



**50<sup>th</sup>/70<sup>th</sup> Anniversary and Field Day**  
**Bismarck Plant Materials Center (PMC)**  
**June 17, 2004**

**8:00 a.m. Registration/Coffee/View Exhibits and Equipment**

**Concurrent Tours and Demonstrations**

(starting location of tours/demonstrations listed on map on next page)

Session 1      8:45 a.m. - 9:25 a.m.

Session 2      9:30 a.m. - 10:10 a.m.

Session 3      10:15 a.m. - 10:50 a.m.

1. **Seed Processing – Building No. 10**  
Earl Aune and Mike Bellon demonstrate everything you need to know about cleaning and storing seed. View equipment and learn the lingo from debearding to pure live seed.
2. **Plant Materials Video – Building No. 12 (lower level)**  
Rachel Bergsagel and Nancy Jensen provide insights into the National Plant Materials Program. View a dynamic new video where private landowners use plants to help solve conservation problems.
3. **Prairie Landscaping – Building No. 12 (buffalograss lawn)**  
Dwight Tober leads a discussion on native plants in reducing energy inputs and promoting environmental benefits to the homeowner. View various design techniques and learn some of the more common native species used in prairie landscaping.
4. **Foundation Seed Fields – Bus Tour**  
Wayne Duckwitz and Mike Knudson lead a tour of the PMC seed production fields. View many different plant species and learn various production techniques from burning to irrigating and combining to seed stripping.
5. **Black Ash Traditional Weaving – Building No. 11**  
Mike Demchik, Extension Educator with the University of Minnesota, demonstrates the age old technique of stripping black ash woodsplints for weaving.
6. **Lincoln-Oakes Nursery – Tree Coolers/Grading Shed**  
Greg Morgenson, Lincoln-Oakes Nursery Manager, shows state-of-the-art technology used in the production of more than 5 million conservation trees and shrubs annually.

**11:00 a.m. Program**

**Welcome and Introductions**

- J.R. Flores, NRCS, State Conservationist, Bismarck, ND
- Janet Oertly, NRCS, State Conservationist, Huron, SD
- Bill Hunt, NRCS, State Conservationist, St. Paul, MN

**70 Years of Conservation Plant Technology**

- Gerald Willis, NRCS, Special Assistant, Washington, DC

**NDASCD/Lincoln-Oakes Nurseries**

- Gary Puppe, Executive Vice-President, Bismarck, ND

**National Plant Materials Program**

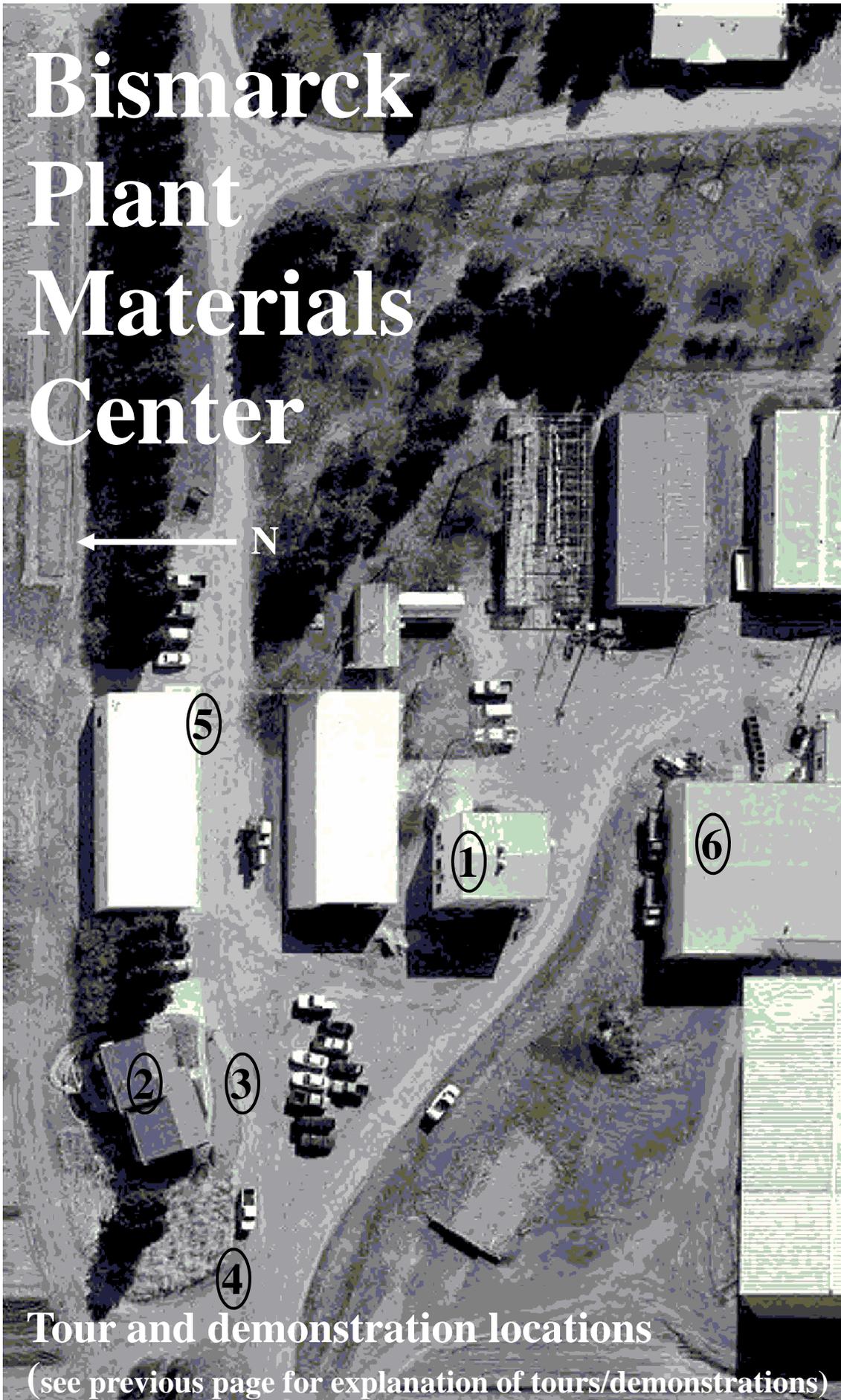
- Bob Escherman, NRCS, PM Program Leader, Washington, DC

