assist teachers and students to better understand the geography and history of North Dakota, a variety of maps, charts, and other resources are available for Grades 4, 8, and high school at **www.ndstudies.org/main.html**.

The maps shown on pages 8–11 are examples of the more than 20 historical maps from the archives of the State Historical Society of North Dakota—and are available at **www.ndstudies.org/resources/hs/index.html**. These maps are intended to assist teachers and help students studying North Dakota history—and are particularly helpful for use with the *North Dakota History* textbook. The maps and the accompanying information have been researched and compiled by Dr. Barbara Handy-Marchello, a North Dakota Studies Project contributor and retired assistant professor of history at the University of North Dakota.

Asher and Adams' Dakota Territory



Asher and Adams' Map of Dakota Territory, 1873. *(SHSND 978.402 A825a 1873)*

This map, published in 1873, was drawn by cartographers working for the New York map publisher Asher and Adams. Asher and Adams were very active in publishing maps and atlases in the 1860s and 1870s. This is an excellent example of a map that could be used to teach about the arrival of the Northern Pacific Railroad to the Dakota Territory, establishment of early counties, and the history of early Bismarck.

Asher and Adams compiled this map twelve years after Dakota Territory was officially established. At that time, settlement still clung to the eastern edge of the territory, with the exception of a small settlement at "the crossing" named Edwinton, soon to be renamed Bismarck.

Asher and Adams made railroad construction the focus of many of their maps. The Northern Pacific Railroad reached the Missouri River in June 1873. This 1873 map shows completed construction to Edwinton. The planned route to continue the Northern Pacific is shown with a plain line. Other railroads are concentrated in the southeastern corner of the territory near the capital city, Yankton. A couple of lines indicate planned routes for railroads that were not built.

The details on this map show the extent of the land survey in northern Dakota Territory in 1873, and a few counties are identified. All of the military posts are situated with the major exception of Fort Buford (along with the badlands and the western boundary of the state) which is located west of the western edge of this map. Topographical features can be seen, but unlike earlier maps were not emphasized by this company.

Political Map of the United States, Mexico, and the British Possessions

This map was created by William C. Woodbridge of New York. The engraver was M. Atwood. The map is copyrighted in 1845, but it reflects the political changes and military conquest that took place between 1848 and 1850.

Political Map of the U.S., 1845. *(SHSND 973 1845 F75q)*

The map is the first expressly political map in this collection. As a political map it shows the state boundaries, capitals and major cities, and territorial boundaries. Because its purpose is to show political boundaries, it contains fewer topographical details such as rivers, lakes, and mountain ranges.

The map does fill in a portion of the unorganized territories of the west with some information about a few Indian tribes and some military forts. Note that the southern boundary of the United States does not have its current location. Dakota Territory has not yet been organized; what we know today as North Dakota is part of Missouri Territory on this map.

Northern Pacific Railroad Map

This map was compiled in 1871 by Edward H. Knight who used English, Canadian, and United States maps and surveys to identify the region of importance to the Northern Pacific Railroad (NPRR).

Northern Pacific Railroad Map, 1871. *(SHSND Dr. G No. 460)*

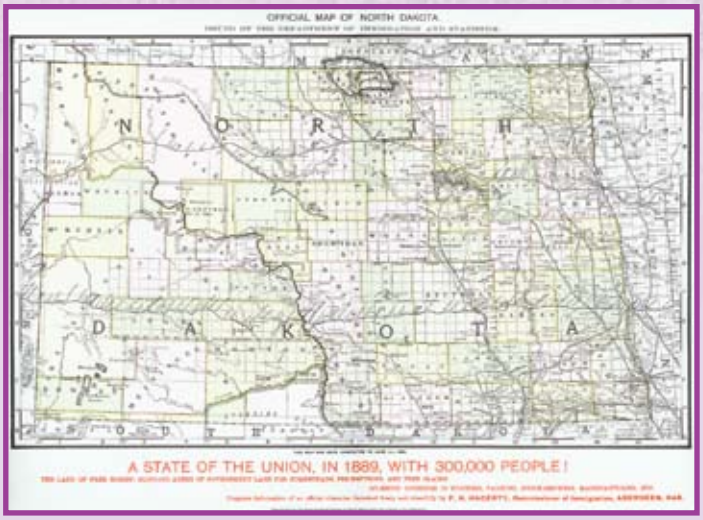
Knight's map was drawn before the NPRR had been completed. The dotted line is a rough plan for the route which would be adjusted by survey crews in the next couple of years.

