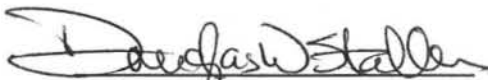


Tewaukon National Wildlife Refuge  
Cayuga, North Dakota

Annual Narrative Report  
Calendar Year 1997

U.S. Department of the Interior  
Fish and Wildlife Service  
National Wildlife Refuge System



Refuge Manager

6/28/02

---

Refuge Supervisor

Tewaukon National Wildlife Refuge Complex  
Summary of 1997 for Annual Narrative

**Comprehensive Conservation Planning**

This is the start of the CCP. Sandra, Ben, and Kristine attended the CCP training in West Virginia. The Tewaukon staff discussed a plan for public outreach and input gathering for this.

**NAWCA**

Ben worked on CRP wetland restorations and Wildlife Extension Agreements for grazing systems and wetland restorations. Seeding grass was a big project that was worked on. There were ten waterfowl nesting culverts installed on the District. A grazing system in Sargent County and plans for a predator fence began to be in the big picture. Wetland restoration surveys were conducted.

**Easements**

Jack closed two Richland County cases, dealt with a Sargent County basement flooding, and a Ransom County easement dealing with closing extra plow furrows. Since it was such a wet year there were problems with easement holders on flooded roads. temporary ditch permits were handed out.

**Law Enforcement**

Jack and Rob instructed law enforcement at Upper Souris. Rob attended the International Conference of Law Enforcement Instructors. Jack went to South Dakota to instruct a PPCT course for the SD Game, Fish & Parks Department.

**Weed Control**

Two trips were made to Valley City and about 438,000 *A. czwalinae* and *A. lacertosa* leafy spurge flea beetles were collected. Sweep netting and sampling of various sites on the District and Refuge showed 30 locations with insects that had overwintered. The sites are growing faster than expected, we plan to harvest off these sites in the next couple of years.

**Fire**

Don Lantz came on board as our Career Seasonal Range Technician. He went on two prescribed burns. One was at Arrowwood NWR and the other one was in Mississippi. Don also went on one wildfire to Jordan Montana for one week.

**Highlights**

A 4-legged mallard (female) was shot in Sargent County. The extra legs were not completely

formed.

After 21 years as Tewaukon's Administrative Assistant Barb Hoflen left for Denver as a writer/editor position in Realty.

Chris Hildebrant took the NAWCA position.

Sam Coleman took Best of Show for the Junior Duck Stamp and 3<sup>rd</sup> place in the National Junior Duck Stamp Contest.

Sandra is the new Project Leader.

The flood of 1997, major flooding went on this year with culverts washing out, dams overtopped, submitted damage estimates were \$1.5 million.

E-MAIL  
MEMORANDUM

February 20, 1998

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: December Activity Report

HIGHLIGHTS:

- \* Scott and Shelly are the proud parents of Henry Emmitt Kahan, born on December 3rd.
- \* Christmas bird count records some unusual sightings.
- \* CCP Planning and Informational Meeting held at Tewaukon.

CCP:

A meeting on CCP Planning and Informational meeting was held for all Tewaukon and Waubay staff members. Ron, Allison Banks, Carol Taylor and Barb came from the RO.

The Tewaukon staff met later to discuss our plan to public outreach and input gathering. Also drafted information to be placed in the Federal Register.

Kristine and Barb developed a one page summary sheet to be mailed out in February.

ENVIRONMENTAL EDUCATION/OUTREACH:

Jack nominated the Cogswell Gun Club for the Dakota Chapter of the Fisheries Society Award.

PUBLIC USE:

Closed the Point road due to unsafe ice conditions.



#### EASEMENTS:

Jack and Scott went out on a easement case concerning the Gwinner cemetary.

Sandra sent a letter to the Wild Rice Refuge Easement landowner to answer questions.

#### LAW ENFORCEMENT:

Jack and Sandra checked ice anglers coming off the Lake at night.

Rob & Sandra had their LE physicals.

#### WILDLIFE:

Jack took an injured bald eagle to the Fargo airport to be shipped to the Minneapolis Raptor Rehab Center. The bird died of Avian TB and other complications.

Jack, Kristine, Don, Keith and Chris conducted the Christmas Bird Count. Twenty-two species were found and a total of 954 birds were seen. Of note 1 immature sandhill crane, 423 mallards, 255 Canada geese was spotted.

#### FIRE:

Don worked on the Refuge Fire Management Plan.

#### PERSONNEL/TRAINING:

Administrative Assistant position was advertised by Green sheet and OPM.

Bill and Rob attended RCRA training.

Personnel evaluations were completed for staff.

#### REFUGE OPERATIONS:

Scott collected herbicide information from cooperators.

Reports completed: WHO's governors report and volunteer report.

A permit was given to Cass County Electric for the removal of electric lines on the Smith/Tanner WPA.

NAWCA:

Scott met with Dave Weaver to modify DDP I agreement.

Scott met with the Wild Rice Soil District about partnerships.

Chris met with Andy, NRCS, about NAWCA projects, surveyed and staked Schmidt WPA.

Held a grant meeting with all the partners at Valley City. Jack & Scott also met with John and Harris.

E-MAIL  
MEMORANDUM

February 20, 1998

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: November Activity Report

HIGHLIGHTS:

- \* Sandra, Ben & Kristine attended CCP training.
- \* Refuge rifle, pheasant, and second archery season opened.
- \* Chris Hildebrant replaced Ben in the NAWCA position.

EASEMENTS:

Jack, Dave Kraft and Mike McEnroe met with Sheldon landowners, Ransom County Water Board and Lynn Clancey from Sen. Conrad's office concerning the easement drain violation. The landowners agreed to restore the wetland according to NRCS's criteria for those soils. The Service agreed to a replacement creation wetland for a wetland where the ditch went through.

PERSONNEL/TRAINING:

Ben took an Assistant Manager position at Sabene NWR in Louisiana.

Keith and Lynda finished their season with us.

Sandra, Kristine and Ben attended CCP training in West Virginia at NCTC.

ENVIRONMENTAL EDUCATION/OUTREACH:

Kristine sent out mailings for Jr. Duck Stamp Contest.

Jack attended the Cogswell Gun Club to talk about the Jr. Duck Stamp Contest. The Cogswell Gun Club donated \$150.00 to the

fund.

#### PUBLIC USE:

The Refuge deer rifle season opened with little problems and moderate activity.

The Refuge pheasant season saw few hunters and pheasants.

The Refuge second archery season opened.

#### LAW ENFORCEMENT:

Jack and Scott had their LE physicals.

#### WILDLIFE:

Bald eagles were seen around the area in small numbers.

#### REFUGE OPERATIONS:

Work was finished on refurbishing on 2 of our predator fences

MMS update sent in.

#### ZOES:

Tewaukon staff met with Delta, NDG&F, DU, and Hapet to discuss waterfowl management treatments in our two "red" zones. In one zone it was decided to initiate trapping on a 25 mile square block and in the other zone it was agreed to build two predator fences.

#### NAWCA:

Scott met with Andy Wingenbach to discuss how NAWCA & NRCS programs could work together.

Chris staked ditch plug at Grant State WMA.

E-MAIL  
MEMORANDUM

November 3, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: October Activity Report

HIGHLIGHTS:

- \* New NAWCA technicians selected.
- \* Don detailed to Mississippi Sandhill Crane for prescribed burn.
- \* New phone system installed.
- \* Radio installation complete.
- \* Refuge hosts Fall Open House.

ENVIRONMENTAL EDUCATION/OUTREACH:

Scott attended the Red River Area Sportsmen's meeting to discuss Adopt-A-WPA and give Refuge report.

Staff attended the Ducks Unlimited banquet in Hankinson.

Refuge hosted it's annual fall Open House. Activities included: Tom Gibson gave a humorous presentation on reptiles and amphibians, horse and wagon rides, self-guided auto tour, making pine cone bird feeders, and local students presented their winning National Wildlife Refuge Week posters. Over 130 people turned out in spite of the chilly weather.

PUBLIC USE:

Opening weekend of waterfowl season saw more Minnesota and eastern state hunters than resident hunters.

Closed the road around the lake on the 15th.

#### EASEMENTS:

McEnroe and Kraft met with Lynn Clancey, Senator Conrad's office, to discuss the Sheldon drain.

#### LAW ENFORCEMENT:

Refuge officers worked every weekend in October with no violations.

#### WEED CONTROL:

Scott attended a weed board meeting to discuss the Refuge's weed management plan for the Refuge and District. He also discussed the possibility of a grant.

Scott continued to work with Linda Drees on IPM plan, no resolution or headway made.

#### WILDLIFE:

Bill and Don freed a red-winged hawk from an abandoned house.

Kristine conducted waterfowl surveys.

Peak duck numbers occurred during the last week of October. Only small numbers of snow geese showed up in October.

A 4-legged mallard (female) was shot in Sargent Co. The extra legs were not completely formed.

#### PERSONNEL:

Staff attended Barb and Ron's wedding in Berthold.

#### REFUGE OPERATIONS:

Staff faced many challenges of trying to operate without an Administrative Assistant. Recruiting process has started.

Staff conducted a County Commissioner's Refuge tour. Commissioners from 5 counties attended. The tour was well recieved and commissioners are now a little more aware of the Refuge and our activities.

Forest Service held a focus group meeting for their Comprehensive planning effort. Conservation groups and individuals discussed goals and needs for the Sheyenne Grasslands.

Sandra met with the City of Milnor to discuss options for the movement of excess flood waters from Storm Lake. Worked with council to come up with a solution which would work for the the city and not affect Service water rights.

Staff worked on finishing the two predator fences re-hap projects.

Worked on MMS and RMIS.

Sandra met with Milnor City Council concerning clean out of the feeder ditch into Storm Lake to assist in flood prevention for the city. Permit was issued for clean-out.

NAWCA:

Chris Hildebrand, Sand Lake NWR; Todd King, Valley City, and John McFarland, Texas were selected for the 2 FT and 1 PTE positions.

Field checked potential grassland easements in Sargent County.

Met with Matt, CRP technician, on the new 16th sign-up.

Worked on a grass seeding project.

Worked on CRP map of Sargent County.

Completed ITS report forms.

Survey work on potential wetland restorations on Grant Township WMA.

Installed 10 waterfowl nesting culverts on the District.

Restored 2 basins, 3 acres, on the Seth Gordan WMA.

Finished FmHA wetland restorations in LaMoure County.

E-MAIL  
MEMORANDUM

November 3, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: September Activity Report

HIGHLIGHTS:

- \* Barb honored at an Open House and a Going Away Party for her 21 years at Tewaukon.
- \* Ben Mense selected for ROS position at NWR in Louisiana.
- \* Wildlife Jeopardy a big hit at local Conservation Tours.

ENVIRONMENTAL EDUCATION/OUTREACH:

Kristine presented a program entitled "Wildlife Jeopardy", where students learn about wildlife in a game show setting for the Richland, Ransom and Sargent County Conservation Tours. Twenty programs were given to over 600 seventh graders.

Sandra attended Cogswell Gun Club meeting and presented updates on fisheries and Refuge activities.

Kristine conducted a wildflower walk for the Wahpeton Women's Club.

Jack did a t.v. spot for Lex Haines, NDGF, on tall grass prairie.

Kristine traveled to Bismarck to present Tewaukon's Environmental Education and Outreach Activities to Terry Sexton.

Kristine presented a program on prairie and wildflowers at the Hankinson Women's fundraiser. Proceeds will go to put interpretative signage at the Hartleben.

Kristine traveled to Aberdeen, SD to present a program on



wetlands at the Northern Prairie Water Festival.

Scott attended a Red River Area Sportsmen's meeting.

Jack worked a Youth Shoot in Cogswell and a M-1 shoot in Cogswell.

Jack gave a Refuge program and tour to the Environmental Science Class from West Fargo.