**The Bismarck PMC, Yesterday and Today**

- Dwight Tober, NRCS, Plant Materials Specialist, Bismarck, ND
- Wayne Duckwitz, NRCS, Plant Materials Center Manager, Bismarck, ND

**12:00 noon – Catered Lunch**

# Bismarck Plant Materials Center



**Tour and demonstration locations**  
(see previous page for explanation of tours/demonstrations)

**Welcome to the Bismarck Plant Materials Center 50<sup>th</sup> Anniversary Field Day**

The USDA Natural Resources Conservation Service takes great pride in welcoming you to this special field day in recognition of 50 years of operation for the Bismarck Plant Materials Center (PMC), and 70 years since its beginning as a Soil Conservation Service (SCS) Nursery. This long-term cooperative effort of plant evaluation and technology development has been the result of the combined efforts of many agencies, organizations, district cooperators, seed growers, and nurserymen. The strong partnership with the North Dakota Association of Soil Conservation Districts (NDASCD), Lincoln-Oakes Nurseries, and the USDA Agricultural Research Service has been especially valuable in the more than 40 new plant releases cooperatively developed by the Bismarck PMC. Continued technology development to support these plant releases is more critical now than ever before to address the environmental and conservation issues of today.

We encourage you to take time to look around the Plant Materials Center and participate in the concurrent tours and demonstrations. The Bismarck PMC headquarters is located where we stand today, but the real operation of the program has its start in every NRCS field office and SCD office in Minnesota, South Dakota, and North Dakota. Seed collection, on-the-farm field plantings, and promotion of the new plant releases are accomplished primarily through the involvement of field offices at the county level. We acknowledge your contribution and encourage your continued support for the Plant Materials Program.



J.R. FLORES  
State Conservationist



*Front Cover Photos: (left to right, starting at the top row): 1) threshing grass seed; 2) Russ Haas, grafting woody plants; 3) Herb Davis, making a western wheatgrass collection; 4) John McDermand, evaluating woody plants; 5) John McDermand (on the left) evaluating grass stand; 6) Betty Wald Thune, planting little bluestem assembly; 7) Todd Hagel, evaluating big bluestem assembly; 8) Erling Jacobson, evaluating larch; 9) Sid Dronen, evaluating Mongolian cherry at Highmore, SD; 10) Maurice Davis, collecting hawthorn seed; 11) Rich Wynia, evaluating big bluestem assembly; 12) grass seed harvest.*

## Plants make conservation happen



“The use of improved conservation plants is integral to protecting America’s working lands. The Plant Materials Program offers a 70-year track record of finding plant solutions to help respond to our most critical natural resource challenges.”  
Bruce Knight, Chief Natural Resources Conservation Service (NRCS)

### Facts about the Center

The Bismarck Plant Materials Center (PMC) is one of 26 Plant Materials Centers in the nation. As part of the Natural Resources Conservation Service’s soil and water conservation program, it evaluates plant materials to provide solutions to conservation problems. The PMC serves a wide variety of land users in North Dakota, South Dakota, and Minnesota.

The Bismarck PMC operates through an agreement with the North Dakota Association of Soil Conservation Districts and the NRCS. The PMC has been co-located with Lincoln-Oakes Nurseries since 1954. The PMC cooperates in its testing and release program with many State and Federal agencies, conservation district cooperators, and commercial seed and tree growers.

Elevation	1,653 feet
Annual precipitation	15.37 inches
Frost free period	135 days
Frost free dates	May 10 – Sept. 22
Soil	Mandan silt loam

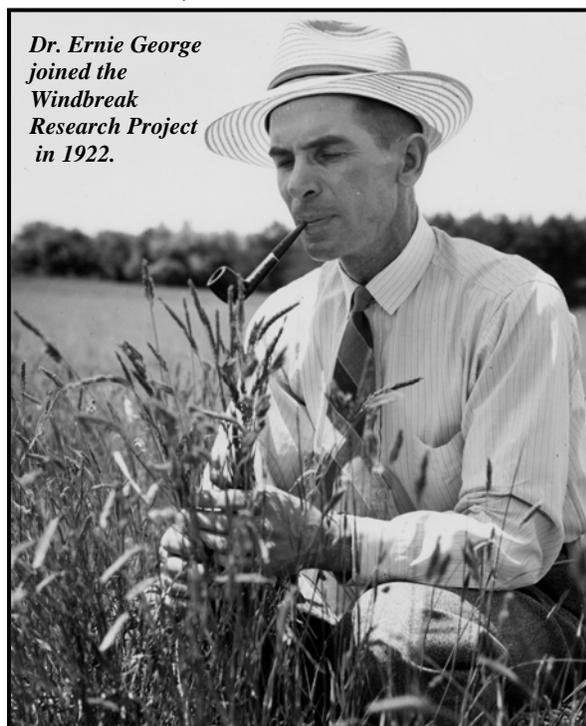
## Glimpses into the Past...

Plant Materials Centers: The plant materials work of SCS started as the erosion control nurseries of the Bureau of Plant Industry, USDA, in 1934.

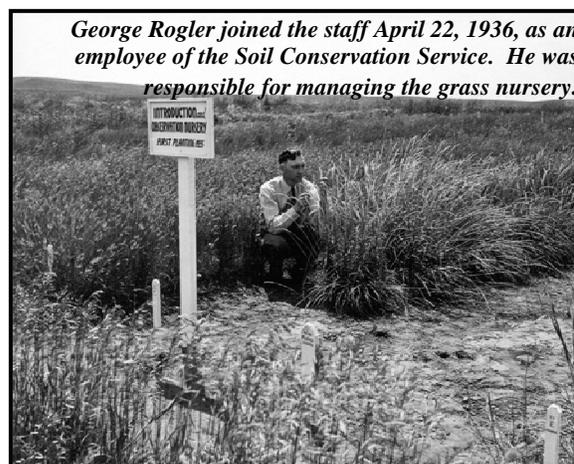
On March 25, 1935, the Secretary of Agriculture, in Department Memorandum 665, ordered the consolidation of all USDA erosion control activities to be placed under the Soil Erosion Service. This included erosion control nurseries.