In 1871, the rails reached Moorhead, Minnesota, across the Red River from Fargo. Some track had been laid from the western end as well. Tracks reached the Missouri River at the small village of Edwinton (soon to become Bismarck) in June 1873. But in September 1873 the railroad's major financial backer, Jay Cooke and Company, shut down in part because of the excessive costs of constructing a railroad into the west. The closing of Cooke and Company led to a national economic panic. The NPRR did not resume construction until 1877 and then work proceeded slowly. The Missouri River presented a major obstacle for the company. For several years, ferries transported passengers and freight across the river, and in very cold winters when the ice was thick enough, rails were laid on the river's ice surface. A bridge was constructed across the Missouri River in 1882.

Finally in September 1883 the tracks from east and west connected and the railroad's president, Henry Villard led hundreds of guests on four special trains to celebrate the completion. On the way west, he and his guests stopped at Bismarck, Dakota Territory, where he attended (for about 45 minutes) the dedication of the new territorial capitol.

Melish Map of the United States, 1820. *(SHSND 973.1821 m486 1128)*

Johnson's Map of Nebraska, Dakota, Colorado, and Kansas, 1862. *(SHSND S978.1862 J63)*



Statehood Map, 1889. *(SHSND)*

Melish Map of the United States

John Melish hired Benjamin Tanner to engrave this map which he then published in 1820.

Melish immigrated to the U.S. in 1811 from Scotland. Although he had been in the textile business in Scotland, in the U.S. he became a publisher of maps and was very influential in that field. His maps were hand colored which allowed the reader to immediately see the shapes of states and territories.

The nomenclature (naming of locations) is not modern. What we usually know as the Louisiana Purchase is called Missouri Territory on this map. The state of Missouri had been removed from the Louisiana Purchase by the Missouri Compromise (1820). Map reverts to earlier mapping of the Red River of the North showing it flowing from the east with the Swan River as a major tributary. Moose River is today called the Mouse or Souris River. The map indicates a route from the Mandan villages to the Hudson Bay factories (or trading posts) near Brandon, Manitoba.

Johnson's Nebraska, Dakota, Colorado, & Kansas

This map was published by Johnson and Browning in 1862, shortly after Dakota Territory was organized.

Alvin Johnson's map shows the boundaries of the newly organized Dakota Territory which included at that time portions of the present states of Montana and Wyoming. Though the map shows numerous Indian tribes and their homelands, the new territorial capital at Yankton is not located on the map. Johnson's eastern boundary of Dakota Territory is in the general area, but not quite tied to the Red River of the North.

Official Statehood Map, 1889

This is the official statehood map of 1889. North Dakota gained its final boundaries in 1889 when it entered the Union. It had undergone several changes during the early territorial period. At first, what we know as eastern North Dakota was part of Minnesota Territory. When Minnesota became a state in 1858, its western portions were removed at the Red River. This area became part of Dakota Territory in 1861 which stretched west through most of modern day Montana and part of northern Wyoming. In 1863, Congress created Idaho Territory. This was another sprawling territory with its eastern border on the 104th meridian—North Dakota's modern western boundary. Congress chose the 104th meridian because in creating new territories and states, Congress wanted to make them