#### PUBLIC USE:

The Refuge was open during the Youth Deer Gun hunt and archery season. District open for Youth Waterfowl Hunt.

#### EASEMENTS:

Jack closed two Richland County cases, dealt with a Sargent County basement flooding, and a Ransom County easement dealing with closing extra plow furrows.

Jack closed two temporary ditches on easements for flooded roads.

#### FIRE:

Don and Linda traveled to Arrowwood for a prescribed burn.

Don traveled to Jordan, MT at CMR for wildfire and pre-suppression burns for a week.

#### LAW ENFORCEMENT:

Sandra, Jack, Rob, and Scott attended LE refresher in Miller SD.

Jack and Rob instructed at Upper Souris.

Rob attended the International Conference of Law Enforcement Instructors.

#### WILDLIFE:

Osprey was spotted by East White Lake.

#### PERSONNEL:

After 21 years as Tewaukon's Administrative Assistant, Barb, left for Denver. Not only did Barb do her tremendously complex and demanding job efficiently and successfully but she also provided a local and historic perspective. Staff hosted an Open House and Going Away Party to wish her well and show our appreciation for all her dedication and hard work.

Staff was given crash courses in all of Barb's duties which we know will take 4 people and twice as long to do and even then we will be lucky not to make huge mistakes.

Sandra attended Women's Leadership Training in Greensboro, NC.

#### REFUGE OPERATIONS:

Ernie visited Tewaukon to review all flood damage projects.

YCC report and Challenge Grant proposals sent in.

Karen Knight, GEI Consultants, inspected Dams 1-4.

Sandra prepared SUPs for: cleaning of ditch on Storm Lake NWR in preparation of spring flooding for city of Milnor, archeological review of RSR underground cable right of way, for borrow removal and wetland mitigation on Smith WPA (Ransom County) for emergency road project.

Prepared paperwork for Right of Way to RSR to bury underground cable in uplands on the Evanson WPA to avoid wetlands and replace an overhead electrical line.

Scott and Kristine met with Masters on his study site to discuss his findings and applications to our seeded native fields.

Radio and LE light installation is underway.

#### WEED CONTROL:

Scott worked on IPM plan with Linda Drees - still no resolution.  
NAWCA:

Set up a 640 acre grazing system with Sargent Co. landowner.

Surveyed wetland restorations on FmHA easements.

Worked with contractors on wetland restorations on the Refuge and Tewaukon and Wild Rice WMA.

Completed semi-annual NAWCA report.

Worked on predator fence.

Scott hired 2 FT and 1 PT people for NAWCA positions.

E-MAIL  
MEMORANDUM

November 3, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: August Activity Report

HIGHLIGHTS:

- \* Barb selected for writer/editor position in Realty in Denver.
- \* Bill and Rob attend the Maintenance Workshop.
- \* Kristine and Scott attend Biologist Workshop.
- \* Safety Inspection held at Tewaukon Refuge.

REFUGE & DISTRICT OPERATIONS:

A safety inspection was conducted with Kevin Jensen and Marsha Heggy.

Sandra met with Sargent County commissioners, Water board, and Park board to present land use exchange options for Silver Lake. All agreed to the proposal and an amendment will be made to the existing MOU.

Sandra met with Bakkegard from Kadrmas, Lee & Jackson Engineering firm and Karen Kreil, Bismarck, to look over a possible borrow site on a WPA and mitigation impacts to wetlands on a emergency flood repairs FEMA project in Ransom County

Don continues to try and get the Weather Station up and running.

ENVIRONMENTAL EDUCATION/OUTREACH:

Kristine taught the Waterfowl Identification course at the Outdoor Women's Workshop.

Staff worked at a booth at the Sargent County Fair.

Kristine lead a tour on the Refuge and Hartleben WPA for the ND Natural Science Society.

Kristine conducted the third wildflower walk for the summer. Seventeen participants enjoyed a warm and beautiful evening on the prairie.

#### WEED CONTROL:

Scott met with Cyanamid to discuss the herbicide Arsenal and its effects on Russian Olive. Worked on effective rates of application.

#### PUBLIC USE:

The Archery deer season opened on the Refuge.

#### BUDGET:

End of year spending.

#### LAW ENFORCEMENT

Meeting planned with Kraft, Jack, Sandra, and landowners to continue discussions for closing of a temporary ditch. Group canceled so proceedings will begin through legal channels.

Jack called easement holders to remind them that their temporary ditches for road flooding needed to be closed.

#### PERSONNEL:

Staff held a summer party to thank all the hard work that our summer crew put in.

Rob and Bill attended the Maintenance Workshop.

Kristine and Scott attended the Biologist Workshop in Alamosa CO. The YCC finished out their summer.

#### FIRE:

Don worked on ordering fire equipment.

REFUGE OPERATIONS:

Don and Keith went to Kulm WMD to help pick up dead birds.

Staff submitted 4 Challenge Grant proposals.

NAWCA:

Ben attended Range workshop in Bismarck.

Worked on a grazing system in Sargent County and plans for the predator fence.

NAWCA meeting in Valley City with all partners participating.

Developed a Plan of Action for NAWCA.

Conducted wetland restoration surveys.

E-MAIL  
MEMORANDUM

August 10, 1995

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: July Activity Report

HIGHLIGHTS:

- \* Leafy spurge bug populations are not only overwintering but expanding into new areas.
- \* Butterfly surveys conducted on Refuge and District.
- \* Finished third round of nest dragging.
- \* Staff attends wetland easement mapping meetings.

EASEMENT:

Jack, Rob, and Sandra attend the wetlan easement mapping meeting in Jamestown and Kristine and Scott in Fergus Falls.

BIOLOGICAL ACTIVITIES:

Tim Orwig conducted butterfly surveys on the Stacks Slough Complex, Gunness, Krause, McGill, Biggs/Berndt WPAs, and selected tracts on the Refuge.

Keith, Sandra, Simon, Lynda, Kyle and Jessica participated with the Heritage Program in their annual W. Prairie Fringed Orchid surveys in the McLeod area.

Finished checking all remaining waterfowl nests from third nest dragging efforts.

FIRE:

Don settled into his office and inventoried our fire program needs and equipment.

#### WEED CONTROL:

Keith, Lynda, Simon, Kyle, and Jessica traveled to Valley City twice and collected about 438,000 *A. czwalinae* and *A. lacertosa* and put them out on various Waterfowl Production Areas in three counties.

Sweep netting and sampling of various sites on the District and Refuge showed 30 locations with insects that had overwintered. Six of those sites had fair to good populations with greater than 120 insects per 80 sweeps. Sites have grown faster than expected, we are hoping to harvest off these sites in the next 2-3 years.

The sheep on the Hartleben WPA were attacked by dogs on three separate occasions resulting in a loss of around 75 sheep. The dogs have not as yet been identified.

Mowed thistles on Refuge and District.

#### ENVIRONMENTAL EDUCATION/OUTREACH:

This month the ND Jr Duck Stamp exhibit traveled to Des Lacs Refuge and the Tewaukon NWR.

Kristine led the second wildflower walk with about 18 people participating on one of the hottest and most humid days of the summer.

Kristine and Barb attended a meeting of other Jr Duck Stamp State coordinators at Minnesota Valley NWR.

#### PERSONNEL:

Barb traveled to Denver for a two week detail.

#### REFUGE OPERATIONS:

Bill continued spurge spraying on the District.

Scott worked on the MMS predator fence upgrading project.

#### NAWCA:

Keith, Lynda and the YCC began the Russian Olive herbicide



treatments.

Ben met with Roland Crandall and visited wetland restoration sites.

Ben met with landowner concerning grazing systems and another landowner on his unsuccessful grass seeding project.

Ben, Jack, Scott and Sandra met with DU about NAWCA projects.

Ben worked on CRP wetland restorations and Wildlife Extension Agreements for grazing systems and wetland restorations.

Ben met with predator fence landowner.

Ben attended a Range Tour and a Range Condition workshop put on by the NRCS.

E-MAIL  
MEMORANDUM

June 30, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: June Activity Report

HIGHLIGHTS:

- \* Tewaukon Field Days was a success with 55 participants.
- \* Record number of teams and fish caught at the 11th annual Lake Tewaukon Fishing Tournament.
- \* Native grass seeding finished on the Hartleben WPA.
- \* First of three wildflower walks held on the Hartleben prairie sponsored by the Hankinson Chapter of the General Federation of Women's Cultura Club.

LANDFILL NEWS:

Jack and Sandra met with USA Waste to discuss future planning and easement wetlands.

Jack and Sandra met with the WhiteStone Hill Township officer to discuss the landfill.

KRAFT SLOUGH:

Worked with NRCS to find options for landowners whose bean fields adjacent to Kraft Slough are contributing sedimentation to the Slough. Hope to get them into a grassed waterway program.

LAKE ELSIE:

Sandra consult with RO on the proposed Marina in Lake Elsie. There was concern that this would affect our water rights. The developer will wait to hear about the divesture before he pursues it any further.

MINIMAL EFFECTS AND EASEMENTS:

Jack met with Ransom County Water Board about water on road and the some options.

Jack met with a Sargent County landowner to discuss the additional wetland restoration work that needed to be completed.

Jack and Sandra met with a Ransom County easement holder on a ditch.

BIOLOGICAL ACTIVITIES:

The second round of nest dragging was completed.

Bird Area Search Census were done on the native prairie sites on the Sprague Lake Unit and Hartleben WPA.

Scott met with Bob Masters to discuss his research using a combination of herbicides and prescribed burning to control leafy spurge and cool season exotic grasses and restore native prairie. The results of his work seem to be very encouraging.

#### WEED CONTROL:

Temporary sheep fence was put up on 80 acres of the Hartleben WPA.

#### ENVIRONMENTAL EDUCATION/OUTREACH:

Jack attended a Fishing Tournament meeting.

The Refuge hosted the 11th annual Tewaukon Fishing Tournament. A record 94 people on 37 teams yielded a record number of fish. The day's total included 303 walleyes weighing in at 517 pounds and three northernns that weighed 11½ pounds. The largest walleye was 4 lbs 15 oz. (Brian Gaukler) and the largest northern was 4 lbs 4 oz. (Chad Wheeler). In the youth category the largest carp (9lb 3 oz), largest walleye and bullhead earned the youngsters cash prizes and trophies. The first place team was Duane and Joe Krivarchka and Bob Boughton with 30 lbs and 15 oz of fish.

The Refuge hosted the annual Tewaukon Field Days that is sponsored by the ND Extension Service. This year the Field Days had theme was Wonderful Wacky Wetlands.

The Junior Duck Stamp Exhibit traveled to the Gateway Mall in Bismarck. Thanks to Ken Torkelson for setting up the display and the publicity.

Two newsreleases were written on the Tewaukon Fishing Tournament and two on the Jr. Duck Stamp Contest.

Jack attended the Cogswell Gun Club.

Jack worked on the Hunter Safety Field Shoot with the Forman Hunter's Ed. Class.

#### PUBLIC USE:

#### FIRE:

Don Lantz came on board as our Career Seasonal Range Technician.

#### WILDLIFE:

96,000 northern fry were stocked in Sprague Lake and 80,000 in Lake Tewaukon. 10,000 tiger muskies and 40,000 walleyes were stocked in Lake Tewaukon.

Forty fish structures were put out into Lake Tewaukon.

Virginia rail spotted on the Hartleben WPA.

#### PERSONNEL:

Dave attended ATV training.

Eight staff members donated blood for local blood drive.

Sandra attended NEPA training in Maryland.

Dave Wenner, Range Technician, resigned at the end of the month.

#### REFUGE OPERATIONS:

Fixed fence on the Sprague Lake Unit.

Barb traveled to Denver to provide Administrative Support to the Regional Office for the Administration Manual.

Scott marked and assigned haying areas.

Seeding on the Hartleben WPA was finished up.

Rob conducted an asbestos inspection at Long Lake Refuge and Lake Andes in SD.