Authorities for operating plant materials centers are in Public Law 74-76, the Soil Conservation and Domestic Allotment Act, and Public Law 74-210, Bankhead-Jones Farm Tenant Act.

In 1954, the objective of quantity production of seed and plants by the nurseries was changed to emphasize assembly, evaluation, and field testing of plants for conservation uses. Commercial growers were encouraged to produce SCS-related materials in quantity for use in conservation programs. The name "nurseries" was changed to "plant materials centers" at that time. *(taken from "Organization and Development of the Soil Conservation Service", USDA-SCSPER-223, September 1981)*



*Dr. Ernie George joined the Windbreak Research Project in 1922.*

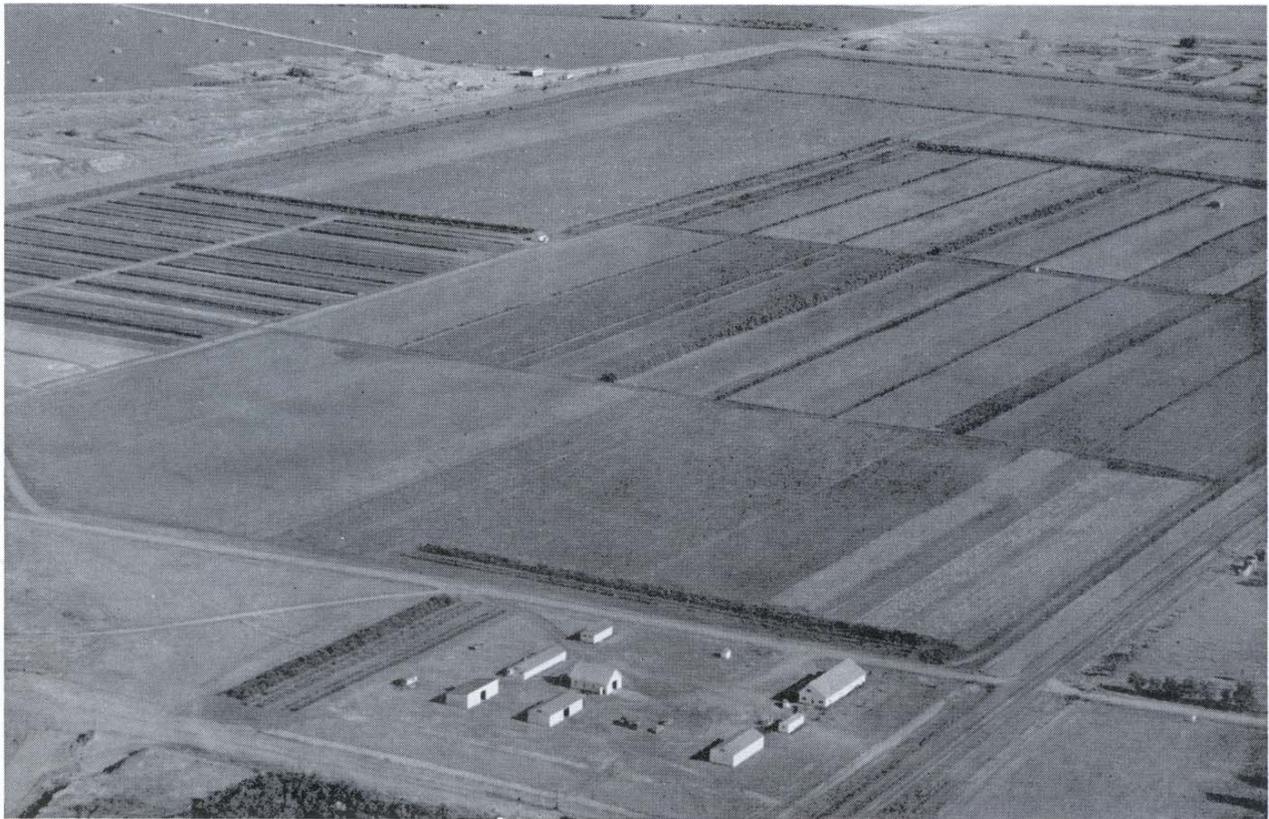


*George Rogler joined the staff April 22, 1936, as an employee of the Soil Conservation Service. He was responsible for managing the grass nursery.*

## History Timeline of the USDA – Soil Conservation Service Tree and Grass Nurseries Mandan, North Dakota

1933	Congress passes Soil Erosion Act. Soil Erosion Service part of Bureau of Plant Industry.
1934	Northern Great Plains Field Station purchased NW1/4, Sec. 4, T.138N., R.81W.
1934	Soil Erosion Service established tree and grass nurseries on NW1/4, Sec. 4, T.138N., R.81W.
1934	Dr. Ernie George named head of tree nursery.
1935	Soil Erosion Service transferred to new Bureau called Soil Conservation Service.
1936	George Rogler named head of grass nursery.
1937	Over 1 million trees taken off tree nursery in last year of production.
1937	SCS purchased land in bottoms between Bismarck and Mandan for new nursery.
1937	Art E. Ferber named head of new nursery.
1937	Tree, shrub, and grass beds sown in new nursery.
1953	SCS Nursery moved to Fort Lincoln.
1954	SCS Nursery discontinued and Plant Materials Program is created.

*(History timeline and photos on this page courtesy of Dr. Richard Cunningham and the USDA-ARS Northern Great Plains Research Lab, Mandan, ND.)*



The soil at Fort Lincoln Nursery is exceptionally well adapted for irrigation and a single large deep well produces water enough to supply most of the area.

## HISTORY OF FORT LINCOLN NURSERY

On March 27, 1935, the Secretary of Agriculture transferred the Mandan Nursery from the Bureau of Plant Industry to the Soil Erosion Service. Just one month later, on April 27, 1935, the Agency's name was changed from the Soil Erosion Service to the Soil Conservation Service.