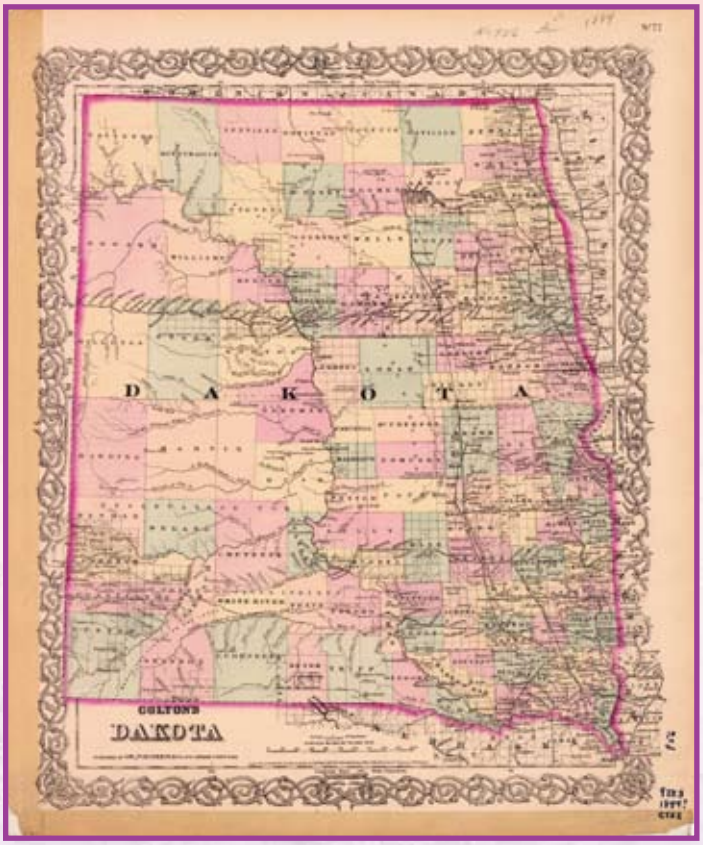
as equal in size as possible. Therefore, North Dakota, South Dakota, Wyoming, Colorado, Washington, and Oregon are similar in size, each having about 7 degrees of longitude in width.

The southern border of North Dakota was established when the territory split into two states and the reasoning was similar. The column of states in the Great Plains formed by Kansas, Nebraska, South Dakota, and North Dakota were divided equally, each having 3 degrees of latitude. Only one of North Dakota's boundary lines was based on a natural feature, the Red River of the North; the other boundaries were drawn by surveyor's lines along the meridians.

Colton's Map of Dakota

This map was created in 1885 by G. W. and C. B. Colton and Company. George Woolworth and Charles B. Colton succeeded their father as the best mapmakers in the United States during the 19th Century.

Colton's map is dated before the territory was split in two at statehood. It is a largely political map in that it shows such political boundaries as the territorial border, county lines, and township lines. Sheridan County features Dogs Den Butte which has been present under other names on many earlier maps. Note the close proximity of towns along the route of the Northern Pacific Railroad (parallel to today's Interstate 94). Towns were built about every 7 miles as designated by railroad engineers.