Jack met with grazing cooperators on the Gainor grazing system.

Jack worked on radio package including 2109's, purchase orders, and tower inspection.

#### NAWCA:

Jack met with the Wetland Trust to secure \$20,000 in funding to do the Tewaukon wetland projects.

Ben surveyed wetland restoration projects on the Aaser and Hartleben WPAs, Tewaukon and Sprague Lake Refuge units, Wild Rice WMA, and FmHA tracts.

Ben attended SF130-190 training in Rapid City.

Ben worked on the predator fence location, evaluated a tract of land in Ransom County for a wetland/grassland easement, worked to send surveys out to bid for contractors, and worked on 2 grazing systems in SW Sargent County.

Scott, Rob, Ben, Jack and Sandra met with DU to discuss concerning the Tewaukon projects.

#### SAFETY:

Lynda and Dave held a safety meeting on the 10 Watch Out Situations, Standards of Survival, and staff practiced deploying fire shelter.

Fire extinguishers were checked and recharged.

E-MAIL  
MEMORANDUM

July 21, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: May Activity Report

HIGHLIGHTS:

- \* Jr Duck Stamp Banquet is held in Bismarck. North Dakota Youth Places Third in National Jr Duck Stamp Competition.
- \* 4<sup>2</sup> mile counts began with most area wetlands full to overflowing.
- \* Tewaukon hosted the SE Crime Conference.
- \* Simon, Range Technician, Jessica and Kyle (YCC) joined the staff this month.
- \* Don Lantz was selected as our Career Seasonal Range Technician.

FLOOD:

We continued to have calls for assistance in removing water from roads during the month. Eight contacts were made during the month with a total of 4 permits for pumping issued, two permits for temporary ditch and one permit for damming of water on an easement to prevent additional flow to a State Highway which was in danger of going underwater.

KRAFT SLOUGH:

Sandra attended the Kraft Slough Federal Advisory meeting.

BIOLOGICAL ACTIVITIES:

4<sup>2</sup> mile counts began in earnest. Most of the wetlands were 90-100% full and the ducks seemed to be spread out all over the counties. Water over the roads made access to some of the ponds difficult. No rain had fallen since the second round so some of the temporary and seasonal wetlands were dry.

Kristine conducted the annual Dove coo count in Ransom County.

Began first round of nest dragging.

MINIMAL EFFECTS & EASEMENTS

Jack met with Ransom County Water Board, Moore Township, and easement holder on flooded road problems. Also met with Isley Township, RA CO Water Board and easement holders on flooded road problems.

Issued 3 temporary ditch permits, 1 pumping permit and had 9 easement contacts.

Ron Shupe, Jack, Sandra, and Harris, VC, met to discuss the proposed drainage project in Coburn/Greene Township. A letter was sent to the proposed drain organizers.

Jack met with a Richland County landowner to discuss the unsuccessful restoration of drained easement wetlands and to give the landowner a new compliance date.

Jack met with North Dakota and Minnesota folks to develop easement wetland mapping criteria.

#### ENVIRONMENTAL EDUCATION/OUTREACH:

The ND Jr Duck Stamp banquet that was rescheduled from April was held in conjunction with the Lewis & Clark banquet in Bismarck. The Jr Duck display traveled to the Columbia Mall this month.

Sam Coleman, ND Best of Show winner, took third place in the National Jr Duck Stamp Contest. His acrylic painting of a pair of mallards entitled, "Landing Gear" will be on display throughout the country next year. Sam won a free trip to Washington D.C. for himself, one parent and his art teacher. Sam, along with the first and second place winners will be attending a banquet, a congressional reception, and the Federal Duck Stamp Contest.

Sandra attended the Cogswell Gun Club's meeting to provide update on the Fishing Tournament and Jr. Duck Stamp Winner. She also attended the Red River Sportsmen's meeting.

Kristine met with the Hankinson Women's Club on the Hartleben WPA to discuss the three upcoming wildflower walks and the interpretive trail.

Due to flooded roads and washed out bridges we had to cancel all but one school tour this spring. The West Fargo high school Science class did make it down.

Jack attended two Fishing Tournament meetings.

#### PUBLIC USE:

Put out the Spring/Summer Public Use Summary pamphlet.

#### LAW ENFORCEMENT:

Tewaukon hosted the Southeast Crime Conference.

Rob, Scott, and Jack finished their Hepatitis B vaccination series.

#### WILDLIFE:

The first round of nest dragging was conducted on the Refuge. Franklin's ground squirrels still present a problem in one of the predator fences and a fox that seems to thrive on electrical charges in the other.

#### WEED CONTROL

Sheep out on 6 WPA's and 2 sites on the Refuge.

#### PERSONNEL:

Simon Shafer, Range Technician, and the YCC started work.

#### SAFETY:

Lynda and Dave attended Aviation Safety training.

#### REFUGE OPERATIONS:

Sandra delivered Sargent, Ransom and Richland County's revenue sharing checks and the county annual reports.

Scott met with Robert Gleason, Northern Prairie, about choosing wetland sites for his study.

Dropped off DNC seed to farm cooperators to seed down 119 acres of cropland this spring.

Updated and sent in RONS & MMS.

Met with Joel Hietkamp and Dave Paulson on Lake Elsie.

Ron Shupe met with staff to discuss our six month work plan.

NAWCA:

Field checked six areas for potential grassland easement.

Surveyed potential wetland creation location in LaMoure County.

Worked with Jeff Printz, NRCS, on grazing systems.

Met with landowner on wetland restoration and easements and nesting culverts.

Attended training on wetland creation planning and design in Bismarck.

Met with USFS about potential projects for next grant.

Met with Scott Collins to discuss wetland creation sites, visit previous Partners for Wildlife projects.

E-MAIL  
MEMORANDUM

June 30, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: April Activity Report

HIGHLIGHTS:

- \* Flood waters hit Tewaukon - three Refuge dams overtopped, County Road #12 washed out, LaBelle Creek bridge wiped out, two holes punched in Ducks Unlimited dikes, and several places were township and Refuge roads underwater.
- \* The Hankinson Women's Club volunteers to help fund, work, and raise community awareness and appreciation of the Hartleben prairie.
- \* Staff visited 12 local schools for National Wildlife Week.

FLOOD OF 1997:

Major flooding started on April 1 with high flows moving through the entire week with most dams overtopped by Friday. Heavy whirlpools were moving through the large culverts just east of Dam 2 where County Road 12 leads to the Refuge headquarters. On Saturday one of the culverts failed, washing out a 20 foot section of the asphalt road. The water in Pool 2 also flowed over the edge of the wetland into the Show Pool. Water management consisted of making sure that we were passing as much water as possible and still not impacting the downstream roads. An attempt was made prior to the thaw to move water downstream but due to freezing conditions and complaints from the County Road not much was accomplished.

We worked through out the month to determine costs of the damages caused by flooding and winter weather. Many of the estimates were modified after closer inspection of the damages as the water receded and assistance on estimates from engineering. Submitted damage estimates were \$1.5 million. This included replacement of a collapsed pole barn, replacement of a bridge, major erosion control, dike repairs, road repairs and fencing repairs.

A major snow storm hit the area on April 5th and 6th freezing all of the flooded roads, causing high snow drifts and making life generally difficult. The office was closed on April 7 due to impassible roads in the area.



As a result of the high water we had many calls for assistance in removing water from roads. Thirteen contacts were made during the month with a total of 4 permits for pumping issued, two permits for temporary ditch and one permit for damming of water on an easement to prevent additional flow to a State Highway which was in danger of going underwater.

#### EASEMENT WETLAND:

Jack and Rob met with the chairman of the Rutland Township board to discuss drainage involving easement wetlands.

Sandra attended a meeting was held in Leonard, ND with three water districts, local farmers, NRCS and FWS. The local landowners in the area are interested in creating a legal drain of up to 90 miles of ditches in Richland County, Ransom County and Cass County. They requested all interested parties to attend in order to work with agencies to accomplish the project and find out what permits/mitigation they would have to do. Preliminary information is sketchy and we indicated that we would have to look at each of our easements to determine the effects of the project on the wetlands. We indicated that we could identify the affected wetlands and requested further information to make our determinations. The area where the drain is proposed is in a high water table area with sandy soils. Impacts to wetlands may occur up to 100 feet from a ditch.

Sandra met with David Paulson concerning his development of a marina on Lake Elsie Easement Refuge. Discussions centered on what road blocks Mr. Paulson would encounter in his attempts to develop his land into a marina.

#### FIRE

Several fire budget planning requests were completed during the month. The general Fire Budget and fire equipment needs were submitted. Several Prescribed Burn Plans were sent in for review during the month.

#### ENVIRONMENTAL EDUCATION/OUTREACH:

The ND Jr. Duck Stamp banquet was canceled and then rescheduled for May 3, 1997 due to blizzard.

Kristine met with the Hankinson Women's Club to discuss their participation in biological and education programs on the Hartleben prairie. They plan to participate in hand forb seed collection, organizing and promoting three wildflower and butterfly walks throughout the summer, and raising funds to purchase interpretative signs for the site.

Scott presented a program on the Refuge at the Red River Area Sportsmen's annual banquet.

Jack, Sandra, Kristine, Rob, and Keith attended the Lake Region Wildlife Club meeting. A few questions were asked concerning the drop in acres of

cropland on the Refuge and the lack of snow geese in the area.

Staff traveled to 12 schools for National Wildlife Week and presented programs on Nature's Communities and the "The Web of Life".

#### LAW ENFORCEMENT:

Scott and Rob got their Hepatitis B shot.

#### WILDLIFE:

Observations of note: 1 merlin (Rutland), red necked grebes, bald eagles and a common loon.

Some concerns were raised by Refuge staff when the Game and Fish started issuing permits for shooting of muskrats along road right-of-ways to prevent road damage. The county was to designate control agents who would kill the muskrats with shotguns. Many safety concerns and Refuge concerns were brought to the attention of the County Commissioners and the Game & Fish Department. Roads traversing the Tewaukon National Wildlife Refuge would be controlled by designated Refuge staff only since the Refuge areas are normally closed to hunting unless specifically opened. WPA's were not of concern since they are normally open to hunting. A news release was also sent out to bring up the safety concerns of shooting from a vehicle, and having a loaded shotgun in the vehicle.

#### PERSONNEL/TRAINING:

Barb and Jack attended the Electronic Payroll and Budget Tracking Workshop in Bismarck.

Scott and Sandra went to Easement Workshop at Sully's Hill.

Linda Knutson and Dave Wenner started as our Range Technicians and Keith Frankki returned as a Biological Technicians.

Rob, Jack, and Sandra went to aviation training.

Rob, Dave, and Linda went to S-205 (Fire in the Urban Interface) training in Montana.

Staff were recertified in CPR and step tests were administered by the nurse.

YCC were selected.

#### REFUGE & DISTRICT OPERATIONS

Scott met with the four Refuge farm cooperators about this year's crop rotation schedule.

Rob drove out to Montana and had a Type 6 slip-on put on one of our truck.

Linda and Dave wrote five fire plans in the new and improved? (11 -13 page) format.

Predator fences were turned on.

Scott met with a cooperatoer to set up a sheep grazing area on the Hartleben WPA.

Staff met to set Refuge goals and objectives.

NAWCA:

Scott, Ben and Sandra attended the Zones of Opportunity meeting in Bismarck at the ND Game & Fish Office. It was discussed that since our zone had a lot of black dirt, predator control would be the most effective means of increasing duck production. One zone which had some CRP in the area would be conducive to a general area predator management (the entire 25 square miles) while the area without CRP would utilize two predator fences. Discussions also center around possible funding for these projects.

Worked on grassland easements and two grazing systems.

Field checked four areas for potential grassland easements on over 3,000 acres.

Worked on federal projects

Prepared cultural permit for Tewaukon projects.

Finished CRP wetland restoration sign-ups.