From a small beginning on land adjacent to the United States Field Station at Mandan, the Nursery rapidly expanded. A tract of 240 acres located on the bottoms between Mandan and Bismarck was purchased for the main production area. Both trees and grass seed for soil conservation purposes were produced at this location.

As this Nursery site was located on a flood plain, between the Missouri and Heart Rivers, it was necessary to construct dikes to protect the area. In spite of the rather high dikes, it was impossible to prevent occasional flooding.

Due to this periodic flooding of the Mandan Nursery site, it was decided that a new site was needed. A tract of land comprising 355 acres, that was originally part of the Fort Lincoln Military Post, was transferred from the Army to the Soil Conservation Service in 1952. The Nursery was in the process of being established on this site when in the summer of 1953, the Department of Agriculture decided to discontinue all of its Soil Conservation Service Nurseries.

On November 1, 1953, the North Dakota Association of Soil Conservation Districts agreed to take over and operate the Fort Lincoln unit. An agreement was approved by both parties on September 22, 1953. From that time to the present the project is known



Putting trees in heel-in bed for winter storage.



About 20,000 pounds of foundation stock grass seed is produced annually.

as the Fort Lincoln Nursery. It is located two miles south of Bismarck, directly across from the Fort Lincoln Military Post.

On June 18, 1955 the United States Department of Agriculture transferred the title for the Fort Lincoln Nursery lands to the State of North Dakota for continued use in expanding the soil and water conservation program in North Dakota.

The 1957 Legislative Assembly passed H. B. 583 accepting the deed to these lands and named the North Dakota Association of Soil Conservation Districts as trustee to have custody, operate and manage the Fort Lincoln Nursery for the soil conservation districts of North Dakota.

This Nursery, as well as the one at Oakes, is now operated by a seven-man Nursery Board. These men are elected from the membership of the Soil Conservation District Supervisors at their annual meeting and they represent every section of North Dakota.

The Nursery Board has continued the policy of producing both trees and grass as was done when the nursery was operated by the Soil Conservation Service.

The Fort Lincoln Nursery has been under the successful management of George Kary since it was taken over by the Association and the total payroll is about \$50,000.00 annually. It produces about three million trees and shrubs annually for planting in field and farmstead wind-breaks in the State. Under an agreement with the Soil Conservation Service, a small acreage is used for trial plantings of promising trees and grass planted and cared for under their direction.

The Mandan Field Station provides the Nursery with newly developed varieties of grass seed for increase and distribution to the soil conservation districts. The grass seed is grown under close supervision of the State Seed Department.

*(Taken as printed from the report "North Dakota, Twenty Years of Progress in Soil and Water Conservation", published by the North Dakota State Soil Conservation Committee, 1957.)*

# Breaths held all across the wide Missouri

## Bridge too small for SCS move

By STAN STELTER  
Tribune Staff Writer

Say you want to move an 80-ton building.

And, just for kicks, let's say you want to add a bit of tension ... make that scariness.

Well, you could try rolling it across the frozen Missouri River.

That's what the Soil Conservation Service embarked upon back in 1953, moving its nursery from the "Strip" area in Mandan to south of Bismarck.

What brought about the move was water — too much of it.

For two years, the 200-acre tree and grass nursery had been inundated with up to 8 feet of flood waters, says Elmer "Buck" Worthington, former Mandan city forester who had been the SCS nursery manager.

**ONE FLOOD** involving both the Heart and Missouri rivers was high enough to lift a three-room house over the main railroad line between Bismarck and Mandan, he recalls.

Nursery crews put their tractors and trucks on the nearby flood protection levee, but one year that didn't work. "All I could see was the tailpipe of one tractor sticking out" of the water, Worthington says. Ice eventually knocked the vehicles off the levee and into the water.

No lives were lost, however, and no buildings left the premises courtesy of either of the two rivers.

Mostly what saved the structures was a tree shelterbelt that protected them from ice cakes.

**THE SCS** nursery planted an average of 4 million to 5 million trees each year, providing them for SCS districts in Kansas, Nebraska, North Dakota, South Dakota, Montana and Wyoming. Most remained in North Dakota.

In addition, the nursery produced around 25,000 pounds of grass seed.

With the flooding, the nursery was losing about 2 million trees, Worthington says.

The SCS had 355 acres at the old Fort Lincoln south of Bismarck, and the service finally decided it had had enough on the Strip. After about 20 years, the nursery would make the big switch, moving across the river to the Fort Lincoln site some four



Once they hit the ice, the orders were to keep that big building moving, above. They had to cut a few trees and doze a ramp, inset, before lumbering onto the ice.



miles away.

**FIVE OF** the eight buildings would be saved and moved to the new location, it was decided. Of those five, two could be moved across Memorial Bridge, then the only highway bridge spanning the Missouri at Mandan.

But the three others were too large, so the alternative was to move them across the frozen Missouri. "It was either do it that way or not move it at all," Worthington says.

The decision to move came in the fall of 1952 and the service waited until February 1953 to make the move.

Van Beek House Moving of Linton got the contract to do the work, but before that some trees were cut in the path from the nursery site to the Missouri bank

about where the Bismarck-Mandan Expressway Bridge sits today.

**THE BANK** at that spot was bulldozed for a smoother, sloping ramp. When that dirt was pushed down to the river, the water seeped up to the edge, causing some concern, Worthington says.

But that froze before the buildings were shuffled onto the ice.

A check showed the ice to be between 15 and 27 inches thick.

How safe is that? The only information they got, Worthington says, was from the U.S. Army Corps of Engineers, which said 18 inches of ice would support a train on railroad tracks.

But that's different from a building with its weight on widely spaced wheels. And the largest and heaviest of the buildings was

a 30-by-90-foot combination garage and warehouse weighing in at 80 tons.

**BUT THE** contractor had no qualms. "I though he was a little too brave," Worthington admits some 30 years later.

Three large trucks towed the biggest of the buildings onto the Missouri. For safety's sake, 100-foot ropes were tied around each of the three drivers. The other end was held by three men walking in front of and off to the side of the trucks, ready to haul the drivers out should the ice cave in.

Worthington says the contractor gave instructions to his drivers that once they got moving on the ice, they should keep going toward the other side. But the lead driver, Van Beek's son, apparently got a little nervous

and choked the engine.