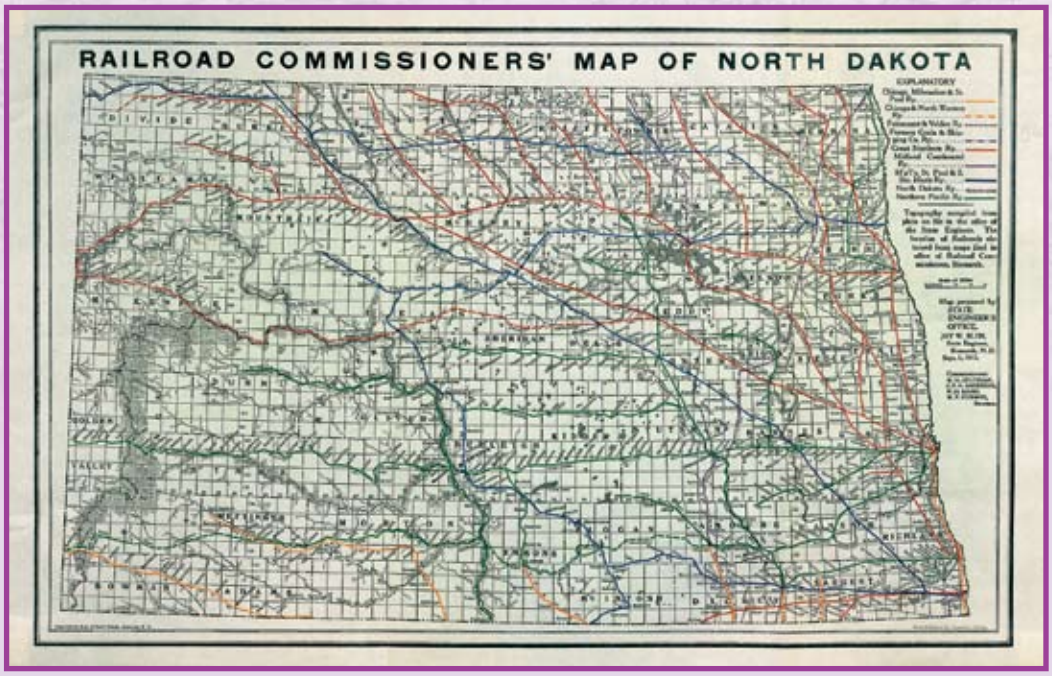
Colton's Map of Dakota, 1885. *(SHSND 978.402 C11c 1885)*

Railroad Commissioners' Map of North Dakota

This map was published in 1913 by the Railroad Commissioners under the supervision of State Engineer, Jay Bliss.

In 1905, the state of North Dakota had more miles of track per resident than any other state in the Union. Every small town that could build a grain elevator was likely to have a spur line to one of the five major railroads that crossed the state. These spurs were used to haul grain out of the region and possibly cream, eggs, and other fresh products if the town was large enough. The train might also bring mail and possibly carry a few passengers.

In 1913, few towns in North Dakota were more than 50 miles from a rail line. In 1914, when World War I broke out in Europe, farmers and ranchers depended on these lines to take grain, cattle, and horses to markets where wartime need drove prices upward.



Railroad Commissioners' Map of North Dakota, 1913. *(SHSND)*

USING MAPS TO TEACH WITH *NORTH DAKOTA LEGENDARY*

More than 30 maps, charts, and other resources from *North Dakota Legendary* are available to assist in teaching North Dakota Studies to Grade 8 students and these can be accessed at www.ndstudies.org/resources/eighth.html.

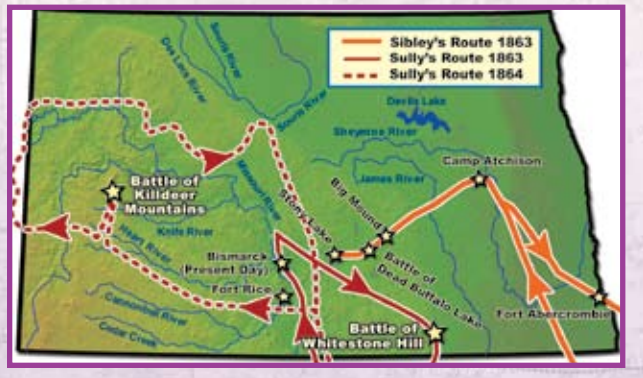
Three Natural Regions of North Dakota

North Dakota covers almost 71,000 square miles and has three main natural regions of land. They are the Red River Valley, the Drift Prairie (also called Glaciated Plains), and the Missouri Plateau. These regions are almost like three sloping stair steps as they go up in elevation from east to west. The glaciers that covered most of North Dakota during the Ice Age had a part in forming all three regions, but each region was formed differently.

MAP SIGNIFICANCE: Students need to describe the location and characteristics of the three regions of North Dakota including the Red River Valley, the Drift Prairie, and the Missouri Plateau.

Sibley and Sully Campaigns

In June 1863, the U.S. government sent General Henry Sibley and General Alfred Sully into North Dakota to round up the "hostiles" who had fled Minnesota following the Dakota Conflict in 1862. General Sibley set out on a march from Minnesota with about 3,300 soldiers. Most of them were infantry, but about 500 were cavalry. Sibley's army also had 225 mule-drawn wagons with cannons and supplies and a herd of cattle to provide food for the troops.