E-MAIL  
MEMORANDUM

April 18, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: March Activity Report

WEATHER:

Record yearly snow levels reached - 109". A slow warming trend helped to melt some of the snow this month and kept flooding to a manageable level (so far).

HIGHLIGHTS:

- \* Bismarck Youth Wins ND Jr Duck Stamp Contest For A Second Time.
- \* Waterfowl, bald eagles, robins, meadowlarks show and give hope for the possibility of spring.
- \* Discussions about opening Kraft Slough to hunting.

MINIMAL EFFECTS:

A public meeting was held in Lidgerwood with the Richland County Water Board to discuss problems with Park Lake. Park Lake State Game Management Area and the Wollitz WPA wetland are now one big wetland. The Water Board wanted both sides to agree on a solution for the Lake and then submit a proposal for a County Drain Project. It was suggested that three people from each affected group (landowners upstream, downstream and landowners near Sargent County Drain 3) get together to work out their differences and come up with a plan that they could present to the Water Board for a permanent solution.

KRAFT SLOUGH:

During March, Sandra and Jack worked on preparing information on the possible opening of Kraft Slough to hunting (when it becomes a National Wildlife Refuge) at the request of the Federal Advisory Council. They also met with Bill Bicknell, FWS, and Gerry Heiser, BR, to discuss Kraft Slough issues. Discussion centered on management issues for the area.

ENVIRONMENTAL EDUCATION/OUTREACH:

The Jr Duck Stamp judging was held on March 7 in Cayuga. The five judges selected 36 1st-3rd place winners from the 578 entries. Sam Coleman, Bismarck, won Best of Show. His acrylic painting of a pair of mallards landing on a marsh will go on to compete in the National Contest at the end of April. The Awards Banquet will be held in Bismarck on April 5th. If anyone is interested in displaying the winning artwork at a Refuge event or activity there are still a few openings left.

Tewaukon helped staff the FWS booth at the Fargo Sports Show.

The 4-H workshop at Oakes was canceled due to weather.

Staff attended the Pheasants Forever banquet and the Rutland Sportsmen Fish fry.

Jack taught the Milnor Hunter's Safety class.

Bill attended the Rutland Sportsmen's Club meeting.

Sandra attended the Cogswell Gun Club meeting and provided updates on Refuge activities to the club.

Jack attended the Fishing Tournament meeting.

#### LAW ENFORCEMENT:

Jack traveled to South Dakota to instruct a PPCT course for the SD Game, Fish & Parks Dept.

Jack attended the SECC in Gwinner.

#### WILDLIFE:

Waterfowl, raptors, some shorebirds (godwits, killdeer) and some of the songbirds (robin, meadowlark, morning dove) started showing up in the middle to end of April.

We estimate that we lost 85-90% of the pheasants on the Refuge and 95%.

The aerator was turned off for the year on March 27. It only ran for two months due to breakdowns. Although oxygen levels were below 3 ppm there is currently no sign of a large die off.

#### PERSONNEL/TRAINING:

Two bio-techs and two range techs were selected.

Bill's accretion package was sent in to personnel.

Jack, Rob, and Bill worked on the Wage Grade questionnaire.

Jack worked on Performance Standards for Kris, Bill, & Rob.

#### REFUGE OPERATIONS:

On a few of the warmer days during March, the boards at Dam 1 were lowered to encourage water downstream in anticipation for the spring runoff.

Sandra attended the FAC (local agencies involved with land conservation) meeting in Lisbon. Discussions included railroad expansion wetland mitigation, grazing rotations, and CRP signups.

Sandra met with the Sargent County Farm Bureau. They were interested in hearing her views on wildlife and agriculture.

A phone conference call was held between Sandra, Bill Bicknell, FWS Realty Bismarck, and Gerry Heiser, Bureau of Reclamation. Bill and Gerry were giving an update on the most recent developments on Kraft Slough. They were also practicing for their conference call on Friday with the Federal Advisory Council. Some progress with landowners appears to have

been accomplished.

Scott attended the Spring Township Officer's meeting for Sargent County. Road flooding and FWS easements/property were discussed.

Brian Stotts, manager at the Sheyenne National Grasslands, met with Sandra. They discussed possible cooperation between the two agencies to accomplish resource goals including prescribed burning, grazing, improving waterfowl areas on the Grasslands, prairie chicken habitat and input on the Forest planning process.

The Pesticides Use report and the Water Management Plan were completed.

Staff discussed Refuge and District goals.

The Tewaukon Township board had their annual meeting at the Refuge.

NAWCA:

Ben assisted the Sargent County NRCS for almost the whole month with CRP sign-ups.

Ben and Scott worked on the predator fence location. The 80 acre fence will be located in Sargent County south of Milnor.

Ben finished the semi-annual report for the grant.

Progress was made between DU and FWS on the grant agreements for the Drift Prairie Project.

E-MAIL

MEMORANDUM

March 6, 1997

TO: R&W, ND Associate Supervisor (60130)  
Denver, CO

FROM: Biologist, Tewaukon NWR Complex (62660)  
Cayuga, ND

SUBJECT: February Activity Report

HIGHLIGHTS:

- \* Staff attend Easement Meeting.
- \* Open House held to welcome new Project Leader.
- \* Jr Duck entries flock to the Refuge.

LAKE ELSIE:

Jack addressed a request to develop a marina on Lake Elsie Wildlife Easement Refuge.

EASEMENT:

Sandra and Jack attended the easement meeting held in Mandan on February 11 and 12. It was helpful for clarification of complex issues involving easements.

Jack attended an R3 & R6 easement manual committee meeting in Fargo.

Coordinated with Realty and Sargent County Water Board regarding time frames for Silver Lake flowage easements for the Service.

Jack and Scott responded to four landowners regarding State land that is under easement and has new operators.

ENVIRONMENTAL EDUCATION/OUTREACH:

579 entries for the 1997 Jr Duck contest were received. We are pleased again at the amount of talented young people. We will be putting together another exhibit of the 1997 North Dakota winners that will travel around the state. If your Refuge is hosting a special event or you would like to display the exhibit at your



visitor center let us know. We will be booking the exhibit for the major shopping malls soon so dates will go fast. If you use all the artwork there is approximately 100 pieces, you can display just the St., 2nd, and 3rd place winners (36 pieces) if space is limited.

The Tewaukon staff joined the Valley City, Bismarck, and Rydell NWR staff in staffing a booth at the Fargo Sportsmen's Show the last of Feb and the beginning of March.

Scott, Kristine, Jack, and Rob attended the Cogswell Buffalo Supper.

#### LAW ENFORCEMENT:

Refuge Manager Siekaniec attended Law Enforcement Refresher at Marana on February 19 - 23. She also attended the Rifle Training on February 23 and 24.

#### WILDLIFE:

Approximately 300 deer are feeding on corn on the Refuge. Released corn to area sportsmen.

Four Canada geese were spotted using the open water on Lake Tewaukon from the aerator. A goshawk was observed around the office. An adult golden eagle was observed near Fedje Lake.

Steve Krenz came down and took DO readings in Lake Tewaukon and Sprague Lake. Lake Tewaukon turned up very low readings.

#### PERSONNEL/TRAINING:

An open house was held on February 6 to introduce the new manager to the local community. Approximately 30 people from the community attended.

Rob, Ben, Jack, and Scott donated blood.

Scott and Ben traveled to Jamestown for NRCS's CRP training. They will be helping out with the sign-up process in March.

Scott traveled to Minneapolis for Managing Performance and Conduct training. It was very good training.



#### REFUGE OPERATIONS:

Jack, Sandra, and Kristine attended the ND Chapter of the Wildlife Society meeting.

Kristine met with Doug Staller and others interested in environmental education and outreach.

Scott worked on various year end reports.

Jack wrote a letter of support to the Sargent County commissioners on a Refuge main access and County road grant application.

Jack visited with landowners prior to and attended the Richland and Sargent County joint Waterboard meeting concerning Park Lake flooding and the Wollitz WPA.

#### NAWCA:

Chuck Bosch visited to go over grassland easement proposals.

Worked with Nature Conservancy to determine if they are still able to purchase their fee title tracts under the Grant.

In a ongoing consultation with Ducks Unlimited, Scott worked providing updates on the Grant in case DU becomes the Grantee.

Reviewed preliminary drawings for Tewaukon NAWCA projects.

# VOLUNTEER SERVICES REPORT

Fiscal Year 1997

Station: Tewaukon NWR Organization Code: 62660

Provide data on all volunteers working under signed volunteer services agreements. Include Student Conservation Association (SCA) volunteers.

## 1. NUMBER OF VOLUNTEERS BY AGE

UNDER 18	18-35	36-61	OVER 61	TOTAL
	<u>3</u>	<u>31</u>	<u>14</u>	<u>48</u>

## 2. HOURS CONTRIBUTED BY ACTIVITY CATEGORY

Monitoring & Studies:		Coordination Activities:	
Surveys & Censuses		Interagency Coordination	
Studies & Investigations		Tribal Coordination	
Habitat Restoration:		Private Lands Activities (ex. restoration)	
Wetland Restoration		Resource Protection:	
Upland Restoration	<u>56</u>	Law Enforcement	
Deepwater/Riverine Restoration		Permits & Economic Use Management	
		Contaminant Investigation	
		Contaminant Cleanup	
Habitat Management:		Water Rights Management	
Water Level Management		Manage Cultural Resources	
Moist Soil Management		Cultural Resource Management	
		Coordination	
Graze/Mow/Hay		Land Acquisition Support	
Farming		Provisions Unique to Alaska	
Forest Management		Subsistence	
Fire Management		Public Access	
Pest Plant Control		Manage Comm./Subsistence Fisheries	
Fish and Wildlife Management		Manage Private Lands	
Bird Banding		Navigability Determinations	
Disease Monitoring & Treatment		Public Education and Recreation	
Reintroductions		Provide Visitor Services	
Nest Structures		Outreach	<u>368</u>

Pest, Predator & Exotic Animal Control		Planning & Administration	
		Comprehensive Conservation Planning	
		Conservation Management Planning	
		General Administration	120

### 3. OPERATION COSTS

COST CATEGORY:	DOLLARS
Operations (Supplies, Materials, Equipment, Uniforms, etc.)	\$ <del>0</del>
Travel/Transportation, Per Diem, Housing/Utilities (etc.)	<del>0</del>
Other (Staff/Volunteer Training, Recruitment, Recognition Awards/Activities, Program Brochure/Exhibits/Videos, etc.)	<del>0</del>
<b>TOTAL</b>	<b>\$ <del>0</del></b>

### 4. STAFF TIME/SALARY FOR ADMINISTRATION OF PROGRAM

CATEGORY:	TOTAL
Staff Time (Hours)	130
Staff Salaries	\$2685

5. **PROGRAM HIGHLIGHTS** (Unique Activities, Special Achievements, Special Events, Partnerships.)

Tewaukon Fishing Tournament  
Stacks Slough Prairie Restoration & Education project

### 6. SPECIAL RECOGNITION

- Provide individual's name and station(s) where work was accomplished.
- Why was this person outstanding in their support of the FWS?