**THE OTHER** trucks just pushed him until he got it restarted.

Things moved along briskly, says Worthington, who was out on the ice himself: "You had to jog to keep up." As the rolling entourage got about halfway over the main channel — with the thinnest ice — there was a big crack, a "boom, like a cannon or dynamite blowing," Worthington says.

A shuddering crack went up and down the Missouri, a sound Worthington won't forget.

A story in The Tribune at the time noted that when the large building was moved, "ominous noises of cracking were heard but there was no serious danger."

Worthington suggests it wasn't quite that safe, but, as it turned out, nothing else happened.

(Taken as printed from the Bismarck Tribune, December 10, 1985)

## History of the Bismarck Plant Materials Center

The Soil Conservation Service Plant Materials Center (PMC) at Bismarck began operations in 1954 with the objective of evaluating and releasing plant materials for conservation use in North Dakota, South Dakota, and Minnesota. The PMC operates through a working agreement with the North Dakota Association of Soil Conservation Districts' Lincoln-Oakes Nurseries. John McDermand was the first full-time plant materials employee at Bismarck. John had a skill in identifying superior plants and many of these improved plant materials are still in great demand for a variety of conservation uses.

In June 1954, he transferred from the SCS nursery at Kearney, Nebraska, as a Plant Materials Technician. He spent the summer inspecting grass seedings established by earlier SCS nursery employees. In September, he traveled to the arboretum at Morden, Manitoba, to make collections of improved trees and shrubs for use in shelterbelts. One of the very first plants that he collected seed from was the Ussurian pear. In the following years, he made many trips to the arboretum at Morden. John continued to work at the PMC until the early 1970s. In 1993, his selection of Ussurian pear was named in his honor and released as a cultivar for use in a wide range of conservation plantings.

*Plant Materials Program regional personnel from 40 years ago. Photo taken by Erling Jacobson at a regional workshop in Missouri in 1964. John McDermand is third from the left.*



*Left to Right: D.A. Carroll, Ctr. Mgr., Rose Lake PMC, E. Lansing, MI.; W.H. Billings, Ctr. Mgr., SCS, PMC, Elsberry, MO; J. McDermand, PMS, Bismarck, ND; Wm. M. Briggs, PMS, SCS, Madison, WI; V.B. Hawk, PMS, SCS, Ames, IA; R.D. Lippert, PMS, SCS, Manhattan, KS; E. Lynn Guenther, PMS, SCS, E. Lansing, MI; C.M. Schumacher, PMS, SCS, Lincoln, NE, M.O. Atkins, Reg. PMS, SCS, Denver, CO; B.H. Rountree, PMS, SCS, Elsberry, MO; D.S. Douglas, Head, PMS, Washington, DC*

## Cooperative Plant Releases

The Bismarck PMC has cooperated with other agencies in the release of the following improved plant materials.

Variety Name	Common Name	Year of Release
<b><u>Grasses</u></b>		
Mandan	Canada wildrye	1946
Lodorm	green needlegrass	1969
Nordan	crested wheatgrass	1953
Garrison	creeping foxtail	1959
Pierre	sideoats grama	1961
Killdeer	sideoats grama	1963
Rodan	western wheatgrass	1983
Bonilla	big bluestem	1989
Forestburg	switchgrass	1987
Tomahawk	Indiangrass	1988
Bison	big bluestem	1989
Dacotah	switchgrass	1989
Reliant	intermediate wheatgrass	1991
Mankota	Russian wildrye	1991
Manska	pubescent wheatgrass	1992
ND-WWG931	western wheatgrass	1993
ND-WWG932	western wheatgrass	1993
Badlands ecotype	little bluestem	1996
Bad River ecotype	blue grama	1996
Bismarck ecotype	buffalograss	1996
Red River germplasm	prairie cordgrass	1998
Itasca germplasm	little bluestem	2001
NU-ARS AC2	crested wheatgrass	2002
Haymaker	intermediate wheatgrass	2003
<b><u>Forbs/Legumes</u></b>		
Antelope germplasm	slender white prairieclover	2000
Bismarck germplasm	purple prairieclover	2000
Bismarck germplasm	stiff sunflower	2000
Medicine Creek germplasm	maximilian sunflower	2000
Bismarck germplasm	narrow-leaved purple coneflower	2000
<b><u>Trees and Shrubs</u></b>		
Midwest	Manchurian crabapple	1973
Cardan	green ash	1979
Oahe	hackberry	1982
Sakakawea	silver buffaloberry	1984
Scarlet	Mongolian cherry	1984
Centennial	cotoneaster	1987
McDermand	Ussurian pear	1990
Homestead	Arnold hawthorn	1993
CanAm	hybrid poplar	1995
Regal	Russian almond	1997
Legacy	late lilac	1999

## Did You Know?

- ✓ The Cooperative Windbreak Program started at the Mandan Station in 1915 and over 4,000 landowners applied for trial plantings in North Dakota, South Dakota, Montana, and Wyoming. In 1916 alone, tree and shrub stock for over 1,300 plantings was shipped.
- ✓ Soil Conservation Service (SCS) Nurseries were established in 1934 primarily to build up grass seed supplies to revegetate abandoned farmland.
- ✓ George Rogler was the first geneticist with the SCS/ARS at Mandan and his first release was a native species, Mandan Canada wildrye, released in 1946. George went on to help develop 10 new grasses, including Nordan crested wheatgrass, and authored and co-authored more than 90 publications on grassland management and plant breeding.
- ✓ Nationally, more than 425 million pounds of seed were harvested by SCS Nurseries and Soil Conservation Districts in 1950.
- ✓ SCS Nurseries were discontinued in 1953 and the SCS Plant Materials Program evolved in 1954.
- ✓ More than 75 percent of the grasses recommended nationally in the Field Office Technical Guide are derived from PMC cooperative releases.
- ✓ The Bismarck PMC first started marketing foundation grass seed in 1996 through an agreement with NDSU Foundation Seed Stocks, and there is a 1 to 3 year waiting list for most species.
- ✓ The commercial value of seed grown from Bismarck PMC releases is conservatively estimated at more than 9 million dollars in 2003 alone.
- ✓ Four to six seasonal employees, often college students, are hired each summer at the Bismarck PMC, mainly to hoe weeds and move irrigation pipe. These essential employees are a primary reason for the high quality foundation grass seed produced at the PMC.
- ✓ Thomas Jefferson said, "The greatest service which can be rendered any country is to add a useful plant to its culture."

