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Waterfowl Research in Cultivated Wild Rice Paddies

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University of North Dakota**

Each spring, large numbers and many species of waterfowl arrive in Minnesota on their annual spring migration. Some continue northward to their arctic breeding grounds, but many choose the "Land of 10,000 Lakes" as the place where they will nest. Fantastic courtship displays and frenzied feeding activity bring Minnesota's marshes, lakes and rivers to life as waterfowl pour into the region.

Migratory waterfowl (ducks, geese and swans) have lifestyles revolving around their annual movement between breeding and wintering grounds. Habitat loss and alternation have contributed to decreasing numbers of many species with 40 to 60% of the original wetlands in the lower 48 states lost in the last 150 years. Thus, new or enhanced wetland habitats have become increasingly important to waterfowl.

A primary concern in managing waterfowl is to increase the amount of habitat available for reproduction, migration, and wintering. To maintain waterfowl numbers, annual reproduction must be adequate to compensate for annual mortality. The quality of a habitat for waterfowl production is measured by estimating nesting density, number of nests hatching, and survival of ducklings.

Research is currently underway at the Northwest Experiment Station to

assess the value of cultivated wild rice paddies and associated nesting cover to waterfowl. This is part of a larger study directed by Station wildlife biologist, Dan Svedarsky, who is also investigating water quality, invertebrates, and nongame birds associated with cultivated wild rice paddies.

Cultivated wild rice farming had its beginning in Minnesota during the mid 60's and had expanded to about 17,000 acres by 1992. Cultivated wild rice is grown in diked paddies which are flooded in early spring and drained in late summer prior to harvest. Water levels are maintained at about 10 inches throughout the growing season. Some paddies are fall-flooded after harvest to reduce the amount of water that must be pumped from rivers the following spring.

The study area is in northeast Polk County along the Clearwater River on a block of paddies owned and operated by the Gunvalson brothers (John, Jim, and Ken), Paul Imle, and Duane Erickson.

Migratory use of paddies is determined by conducting a weekly census route of 17 paddies of various sizes and shapes, representing about 780 acres. Species composition and density (number of birds per flooded paddy area) are recorded for each paddy along the 5 mile route.

Potential nesting cover is searched in mid May after some hens have begun incubation. Large, open blocks of nesting cover are searched by dragging a length of chain between
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Jay Huseby, candling a mallard egg to determine the stage of incubation.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

Smith's Comments



Another crop season has commenced. The wheat scab epidemic that plagued the area in 1993, continued to cause problems this spring as there was a limited supply of good quality, disease-free wheat seed to plant.

On a brighter note, feeding trials using scabby barley with high vomitoxin levels have so far shown no major impact on health or rate of gain of either beef or sheep. The effect on bred ewes will be known later this month. Harvey Windels,

Station Animal Scientist will have more information in the next newsletter.

The Minnesota Legislature passed legislation that will fund research relative to the scab problem. The Minnesota Wheat Growers Association and regional Legislators spearheaded this grassroots effort and should be complimented for their leadership roles.

The Agricultural Experiment Station at the University of Minnesota is currently recruiting for a small grain specialist. This position will be located at the Station. The successful candidate will develop a comprehensive research and outreach program which is responsive to the small grain production and management needs of the region. Hopefully, a candidate will be selected by July 1.

Rusty Remick has joined the staff of

the Station as a maintenance and operations mechanic. Rusty's enthusiasm for the position was tested many times this past winter with the frozen water pipes, watercups, and breakdowns on silo unloaders. I'm sure he was wondering at times why he took the job when his background was in electricity. The personnel in the farm and maintenance departments are trying to have his probationary period lengthened because of his wife, Kristie. They fear once Rusty is beyond probation, all the freshly baked caramel and cinnamon rolls, pies, cakes, strawberry short cake, etc., she sends with Rusty to work each week will cease. She passed probation two months ago!

Farming is one of the most dangerous occupations in the United States. As we proceed with this season's crop production, please take a little extra time to ensure an accident free summer.