### 7. RECOMMENDATIONS TO IMPROVE THE VOLUNTEER PROGRAM.

## Tewaukon NWR 1997 Volunteer Report

### Stacks Slough Prairie Restoration Project:

7 people X 8 hrs = 56 hours Upland Restoration

12 people x 4 hrs = 48 hours Outreach Wildflower tours

2 people x 20 hrs = 40 hours Outreach Fundraising for educational panels

1 - 18-35

10 - 36-61

14 - Over 61

### Tewaukon Fishing Tournament

20 people x 2 hrs = 40 hrs Outreach

20 people x 12 hrs = 240 hrs Outreach

20 - 36-61

### Spouses

3 people x 40 hours = 120 hrs

2 - 18-35

1 - 26-81

# 1997 Nest Success On Tewaukon

FIELD	SPECIES	# NESTS	SUCCESSFUL	COMMENTS
ELF 001	Blue-winged teal	5	3	2-predated
	Mallard	16	6	7-predated 3-abandoned
	Gadwall	3	0	3-predated
	Pintail	1	0	1-predated
	TOTAL	25	9	Appt. - 36.0% May. - 12.0%
ELF 002	Blue-winged teal	20	16	2-predated 2-abandoned
	Mallard	17	13	4-predated
	Gadwall	12	7	5-predated
	Pintail	1	1	
	Green-winged teal	1	1	
	TOTAL	51	38	Appt. - 74.5% May. - 58.8%
ELF 003	Blue-winged teal	7	1	6-predated
	Mallard	4	1	3-predated
	Gadwall	11	3	8-predated
	Pintail	1		1-predated
	TOTAL	23	5	Appt. - 21.7% May. - 7.8%
TOTALS		99	52	Appt. - 52.5% May. - 26.2%

Three exclosures = 89 total acres

NESTING SUCCESS ON TEWAUKON NWR (OUTSIDE PREDATOR FENCES) ON 275 ACRES

FIELD	SPECIES	# NESTS	SUCCESSFUL	COMMENTS
KFR 001	Blue-winged teal	10	2	7-predated 1-abandoned
	Mallard	4	1	3-predated
	Gadwall	3	1	2-predated 1-abandoned
	Shoveler	2	2	
	Total	19	6	Appt - 31.6% May. - 12.8
PL2 001	Blue-winged teal	6	4	2-predated
	Mallard	2	0	2-predated
	Gadwall	5	2	3-predated
	<b>TOTAL</b>	13	6	Appt. - 46.2% May. - 19.7
TLA 001	Blue-winged teal	5	1	4-predated
	Mallard	5	2	3-predated
	Gadwall	10	3	6-predated 1-hayed
	<b>TOTAL</b>	20	6	Appt. - 30.0% May. - 17.3
WLN 001	Blue-winged teal	11	3	8-predated
	Mallard	3	1	2-predated
	Gadwall	3	0	3-predated

	<b>TOTAL</b>	<b>17</b>	<b>4</b>	Appt.- 23.5% May. - 11.0
SLN 001	Blue-winged teal	10	3	7-predated
	Mallard	2	1	1-predated
	Gadwall	2	0	2-predated
	<b>TOTAL</b>	<b>14</b>	<b>4</b>	Appt.- 28.6% May. - 9.3%
SIL 001	Blue-winged teal	8	2	6-predated
	Mallard	11	5	5-predated 1-hayed
	Gadwall	8	2	5-predated 1-hayed
	Pintail	2	0	2-predated
	Widgeon	1	1	
	<b>TOTAL</b>	<b>30</b>	<b>10</b>	Appt.- 33.3% May.- 11.1 %
SIL 002	Blue-winged teal	11	4	7-predated
	Mallard	14	3	11-predated
	Gadwall	5	1	4-predated
	Pintail	1	0	1-predated
	C. Goose	1	1	

	TOTAL	32	9	Appt- 28.0% May.- 6.2
SIL 003	Blue-winged teal	1	0	1-predated
	Mallard	2	1	1-predated
	Gadwall	1	1	
	Pintail	1	1	
	TOTAL	5	3	Appt- 60% May. - 22.9 %
TOTALS		150	48	APPT.- 32% MAY.- 13.78%



OBS	PROJECT	SAREA	FIELD	YEAR	NEST	SPECIES	NESTFATE	CAUSE	INCUB
1	TEWK	ELF	002	97	36	1400	2	6	4
2	TEWK	ELF	002	97	41	1400	1	.	8
3	TEWK	ELF	002	97	46	1350	1	.	0
4	TEWK	ELF	003	97	5	1400	3	1	0
5	TEWK	KFR	001	97	6	1400	2	6	0
6	TEWK	SIL	002	97	11	1720	1	.	0
7	TEWK	SIL	002	97	14	1400	1	.	12
8	TEWK	WLN	001	97	6	1400	3	1	0
9	TEWK	WLN	001	97	9	1400	1	.	0

STUDY AREA	Specific field within a study area	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESSFUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD LOWER 95% CL		MAYFIELD UPPER 95% CL	MLE LOWER 95% CL		MLE HATCH RATE	MLE UPPER 95% CL	
ELF	001	25	9	16	0	264.7	0.360	0.041	0.120	0.341	0.040	0.121	0.362		
ELF	002	48	36	12	0	774.8	0.750	0.432	0.588	0.798	0.442	0.596	0.805		
ELF	003	22	5	17	0	235.4	0.227	0.022	0.078	0.263	0.023	0.083	0.295		
KFR	001	18	5	13	0	221.6	0.278	0.040	<u>0.128</u>	0.393	0.045	0.140	0.435		
PL2	001	13	6	7	0	149.9	0.462	0.056	<u>0.197</u>	0.658	0.064	0.213	0.705		
SIL	001	30	10	20	0	319.0	0.333	0.041	<u>0.111</u>	0.292	0.040	0.113	0.318		
SIL	002	30	7	23	0	292.8	0.233	0.019	<u>0.062</u>	0.194	0.015	0.055	0.206		
SIL	003	5	3	2	0	47.2	0.600	0.027	<u>0.229</u>	1.731	0.031	0.245	1.913		
SLN	001	14	4	10	0	147.9	0.286	0.020	<u>0.093</u>	0.404	0.019	0.093	0.451		
TLA	001	20	6	14	0	278.3	0.300	0.067	<u>0.173</u>	0.436	0.073	0.183	0.461		
WLN	001	15	3	12	0	190.8	0.200	0.030	<u>0.110</u>	0.384	0.031	0.114	0.416		

13.78

Cooperator or research project=TEWAUKON NWR Year=97

STUDY AREA	Specific	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESSFUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD	MAYFIELD	MAYFIELD	MLE	MLE	MLE
	field within a study area							LOWER 95% CL	HATCH RATE	UPPER 95% CL	LOWER 95% CL	HATCH RATE	UPPER 95% CL
ELF	001	25	9	16	0	264.7	0.360	0.041	0.120	0.341	0.040	0.121	0.362
ELF	002	48	36	12	0	774.8	0.750	0.432	0.588	0.798	0.442	0.596	0.805
ELF	003	22	5	17	0	235.4	0.227	0.022	0.078	0.263	0.023	0.083	0.295
KFR	001	18	5	13	0	221.6	0.278	0.040	<u>0.128</u>	0.393	0.045	0.140	0.435
PL2	001	13	6	7	0	149.9	0.462	0.056	<u>0.197</u>	0.658	0.064	0.213	0.705
SIL	001	30	10	20	0	319.0	0.333	0.041	<u>0.111</u>	0.292	0.040	0.113	0.318
SIL	002	30	7	23	0	292.8	0.233	0.019	<u>0.062</u>	0.194	0.015	0.055	0.206
SIL	003	5	3	2	0	47.2	0.600	0.027	<u>0.229</u>	1.731	0.031	0.245	1.913
SLN	001	14	4	10	0	147.9	0.286	0.020	<u>0.093</u>	0.404	0.019	0.093	0.451
TLA	001	20	6	14	0	278.3	0.300	0.067	<u>0.173</u>	0.436	0.073	0.183	0.461
WLN	001	15	3	12	0	190.8	0.200	0.030	<u>0.110</u>	0.384	0.031	0.114	0.416

13.78

Study area within project	Host species	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESS- FUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD LOWER 95% CL	MAYFIELD HATCH RATE	MAYFIELD UPPER 95% CL	MLE LOWER 95% CL	MLE HATCH RATE	MLE UPPER 95% CL
ELF	MALLARD	37	20	17	0	432.1	0.541	0.131	0.255	0.492	0.138	0.266	0.513
ELF	GADWALL	25	9	16	0	306.2	0.360	0.064	0.161	0.397	0.069	0.170	0.423
ELF	G-W-T	1	1	0	0	23.0	1.000	1.000	1.000	1.000	764E96	764E96	764E96
ELF	B-W-T	29	19	10	0	492.9	0.655	0.320	0.498	0.772	0.328	0.506	0.780
ELF	PINTAIL	3	1	2	0	20.7	0.333	0.000	0.032	3.041	0.000	0.029	6.885
KFR	MALLARD	4	1	3	0	50.8	0.250	0.011	0.126	1.272	0.012	0.137	1.536
KFR	GADWALL	3	0	3	0	35.6	0.000	0.001	0.050	1.349	0.001	0.052	1.989
KFR	B-W-T	9	2	7	0	84.2	0.222	0.005	0.052	0.454	0.005	0.056	0.598
KFR	SHOVELER	2	2	0	0	51.0	1.000	1.000	1.000	1.000	342E34	342E34	342E34
PL2	MALLARD	2	0	2	0	16.0	0.000	0.000	0.011	3.839	0.000	0.000	0.000
PL2	GADWALL	5	2	3	0	54.1	0.400	0.014	0.144	1.258	0.016	0.152	1.436
PL2	B-W-T	6	4	2	0	79.8	0.667	0.122	0.422	1.399	0.137	0.440	1.413
SIL	MALLARD	27	9	18	0	260.1	0.333	0.027	0.087	0.270	0.025	0.086	0.294
SIL	GADWALL	14	4	10	0	136.3	0.286	0.014	0.075	0.372	0.010	0.067	0.431
SIL	WIGEON	1	1	0	0	5.0	1.000	1.000	1.000	1.000	15E245	15E245	15E245
SIL	B-W-T	19	5	14	0	219.5	0.263	0.031	0.106	0.345	0.031	0.109	0.386
SIL	PINTAIL	4	1	3	0	38.1	0.250	0.002	0.062	1.335	0.001	0.056	2.206
SLN	MALLARD	2	1	1	0	29.0	0.500	0.026	0.303	3.044	0.027	0.302	3.388
SLN	GADWALL	2	0	2	0	15.0	0.000	0.000	0.008	4.078	0.000	0.000	0.000
SLN	B-W-T	10	3	7	0	103.9	0.300	0.015	0.093	0.536	0.016	0.099	0.624
TLA	MALLARD	5	2	3	0	81.3	0.400	0.062	0.278	1.181	0.068	0.288	1.225

TLA	GADWALL	10	3	7	0	142.3	0.300	0.048	0.180	0.642	0.053	0.191	0.685
TLA	B-W-T	5	1	4	0	54.7	0.200	0.005	0.076	0.911	0.006	0.082	1.085
WLN	MALLARD	3	1	2	0	18.7	0.333	0.000	0.021	3.327	0.000	0.013	17.921

NESTING RESULTS BY SAREA AND SPECIES

13:52 Tuesday, December 2, 1997 8

Cooperator or research project=TEWAUKON NWR Year=97  
(continued)

Study area within project	Host species	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESS- FUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD LOWER 95% CL	MAYFIELD HATCH RATE	MAYFIELD UPPER 95% CL	MLE LOWER 95% CL	MLE HATCH RATE	MLE UPPER 95% CL
WLN	GADWALL	3	0	3	0	15.4	0.000	0.000	0.001	1.269	0.000	0.000	0.000
WLN	B-W-T	9	2	7	0	156.7	0.222	0.064	0.211	0.671	0.069	0.220	0.703

WESTING RESULTS BY STUDY AREA, ALL SPECIES AND FIELDS COMBINED

13:52 Tuesday, December 2, 1997 9

Cooperator or research project=TEWAUKON NWR Year=97

STUDY AREA	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESS- FUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD LOWER 95% CL	MAYFIELD HATCH RATE	MAYFIELD UPPER 95% CL	MLE LOWER 95% CL	MLE HATCH RATE	MLE UPPER 95% CL
---	240	94	146	0	2922.4	0.392	0.131	0.175	0.233	0.138	0.184	0.245
ELF	95	50	45	0	1274.9	0.526	0.204	0.295	0.423	0.214	0.306	0.438
KFR	18	5	13	0	221.6	0.278	0.040	0.128	0.393	0.045	0.140	0.435
PL2	13	6	7	0	149.9	0.462	0.056	0.197	0.658	0.064	0.213	0.705
SIL	65	20	45	0	659.0	0.308	0.044	0.090	0.184	0.041	0.089	0.192
SLN	14	4	10	0	147.9	0.286	0.020	0.093	0.404	0.019	0.093	0.451
TLA	20	6	14	0	278.3	0.300	0.067	0.173	0.436	0.073	0.183	0.461
WLN	15	3	12	0	190.8	0.200	0.030	0.110	0.384	0.031	0.114	0.416