General Sully's army consisted of 2,000 cavalry. They were loaded on four steamboats and headed up the Missouri River toward the northern Dakota Territory.

The following months were marked by a number of bloody skirmishes and battles between these armies and the Dakota people—noting an important part of North Dakota history.

MAP SIGNIFICANCE: Students need to be able to explain the significance of key events (Sibley and Sully Campaigns of 1863–1864, creation of frontier military forts in Dakota Territory, and the establishment of reservations) to understand North Dakota and tribal history.

North Dakota's Major Drainage Basins

North Dakota is separated into two major drainage basins by a continental divide that runs, generally, from the northwest corner of the state, through the central and southeastern part of the state. The eastern and north-central regions of North Dakota fall generally within the Hudson Bay drainage basin, while the western and south-central part of the state is drained by the Missouri River to the Gulf of Mexico.

The Missouri River drainage basin in North Dakota includes the major subdivisions of the Missouri and James Rivers. The Hudson Bay drainage basin system includes the Souris and Red River basins, plus the presently noncontributing Devils Lake basin.

MAP SIGNIFICANCE: Students need to identify the location and characteristics of significant features of North Dakota including landforms, regions, major rivers, and drainage systems. The significance of the Devils Lake Basin, its high level, and the ramifications of an overflow makes an excellent lesson in geography, geology, and current events.

USING MAPS TO TEACH 4TH GRADE NORTH DAKOTA STUDIES

Maps, charts, activities, assessments, and web links from the six units for 4th Grade North Dakota Studies are available at www.ndstudies.org/resources/fourth.html. More than 50 maps and charts to help teach the six units of 4th Grade North Dakota Studies are available at the website.

Lake Agassiz

When the Wisconsinan glacier in North Dakota melted for the last time, glaciers still existed to the north in Canada. These glaciers formed a huge dam which backed up rivers trying to flow north. The water backed up and formed a gigantic lake. Some of the water in the lake came from the melting glaciers, but most of it was runoff from the south that could not flow northward because its way was blocked by the glaciers in Canada.

This ancient lake, named after geologist Louis Agassiz, was called Lake Agassiz. It was 700 miles long, 200 miles wide, and 300 feet deep, and covered the eastern part of North Dakota, part of Minnesota, and parts of Canada. Although the lake has been gone for thousands of years, the Red River Valley remains the floor of this prehistoric lake.

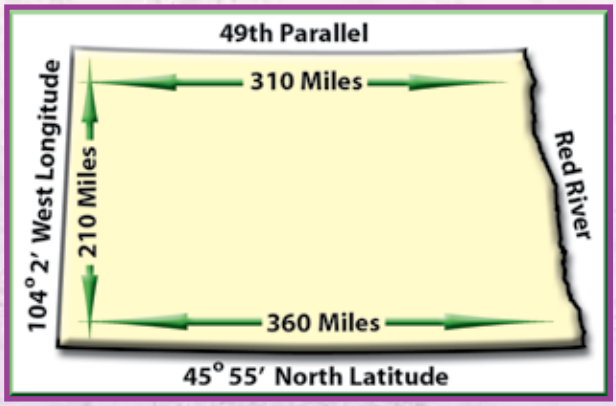
MAP SIGNIFICANCE: Students need to describe ways geology and geography have affected the development of the state and region over time.

Area of North Dakota

North Dakota's shape is easy to draw because it is almost a perfect rectangle. The distance from the eastern border to the western border averages 335 miles. From the northern border to the southern border it is about 210 miles. The total land area of the state is 70,704 square miles; about 1,403 square miles of that area is covered by water.

North Dakota is smaller than the other states and the Canadian provinces that surround it, but it ranks 18th in size among all the 50 states.

MAP SIGNIFICANCE: Students need to use map scales to locate physical features and estimate distance on a map.

