

REVIEW AND APPROVALS

WALNUT CREEK NATIONAL WILDLIFE REFUGE - PRAIRIE LEARNING
CENTER

Prairie City, Iowa

ANNUAL NARRATIVE REPORT

Calendar Year 1992

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U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

INTRODUCTION

Walnut Creek National Wildlife Refuge - Prairie Learning Center (WNT) is located approximately 20 miles east of Des Moines, Iowa in southwest Jasper County. WNT was established September 1990, 30 days after release of an Environmental Assessment and signing of the Finding of No Significant Impact by Regional Director Jim Gritman. Authority for establishment was the Fish and Wildlife Act of 1956.

Authorized size is 8,654 acres. The core of the project is 3,622 acres formerly owned by Redlands Corporation, a subsidiary of Iowa Power and Light Company. The primary purposes for establishment are: "(1.) to restore native tallgrass prairie, wetland, and woodland habitats for breeding and migratory waterfowl and resident wildlife, (2.) to serve as a major environmental education center providing opportunities for study, (3.) to provide outdoor recreation benefits to the public, and (4.) to provide assistance to local landowners to improve their lands for wildlife habitat."

Topography within WNT is rolling, containing lands which are highly erodible with steep slopes draining into Walnut Creek. Current land use is approximately 70% corn and soybeans, 14% pasture and small grain, 9% forest and 7% "other". Wooded areas are mostly oak savannas and riparian corridors along Walnut Creek.

The project was proposed to be purchased from "willing sellers" only and the core of the land was owned by Iowa Power. The land had been purchased originally in the late 1970s/early 1980s as the site for a future nuclear power plant. The plant was never built and the land had been intensively farmed by tenants.

A preliminary feasibility study conducted by the Service indicated a traditional waterfowl refuge was not possible. However, in the interest of promoting biodiversity by reconstruction of the tallgrass prairie ecosystem, providing a major interpretation/environmental education facility, and providing an opportunity to work on private lands and Service lands within one discreet watershed; this opportunity was looked at in a new light.

On May 29, 1990, a 6 million dollar Land and Water Conservation Fund (LAWCON) appropriation was included in a supplemental FY '90 appropriation bill. A Preliminary Project Proposal was prepared and approved on June 26, 1990.

A Region III Planning Team was formed and the necessary preliminary planning work completed. Following difficult negotiations with Iowa Power, an agreement was executed on September 26, 1990, for sale of the 3,622 acres for 4 million dollars. The original cost to Iowa Power to acquire the land was 7.8 million dollars.

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A. HIGHLIGHTS

Highlights for the year include:

- acquisition of an additional 554 acres.
- addition of staff: Biologist, Operations Specialist, Maintenance Worker and Biological Technician.
- development of the pre-Title I design for the Administrative, Maintenance and Visitor Center facilities.
- planting of the first prairie plants and gathering of local ecotype seed for use in restoration.
- confirmation of a breeding population of Indiana bats, *Myotis sodalis*, on the Refuge.

B. CLIMATIC CONDITIONS



Too far south for good skiing -- too far north for good grits.

1992 proved to be an exceptionally favorable year weatherwise. A mild winter and low summer temperatures resulted in an unusual lack of weather extremes.

January through March was the fourth warmest quarter on record. February's average temperature was 41.6°, which left the ground very soft. Construction activity on the interim office facility was hampered by muddy conditions, but contractors were able to complete the majority of the work to enable WNT staff to move in on February 28. Summer months were very mild; statewide, we recorded the coolest growing season since 1907. Temperatures continued below normal through November.

May and June were extremely dry, but drought fears gave way to copious rainfall. July brought an average of 8.53" of rain, the second highest July total ever. On July 7, approximately 1 1/2" of heavy rain drenched WNT in less than two hours. On July 12 and 13, we received more than 3" of rain and again July 24 - 29. During September, rainfall totalled more than 4" within eight days. November precipitation included 9" of snow on November 25.

C. LAND ACQUISITION

1. Fee Title

Efforts continue, with several owners undergoing appraisals and in negotiation. Mr. Don Klevin, WAM3-Fergus Falls, MN, is the Realty Officer working on WNT. Don is doing an excellent job of learning the neighborhood and developing sound relationships with potential sellers.

Our appraisals are still seen as being low, but little land is being sold in the neighborhood. No real good market has been established for local land. Prices seem to be holding or rising slightly. The local custom traditionally divides offered price by total acres to arrive at the "price per acre". This skews the real value by not deducting the value of buildings and other improvements. Comparison of one tract to another is difficult.

In summary, at the end of the year:

<u>Tract#</u>	<u>Name</u>	<u>Acres</u>	<u>Status</u>
40	Ogburn	78.0	ag. use - 1993
51	Cline	7.0	bldg. use - 1993
55	McFadden	149.5	ag. use - 1994
26	DeBruin	320.0	ag. use - 1995
		<u>554.5</u>	bldg. use - 1995

2. Easement

Nothing to report.

3. Other

Nothing to report.

4. Farmers Home Administration Conservation Easements

Birger evaluated potential FmHA Conservation Easement tracts in Madison, Warren and Polk Counties on February 12. There were no existing or potential restorations.

In May 1992 Birger met with SA Walt Kocal in Des Moines to discuss the Shaw Conservation Easement case in Polk County. On May 8, 1992, Birger contacted Larry Shaw at his Polk County farm to discuss the terms of the easement and what was needed to restore the easement. As a result of this discussion, Shaw agreed to plant 28 acres of corn, using the pre-approved list of chemicals. He will harvest 50% of the crop in the fall and salvage any remaining corn after March. This is the same regime used by the Polk County Conservation Board on its adjoining Chichaqua Wildlife Area. Shaw also agreed to finish field preparation on the two remaining fields which will then be planted to permanent grass cover by the county conservation board.

D. PLANNING

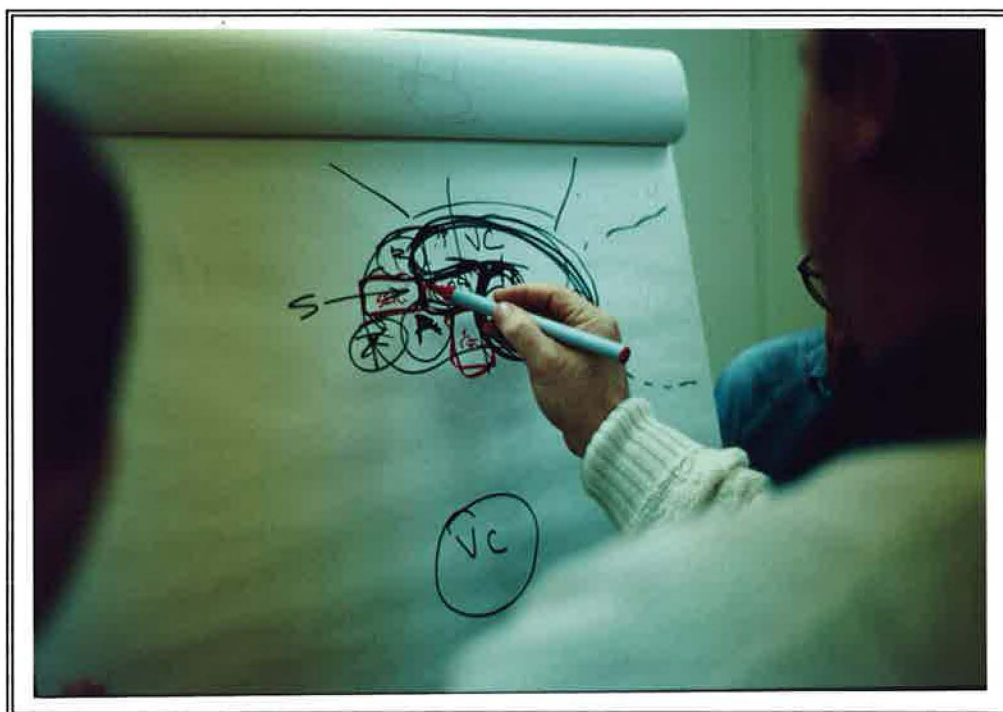
1. Master Plan

Much of the time and energy of the Refuge staff was still involved in the Master Planning and Environmental Impact Statement development effort through the first half of the year. At the time of this writing, several unresolved issues remain between the Service and the contractors; prime contractors Sellards & Grigg, Inc., with sub-contractors Eskew, Filson & Associates, Charles Beasely & Associates and Wallace Roberts & Todd.