NESTING RESULTS BY SPECIES, ALL STUDY AREAS COMBINED

13:52 Tuesday, December 2, 1997 10

Cooperator or research project=TEWAUKON NWR Year=97

Host species	NORMAL NESTS	SUCCESSFUL NESTS	UNSUCCESSFUL NESTS	FATE UNKNOWN	EXPOSURE DAYS	APPARENT HATCH RATE	MAYFIELD LOWER 95% CL	MAYFIELD HATCH RATE	MAYFIELD UPPER 95% CL	MLE LOWER 95% CL	MLE HATCH RATE	MLE UPPER 95% CL
-----	240	94	146	0	2922.4	0.392	0.131	0.175	0.233	0.138	0.184	0.245
MALLARD	80	34	46	0	888.0	0.425	0.096	0.164	0.278	0.099	0.171	0.293
GADWALL	62	18	44	0	704.9	0.290	0.057	0.112	0.215	0.058	0.115	0.227
WIGEON	1	1	0	0	5.0	1.000	1.000	1.000	1.000	15E245	15E245	15E245
G-W-T	1	1	0	0	23.0	1.000	1.000	1.000	1.000	764E96	764E96	764E96
B-W-T	87	36	51	0	1191.7	0.414	0.149	0.226	0.342	0.159	0.239	0.359
SHOVELER	2	2	0	0	51.0	1.000	1.000	1.000	1.000	342E34	342E34	342E34
PINTAIL	7	2	5	0	58.8	0.286	0.003	0.049	0.657	0.002	0.044	0.953





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Tewaukon National Wildlife Refuge Complex  
9754 143½ Ave SE  
Cayuga, ND 58013-9764

### MEMORANDUM

May 21, 1998

**To:** R&W, ND Refuge/Fisheries Supervisor (60130)  
Denver, CO

**From:** Refuge Manager, Tewaukon NWR Complex (62660)  
Cayuga, ND

**Subject:** 1998 Annual Water Management Plan and 1997 Use Report

#### 1. List of Water Rights

Declaration of Filing dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 7,198 acre-feet storage, 4,251 acre-feet seasonal from Wild Rice River.

Declaration of Filing dated September 1, 1934 claimed 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now called Hepi Lake. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo. Water use in pools 5 through 10 is covered under this right, with Hepi Lake to be drawn down to fill these pools.

**Permit #1261:** 4852 acre-feet storage and 2287 acre-feet seasonal use, for a total of 7139 acre-feet. This permit covers additional storage and seasonal use in Lake Tewaukon, Cutlers Marsh and West White Lake; 409 acre-feet seasonal use to replace water to be diverted from the watershed by Sargent County Water Conservation District project; and total storage and seasonal use for Pools 3 and 4. Priority date December 28, 1964.

**Tewaukon NWR #1262:** 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 28, 1964, diversion from an unnamed creek in the SE1/4NW1/4, Section 2.

**Tewaukon NWR #1263:** 686 acre-feet yearly for Mann Lake (236 acre-feet) and Horseshoe Slough (450 acre-feet) dated December 28, 1964, diversion from the Wild Rice River.

**Tewaukon NWR #3816 Nickeson Tract:** 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and US Fish and Wildlife Service (FWS). Diversion is from the Wild Rice River, W ½ Section 27, T. 130 N., LTL, R. 54 W. Priority date August 15, 1985. Received perfected water permit on August 14, 1997. Recorded in the Register of Deeds, Sargent County on March 3, 1998.

## 2. Water Use - 1997

The Wild Rice River, LaBelle Creek, Frenier Dam Outlet and Sprague Lake Creek flowed well above average this year, exceeding management levels in all wetlands. In February stoplogs were removed from Dam 1 to move water out of the system before a major spring thaw. After a major storm moved through the area the river froze up again and did not flow until the end of March. Flood waters damaged dikes and roads making it difficult to travel in the area. Three of the four main dams on Tewaukon were totally immersed as flood waters reached their peak. The main access route to the refuge headquarters was washed out after vortexing water through the culverts removed a 20 ft section of the paved road on April 5 below Pool 2 dam. The Wild Rice River continued a steady flow the entire year. It is believed that the cleaning of the Crete-Cogswell drain in 1984-85 plus a record snow fall caused this increased flow in the Wild Rice River. Most wetlands on the Refuge were filled by the above normal runoff, and they held water into freeze-up.

**Pool 1 (Lake Tewaukon):** Major inflow began on March 25 from LaBelle Creek and overtopped the township road on March 26. Water over topped the emergency spill way on April 4 at an elevation of 1150.75. On April 7, outflow peaked at 1151.40. The management level of 1148.15 was reached on May 12. The lowest level occurred on August 29 at 1147.74. Boards were added in September and October to increase the water level to maintain the fisheries over winter. Snow geese (200), Canada geese (250), and mallard (10,000) numbers peaked on Lake Tewaukon on 10/28/97. Adequate water and available food in crop fields throughout the District distributed the flocks of geese. Most of the geese were found on Pool 2. The lake was frozen at 1148.15 (which is full pool) on November 12. The river continued to provide an intermittent flow under the ice after freeze up.

**Parker Bay (east end of Lake Tewaukon):** Inflow from LaBelle Creek flowed into Parker's Bay and raised the water level to about 6 feet. The high water from LaBelle Creek over-topped the East Dike of Lake Tewaukon and the township road several times during spring flow. By late July the pool was at 3 feet.

**Pool 2 (Cutler Marsh):** This pool filled rapidly due to flooding received runoff from the Wild Rice River, West White Lake and drained wetlands south of Pool 2. Water came pouring in from south of the refuge at the corner of a curve on County Road 5. There was such a rush of water that the road south of Pool 2 and the Ducks Unlimited (DU) cross dike were severely eroded. It overtopped the Pool 2 DU Dike and the Pool 2 Dam starting April 4. The peak on April 4 was 9 inches above the dam. The next measurable peak was 1154.18 on April 12. The water level gradually dropped through the season to expose erosion damage and to preserve the damaged dike and dam. Pool 2 received the most snow goose use in the fall of 96 with 600 birds sitting on the pool on 10/28/97. Close proximity to food plots made the pool an attractive resting site. At freeze-up (November 12) the level of this pool was 1149.30.

**Pool 2A:** Pool 2A was kept as dry as possible in order to repair the 2A inlet dike with North American Wetland Conservation Council (NAWCC) funds. It was decided not to include this project in the NAWCC projects. Plans are to accomplish this repair in 1998 by force account with flood damage dollars. Water from spring runoff naturally maintained the pool at a depth of approximately 1152\*.

\* Approximate water level readings are based on recently completed surveys of pool depths which were mapped for refuge use. This is the only method available at this time. All pools are scheduled to have gauges installed in 1998.

**Pool 3 (Maka Pool):** Pool 3 peaked at 1157.80 on April 4. Water over topped and breached the DU cross dike at approximately the same time. Dam 3 was not over topped by the flood waters. The water gradually dropped to 1151.18 by August 22 to expose erosion damage and to insure vegetation growth in the pool. Boards were added gradually starting August 29 to raise water level to save transplanted cattails remaining on the DU cross dike. Late summer and fall this pool was a hot spot for waterfowl and pelican loafing. 3A saw over 2500 pintails on 10/18/96. At freeze-up the level of this pool was 1152.72 which left about 1 ½ foot of water on the vegetative growth.

The DU cross dike was breached on approximately April 4 allowing water to enter the Pool 3 east area. Water level then matched Pool 3. Water level gradually dropped to 1151.18 August 22 to expose erosion and promote emergent vegetation. Water level gradually raised to a level of 1152.72 at freeze up.

**Pool 3A:** This pool had local runoff only, it did not increase above 1154 and naturally dried up in the early fall.

**Nickeson Bottoms:** Pool levels were high at 6 ft approximate depth. Waterfowl use in 1997 was low. Lack of emergent vegetation caused by deep water made the area unappealing to over water nesters and as brood water. This pool had some increase due to local runoff and decrease due to natural evaporation.

**Pool 4 (River Pool):** On April 4 water overtopped the concrete spillway and earthen dam. No significant damage and water dropped to below the earthen dam by April 5. On April 7 the water level was recorded as 1160.02. The water level fluctuated the rest of the season + or - 6 inches. It peaked at 1161.72 on April 2. Level at freeze up was 1160.00 on November 12.

**Pools 5, 5A, 6, 7, 7A:** Pool 5 remained dry all year due to damage of the dike from high water levels in 1996. All other pools were full at the beginning of the year, but after the Hepi outlet to the north was washed open, pool levels dropped considerably due to lack of water from Hepi and loss of water from the damage to Pool 5. Pool 5A filled to approximately 1165 then dropped to 1162 at freeze up. Pool 6 filled to approximately 1168 and dropped to 1165 at freeze up. Pool 7's highest water level was approximately 1178 and dropped to 1172 during the summer. Pool 7A water level dropped through out the summer after reaching a peak level of 1177.90 on March 17. Pool 7A has a active rookery composed of great egrets, great blue herons, cormorants, and black-crowned night herons. In the fall of 1997, after Hepi Lake went dry, Pool 7A saw large numbers of puddle ducks (over 5,000 were observed on 10/15/97) utilizing the shallow water and vegetation as a resting and feeding area. 1,000 gadwalls were observed in the area on 10/15/97. At freeze up Pool 7A was estimated to be at 1174.

**Pool 8 (Hepi Lake):** A maximum depth of 6 feet was reached on April 17 and continued to drop during the rest of the summer. Water continued to exit the pool through the nonfunctioning north structure. By the end of summer only a small amount of water was located in the middle of the pool with mud flats around. Vegetation growth in the pool was good with emergents on the edges of the water including goosefoot, and dock. This area was used by shorebirds, ducks, geese and swans in the summer and fall. At freeze up the pool had approximately 1 ½ feet of water in the center of the pool. The open structure to the north made management water levels impossible.

**Pool 9:** All water in Pool 8 ran into Pool 9 and water level peaked at approximately 10 feet in April. Because of the steep sides on this pool, vegetation only grew along the edges of the water. It drained through the existing pipe to the Wild Rice River until it reached 3 ½ feet by freeze up.

**Pool 10:** This pool received only local runoff and natural evaporation due to no management capability on Pool 8. In April it reached an approximately depth of 6 ft. This pool has vegetation around the edges and some submergent vegetation. Due to high water, management goals were not accomplished in this pool (desired depth of 2 ½ feet then dry by August as semi permanent marsh). Pool level gradually dropped to 4 foot by freeze up.

**Pool 11 (West White Lake):** This pool filled rapidly due to water runoff conditions. It peaked at approximately 1151.52 on April 25. Water was moved into East White Lake then into south Pool 2 and the Wild Rice River when the south Pool 2 levels had dropped significantly. Boards were reinstalled in the West White Lake structure on September 12 at 1149.05 to stabilize West White Lake at that level. The southwest section of the pool has significant cattail growth and the area was utilized by ducks and geese in the fall. The rest of the pool was frequented by pelicans and cormorants. Pool 11 froze on November 12 at 1148.77.