# Bismarck Plant Materials Center Staffing 1954-2004

## Plant Materials Specialist

John McDermand 1967-1974  
Erling Jacobson 1975-1984  
Russell Haas 1984-1998  
Dwight Tober 1998-present

## Plant Materials Center Manager

John McDermand 1954-1967  
Sheridan Dronen 1967-1970  
Dave Lorenz 1971-1974  
Russell Haas 1974-1984  
Dwight Tober 1985-1998  
Wayne Duckwitz 1999-present

## Biological Technician

Rachel Bergsagel 1980-present  
Earl Aune 1983-present  
Dorothy Glatt (Biological Aid) 1983-1998

## Student Trainee

Roberta Dahl 1982  
Mike Humann 1982  
Jay Mar 1982  
Lealand Schoon 1993  
Brad Red Horn 1996  
Sharla Silk 1997

## Soil Conservationist

John Coleman 1975-1976  
Larry Bushey 1975-1978  
LeRoy Johnke 1978-1979  
Steve Hausauer 1979-1980  
Dwight Tober 1979-1984  
Dale Darris 1980-1986  
Mike Knudson 1986-present  
Rich Wynia 1988-1989  
Nancy Jensen 1989-1991, 1993-present

## Clerk/Secretary

Mary Jaszkwowiak 1980-1983  
Linda Williams Kassian 1988-1990  
Margo Lindgren 1991-1995  
Melissa Reep 1997-2000  
Danita Gebeke 2001

## Lincoln-Oakes Nursery assigned personnel (through 1982)

Tony Moser  
Paul Star  
Frank Berger  
Russell Laemmler  
Allen Vogel

## North Dakota State University

Mike Bellon 2000-present



*Plant Materials staff: (back row, left to right) Mike Bellon, Wayne Duckwitz, Nancy Jensen, Mike Knudson. (front row, left to right), Earl Aune, Dwight Tober, Rachel Bergsagel.*

# FROM THE FILES . . .

## 1987

### Bismarck Receives “PMC of the Year” Award

The SCS has an Outstanding Awards Program for its employees and organizational units. The first awards were presented at the National Plant Materials Conference in Reno, Nevada, on March 6, 1987. The Bismarck PMC was selected to receive the award “Plant Materials Center of the Year.” It was quite an honor to receive this “first ever” award and a lot of credit goes to field and area office staffs and the state technical specialists. Russ Haas was honored to receive nomination as “Plant Materials Specialist of the Year.”

## 1989

### New Office Dedication

Approximately 200 people attended the August 21, 1989, dedication ceremonies at the PMC. Concurrent tours were held in the morning. Equipment was lined up for display and buildings were open for public viewing. A demonstration of cleaning Rodan western wheatgrass seed was viewed by many people. The dedication program was highlighted by comments from Wilson Scaling, Chief, Soil Conservation Service, Washington, DC.

The program was moved indoors to the Lincoln-Oakes Nursery grading shed because of wet and stormy weather conditions. The thunder and lightning created an impressive background to the dedication ceremonies. The rain held off for most of the tours, but a downpour ensued directly after the program, and was welcomed because of the dry conditions.



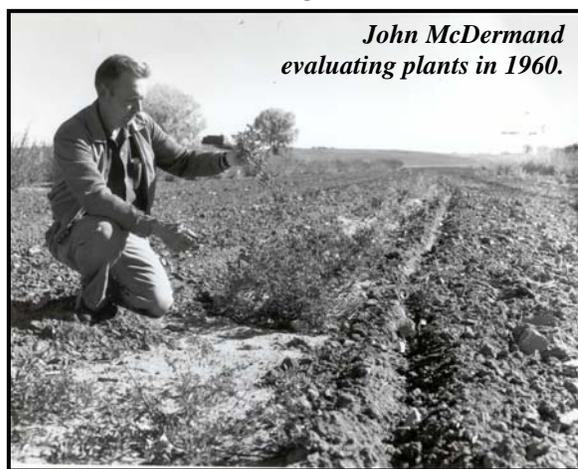
## 1991

### New Tree has Long History

McDermand Ussurian pear (*Pyrus ussuriensis*) PI478004 is the latest tree cultivar released by the Bismarck PMC. It has been released in cooperation with

Agriculture Experiment Stations of North Dakota, South Dakota, and Minnesota. McDermand pear has been produced by regional nurseries for many years as Harbin pear. It was named after John McDermand, who spent his career with the SCS working with plants for the Northern Great Plains. In September 1954, McDermand collected 454 pounds of fruit at the Agricultural Research Station at Morden, Manitoba. He was one of the first people to bring this pear to the United States.

McDermand had a skill in identifying superior plants, and many of those improved plant materials are still in great demand for a variety of conservation uses. On the same trip where McDermand collected the pear fruit, he also collected eight pounds of fruit from some Arnold Hawthorn trees at Morden. This accession has been known as ND-20 and will shortly be released as Homestead hawthorn (*Crataegus arnoldiana*) PI503530.



## 1991

### Irrigation Pipeline Project

(by Gary Puppe, Executive Vice-President, NDASCD)

A joint effort and long time goal of the North Dakota Association of Soil Conservation Districts and the USDA Soil Conservation Service was realized September 24, 1991, with the dedication of the irrigation pipeline project.

Since the nursery was first established at its present location in 1952, it has been the objective to receive high quality Missouri River water for irrigation. The previous source of water was from three wells classified as high in salinity and medium in sodium hazard for irrigation.

Several preliminary investigations were considered during the years. On November 16, 1990, the firm of Swenson, Hagen, and Co., P.C. Consulting Engineers, Bismarck was selected to perform site investigation, preliminary and final design for the project.

Bid opening for the water pipeline project was held on May 14, 1991. The first Missouri River water was pumped to the nursery and PMC on September 4, 1991.