The issues have prevented the delivery to the Service of the Master Plan and the final Environmental Impact Statement. We hope the turmoil at the Service Engineering Center will be settled and the products will be finally delivered.



At times the Refuge staff seems skeptical, or at least puzzled, by the planners ...



... it doesn't seem to relate to our version of reality...



... hopefully, out on the ground it all comes together.

The final Public Meeting scheduled for the planning process was held at the PCM Middle School on the evening of June 17, 1992. It was almost anti-climactic. Thirty-five people were in attendance. Several people testified in support of the project, no new issues were raised regarding the specifics of the planning effort. Old animosities were restated. The proceedings were video taped.

On May 2, 1992, during the day, an Open House was held at the PCM Middle School. This was another opportunity for interested citizens to view the Draft Master Plan/EIS and make informal comments. Approximately 40 people attended. Questions were related to specific affects on neighboring landowner use and general refuge system operation policies.

In February 1992 briefings on the Master Planning/EIS work were given to Deputy Regional Director Marvin Moriarty and Assistant Regional Director for Wildlife Resources John Eadie.

The long awaited Economic Impact Report was finally delivered to the Prairie City citizens on January 3, 1992. The forum was a public meeting on January 13, 1992, called by the Farm Focus group, (made almost exclusively of members of the Prairie City Farmers Cooperative),

approximately 50 people were in attendance at the Cardinal Inn. It went as expected for the most part. The numbers were not disputed but the effect was. As in other projects of this sort, the most immediate and negative impacts will be on the few families within the project's boundary. The positive impacts will be spread over a wider area and be more diffuse. This is a hard fact to get by, but by year's end, we seem to have made progress--or people are resigned to our presence.

2. Management Plan

During the February 1992 period, Birger met with the co-op farmers to work on the 1992 farming program. There were significant changes in the way the land had been managed. Formerly it had been to maximize production and return on investment; currently it is a conversion to permanent prairie cover.

The Interim Hunting Plan for Walnut Creek National Wildlife Refuge was submitted to the Regional Office on April 1, 1992. It was expected to move through the system and be published in time for the fall hunting season. Alas, it fell victim to the Vice President's Council on Competitiveness -- suffice to say resolution wasn't forthcoming until the literal eve of the deer gun season.

The Public Use Plan, AKA "the PUP", was a prominent part of the work load during the year. By year's end, it was to the point where it could be presented to the contractors for guidance in the design and development of the Visitor Center experience.

Between June 23-25, 1992, a Bison/Elk Management Workshop brought together experts from within and outside the Service for guidance in development of an operational plan to integrate large ungulates into the WNT program. Participants were from Missouri DOC, Montana Parks and Wildlife, the Service and the private sector.

Also during the year much effort was devoted to framing of a Prairie/Savanna Restoration/Reconstruction Plan. It's almost as complex as its title. Several meetings were held between the Refuge staff and Drs. Daryl Smith, Paul Christiansen and others knowledgeable in the field.

3. Public Participation

The Refuge Manual calls for this section to "...describe any refuge activities involving public participation in the planning or decision making process....".

Activity at Walnut Creek National Wildlife Refuge - Prairie Learning Center is so replete with public participation, (it is after all a verb, not a noun), that to document any single segment or event would be meaningless. We have decided to skip this portion of the Annual Narrative in favor of including some of the particulars in following sections.

4. Compliance With Environmental/Cultural Resource Mandates

During the master planning period, a final approved draft of the cultural resources work completed by Malcolm Pirnie and Associates for the Master Plan/EIS was accepted. This work developed a predictive model of cultural resource potential at WNT and the model was field tested. During the field test, nothing of National Register significance was found.

5. Research & Investigations

What is being done at Walnut Creek National Wildlife Refuge - Prairie Learning Center, the reconstruction/restoration of nearly 7,000 acres of tallgrass prairie and oak savanna, is so new a concept that research as an endeavor will be a vital part of the effort.

Without getting into the quagmire of differentiating between applied and basic research, suffice to say the "scientific method" will be used to answer the following basic questions regarding the reconstruction/restoration at WNT.

- * What was the pre-euroamerican settlement condition of the natural landscape in the Walnut Creek watershed?
- * What is the nature of the existing plant and animal community, (including related environmental factors e.g. soils, hydrology, etc.), in the Walnut Creek watershed?
- * What are the specific strategies and tactics to reconstruction/restoration of the natural landscape?
- * How do we evaluate our efforts toward the goal of reconstruction/restoration of the natural landscape?
- * How can we transfer the knowledge gained through our Environmental Education mandate?

The nature of the Walnut Creek project calls for a paradigm shift in traditional Service thinking. The management of the research function calls for new ways of thinking and acting. To that end, we anticipate using the

facilities of the National Ecology Research Center to help put these ideas into a useful form. This is scheduled to happen early in 1993.

Specifically in 1992, responding to the "What is" question, an investigation was carried out to determine if the endangered Indiana bat was indeed present on the site. See Section G.2. for details.

6. Other

Nothing to report.

E. ADMINISTRATION

1. Personnel

In 1992, Walnut Creek National Wildlife Refuge - Prairie Learning Center went from three to seven staff members.

Pauline M. Drobney entered on duty as Wildlife Biologist GS-0486-9/1, March 8, 1992. Ms. Drobney brings a Masters degree from the University of Northern Iowa and 15 years of experience in prairie reconstruction/restoration to the project. She worked as a private consultant and also for the University of Northern Iowa at Cedar Falls. As part of Compass Plant Consultants, Pauline was involved in the initial plant inventory work for the Master Plan/EIS, she is probably the person most familiar with WNT's plant community.

Kathryn A. Heckroth began a 180 day appointment as Biological Technician (Wildlife) GS-0404-5/1 on July 7, 1992. Ms. Heckroth was instrumental in bringing order to the chaos of developing a systematic method of identification of prairie remnants in 38 counties of Iowa. Trained as a research botanist, she was also able to assist the biological program in other fun ways e.g. collecting samples from hog confinement slurry pits for analysis of nutrients prior to spreading on WNT fields and collecting lower jaws of deer taken during the shotgun hunt.

Brian A. Boot entered on duty October 4, 1992, as Maintenance Worker WG-4749-8. Brian brings a unique mix of experience to the project -- he farms and raises cattle within the Walnut Creek watershed, has experience as a research assistant for Union Carbide Ag, a boiler maker in Des Moines and most recently was an employee for the City of Pella. Brian brings to the project the ability to do those things that "... need to be done but have never been done before."

Bernard J. Petersen began his tenure as Refuge Operations Specialist GS-0485-11/1 on November 1, 1992. Bernie has had 15 years of experience with the Iowa Department of Natural Resources serving as Manager in several state parks. He is a graduate in Fisheries and Wildlife Biology from Iowa State University and was restoring prairie at George Wyth State Park near Waterloo prior to joining WNT.