**Pool 12 (East White Lake):** East White Lake peaked on April 25 at an elevation of 1151.52. It then maintained the same level as West White Lake until September 12 when the boards were placed in the West White Lake Structure. This pool has no vegetation except along a few edges. It also has developed severe erosion in some areas. The only wildlife to use this pool are pelicans, cormorants and great blue herons. In August these species were present in large numbers due to the fathead minnows in the pool. Pool 12 continued to flow into south Pool 2 and into the Wildlife Rice until freeze up on November 12 at approximately 1148.5

**Pool 13 (Mann Lake):** Mann Lake dike overtopped on approximately April 1 and filled the lake to approximately 14 feet. The lake was lowered gradually as the river level dropped. Additional boards were taken out on August 21 to remove as much water as possible. At this time several large bullhead came out of the pool. The west end of the pool saw some brood use and divers during the summer. In the fall migratory waterfowl use was also noted. The level at freeze up was approximately 8 feet.

**Pool 14 (Sprague Lake):** Sprague Lake overtopped on April 1 at several places through April 16. Severe erosion occurred to the township road to the north making it impassible until the water level dropped and new culverts were installed in the road. Water gradually lowered to 8.78 feet in July which facilitated a structure installation in the dike on the North Side. This lake had some migratory bird use as well as mergansers, grebes, cormorants and great blue herons. Elevation at Freeze up was approximately 8.9 feet.

**Pool 16 (Horseshoe Slough Group):** "A" dike by the Wild Rice River overtopped in April but was unobserved. The only evidence of this was the cattail debris left on the dike. The Banish "J" Dike was overtopped by April 4 and was partially under water for about 2 weeks. B-North received water from the north from off of the Refuge when the County Road Department breached an old railroad grade to relieve flooding of County Road 3. When the water level dropped in the Wild Rice River on approximately July 8, all Pools were lowered a few inches by backing water through "A" dike into the Wild Rice River. The pools in the Horseshoe Slough Unit saw high numbers of broods due to the good ratio of open water to cattails. They also provided shallow feeding areas for broods. 200 snow geese, 1,000 Canada geese, and 3,000 mallards used the Horseshoe Slough Unit until about the middle of November when the pools froze over.



### 3. Impoundment Data

Please see the attached chart for capacities for each pool at various elevations. No formal inflow/outflow records were maintained. There are currently no functional gauges on pools that relate to mean sea level. Please see Section #2 above for elevation changes for the various pools.

### 4. 1998 Plans

The following plans for the water levels in the pools are the best levels for attaining management objectives. However, with damage to dikes and expected high water, is not anticipated that we will attain them this year. All efforts will be made to manage pool levels at desired elevations without incurring additional damage to dikes from high water.

**Pool 1 (Lake Tewaukon):** Maintain 1148.0 Mean Sea Level (MSL). This elevation will help to maintain the sport fishery habitat.

**Parker Bay (east end of Lake Tewaukon):** If possible, lower to maintain a 2½-3 foot depth for waterfowl production.

**Pool 2 (Cutler Marsh):** Try and maintain the pool at 1148.0 MSL to relieve pressure on damaged dikes and to facilitate placement of rip rap on Dam 2. This will also encourage vegetative growth in the east side of the pool and provide mud flats for shore bird use. Care will be taken to ensure that water is not dropped too low to allow sheep to escape the Cutler Woods Area. Keep Pool 2 South of DU dike at 1148 to relieve pressure on the breached dike and to promote vegetative growth for erosion control.

**Pool 3 (Maka Pool):** Maintain pool at 1152.5 to facilitate new growth of cattails on DU cross dike and to relieve pressure on the breached dike. Stabilize water as quickly as possible before over-water duck nesting is initiated. If needed, supply water to Pools 2A and 3A.

**Nickeson Bottoms:** Water levels will be dropped as the Wild Rice water levels will allow. This pool has very little vegetation or wildlife use. An attempt must be made to try and lower this pool from approximately 6 feet to a depth of 3 feet to improve vegetative growth and waterfowl use.

**Pool 4 (River Pool):** Maintain approximately 1160 MSL for duck nesting, especially over-water nesting, and stabilize as quick as possible before April 15. Maintain muskrat populations by keeping this pool at this elevation.

**Pool 2A:** Water will be dropped in this pool to facilitate the repair of the 2A inlet which was damaged by flooding. After the repairs the pool will be raised to a level of 1154.

**Pool 3A:** Water will be removed from this pool to facilitate the repair of the 2A inlet. After the repair the pool will be filled to a level of 1156.

**Pool 5:** The structure was washed out during a flood event and there is currently no control. Plans are to begin the repair this year with the NAWCC grant funding. Ducks Unlimited will be completing the construction.

**Pools 5A, 6, 7, 7A:** If possible, fill to maximum depth to flood cattails and maintain water through out the summer. The pools will dry out rapidly through an average summer due to evaporation. Only rain and local runoff will provide water as Hepi Lake structure is non-functional to pass water into these pools. For Pool 7A's active rookery water levels should be managed to keep 1- 3 feet of water in the pool throughout the summer and fall. North American Wetlands Conservation Council (NAWCC) funds and flood damage monies will be used to repair Pool 5 dike, Pool 3A and Hepi Lake north outlet. DU plans to begin these projects in 1998 and as needed pools will be drawn down to accommodate the construction.

**Pool 8 (Hepi Lake):** This pool has no working control structure due to the collapse of the culvert to the north (to Pool 9). Any runoff that comes from the south flushes out through the culvert to the north and then into the Wild Rice. Plans are to begin repairs on this pool this summer using NAWCC funds.

**Pool 9:** Pool 9 will receive water from Hepi Lake and will seek a natural level as water flows out of the pipe to the Wild Rice. Once construction begins (planned for this summer), this pool will have to be lowered some how to facilitate the construction of the outlet to the Wild Rice.

**Pool 10:** Lower to a depth of 2½ feet to encourage submergent vegetation growth to maintain its highest use as a semi-permanent wetland.

**Pool 11 (West White Lake):** Maintain depth at 4-4½ feet to slow cattail invasion. If necessary pump water to Pool 12 to keep from flooding County Road 5. Maximum level should be 1150 for cattail control and no higher than 1151 to reduce impacts to County Road 5. To allow drop in East White Lake, block structure after spring runoff.

**Pool 12 (East White Lake):** Add no water to this pool unless there is a need to pump water from Pool 11 to protect County Road #5. If possible allow this pool to drop to a level of 1148. Allow gradual drying to reestablish cattails and to reduce bank erosion.

**Pool 13 (Mann Lake):** Maintain at 4 -5 feet, will need to reduce current level (8 ft). Pool is currently above optimum operating level. If possible reduce water level to allow for emergent vegetation growth. If flood project is to begin this summer there may be a need to pump water to work on the dike.

**Pool 14 (Sprague Lake):** Maintain maximum pool, about 8½ to 9 feet in order to maintain the sport fishery. If flood project is to begin this summer there may be a need to reduce the water level.

**Pool 16 (Horseshoe Slough):** Pools are at maximum level, no water is needed in the system. Once the Wild Rice River recedes lower Pool A to protect the Banish "J" dike and the Pool A dike. If flood project is to begin this summer there may be a need to reduce the water level. The railroad grade still has a cut in it and may raise the water levels in these pools further.

## 5. Location Map

Please see attached Refuge Map on which all management pools are marked.

**TEWAUKON NATIONAL WILDLIFE REFUGE**  
Pools, Elevations and Acres

Pool No. & Name	Max. elevation (msl)	1985 Acres	1996 Acres *	1996 Volume (acre ft.) *	1997 Acres *	1997 Volume (acre ft.) *
Pool 1 - Tewaukon	1149	1015	1067.77	9366.92	1067.77	9366.92
- Parker's Bay	1149	95	90.30	371.36	90.30	371.36
Pool 2 - Cutler's Marsh	1152	246	267.98	1341.26	246.62	825.73
Pool 2A	1152	30	24.19	45.84	24.19	45.84
Pool 3 - Maka Pool	1156	125	134.14	500.02	98.99	257.31
Pool 3A	1156	18	15.46	33.57		
Pool 4 - River Pool	1159	108	102.36	217.00	25.82	31.71
Pool 5	1160	6	3.34	6.39	0.15	0.07
Pool 5A	1164	5	9.30	15.97		
Pool 6	1169	6	8.46	20.99	8.46	20.99
Pool 7	1174	21	21.64	58.52	21.64	58.52
Pool 7A	1178	106	88.88	228.29	16.58	6.61
Pool 8 - Hepi Lake	1179	106	109.86	882.89	58.62	19.76
Pool 9	1167	10	11.75	46.77	8.54	15.20
Pool 10	1173	5.5	4.57	6.66	4.57	6.66
Pool 11 - West White Lake	1151	80	86.62	254.87	71.86	174.69
Pool 12 - East White Lake	1147	103	97.75	389.62	97.75	389.62
Pool 13 - Mann Lake	1207	57				
Pool 14 - Sprague Lake	1209	186				
Pool 16 - Horseshoe Slough		244				
- Pool 1 (A Pool)	1210	119.7				
- Pool 2 (B Pool)	1206	42.5				
- Pool 3 (C Pool)	1206	10.3				
- Pool 4 (B West)	1206	+30.3				
- Pool 5 (B North)	1206	24.5				
- Pool 6 (C North)	1206	+2.8				
- Pool 7 (C South & C East)	1206	14.5				

\* 1996 Pool acreages and volumes were calculated from information gathered during recently completed surveys of pool depths which were mapped for refuge management purposes. There are currently no functional gauges on pools that relate to mean sea level.

## 1997 HERBICIDE COST SUMMARY

### SARGENT COUNTY (WPA)

CHEMICAL	6.25 GAL. TORDON 22K @ \$72.75/GAL.....	\$455
	12.5 GAL. 2,4-D @ 10.95/GAL.....	\$137
SALARY	1 PERSON - 76.5 HOURS.....	\$1400
TRUCK	313 MILES @ \$.45/MILE.....	<u>\$141</u>
		<b>\$2133</b>

### SARGENT COUNTY (REFUGE)

CHEMICAL	21.25 GAL. 2,4-D @ \$10.95/GAL.....	\$233
	10.63 GAL. TORDON 22K @ \$72.75/GAL.....	\$773
SALARY	1 PERSON - 89 HOURS.....	\$1629
TRUCK	327 MILES @ \$.45/MILE.....	<u>\$147</u>
		<b>\$2782</b>

**TOTAL COST \$4915**

### RICHLAND and RANSOM COUNTIES

No chemical applied this year due to success with biological control insects, sheep grazing, mowing, and haying.