Ruthenberg Named Employee Of The Year

Roger Ruthenberg, Research Plot Coordinator, was the recipient of the **8th Annual Employee of the Year Award** at the Northwest Experiment Station.

Roger began working at the University of Minnesota in April 1965 in the Horticulture Department which served both the Northwest School of Agriculture and Experiment Station.

Roger moved to the Agronomy Department of the Experiment Station in 1968 and to the Sugarbeet Research Project in 1978.

Roger works in all phases of the sugarbeet project from laying out plots, to hiring summer employees, to harvesting the beets.



Larry Smith, Roger and Darlene Ruthenberg

Roger was nominated for the award by his co-workers because of his knowledge of his job, his willingness to help other employees and his friendliness toward his co-workers.

The **Employee of the Year Award** was designed to promote and recognize excellence in job performance among Civil Service and Bargaining

Unit personnel. Funds for this special award come from a President's Club donation designated especially for this purpose.

Congratulations, Roger, on receiving the 1993 **Employee of the Year Award**.

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two all-terrain vehicles driving parallel to each other about 35 feet apart. Nesting hens are flushed as the chain passes harmlessly over their nests. Areas inaccessible to cable dragging are systematically searched by researchers on foot. Once a nest is located, it is marked for future location, and various nest data are recorded.

Mallard nests located during nest searching are revisited when they are at an estimated incubation state of 20 days. During this visit a nest trap is placed over the nest to catch the nesting hen when she returns to the nest to resume incubation. Once hens are captured, they are equipped with small radio transmitters, banded, and returned to the nest. On the day a nest is predicted to hatch, researchers return to the nest and attach transmitters to 3 or 4 of the newly hatched ducklings. Individual hens and ducklings are then monitored via radio telemetry and daily survival, movements, and habitat use are determined.

Preliminary results indicate that wild rice paddies are being used extensively by waterfowl during spring and fall migration. Densities of over 20 birds per flooded paddy acre have been observed during periods of peak migration. Paddies and associated nesting cover are also utilized for nesting. Over 160 waterfowl nests were located and monitored during the 1993 field season.

Wild rice paddies as potential habitat for waterfowl is a concept that has far-reaching implications. As natural habitats are lost or degraded as a result of human manipulation, it will become imperative to have a thorough understanding of wildlife biology in manipulated environments. Studying the use of agriculturally-created artificial wetlands by waterfowl may provide a basis for future management decisions.



Migrant tundra swans and Canada geese at a wild rice paddy in northeast Polk County.

New President's Club Member



Sandy Smith, (center) instructor at the Agassiz Valley School of Practical Nursing, Crookston, was recognized as a new member of the President's Club for contributions to the University of Minnesota. The recognition was given at the annual Torch and Shield Banquet. The funds will be used to support educational scholarships for NWES employees or their families. Pictured above from left are: Allen Larson, director of external relations; Branch Station Head Larry Smith; and UMC Chancellor Donald Sargeant.

EXPERIMENT STATION SCENES



Meet the Staff ...

During the past 19 years, all of the research scientists have been introduced to our readers. However, the support of the Civil Service and Bargaining Unit employees is very important to the operation of the Station. In this issue we feature the employees of the **Plant Pathology Lab.**

Carol Windels, scientist in charge of Plant Pathology research, is originally from Long Prairie, Minnesota. Dr. Windels received her Ph.D. degree from the University of Minnesota. Joining the staff in 1984, Dr. Windels started the Plant Pathology project in 1984. Primary research studies are in soilborne diseases of sugarbeet root maggot. Carol and her husband, Mark, live in Crookston.

Rita Kuznia, a research fellow on the Plant Pathology project, is from southern Minnesota near Janesville. Rita attended the University of Minnesota where she obtained a B.S. degree in agronomy and plant health technology and a M.S. degree in plant pathology. Rita joined the staff in May 1991.

Rita and her husband, Joe, reside on a farm near Fisher with their "family" of seven cats, four dogs and 50 chickens.

Cheryl Engelkes, research associate, is from Adrian, Minnesota, and grew up on a corn and soybean farm.