Project Features – Water Intake = Phase I  
 Intake screen  
 190 LF of 18” intake pipe (siphon system)  
 400 LF of 16” discharge line  
 Concrete wet well and dry well  
 1 each 30 HP motor and pump  
 3 each 50 HP motor and pump  
 Control and electric panels  
 Site work including grading, gravel, and tree removal

Project Features – Water Distribution Line – Phase II  
 19,200 LF of 16” water distribution line  
 1,800 LF of 10” water distribution line  
 7,000 LF of 8” water distribution line  
 3 road crossings (open cut)  
 4 each air release valves  
 8 each drain systems  
 50 each irrigation hydrants  
 1 each 10” gate valve  
 2 each 8” electric solenoid valves  
 4 each 8” gate valves

Project Cost: \$750,000  
 Dedication: September 25, 1991

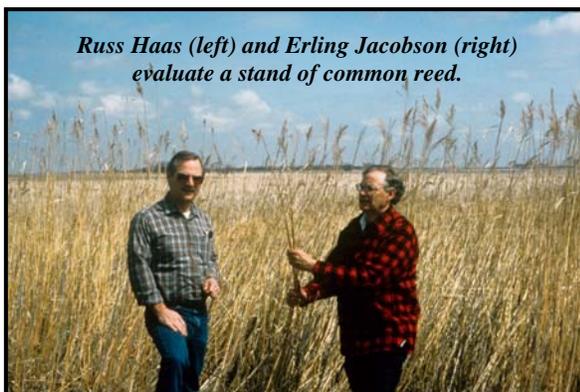
## 1994

### The Jacobson Legacy

Erling Jacobson, Regional Plant Materials Specialist, Midwest National Technical Center, Lincoln, Nebraska, and former Field Plant Materials Specialist, Bismarck, North Dakota, retired January 3, 1994, after more than 35 years of federal service.

He spent his entire career in the Plant Materials discipline in the Midwest Region, working with Plant Materials Centers at Elsberry, Missouri; Manhattan, Kansas; and Bismarck, North Dakota. The last nine years, Erling provided technical guidance to the four Plant Materials Centers and Field Plant Materials Specialists in the Midwest and their associated States.

Erling is well known and respected for his innovative ideas and expertise with native grasses. His professionalism, dedication to the plant materials program, and the conservation of our natural resources



*Russ Haas (left) and Erling Jacobson (right) evaluate a stand of common reed.*

have provided an example for everyone to follow.

During his career, he has been author of many technical publications relating to the establishment and management of native grasses in the Northern Great Plains and Canada. In the past few years, his duties have taken him to Canada, Russia, and China. These trips have resulted in the exchange of technology and plant materials and have opened the doors for future cooperative studies.

His creative ideas have resulted in innovative techniques and equipment for the collection, evaluation, planting, and harvesting of numerous species of trees, shrubs, and grasses that are currently in large scale production in the Midwest and Canada. Several techniques have been utilized by plant materials programs across the nation and adopted by researchers in other agencies.

Erling has truly left a legacy for everyone. His many years of hard work and dedication will not be forgotten. He can retire with the satisfaction that he had a lasting impact on the plant materials program, the Soil Conservation Service, and the conservation of our precious natural resources.

We thank him for all he has done and wish him the best in his well deserved retirement.

## 1995

### The First Native Plant Summit

A high level of interest has developed both in the United States and Canada regarding native plant restoration and management. Last summer, a national Memorandum of Understanding on Native Plant Conservation was signed by 7 federal agencies, with cooperator support from 29 organizations. Requests for more localized sources of native plant materials and establishment technology have also increased at the PMC.

In response, the Bismarck PMC and Ducks Unlimited Canada hosted a “Native Plant Summit” at Bismarck on February 28 and March 1, 1995. The purpose of the summit was to bring together individuals and groups interested in emphasizing native plant materials regarding management technology and localized sources in the Northern Great Plains. Discussion included native source identification, source development and testing, seed increase, harvesting techniques, and development of establishment technology. The summit provided an opportunity for the exchange of this technical information and future coordination.

Thirty-nine individuals were in attendance at the summit, representing 16 different groups and agencies. Nine individuals represented seven different agencies and organizations from Canada. Technical information regarding programs and operations was presented by various agency representatives the first day of the summit. The morning of the second day was used to discuss

future coordination and organization of this group. It was decided an “action plan” would be developed as the result of this meeting, and various working groups were organized to address the 10 priority needs identified by the group. It was agreed that the second meeting of this group would be next spring, in Canada, in conjunction with a revegetation workshop. Program summaries contributed by the participants and a listing of those in attendance have been compiled and are available by contacting the Plant Materials Center. (Note: Since the first Native Plant Summit at Bismarck, other regions have also held Native Plant Summits. The Bismarck PMC hosted Native Plant Summit VII last September in Fargo with approximately 175 people in attendance.)

## 1998

### Russ Haas Transfers to Colorado

Russ Haas has accepted a position as National Park Service Liaison and is headquartered in their regional office in Lakewood, Colorado. He is a technical advisor to the National Park Service and works with revegetation on new highways and building construction projects. Russ started the new job August 3, 1998.

Russ has been the cornerstone of the plant materials program in North Dakota, South Dakota, and Minnesota for many years. During Russ’s tenure, the program has expanded greatly. Numerous awards were received both locally and nationally while he served as manager and specialist. Russ was the PMC Manager from 1974 to 1984. PMC facilities, at that time, consisted of a relocated tool shed turned into a “temporary” office. Today, capitalized property and equipment total over a million dollars. Twenty-eight conservation plants have been released since

then, and Russ has been involved with all of them. While Russ was Plant Materials Specialist, he administered more than 900 field plantings in the three-state area!

Congratulations to Russ in his new position! We will greatly miss his plant materials expertise and guidance at the Bismarck PMC.

## 1999

### Traveling with Trees

Every spring, some of the PMC staff head out to plant trees and shrubs at selected sites in our three-state area. In the fall, the staff returns to these sites to evaluate how the woody plants have done. These evaluations are reported in the PMC Technical Report. This is an important part of the work of the PMC. Since 1972, the PMC has been testing trees at these field evaluation plantings (FEPs). Most of the FEPs are on public owned land, such as agricultural experiment stations, where site conditions vary considerably. The table at the top of the next column lists such critical factors as soils, precipitation, and average January temperature for these FEPs.