	<u>Permanent Full-Time</u>	<u>Part-Time</u>	<u>Temporary</u>	<u>Total FTE</u>
FY 1992	6	0	1	7.0
FY 1991	2	0	0	2.0
FY 1990	0	0	0	0.0



Left to right: Bernie Petersen, Pauline Drobney, Kate Heckroth, Brian Boot, Dave Aplin, Carla Dykstra, Dick Birger

2. Youth Programs

Nothing to report.

3. Other Manpower Programs

From July 6 through July 24, 1992, Sivananthan Elagupillay, a wildlife manager with the Malaysian Department of Wildlife and National Parks, was at WNT. This was an internship through West Virginia University where he is doing graduate work. The opportunity was arranged through DOI-FWS International Affairs and was a good experience for Siva and the Refuge staff. To some in the local community, tigers and elephants would be no more bizarre than bison and elk on restored prairie.

4. Volunteer Programs

1992 will be remembered as "the formative year" for the WNT volunteer program. With input from a variety of sources, especially the Public Use staff at Minnesota Valley NWR, ORP Dave Aplin developed Volunteer Program Goals and Strategies as part of the Public Use Plan. The document identified the following goals for the Refuge volunteer program:

- Create an organized volunteer structure which maximizes the effectiveness of volunteers in developing and implementing all Refuge programs and activities.
- Develop a highly professional, trained group of volunteers with specific training requirements and commitment for each service area.
- Create an organization which can relieve the staff of "daily life" coordination, scheduling and programming implementation tasks.
- Create an organization which is cohesive and gives volunteers a sense of community and common purpose.
- Develop a "technical aides" volunteer service role to include non-Service experts and enthusiasts to assist Refuge staff by application of skills and knowledge of technical, research, and management activities.
- Structure a "Refuge Ranger" volunteer role to accommodate a variety of strategies that will be employed in accomplishing WNT management goals.

- Develop an "Interpreters" volunteer service role to include specialty "skills education" programming as well as exhibit area and on-site tours.
- Facilitate and enable presentation and development of the Environmental Education and Interpretive Programming.

Specific strategies to accomplish these goals were identified in the Refuge Public Use Plan.

The advantages of a well organized and active Walnut Creek volunteer program have been recognized for the following reasons:

- The process of restoration and reconstruction of thousands of acres of tallgrass prairie and oak savanna requires the work of many hands. This work occurs not only at WNT, but throughout the 38 Iowa county "local ecotype" seed collection area. In that respect, a number of groups and individuals provided on-site assistance. High school students from "Basics and Beyond" School in Newton visited WNT three times in 1992 to assist with a variety of tasks including prairie remnant maintenance and the planting of prairie seed and seedlings. Other volunteers including high school senior, Jeremy Cochran, spent hours engaged in the "unglamorous" but necessary task of weeding prairie plantings at the Refuge Headquarters.

Volunteers have also assisted with a variety of off-site activities. Charisse Buissing of Des Moines organized a group of her co-workers at the Pioneer Seed Corporation and adopted a prairie remnant in Polk County. The group is working with the Polk County Conservation Board natural resources manager to develop a management plan for the area. Seeds from the remnant will be contributed to prairie reconstruction at Walnut Creek. Refuge staff coordinated seed harvesting projects undertaken by individuals and groups throughout the WNT local ecotype area.

- Volunteers can supplement the research activities of the WNT staff. In 1992, volunteers Tom Cady and Scott Bryant began researching the land use history of WNT and the natural history of south central Iowa. The information uncovered by these volunteers is crucial to the reconstruction efforts at WNT in helping establish a target for restoration and reconstruction. Other volunteers may assist with a variety of

scientific research and monitoring activities under the guidance of Refuge staff.

- The emphasis on public use activities at WNT will provide volunteers with a variety of opportunities. Volunteer "Prairie Interpreters" will eventually assist with and lead interpretive and environmental education programming. A group of Iowa public and parochial teachers will be employed during the summer of 1993 to begin writing Refuge specific environmental education activities and curriculum materials. Over the next two years, these materials will provide the core information for training WNT EE and Interpretation volunteers.
- "Hands on" volunteer experiences build environmental ethics.

5. Funding

Walnut Creek National Wildlife Refuge - Prairie Learning Center Funding

	<u>Operations & Maintenance</u>		<u>Regional</u>	
	<u>Needed Base</u>	<u>Received Base</u>	<u>Addition</u>	<u>Other</u>
FY 92	\$354,000	\$300,000	\$9,100	
FY 91	\$303,700	\$298,000	\$ 300	\$13.55m
FY 90	0	0	0	\$ 6.0m

6. Safety

The Regional Safety Officer, Jerry Mohl, inspected the new Interim Office on February 10, 1992. A short punch list was compiled and all changes were made shortly after. The Safety Committee was organized in March 1992 shortly after moving into the Interim Office. Members were Carla Dykstra and Dave Aplin. The current committee is composed of Dykstra (Chair), Aplin and Brian Boot, who was added in October 1992.

The fire and burglar security system was installed in March 1992. In May 1992 an automated severe weather radio system was added to our safety equipment. Our policy regarding tornado and other severe weather states that staff should go home using administrative leave if sufficient warning is received. If there is a need for immediate action, several neighbors with basements are located nearby.

On July 22, 1992, aircraft safety orientation was given to all staff members by Regional Pilot/Biologist Foster. The watch word is lookout for "hanging and dripping". Also in July, Dave Aplin used a fire extinguisher from a station vehicle to put out a vehicle fire at an accident scene he came upon near Boone, Iowa. Dave also assisted the injured motorist until help arrived.

In August 1992 at the suggestion of the Regional Safety Office, key chain size CPR Safety Masks were distributed to all employees.

7. Technical Assistance

On the evenings of December 2 and 3, 1992, training in wildlands fire fighting was provided to the Prairie City Benefitted Fire District by Fire Management Officer Mike Benscoter of Seney NWR. Mike offered this on his own time during a period when he was teaching the Basic S-130, S-190 and Introduction to ICS to Service personnel at WNT. Thanks again, Mike.



FMO Norm Brown, Necedah NWR, instructing basic fire fighting techniques at the Prairie City Community Building.

8. Other

Nothing to report.

F. HABITAT MANAGEMENT

1. General

The ecological goal of WNT is to restore the natural condition of the landscape as nearly as possible to the condition that existed prior to European settlement. Surveyor's notes and soil surveys indicate that WNT was a continuum of prairie, sedge meadow, wetland, savanna and woodland. Based on evidence from historical documents, it is estimated that the northern two thirds of WNT were historically prairie and the southern third was historically prairie and savanna.

In order to accomplish natural area restoration (improving existing natural community remnants) and reconstruction (building natural communities from scratch in such areas as former agricultural fields), a WNT Prairie/Savanna Ecosystem Recovery Plan is being formulated. Short and long term restoration, reconstruction and management strategies will be planned in the coming year. Monitoring changes in plant and animal populations and in characteristics of the physical environment, coupled with the application of ecological assessment techniques, will help Refuge staff understand the progress of ecological restoration.

Spring, 1992 planting was limited to two small seedings. Fortunately, three far-sighted and generous individuals; Cindy Hildebrand, Gene Kromray and Carl Kurtz; donated machine harvests of local prairie remnants for WNT's first prairie planting.

These contributions and small collections of local ecotype seed donated by several individuals provided the needed materials for our four acre planting that occurred during our first "Sow Your Wild Oats" public celebration. Machine harvested seed was sown using a Billy Goat lawn mulcher which dispersed the seed via an air current. Hand collected seed was mixed with sand and distributed by those who attended our planting celebration. From this humble beginning, in a sense, a prairie was reborn!