Cheryl was the first "in-resident" graduate student at the Northwest Experiment Station. She has a B.S. degree (with distinction) from the University of Minnesota with majors in plant health technology and horticulture; an M.S. degree from Michigan State University in horticulture; and a Ph.D. degree from the Univer-



Pictured left to right are Darrell Schindler, Rita Kuznia, Jon Warner and Jeremy Paulsrud. Not pictured: Carol Windels, Cheryl Engelkes, Julie Beale and Jeff Nielsen.

sity of Minnesota with a major in plant pathology.

Cheryl returned to Crookston in September of 1993 in a postdoctoral position funded through LCMR (Legislative Commission on Minnesota Resources). She is determining the mechanisms of suppression of *Aphanomyces* damping-off of sugarbeet by an oat precrop.

Julie Beale is a graduate student working on an M.S. degree in Plant Pathology. Her thesis topic is on the relationship of *Aphanomyces cochlioides* populations and disease severity on sugarbeet in the field. Julie takes classes on the St. Paul campus and will return to Crookston this summer to continue her field work.

Julie grew up in North Carolina and received her undergraduate degree from the University of Carolina, Chapel Hill.

Jeff Nielsen, junior scientist, works 1/2 time on the sugarbeet crew and 1/2 time with the plant pathology crew. Jeff has an AS degree in seed

technology and crop science from UMC and a B.S. degree in agronomic science from the University of Minnesota, St. Paul.

Jeff and his family live in Crookston.

Darrell Schindler is from Red Lake Falls. He graduated from Lafayette High School and is a student at UMC majoring in natural resources. Darrell previously worked as a farm laborer and for a general contractor.

Jon Warner is originally from the Pembina, North Dakota area. Jon will graduate Magna Cum Laude from UMC with a B.S. degree in crop science in about 2 days.

Jon and his wife, Rhonda, live in Crookston. However, Jon will be continuing his education at NDSU this summer.

Jeremy Paulsrud is from the Shelly-Halstad, Minnesota area. Jeremy graduated from Norman County West High School. In high school Jeremy was very active in FFA. Jeremy is a student at UMC.



Dairy Department Receives Awards

The Northwest Experiment Station Dairy Department received three dairy herd improvement awards at the annual DHIA meeting. The awards included: **most improved herd for 1993; most improved herd over the last three years and the high producing two-year old cow.** Also, at the annual Land O'Lakes Creamery meeting, the dairy herd was given the **Quality Milk Award** for producing milk low in somatic cells and low bacteria count.

George Marx, dairy scientist, praised the dairy crew for their outstanding efforts in achieving these high standards in the Station's herd. Since

June 1989, annual production per cow has steadily climbed to 23,050 pounds for the large sired cows and 22,162 pounds for the small sired cows. These records put the herd near the top of the local Dairy Herd Improvement Association.

The Station's top two-year old cow produced 27,504 lbs milk, 889 lbs fat and 914 lbs protein in a 305 day lactation. More importance is now being put on protein and less emphasis on milk fat in the dairy industry.

Congratulations to the dairy crew on earning these awards.



Northwest Experiment Station dairy crew displaying the production awards received from DHIA recently. Left to right: Marlyn Jacobson, Rod Wegge, Jim Broekemeier, Joe Larson, Phil Thom and Dave Szczech.

Remick Joins Staff at NW Exp. Station



Russell Remick, better known as "Rusty" joined the staff at the Northwest Experiment Station on a cold day in January as a maintenance and operations mechanic.

Rusty graduated from Red Lake Falls High School and studied electrical construction at Moorhead AVTI. He was previously employed by Bergstrom Electric of Grand Forks and Ken's Electric, Inc., Red Lake Falls.

Rusty and his wife, Kristie, have three children, Wendy, Jason and Kurt. Rusty is also an avid hockey fan!

Welcome to the staff, Rusty.

**The Northwest Experiment Station
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Crookston, MN 56716-5001**

The Northwest Experiment Station News
Patti Malme, Associate Editor

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