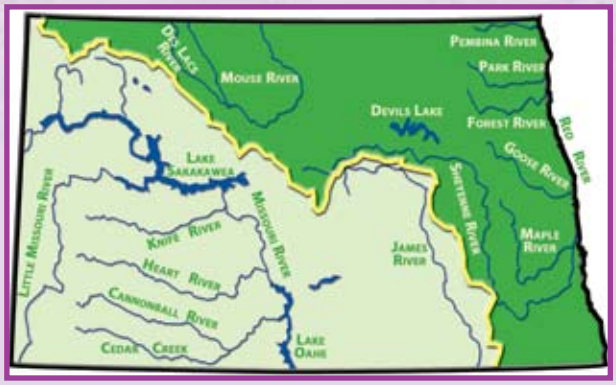


North Dakota's Major Rivers

The continental divide in North Dakota, called the Northern Divide, is a north-south continental divide. Waters to the south and west of this divide (the Missouri River and its tributaries) flow into the Gulf of Mexico, and waters to the north and east of it (the Red River and the Mouse River with their tributaries) flow into Hudson Bay in Canada.

Some of the main tributaries of the Missouri River in North Dakota are the James, Little Missouri, Knife, Cannonball, and Heart Rivers. The Sheyenne River is the main tributary of the Red River but others include the Goose, Pembina, and Forest Rivers. The main tributary of the Mouse River is the Des Lacs River.

MAP SIGNIFICANCE: Students need to interpret and compare physical, political, and thematic maps of North Dakota to identify its landforms, regions, and major rivers.



KNOWING THE SYMBOLS OF NORTH DAKOTA

North Dakota and the United States are represented by many important symbols. Since 1889, more than 15 state symbols have been officially recognized and adopted by the North Dakota Legislative Assembly to show respect and admiration for our state. Other symbols not shown here include an official prairie grass, dance, state motto, song, march, creed, and coat of arms.

North Dakota Flag

The North Dakota flag was copied after a flag used by North Dakota soldiers who fought alongside Theodore Roosevelt in the Spanish-American War in 1898. In 1911, the Legislative Assembly added the words "North Dakota" to this flag and adopted it as the official North Dakota state flag.

The North Dakota flag shows a bald eagle holding an olive branch, which is a symbol of peace, and a bundle of arrows in its claws. In the eagle's beak is a ribbon with the Latin words *E Pluribus Unum*, which means "many uniting into one." This refers to the many states uniting into one nation. The eagle has 13 stars above its head and a shield with 13 red and white stripes in front of it. The stars and stripes stand for the first 13 states in the United States. Below the eagle is a red scroll with the words "NORTH DAKOTA."

North Dakota Flag.

Great Seal of North Dakota.

The Great Seal of North Dakota

A seal is a symbol that belongs only to its owner. The Great Seal of North Dakota is owned by the state of North Dakota and cannot be used by anyone without the approval of the state. It may never be used in advertising or for commercial purposes. It is illegal to print the Great Seal without permission from the North Dakota Secretary of State.

The Great Seal of North Dakota shows a tree with three bundles of wheat around the trunk, a plow, an anvil, a large hammer, a bow with three arrows, and an American Indian chasing a bison toward the setting sun.

Above the tree is a half-circle of 42 stars. Above the stars is the state motto, "Liberty and Union Now and Forever, One and Inseparable." The date "October 1st" is on the left side of the seal, and the year "1889" is on the right. Large lettering at the top says "Great Seal," and the same size lettering at the bottom says "State of North Dakota."

Wild Prairie Rose

The Wild Prairie Rose became the official state flower in 1907. It has five pink petals with yellow stamens in the center. This flower grows wild along roadsides and in pastures all over North Dakota.

Wild Prairie Rose.

The first graduating class of the University of North Dakota chose the colors of the Wild Prairie Rose as their school's official colors in 1889 noting that the colors were "suggestive of our green prairies and rosy prospects."

American Elm

The American Elm became North Dakota's state tree in 1947. Once common along many North Dakota rivers and city boulevards across the state, the American Elm tree often reaches a height of 120 feet or more.