A second stroke of luck was that Allendan Seed Company of Winterset, Iowa, had begun a production area of big bluestem (*Andropogon gerardi*) a few years ago, whose nativity as local ecotype could be verified. The 1500 pounds of seed obtained from Allendan was planted in a 73 acre production plot.

Luck was not with us on our first planting. After our dry early spring, it rained heavily during late spring and most of July, causing record breaking floods in southern Iowa. Our planter did not arrive until after the rains began and our big bluestem was planted in early August. We are anxiously awaiting this spring to see what our planting success will be.

1992 field work concentrated on the collection of local ecotype seed (seed originating from prairie remnants within a specified distance from WNT). Local ecotype seed is important to prairie reconstruction because it preserves characteristics of prairie communities that are unique to this area of the prairie ecosystem.

As directed by the WNT Master Plan, the local ecotype range spans 38 counties in central and southern Iowa including: Jasper, Marion, Marshall, Polk, Poweshiek, Tama, Warren, Benton, Iowa, Johnson, Keokuk, Linn, Mahaska, Washington, Clarke, Decatur, Lucas, Madison, Ringgold, Union, Wayne, Appanoose, Davis, Henry, Jefferson, Monroe, Van Buren, Wapello, Boone, Carroll, Dallas, Greene, Guthrie, Story, Adair, Adams, Audubon, and Taylor.

Local ecotype seed is not readily available from seed companies. Fortunately, such seed exists on scattered remnants of native prairie across the state. An initial step in securing local ecotype seed was to find prairie remnants and make arrangements with landowners for harvest.

In July 1992 the search for local ecotype seed began with the hiring of five "seed seekers" through the Iowa State University Coop Research Unit. The five included Scott Bryant, Tom Cady, Carole Kern, Eugene Kromray and Dan Varland. We also worked with the Integrated Roadside Vegetation Management (IRVM) office at the University of Northern Iowa in Cedar Falls, Iowa.

Each "seed seeker" conducted an evaluation of each site and recorded landowner information, location, topography, size, management and harvest suggestions, noteworthy species and exotic species of concern. In addition, a species list designed to be a quick but useful method of indicating the relative value of the site was compiled.

Seed seeking efforts took place between mid-July and mid-September. Due to time constraints, uncooperative weather or inaccessible landowners, 32 out of the 38 counties were surveyed. Results were used to assign priority ratings for hand harvesting sites and machine harvesting sites.

Approximately 5,933 acres or 481 prairies, including bike trails and railroad right-of-ways, were surveyed. Four hundred seventy were determined to be within our ecotype.

The seed seeking efforts identified several previously undocumented prairie and savanna remnants and generated interest in preservation and management of many of them. In some cases, landowners were unaware of value and rarity of their "old pastures". Many have since requested further information on prairie restoration.

Seed seeking activities generated some beneficial public visibility with articles in local newspapers as well as increased volunteer activities. Private individuals, school groups and local organizations donated valuable time collecting seed at sites surveyed in this study.

Volunteers made 638 collections of local ecotype prairie seed on approved and verified prairie remnants. Approximately 130 different native species were collected. Although these collections were usually quite small, they were vitally important for WNT's success for several reasons. These seeds were carefully collected and labeled according to species, collector, site, and date. This enabled us to develop production areas of seeds which were in short supply and to keep collections from various portions of our collection sites separate. It also allowed us to design planting mixes relative to specific conditions which exist on various areas in WNT.

Volunteers were also able to collect species that could not be obtained commercially because they take so much time and patience to harvest. We anticipate that volunteer collections will always be an important source of difficult-to-obtain seeds.

While volunteers were collecting seeds, they also experienced first-hand the process of prairie restoration and reconstruction. They began to understand the joys and frustrations of rebuilding highly damaged systems and building natural communities in areas where all traces of the natural system has been obliterated, such as in a cornfield. In short, involving the public in seed collection is one of the most important things we do at WNT because the preservation of the larger resource is dependant on a grassroots understanding and valuation of their natural resources and a direct involvement with it.

Most of the seed obtained for WNT however, involved purchase of seed from commercial prairie seed companies, enterprising individuals and from custom harvesters of prairie remnants pre-approved for harvest by WNT. Use of a Kentucky bluegrass stripper modified by Gene Kromray to

harvest several heights of prairie seed with minimal impact to prairie remnants proved to be a successful method of harvesting. Mr. Kromray was able to harvest seeds from plants 18 inches to five feet tall in a single pass. Although a large amount of extraneous material was also collected using this method, it is anticipated that this chaff will carry egg cases of rare invertebrates as well. Another advantage to this method was that a large amount of standing duff remained for burning in the spring or for nesting habitat.

Approximately 8,000 pounds of harvested material were obtained using the modified stripper. The amounts and species of seed obtained while harvesting depended on the condition of the prairie and on previous management techniques. Burning increased the seed amount on these prairies probably by about 60%. Some species, such as prairie dropseed (*Sporobolus heterolepis*), require burning prior to producing seed.

Dan Allen, Allendan Seed, custom harvested using two types of combines. One was a traditional combine and a second was modified with a brush head. This seed was processed, removing much of the chaff. These methods also proved to be successful, but inclement weather conditions prevented maximizing harvesting opportunities for this year.



During late summer, Gene Kromray was contracted to use his converted bluegrass stripper to harvest material from several native prairies located within the collection area. Fees paid are usually equivalent to the hay value.



Gene is adjusting his unusual machine in preparation for harvest on the Moeckley Prairie in Polk County.



The material harvested is put through a mill to reduce the size of the stems and blown out onto the seedbed.

Aldo Leopold noted "To preserve every cog and wheel is the first precaution of intelligent tinkering. Because we consider all of the prairie remnants we harvest as

important pieces of our tallgrass prairie heritage, we are careful to leave seeds for posterity on the site. In all methods of harvesting we have used to date, we have tried to be careful to preserve the resource we are tapping for seed.

2. Wetland

Existing wetland is highly degraded and occurs along Walnut Creek which bisects WNT from northwest to southeast. Much of this wetland is dominated by reed canary grass (*Phalaris arundinacea*). In some areas, reed canary grass is limited and a much higher diversity of plant species exists. Sedge meadows occur especially in the southern two tiers of sections on the Refuge and in isolated upland pockets associated with seeps.

3. Forest

Densely wooded areas found at WNT are either prairie or savannas into which fire sensitive trees have grown or are woodlots created as a result of farmsteads or from seeds via birds, small mammals, water or wind. Interpretation of surveyor's notes and soil surveys indicates that true forest did not occur on WNT at the same time of European settlement. The herbaceous understory of these areas also does not indicate forest character; therefore, savanna communities are discussed under "Other Habitats".



Girdling of black locust in some areas is being done by WNT volunteers as an alternative to cutting and then having to come back and deal with sprouting.

4. Croplands

During 1992, the first major conversion of agricultural ground took place. Five hundred acres of currently farmed ground are being turned back into native local ecotype vegetation. This represents a significant step as the Refuge begins the journey towards its goal of restoring/reconstructing the prairie system at WNT.

Crop ground remaining on WNT totals 1,847.60 acres. Crop ground for purposes of this report will include only those acres used for corn or bean production. This ground is in predominately two types of row crop, soybeans and corn. In addition to the row crop acres, there are a large number of acres that are in a grass cover, either hay or in the Conservation Reserve Program (CRP). It is intended that this ground will be converted to native vegetation as soon as is practical. This will depend on the amount of seed available to plant these acres to the native local ecotype vegetation.

Production on the row crop acres resulted in 36,758.28 bushels of soybeans produced on 855.8 acres and 139,449.30 bushels of corn produced on 1,085.0 acres in 1992. Under the crop share system used by WNT, with the crop being split 2/3 cooperators and 1/3 Refuge, WNT's share of the crop was valued at \$143,000.00.