Location	Mean January Temp.(°F)	Normal Precip. (Inches)	Soils
McKenzie, ND	9.2	15.27	silty clay loam
Bottineau, ND	3.3	17.21	loam
Dickinson, ND	13.4	16.11	fine sandy loam
Lake Andes, SD	19.3	27.25	silt loam
Highmore, SD	12.7	19.66	silt loam
Crookston, MN	1.7	19.86	silty clay loam
Grand Rapids, MN	3.8	27.54	very fine sandy loam
Morris, MN	7.1	24.50	loam
Becker, MN	9.4	30.63	sand complex
Rochester, MN	11.5	29.66	silt loam



*The first PMC office and newly completed greenhouse in 1972. This temporary office space was used as the main PMC headquarters building until construction of the new office in 1989.*

# Bismarck Plant Materials Center Long Range Plan 2001-2005

## PLANT MATERIALS NEEDS AND PRIORITIES SUMMARY

### Native Prairie Ecosystems Restoration

- identify additional species
- develop propagation, enhancement, establishment, and management technology
- develop sources

### Wetland and Riparian Plant Materials

- identify additional species
- develop propagation, enhancement, establishment, and management technology

### Streambank and Lakeshore Stabilization

- identify suitable species
- develop establishment and management technology

### Tree and Shrub Related Technology

- increase species diversity and adapted varieties
- windbreak improvement and renovation
- need additional tall tree species
- need improved native shrub species

### Warm-Season Grass Promotion and Development

- identify species for critical areas and develop technology
- document and promote forage quality
- develop proven management techniques

### Saline/Alkaline Tolerant Plant Materials

- identify woody/herbaceous species and develop establishment technology

### Filter Strips/Nutrient Management

- document methods of nutrient uptake
- promote effective plants for waste management systems

### Urban Conservation

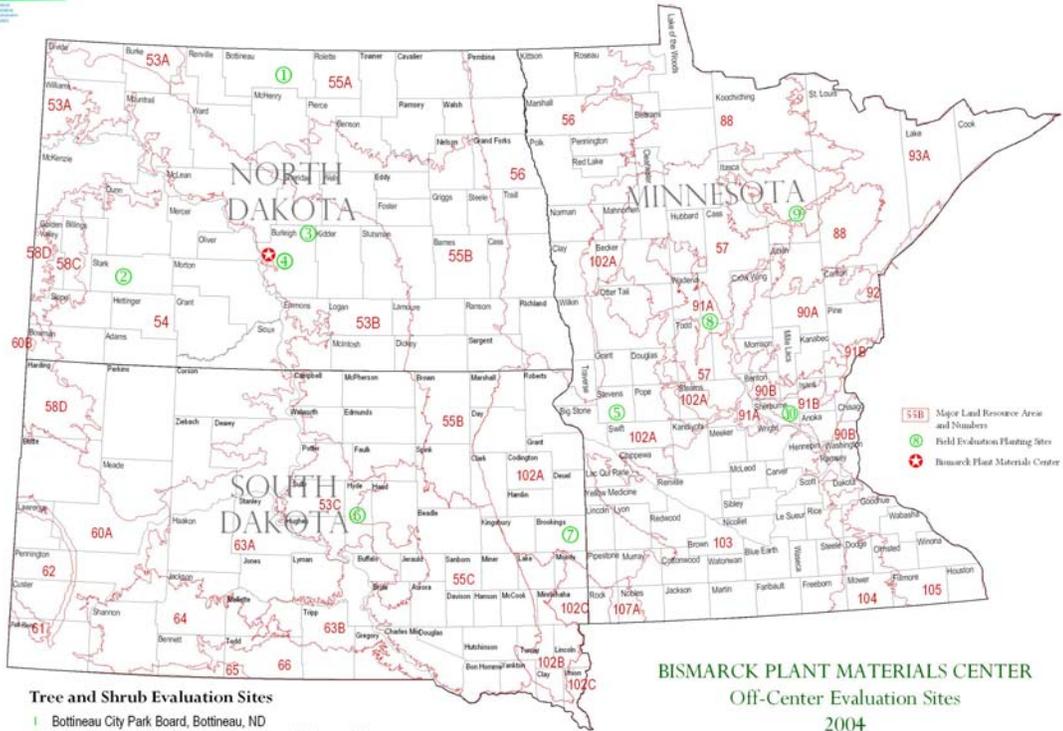
- promote effective species/varieties
- promote effective establishment and management technology
- promote environmental benefits
- promote backyard conservation

### Alternative Income Plants

- promote agroforestry
- promote potential high income species
- identify species and technology

### Information and Education

- identify and promote perennial plants for wildlife food plots
- remarket old plant releases
- promote big bluestem as high quality warm-season pasture
- identify specific outreach opportunities



**Tree and Shrub Evaluation Sites**

- 1 Bottineau City Park Board, Bottineau, ND
- 2 NDSU, Dickinson Research Extension Center, Dickinson, ND
- 4 USDI Fish & Wildlife Service, Apple Creek Twp., Burleigh Co., ND
- 5 Univ. of Minn., West Central Research & Outreach Center, Morris, MN
- 6 SDSU, Central Crops & Soils Research Station, Highmore, SD
- 9 Univ. of Minn., North Central Research & Outreach Center, Grand Rapids, MN
- 10 Univ. of Minn., Sand Plain Research Farm, Becker, MN

**Herbaceous/Misc. Plants Evaluation Sites**

- 3 North Dakota Game & Fish Department, Burleigh Co., ND
- 7 Eastern South Dakota Soil & Water Research Farm, Brookings, SD
- 8 Central Lakes College, Staples Agricultural Center, Staples, MN

**BISMARCK PLANT MATERIALS CENTER  
 Off-Center Evaluation Sites  
 2004**

USDA-NRCS Bismarck State Office GIS Center, Bismarck, ND 2004

Revised March 2004



*1994 aerial photo of the  
 Bismarck Plant Materials Center  
 (photo by Ann Knudson).*