Dutch elm disease, spread by the elm bark beetle, has destroyed thousands of these great trees.

American Elm.

Western Meadowlark.

Western Meadowlark

In 1947, the Western Meadowlark became the state bird of North Dakota. The Western Meadowlark is approximately the size of a robin. It has a yellow breast with a black bib, but the rest of its body is mostly brown.

The Western Meadowlark is also the state bird of Kansas, Montana, Nebraska, Oregon, and Wyoming.

Milk

The dairy industry is important to North Dakota. In 1983, the Legislative Assembly named milk as the official state beverage.

North Dakota produces more than 500 million pounds of milk each year.

Milk.

Teredo-Bored Petrified Wood.

Teredo–Bored Petrified Wood

The state fossil of North Dakota is the 60-million-year-old *Teredo*- (ter-Ee-doe) bored petrified wood. This name comes from little clams called "teredos" that drilled tiny holes into the wood before it fossilized. Minerals filled in the cells of the wood as it decayed so that it looked exactly like the wood that had been there in the first place, except it was now stone.

Northern Pike

The Northern Pike became the state fish of North Dakota in 1969. This fish has spiny fins, a pointed head, and can reach a length of four feet.

The Northern Pike is a popular fish for anglers. Many people come long distances to fish for Northern Pike in North Dakota. The record Northern Pike caught in North Dakota weighed 37 pounds 8 ounces. It was caught in Lake Sakakawea in 1968.

Northern Pike.

Photos courtesy of the ND Secretary of State, ND Tourism, ND Game and Fish Department, ND Geological Survey, USDA, the Nokota Horse Conservancy, www.fvcc.edu, and Neil Howe.

Nokota Horse.

Nokota Horse

In 1993, the Legislative Assembly named the Nokota horse as the honorary equine (Ee-kwine), or horse, of North Dakota. Nokota horses are believed to be descendants of Sitting Bull's horses. Only a few of these horses are left, and an organization has been established to save the Nokota horse from extinction. Some Nokota horses still run wild in Theodore Roosevelt National Park.

Chokecherry

In 2007, the state legislature made the chokecherry the official state fruit of North Dakota. The chokecherry grows wild in all parts of North Dakota. The dark-red berry is a popular fruit for making jelly, syrup, and wine. The chokecherry is also an important food for birds and other wildlife. The idea of naming the chokecherry the official state fruit came from Williston elementary students.

Chokecherry.

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CHANGES COMING IN 2011

Since its authorization and funding in 2005, the North Dakota Studies Project has experienced much progress and growth. Originally created for the purpose of "developing North Dakota Studies materials for Grades 4 and 8," the project has far exceeded its original goals, producing nine publications, accompanying teacher resources, and a website populated with a host of resources. These materials are designed for and used by not only fourth and eighth graders, but by elementary to high school students and even some college classes.

The North Dakota Studies Project has also expanded its role by coordinating its work with a host of other state agencies, including the North Dakota Game and Fish Department, Indian Affairs Commission, UND Bureau of Governmental Affairs—and especially with the State Historical Society of North Dakota (SHSND). Its work with the SHSND has also allowed the project to publish *North Dakota History, Readings about the Northern Plains State* and develop a host of archival materials at the ND Studies website.

With success and growth comes change. Plans are currently underway to transfer the North Dakota Studies Project from the North Dakota Center for Distance Education to the SHSND on July 1, 2011.

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

Although the umbrella agency will change, the North Dakota Studies Project will continue to operate the same. All North Dakota Studies publications and services will be maintained. According to SHSND director Merl Paaverud, "The North Dakota Studies Project is an excellent fit with the Historical Society's mission to preserve and promote the heritage of the people of North Dakota. It is our hope that it will assist teachers and help our students to learn about North Dakota's people and their history."

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This *North Dakota Studies* Newsletter is published by the North Dakota Center for Distance Education and is distributed to students, teachers, schools, and libraries throughout North Dakota.

PUBLISHED BY
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Box 5036, 1510 12th Avenue North
Fargo, North Dakota 58105-5036