The final touches to the crop management plan are being finished and should be completed before the end of March, 1993.

It is important to remember that the goal of WNT is to eliminate the farming activity within its boundaries. While trying to phase out farming, we are also trying to minimize the impact on the local economy. This has proven to be a challenge since we are trying to phase out this activity within the next seven to ten years.

5. Grasslands

Prairie remnants exist primarily in the northern half of WNT. Most exist under a canopy of volunteer trees which will be cut and removed to favor the prairie. These areas will be central areas from which prairie biodiversity can expand.

Two of the first prairie reconstruction efforts took place this year. Four acres surrounding the Interim Refuge Office were planted with a variety of species during the first annual "Sow Your Wild Oats Day" in May. Also, more than 73 acres near the planned site for the Visitor Center were planted with big blue stem (*Andropogon gerardii*).



Co-op farmer, Don Osborn, provided weed control and seedbed preparation work.



John Trunnel and sons planted 73 acres of big bluestem. They are shown using WNT's Truax Broadcast Planter.

6. Other Habitats

Bur oak savanna remnants exist in the southern half of WNT. Native herbaceous vegetation typical of savanna exists in the understory and will serve as a fuel base for future prescribed burns. Savanna is considered by many to be the rarest natural community in the midwest and its preservation has been complicated by the fact that fire suppression has resulted in a dense growth of woody species inappropriate to savanna. As such, they are often confused with forest.

Savannas in this area consist of fire resistant tree species, usually bur oak (*Quercus macrocarpa*) and a mix of grass, sedge and flower species in the understory. The herbaceous understory has species that are found in prairies and species found in more densely canopied woodlands, in addition to species that have an affinity for dappled sunlight that filters to the savanna floor. Animal species such as eastern bluebird, turkey, and loggerhead shrike could be expected to live in a healthy savanna.

7. Grazing

During 1992, co-op farmers used two tracts of ground totalling 112 acres for grazing. This practice was done to ease the transformation from agriculture and eliminate some undesirable vegetation from the restoration project.

8. Haying

Haying which took place on the Refuge during the past year was done as a vegetation management tool rather than as a livestock forage producing mechanism. There were approximately 243 acres of ground hayed. This activity reduced weeds and unwanted vegetation growth.

9. Fire Management

No prescribed burning was conducted in 1992 because a qualified burn crew was not available. Three vandal fires occurred in the spring, however. These burns occurred in conservation reserve areas and wetlands and all three were discovered after they were out. Little damage resulted from the burns.



Approximately 71 acres burned in a CRP field, caused by arson on March 26, 1992.



Another arson fire of approximately two acres in riparian habitat predominated by reed canary grass, discovered out on March 29, 1992.

10. Pest Control

Most, if not all, of the Pest Control activities which took place at WNT during 1992 were agricultural related. Various farm oriented chemicals were used by the co-op farmers to control weeds and grasses on the croplands. There were also approximately 110 acres of ground treated for undesirable vegetation by contractors for the restoration project. On this ground, ROUND-UP was used to burn down the existing growth in preparation for the planting of native species.

Cropland chemical usage was restricted to those listed on the approved list. Due to the steep topography of the Refuge, no-till farming is used extensively. This makes chemical control of pests critical. No-till is a fine technique for reducing soil erosion problems but is antitheses to refuge system goals of reducing application of chemical agents. Another approach would be, if the land is so steep that no-till agronomic techniques are needed, should it be farmed?

Because of the heavy no-till use and the lack of any significant wet areas, we requested and received approval to use LORSBAN 15G on the corn-on-corn rotation to prevent damage by corn rootworm. This type rotation is used because of the steepness of the terrain. It is the intent of WNT to withdraw this type of ground from production as soon as practical to alleviate these situations and to reduce the soil erosion potential.

We also received approval to use ACCENT herbicide on the no-till ground within WNT. It appears to be the best herbicide to control grasses in corn in a no-till situation. The alternate is to use atrazine which is a problem when preceding grass planting.

11. Water Rights

Nothing to report.

12. Wilderness And Special Areas

Nothing to report.

13. WPA Easement Monitoring

Nothing to report.

14. Farmers Home Administration Conservation Easements

The Service obtained an easement on an 80 acre tract in Polk County. The property lies next to a county

conservation wildlife area and was being watched over by Conservation Board personnel in that area. The landowner had ignored the easement restrictions during the '90 and '91 seasons and had replanted through the easement. After being advised of the problems with this activity, the landowner agreed to follow the easement guidelines. The end result of this discussion was that the landowner was going to plant 28 acres of corn and harvest only 50% in the field. On a portion of this easement, approximately 28 acres of switchgrass were planted by the Polk County Conservation Board. We provided the seed and they did the seeding. Further development of this easement will take place in the near future and close monitoring will be done to protect the resource. This is also referred to in Section C4 at the beginning of this report.

15. Private Lands

Nothing to report.

16. Other Easements

Nothing to report.

G. WILDLIFE

1. Wildlife Diversity

A major emphasis of WNT is restoration and preservation of the biodiversity of the prairie/savanna landscape. The holistic approach to land management addresses restoration of natural communities consisting of plant and animal populations and their physical environment rather than managing for the needs of an individual animal species or group of species. As a consequence, however, habitat will be created for a large number of wildlife species that lived on the landscape 175 years ago on what is now WNT. This wildlife diversity spans the spectrum from bison to butterflies.

2. Endangered And/Or Threatened Species

The federally endangered Indiana bat, Myotis sodalis, was discovered on WNT in the spring of 1992. Two bats were mist netted by Dr. John Bowles, a professor at Central College in Pella, Iowa, several of his students and John Stravers, a raptor researcher. The presence of the bats indicates that one or more nursery colonies exist on WNT and is of special significance because this is the northwestern most record for this species.

Additional studies are being planned to gather information about population size and distribution of the bats. Changes in the Indiana bat population and distribution will be monitored as prairie and savanna restoration progresses. It has been suggested that savanna could have been a historic Indiana bat habitat.

3. Waterfowl

Open water on the Refuge is limited primarily to small artificial farm ponds and stock tanks. Waterfowl populations are limited by the lack of existing or potential habitat. A few of the common species have been observed such as mallards, teal, and wood ducks. They are abundant on the ponds in spring. Of note is the appearance of a few ringnecks and canvasbacks in stock ponds that would seem too small to offer enough water surface to get airborne again. Future survey work is expected to reveal the presence of additional species.

4. Marsh And Water Birds

Nothing to report.

5. Shorebirds, Gulls, Terns, And Allied Species

Nothing to report.

6. Raptors

Red tailed hawks, marsh hawks, kestrels and barred owls have been observed on WNT. A formal raptor survey is planned for the future.

7. Other Migratory Birds

WNT is in its infancy and as such, there is much work to do. A concentrated effort to begin bird surveys will begin in 1993. A preliminary bird study compiled as part of the EIS process by Dr. Jim Dinsmore of Iowa State University indicates that at present, about 174 bird species are likely to occur on WNT. As ecosystem recovery proceeds, the potential list could easily exceed 200 species. Of these, approximately 77 species probably will use WNT for nesting and 87 migrate through the area without nesting. An additional 23 species permanently reside in the area and are winter residents as well as nesters.

Of the many species listed as neotropical migrants, 48 of these species have been seen on WNT, 18 are believed to nest here and an additional 30 are migrants through the Refuge.

Prairie and savanna development will undoubtedly cause shifts in specie diversity. In the northern portion of WNT, for example, prairie historically dominated the landscape. As such, woodlots and fence rows will be removed in this area and converted to prairie, improving habitat for neotropical migrants such as Dickcissel, Bobolink and Upland Sandpipers. Additional species such as Prairie Chickens, Short-eared Owls and Harrier Hawks could also begin to utilize WNT for nesting.

Although not observed in initial surveys, an Upland Sandpiper was heard on the Refuge by WNT staff in late spring, 1992. Although not endangered, there is concern about the status of this bird in the midwest, so hearing their distinctive song was a special treat.

Prairie development could cause some species to decline in the northern half of the Refuge. Among these species are Yellow-billed Cuckoo, Eastern Wood-Pewee, Great Crested Flycatcher, Red-eyed Vireo and Wood Thrush. Populations of these migrants are usually associated with forested interior and could shift to the southern portion of the Refuge where savanna restoration and reconstruction is concentrated. These species are all uncommon on the Refuge and probably, at present, WNT only supports a few breeding pair.



Winter in an agricultural mono-culture is tough

Other neotropical migrants well adapted to the relatively open canopy of savanna found at WNT include Black-billed Cuckoo, Ruby-throated Hummingbird, Gray Catbird, Warbling

Vireo, Yellow-throated Vireo, Yellow Warbler, Common Yellowthroat, Rose-breasted Grosbeak, Indigo Bunting, Orchard Oriole and Northern Oriole. These species could increase with savanna development in the southern portion of the Refuge.

Three migrants expected to be nesting at WNT but were not observed in initial surveys after the migration season included Whip-poor-will, Blue-gray Gnatcatcher and American Redstart.

8. Game Mammals

At WNT, game mammals include whitetail deer, cottontail rabbits and grey and fox squirrel. WNT attempts to recreate historic natural communities that, as nearly as possible, are representative of the condition that existed in the middle 1800s. The nearly as possible portion of the last statement is an acknowledgement that not all species can be restored to the landscape. Some species, such as passenger pigeons, are extinct; and other species, such as wolves, cannot be restored to the landscape - mixing wolves with people and livestock would be inappropriate.



Eighteen deer were harvested during WNT's first deer hunting season. The deer were measured for chest circumference and estimated brisket fat. They were examined for visible abnormalities and parasites. In addition, the lower jaws were extracted to determine age and in the future, will be used for a "how to age deer" educational display.

Because species of large predators, such as wolves, will not be restored to the landscape, populations of some animals, especially deer, will be managed using hunting. Monitoring of game species will be important. At present, the staff is using figures and survey techniques used by the Iowa DNR as the base for our population management.

9. Marine Mammals

Nothing to report.

10. Other Resident Wildlife

A thorough survey of the fauna of WNT is planned for the future. Initial survey work will begin in the coming year and will serve as baseline data valuable in understanding changes in animal populations as ecological restoration and reconstruction strategies are applied to the landscape.

11. Fisheries Resources

Nothing to report.

12. Wildlife Propagation and Stocking

Nothing to report.

13. Surplus Animal Disposal

Nothing to report.

14. Scientific Collections

Nothing to report.

15. Animal Control

Nothing to report.

16. Marking and Banding

Nothing to report.

17. Disease Prevention and Control

Nothing to report.

H. PUBLIC USE

1. General

1992 saw major strides toward the development of a WNT Public Use Plan (PUP). Chief among the factors defining Refuge public use activities was the addition of Outdoor Recreation Planner Dave Aplin to the Refuge staff late in 1991 and a planning juggernaut or, fit of planning (FOP), that resulted in the creation of the Refuge EIS and Master Planning documents. The PUP has been further refined through the pre-Title I phase of development.

Through WNT, the Service has the opportunity to integrate the Refuge goals of ecological restoration, research and public use. Public use programs and facilities at WNT will allow visitors outstanding opportunities to become stewards of our wildlife resources through participation in the restoration and reconstruction of tallgrass prairie.

Developing public relations for WNT presents special challenges, as the Refuge represents a process, not necessarily a finished project. In essence, we are charged with illuminating "the vision thing" for Walnut Creek. This process of defining the Walnut Creek vision presents a number of challenges.

The creation of WNT was not the result of a specific grassroots movement to save or protect an existing tangible resource. While many wildlife and environmental enthusiast throughout the state applauded the creation of the Refuge, a sizable portion of the local population saw WNT as a Pork Barrel project that would waste public funds, remove land from agricultural production and negatively impact the local economic base. This perception was to some degree enhanced by local memory of the development of the Corp of Engineers' Lake Red Rock project as constructed in the 1960's. On that occasion, the U.S. Government used the power of eminent domain to condemn private lands.

Many of the farm families displaced by the creation of the Red Rock reservoir looked north to the Prairie City area for farm ground, effectively creating increased competition and higher prices. This process was further complicated by the Redlands Corporation's (Iowa Power, Inc.) attempt to purchase land to site a nuclear power facility. Local opposition to the nuclear power plant contributed to the abandoning of the project by Iowa Power. This land formed the core properties for the creation of WNT.

WNT is not the Grand Canyon or the Ding Darling National Wildlife Refuge. A visiting ORP from another refuge summed it up quite well after a tour of WNT stating, "You've got to have a pretty good imagination to work at Walnut Creek". Today, WNT is 4,500 acres of fairly ordinary looking agricultural land and wood lots. It is our job to provide the public with the fuel and spark to become excited about the coming transformation from farm fields to a slice of native tallgrass prairie and savanna ecosystem. While the process of restoration is extremely important and exciting to Refuge staff and several conservation and environmental enthusiasts, many in the general public see this goal as etherial at best.

The "vision" of WNT was amorphous from the beginning and continues to evolve. This phenomena has occurred within the Service, as well as in Iowa. Early planning attempts focused on the development of a series of impoundments to encourage waterfowl production. The concept of large scale prairie reconstruction with a substantial environmental education component evolved through the master planning process. This vision continues to be defined as new staff join the Refuge and the specifics of restoration, reconstruction, research, and environmental education are defined. In many ways, defining the Walnut Creek vision to the public is an exercise equivalent to hitting a moving target.

Environmental education and public use maintain a high priority at WNT. To that end, WNT requires a more aggressive approach to marketing in order to attain the goal of 200,000 annual visitors.

In addition to the general public relations effort undertaken, the staff at WNT has worked throughout 1992 to become know to the various communities we serve. Efforts have been made to "become a part" of the following communities:

Prairie City/Monroe Community

Several activities have been initiated by Refuge staff to build positive rapport with area citizens. In addition to the day-to-day interactions with members of the community and those public meetings described in the master planning section of this narrative, numerous formal community contacts were made.

Project Leader Birger continues his involvement with the Prairie City Economic Development Committee. This group meets twice a month to discuss a variety of issues affecting the local economy.

In April, Aplin attended an evening meeting of the Prairie City Economic Development Committee facilitated by Iowa State Extension Service Agent, Norm Riggs, to discuss how Prairie City should position itself to prepare for the development of WNT. A number of positive and forward thinking ideas and strategies resulted from this session.

In September, Refuge staff initiated a monthly column in the "Prairie City News", a weekly, local newspaper. This column provides the community with details of Refuge programs as well as the ongoing "invisible" developments.

During July, WNT staff made their second annual appearance in the Old Settlers Day Parades in Prairie City and Monroe. This year's entry featured the entire Refuge staff and families escorting a 1930 vintage bluegrass seed stripper which has been modified to harvest prairie seed. Many favorable, and a few less flattering, comments were heard from the assembled masses.

Refuge staff presented a number of informational and interpretive programs on the WNT project to many civic, youth and school groups. In October, Biologist Drobney spoke to the Prairie City Lion's Club. The group subsequently initiated a project to collect Canada Wild Rye seeds from Jasper County road sides for planting at WNT. By December, the group had contributed over a dozen paper shopping bags of the hard to find seed.

Staff members spoke to a wide variety of civic groups. ORP Aplin presented programs on WNT to diverse audiences including the Prairie City Cub Scouts, the Pella Garden Club and Boy Scout leaders from the area council.

Iowa Conservation/Natural Resources Communities

Refuge staff have enjoyed many opportunities to "spread the word" (proselytize) about Walnut Creek through interactions with Iowa natural resource professionals. While these day to day contacts might stretch the definition of public affairs, WNT has made a concerted effort to communicate with their colleagues in other agencies to increase knowledge of and support for WNT. WNT staff recognizes the value of becoming a part of the resource management community early on.

Much of this interaction was the result of the master planning process. Input from the Iowa Department of Natural Resources Planning Department, Ecological Services and other agencies contributed to planning decisions at WNT.

Project Leader Birger presented WNT updates at the quarterly meetings of the Des Moines Area Greenbelt Committee. The development of this recreational corridor is being coordinated by the Corp of Engineers. When complete, the Greenbelt will provide hiking, biking and boating opportunities across private and public lands from Boone, Iowa in the north to the Red Rock Dam area in the south. The trail will bisect the metro-Des Moines area. Walnut Creek has been designated as a spur of the Greenbelt trail network. The Corp of Engineers also participated in the technical review of the master plan.



Col. Albert Kraus and Jim Mills of the USCOE Rock Island District were given a briefing on the WNT Project by Biologist Drobney and Project Leader Birger.

The addition of Biologist Pauline Drobney and Operations Specialist Bernie Peterson significantly increased Refuge contacts with the Iowa natural resource community. Throughout 1992, Pauline actively spread the word through consultations with integrated roadside managers, county conservation board managers, and Department of Natural Resources personnel. Seed acquisition for prairie restoration at WNT provided Refuge staff with many opportunities to interact with resource professionals throughout the state. Through these valuable contacts, the "Walnut Creek" vision thing" was communicated to an important audience.

Academic Community

A great deal of prairie restoration/reconstruction interest and expertise exists within the academic community of Iowa and the surrounding states. Staying connected to this community is important for a number of reasons. The Refuge staff have made a concerted effort to cultivate contact with this community. As noted above, research is a primary goal of the Refuge. Furthermore, much of the existing knowledge about prairies and reconstruction will be incorporated into the exhibits as well as interpretive and environmental education program. Academic "experts" on prairie ecology, restoration, environmental education and other specialties have participated in a variety of forums including the development of the prairie reconstruction plan, WNT research facilities and the bison and elk workshop. Graduate students from Iowa State University have undertaken a number of projects that will generate baseline data for the development of WNT.

Refuge staff have made presentations on the WNT project to university classes and student organizations at Iowa State University, the University of Iowa, and Central College. Faculty from the University of Northern Iowa, Cornell College and Iowa State University instructed teachers at the Prairie Learning Experience, co-sponsored last summer by the University of Northern Iowa and WNT. These individuals returned in September to help "load up" the architects and exhibit designers who have been retained for the next phase of development.

The upshot of these contacts with the academic community is the development of a group of prairie "experts" who are knowledgeable advocates of the WNT program within their universities and colleges. These individuals will be instrumental in the development of a variety of activities including exhibit and research development.

Iowa's Environmental Education (EE) Community

In many cases, contact with the Iowa EE community has been a by-product of the Master Planning process. Input has been solicited from environmental educators representing a variety of perspectives including classroom teachers, the Iowa Department of Education and Natural Resources, the Iowa Environmental Education Council and the Iowa Association of Naturalists. This input has helped shape the direction of the WNT EE programming especially with regard to the kinds of programs and facilities that will be appropriate at WNT.

A general introduction of WNT to Iowa's environmental education community has been achieved through conference presentations to the Iowa Academy of Science - Science Teachers Section, the Iowa County Conservation Board Naturalists and the Iowa Conservation Education Council.

An article describing environmental education opportunities at WNT printed in the Iowa Conservation Education Council newsletter reached educators around the state. ORP Aplin continues to participate in the Iowa REACH committee; a group of educators from throughout Iowa who are developing environmental education goals to be adopted by the State of Iowa through the Department of Education.

2. Outdoor Classrooms - Students

Eight classes visited the Refuge or participated in outdoor programs lead by WNT staff during 1992. Basics and Beyond High School from Newton travelled to WNT three times during the year to learn about tallgrass prairie and our project. The students assisted with a variety of stewardship activities, including tree and shrub planting, pulling sweet clover from a prairie remnant and planting prairie plant seedlings. Professor Steve Stein of Central College brought his ecology class to the Refuge in October to learn about our restoration and reconstruction efforts.

Off-site programs lead by Refuge staff included prairie seed collections on central Iowa prairies by students from Mount Ayr and West Des Moines. ORP Dave Aplin assisted Jasper County Conservation Board Naturalist, Mark Wagner, in leading EE activities for Newton elementary students at two Jasper County sites.

3. Outdoor Classrooms - Teachers

During June, a week long "Prairie Learning Experience" brought together 14 Iowa elementary and secondary teachers to learn about prairies, environmental education and WNT. The workshop was co-sponsored by the University of Northern Iowa. Many teachers who attended the workshop have returned to their classrooms and initiated projects that support prairie and WNT. These projects include establishment of "school prairies", seed collections for WNT and prairie remnant stewardship activities.



Iowa teachers taking part in the "Prairie Learning Experience"

4. Interpretive Foot Trails

Nothing to report.

5. Interpretive Tour Routes

Nothing to report.

6. Interpretive Exhibits/Demonstrations

Nothing to report, except continued involvement in the development of the Visitor Center and the other exhibits with the Planning Team and consultants. This is such a massive effort and consumes so much staff time that we don't have the time or energy to report all the myriad details in this narrative.



Much of the interpretive effort at WNT involves helping the public understand and value the reconstruction/restoration effort ...



... to have some of the prairie/savanna system left for future generations is what the project is all about.

7. Other Interpretive Programs

The first annual "Sow Your Wild Oats" day was held May 23, 1992. This marked the first large, non-planning event involving the public since the beginning of WNT. A 360 degree photograph was taken with over 100 participants.



... Iowa's 4th Congressional District Representative, Neal Smith, and grandchildren took part ...



Over four acres adjacent to the Interim Office were seeded by hand ...



... then everyone "danced the seed in", to the strains of the Carlyle Cut-off Band.

8. Hunting

Approximately 80% of lands within WNT are currently dedicated to agricultural production. Eventually, these lands will be converted from row crops and pasture to tallgrass prairie and oak/hickory savanna. A revised hunting plan will replace the Interim Plan developed, pending completion of the Refuge Master Plan. Over time, additional revisions to this Interim Plan will be required to respond to changes in habitat and species distribution.

The deer gun season was a success with approximately 28 deer harvested over two, week long seasons. The 1992 deer hunting success surpassed early estimates that 12 to 20 deer would be taken on WNT during the 1992-93 bow, muzzleloader and gun seasons. The original estimates were based on available approximation of deer densities, hunter densities and past hunter success rates.

Pheasant hunters reported average to good success during the abbreviated season that ran from December 5th through January 10th.

The late start reduced the number and success of quail and partridge hunters. Some late season rabbit hunting was observed, but no success/effort data was collected.

Due to the lack of suitable habitat and the nature of WNT, no waterfowl hunting has been proposed.

Refuge staff worked closely with the Iowa Department of Natural Resources in the planning and implementation of the Interim Hunting Plan. Project Leader Birger worked to coordinate enforcement with Iowa DNR, Iowa State Patrol and the Jasper County Sheriff's Department to insure adequate enforcement of the Refuge hunting program. As anticipated, Refuge staff experienced good cooperation with state and local officials.

Reaction to opening WNT to hunting was positive. The local community and region maintain a strong hunting tradition. There is strong support for a hunting program at WNT.

In spite of the rocky start created by the delay in approval of the Interim Hunting Plan in Washington, the 1992 season was considered a success. The last minute approval from Washington allowed for continuity in hunting on the property during the transition from private to public ownership. Local sportsmen and women appreciated our efforts to provide wildlife oriented recreational opportunities.



The first WNT deer hunt attracted a lot of local attention (and for all you nit pickers out there, you're right, we didn't get all the previous owner's signs).

9. Fishing

Nothing to report.

10. Trapping

Nothing to report.

11. Wildlife Observation

Nothing to report.

12. Other Wildlife Oriented Recreation

Nothing to report.

13. Camping

Nothing to report.

14. Picnicking

Nothing to report.

15. Off-Road Vehicle

Nothing to report.

16. Other Non-Wildlife Oriented Recreation

Nothing to report.

17. Law Enforcement

During 1992 only Birger had Law Enforcement authority. LE activity was limited to occasional patrol during the hunting seasons. This was an opportunity to interact with a public that has no history of use on a national wildlife refuge and hopefully, get them started on the right foot.



A successful morning afield

18. Cooperating Associations

Nothing to report.

19. Concessions

Nothing to report.

I. EQUIPMENT AND FACILITIES

1. New Construction

WNT acquired its interim office structure in February which put the staff on site. The office building consists of seven modular sections bolted together giving space for six private offices and up six or seven open office spaces, a conference room and reception area, as well as storage space. The space is shared with the two people presently making up the Service's Iowa Private Lands Office. The units will be available for use on the next developing unit of the refuge system.

In addition to the interim office, a receiving area was constructed in the front of the office building. This consisted of a bricked walkway, the parking area and three kiosk panels for display information.

During the process of constructing the interim office, new power and phone lines were placed in the area, as well as hook up to the rural water system. In many cases, this proved to be a challenge to the utility people because of the building location.

The power people have come out a couple of times to brace up the power poles as they have a tendency to lean making snow removal difficult and hazardous.



The first Refuge office was located in a rented building in Prairie City.



The Interim Office consists of 7 "modular units" -- AKA house trailers.



View to the northwest of the Interim Office site nearing completion of the installation.



The addition of an information kiosk, brick plaza, and parking -- open for business.

2. Rehabilitation

During September and October, two barns on the WNT site were renovated for vehicle storage and maintenance usage. The interiors of these facilities were stripped down and all interior amenities removed. The dirt flooring was leveled off and in one of the structures, a slab was poured. New overhead garage doors were installed and entrance/exit doors were added. The larger of the two facilities also had a shop area constructed within it, which included a poured floor, heated running water and new lighting. Both structures had new wiring installed and were reinforced to shore up any weak spots. The old paint was removed and fresh paint was applied to improve the appearance of the exterior.

In addition to the above improvements, a new pad of concrete was poured for fuel tank placement and electrical service was provided. The yard and entrance drive to the facilities were graded and rocked. All this work was completed just prior to bad weather.

Several buildings located on WNT property were renovated to allow for the storage of harvested native grass and forb seed. In many cases, repairs consisted of sealing up any holes in the walls or floor. These renovated

structures have provided the much needed storage space for the nearly 8,000 pounds of collected material for restoration. The buildings are also used to store equipment, such as the dozer and other heavy equipment.

3. Major Maintenance



WNT's cleaning person, Aletta Beerends, not only does a great job of coping with our "thrööp", (Dutch for mess), but provides incentives for maintaining clean offices.

Major problems were encountered on WNT with existing fence lines separating the Refuge property from private property. The main problems came along deep water gaps which have been an on-going chore to maintain. The custom in Iowa is for neighbors to follow the "right hand rule" in maintenance of boundary fences. You meet in the middle of the fence and your responsibility is the fence to your right -- which invariably contains all the problems.

Refuge boundary posting took place during 1992. The entire boundary of currently owned property was posted with a completion date in late October. This activity was contracted out due to staff shortage.

4. Equipment Utilization And Replacement

WNT is still in the process of obtaining equipment. We have put to use the various grass seeding equipment and were able to plant 73 acres of local ecotype big bluestem.

Heavy equipment used in brush removal and tree clearing which was accomplished with the backhoe and the dozer.

Other pieces of heavy equipment are on loan to other refuges at this time, as noted in last year's narrative, and should be returning to WNT soon. The semi and trailer were retrieved in early fall and have been used extensively to move and retrieve other pieces of heavy equipment. We picked up the crawler and backhoe, as well as one of the agriculture tractors.

Shop related equipment acquired include a generator/welder for doing repairs, etc. and explosion/fire proof cabinets for storage of flammable liquids.

We have also acquired several small tools to get the shop outfitted, ranging from wrenches to socket sets and other miscellaneous small tools.

Equipment received during the year relating to educational programming consisted of: a Multiplex display slide management system, a Polaroid Corporation instant slide maker, binoculars and spotting scopes.



The medium technology, power seed stripper - a new use of your basic weed whip.

We have procured items that will be used specifically in the restoration process. These include a custom built seed starter light rack built by a volunteer; Prairie Habitat's power seed strippers; a Truax Company Cultipacker; a Truax Native grass drill broadcast model; a Leeds Precision microscope; an Ohaus Corporation D5-M scale for weighing seed samples; a Denver Instruments Company balance scale, also for weighing seed samples; and a Lane Science Equipment herbarium for the storage of plant specimens.

Last, but not least, is the purchase of a sprayer tank and trailer system for use behind our ATV. This will be used for spot spraying in areas where we have planted native species to control unwanted weed infestations. It could also double as a sprayer for use during prescribed burns. The tank is 25 gallons and is mounted on a trailer with ramps for loading onto a truck.

5. Communications Systems

A cellular telephone was acquired from U.S. West during the period. It has proven to be very beneficial, especially during the hunting season since we had not yet purchased a radio system.

6. Computer Systems

Two Apple Macintosh computers, software and a Scanmaker Micro Tex Scanner were added to our inventory. The computers are used by the Environmental Education Coordinator and the Biologist. The scanner has been useful in incorporating various maps and pictures into materials used for educational programs.

7. Energy Conservation

WNT purchased two bulk fuel tanks for vehicle and equipment fuel which has made a considerable difference in the area of energy conservation. Since the installation of these tanks, we have been able to purchase fuel at a cheaper bulk rate and no longer have to leave the field station for fuel. We have also been able to save both time and labor in being able to fuel the heavy equipment on site. Prior to this, it was necessary to load the equipment when they needed to be fueled.

8. Other

Nothing to report.

J. OTHER ITEMS

1. Cooperative Programs

Nothing to report.

2. Other Economic Uses

Nothing to report.

3. Items Of Interest



During his term as acting Regional Director, John Rogers visited and was given a briefing and tour.

4. Credits

Administrative Technician Carla Dykstra prepared the Climactic Conditions section and did all the myriad tasks involved in actually getting the copy printed, assembled and finally out the door. It's not her fault its late -- blame the Project Leader!

Bernie Petersen, Pauline Drobney, and Kate Heckroth together wrote the sections on Habitat Management and Wildlife.

Dave Aplin wrote Section E.4 on Volunteers and the Public Use section.

Bernie Petersen wrote the section on Equipment and Facilities.

Dick Birger wrote the sections on Land Acquisition, Planning, Administration, and Other Items. He also edited the document and if there are omissions or misstatements, it's his fault. The photographs and good parts were done by the other staff members.

K. FEEDBACK

Nothing to report.



... compass plants to corn fields and back to compass plants ...