### ACREAGES SPRAYED:

SARGENT COUNTY (REFUGE)	85	(SPURGE)
SARGENT COUNTY (WPA)	50	(SPURGE)
RICHLAND COUNTY (WPA)	0	
RANSOM COUNTY (WPA)	0	

**TOTAL ACREAGES SPRAYED 135**

**COST PER ACRE:**       $\$4915/135 \text{ acres treated} = \$36.41/\text{acre}$



Rutland County

HERBICIDE APPLICATOR RECORDS

H G Herbicide gun

H G Herbicide gun

[illegible]

DATE	TIME	Tewaukon 1997	CROP	LEGAL DESCRIPTION	NUMBE R OF ACRES	PEST CONTROL	WIND INFO	TEMP	PESTICIDE USED	SUPPLIER OF PESTICIDE	GAL/ACRE 1 PT TORD/ 2 PT 2,4-D	LBS. AI # TORDON/ # 2,4-d	TANK MIX /AC	APPLI- CATOR INITIALS
6-18	1500	Tewaukon	grass	129-53-32	2	spurge	NE-3	76	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-19	1300	Tewaukon	grass	129-53-32	12	spurge	S-5	75	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-19	1400	Tewaukon	grass	129-53-5	1	spurge	S-5	75	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-23	0900	Tewaukon	grass	130-53-44 32	15	spurge	S-3	70	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-23	1300	Tewaukon	grass	130-53-44 32	15	spurge	S-7	81	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-23	1600	Tewaukon	grass	130-53-44 32	16	spurge	S-8	85	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-24	0900	Tewaukon	grass	129-53-44 5	4	spurge	NW-6	83	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-24	1200	Tewaukon	grass	130-53-44 31	5	spurge	NW-7	85	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-24	1400	Tewaukon	grass	130-54-44 25	3	spurge	SW-8	81	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-25	0900	Tewaukon	grass	130-54-44 27	.5	spurge	S-4	73	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-25	010:00	Tewaukon	grass	130-54-44 26	.5	spurge	S-5	76	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-26	1200	Tewaukon	grass	130-54-44 35	1.0	spurge	S-8	85	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-27	1300	Tewaukon	grass	130-54-44 36	2.0	spurge	S-8	85	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-27	1300	Tewaukon	grass	130-54-44 34	1.0	spurge	S-8	85	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-30	0700	Tewaukon	grass	130-54-44 34	1.0	spurge	S-2	68	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-30	0900	Tewaukon	grass	130-54-44 35	2.0	spurge	S-2	70	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
6-30	1300	Tewaukon	grass	129-53-44 53	2.0	spurge	SE-6	78	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-1	1400	Tewaukon	grass	130-54-44 36	2.0	spurge	SE-7	80	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-3	0900	Sprange	grass	130-55-34	2.0	spurge	NW-7	60	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-3	1300	Sprange	grass	130-55-35	2.0	spurge	NW-7	60	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-8	01000	Sprange	grass	129-55-2	6.0	spurge	N-2	60	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH

Total 85AC

1546

72.75  
2.0

## SPRAYING RECORD (Hours/Fuel)

Date	County	WPA	Name	Regular Hours	Comp Time Hours	Gas	Diesel	Vehicle	Miles
6-18		Tewanton	Bill	8			19.0		
6-19		Tewanton	Bill	8					
6-23		Tewanton	Bill	8		2.7			
6-24		Tewanton	Bill	8					
6-25		Tewanton	Bill	8					
6-26		Tewanton	Bill	8					
6-27		Tewanton	Bill	8			21.0		
6-30		Tewanton	Bill	8	1				
7-1		Tewanton	Bill	8		2.6			
7-3		Sprague	Bill	8					
7-8		Sprague	Bill	8					
			Total -	88 hrs.	1 hr comp. hrs.	5.3	40		327

Total —

88 hrs.

1hr comp hrs.

5.3.

5.62

40

L 456

327

147.15

1997

BLANK

10000

DATE	TIME	WPA	CROP	LEGAL DESCRIPTION	# OF ACRES	PEST	WIND INFO	TEMP	PESTICIDE USEC	SUPPLIER OF PESTICIDE	GAL/ACRE 1 PT TORD/ 2 PT 2,4-D	LBS. AI # TORDON/ # 2,4-d	TANK MIX /AC	APPLI-CATOR INITIALS
		Palensky (137)	grass	132-58-4		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Widmer (172)	grass	132-58-3		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Gainor (134)	grass	132-54-14/23		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Douglas (174)	grass	132-54-14		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Gainor (170)	grass	132-54-13/24		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Hellen (181)	grass	132-54-24		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Brekke (183)	grass	132-54-24		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-17	0800	Bauer (10)	grass	131-58-12	15	spurge	SE 5	70	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Bauer (10)	grass	131-57-7		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-15	0900	Saunders (157)	grass	131-56-31	9	spurge	W 6	71	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Asche (148)	grass	131-55-12		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-16	1200	Mahrer (94,a)	grass	131-55-24	2	spurge	W 3	82	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-16	0800	Wyum (168)	grass	131-54-33	0	spurge	W 4	69	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-16	0800	Kaske (175)	grass	131-54-33	0	spurge	SW 3	68	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-16	0900	Palensky (154)	grass	131-54-34	11.0	spurge	SW 3	69	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Even (126)	grass	130-56-5		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-17	1200	Evanson (160)	grass	130-56-2	1.5	spurge	SE 8	75	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Anderson (31)	grass	130-56-11		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-15	1200	Olson (150)	grass	130-56-14	3.0	spurge	W 5	81	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-15	1400	Olson/BN(151a)	grass	130-56-25	1.5	spurge	W 7	74	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-16	1400	Lunstad (167)	grass	130-55-5	1.0	spurge	W 7	76	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-12-97	0100	Klefstad (149)	grass	130-55-33	1.0	spurge	NW 5	72	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
		Krause (158)	grass	129-53-4/5		spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-15	1300	Evanson (163)	grass	129-56-2	4.0	spurge	W 3	87	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
7-12-97	011:00	Nelson	grass	130-55-33	1.0	spurge	NW 4	73	Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH
			grass			spurge			Tord/2,4-D	Ostlund	1-Tor/2-2,4	.25/.94	20	WH

Total 50Ac.



## SPRAYING RECORD (Hours/Fuel)

Date	County	WPA	Name	Regular Hours	Comp Time Hours	Gas	Diesel	Vehicle	Miles
7-12	Sargent	Klebstad	Bill	4					
7-12	Sargent	Nelson	Bill	4					
7-15	Sargent	Launders	" "	8	.5		22.0		
7-16	Sargent	Wynn Polonsky Kasbe	" "	8	1.5	3.3			
7-16	Sargent	Maker	" "	8					
7-16	Sargent	Knotted	" "	8	1.5				
7-17	Sargent	Bauer	" "	8	1.0				
7-15	Sargent	Evanson (163)	" "	4			16.0		
7-15	Sargent	Olson (150)	" "	4					
7-15	Sargent	Olson (151A)	" "	8					
7-17	Sargent	Evanson (160)	" "	8					
			Totals →	72 hrs.	4.5 comp hrs	3.3	38		313



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Tewaukon National Wildlife Refuge Complex  
9754 143-1/2 Avenue SE  
Cayuga ND 58013-9754

March 2, 1998

Dear County Commissioners:

In accordance with the North Dakota Wetland Acquisition and Management Agreement, the following is the Tewaukon National Wildlife Refuge Complex's annual report.

Approximately 669 acres were hayed during the year with 523 acres (24 permittees) in Sargent County, 0 acres in Ransom (0 permittees) and 146 acres in Richland County (6 permittees). Haying in the three county District is used as a management tool to increase vigor of certain grass species.

Grazing is another tool used at Tewaukon to manipulate vegetation. This year the pasture in our rotational grazing system located in Sargent County dried out enough to allow us to graze 259 acres with 150 AUM's.

Tewaukon again carried out noxious weed control measures on the Refuge and Waterfowl Production Areas (WPA's) in our three county District. The methods used to control noxious weeds were biological control (insect releases and sheep grazing), mowing, and herbicide application.

In 1997, 5 permittees in Sargent, Richland and Ransom Counties grazed sheep on 321 acres to control leafy spurge. These areas consisted of a few WPA's, and a couple of spots on the Refuge that were difficult to treat with traditional means.

Tewaukon also used mechanical methods to control Canada thistle. Mechanical methods of control included haying 60 acres and mowing 190 acres of thistle in Sargent County before seed set. Approximately 200 acres of broadleaf weeds were mowed in Richland County. The locations requiring broadleaf weed control were seeded to native grasses in 1996.

Typically, native grass establishment requires several years of intensive management (mowing/burning) to discourage competing weeds, and promote grass growth.

Tewaukon has worked with APHIS, NDSU, local weed boards, and sportsmen's clubs to release approximately 438,000 *Apthona czwalinae*/*A. lacertosa* flea beetles to control leafy spurge (36 sites). The Refuge also dispersed 1125 *Ceutorhynchus litura* stem mining weevil galls to control Canada thistle (12 sites). Each insect release site is approximately 1 acre in size, and will hopefully become larger over time. The release sites described above are in addition to insect release sites previously reported. A total of approximately 1,145,000 insects/galls (5 species which attack leafy spurge, and 2 species which attack Canada thistle) have been released on the Tewaukon Complex since 1993.

Sheep and insect treatment sites were located in shelterbelts with a heavy infestation of noxious weeds in the trees, topography not easily accessible to herbicide application equipment, areas with high water tables, or sensitive plant communities.

We have continued a crop rotation system with the Refuge farmers that reduces the amount of chemicals used on the Refuge. The farmer's share of the crop has been increased in order to compensate them for using different crops, and doing more mechanical control of weeds. A total of 809 acres were farmed on the Tewaukon Complex in 1996 (759 acres in Sargent County, and 50 acres in Richland County). One hundred and eighty of the 759 acres of cropland reported in Sargent County were seeded to grass with a cover crop in 1997.

Attached is a summary sheet of roadside mowing, a herbicide cost summary, and breakdown of sheep grazing for leafy spurge control. After reviewing this report, we would welcome any comments or suggestions you may have. In addition, during 1998, if you receive any complaints concerning noxious weeds or road ditches which need to be mowed on our areas, we would appreciate being informed as soon as possible.

Sincerely,



Sandra Siekaniec  
Refuge Manager

Attachments

1  
a  
0  
  
2.  
90  
00  
ns  
36.

## 1997 ROADSIDE MOWING

### **RANSOM COUNTY ROADSIDE MOWERS:**

<u>Permittee</u>	<u>WPA</u>	<u>Date Checked</u>	<u>Permit Type</u>
Dennis Hagen	Smith/Tanner	10/97	Haying (ditch)
Dennis Hagen	Buckmiller	10/97	Haying (ditch)
	Compson	10/97	Under H2O, road closed
State Highway Dept.	Dick, Holt	10/97	no cost
Aliceton Township	Carlson	10/97	no cost
Ft. Ransom Twp.	Strander	10/97	no cost
Sydna Township	Metzen	10/97	no cost

### Paid Mowers

Ken Stroh	Reinke-Bachman	10/97
Herman Funk	Shelver	10/97
Ken Stroh	Dick-Gjertson-Kenyon	10/97
Northland Township	Blikre-Arneson	10/97
Lance Bueling	L. Bueling	10/97
Shenford Township	Wiltse-Kaspari	10/97
Ray Bartholomay	Warner	10/97

### **RICHLAND COUNTY ROADSIDE MOWERS:**

<u>Permittee</u>	<u>WPA</u>	<u>Date Checked</u>	<u>Permit Type</u>
Ted Harles	Nechas	10/97	State Highway Dept.
Andy Gaukler, Jr.	Boehning	10/97	Haying (ditch)
Red River Sportsmen	Smith	10/97	Farming
Jerry Berg	Bladow	10/97	Grazing
	Kuehn	10/97	Under H2O, road closed
unknown	Korth	10/97	no cost
Clint Gaukler/M. David	Wollitz	10/97	Haying
State Highway Dept.	Novetzke	10/97	no cost
County Highway Dept.	Gunness	10/97	no cost
Paul Tiegs	Hartleben	10/97	Haying
Walter Hartleben	Hartleben	10/97	Farming



### 1997 ROADSIDE MOWING (cont.)

#### Paid Mowers

Mike Skroh	Gaukler	10/97
Clint Gaukler	Wollitz	10/97
Mark Stenson	Haaland/Vogeler	10/97
Harris Strege	Ford	10/97
Lyle Buckhouse	Hartleben	10/97

#### SARGENT COUNTY ROADSIDE MOWERS:

<u>Permittee</u>	<u>WPA</u>	<u>Date Checked</u>	<u>Permit Type</u>
Pheasants Forever	Klefstad-Asche-Nelson	10/97	Farming
Joe Breker	Tewaukon Refuge	10/97	Farming
Quentin Hoistad	Sprague Lake	10/97	Farming
Orvis Silseth	Sprague Lake	10/97	Farming
Larry Erickson	Sprague Lake	10/97	Haying
Tewaukon Refuge	Krause, Nickeson Gravel Road, County Road #12, County Road #5 to W.White Lake & Mark Saunders farm area LK. TWK. gravel road.	10/97	
State Highway Dept.	BN/Olson	10/97	no cost
State Highway Dept.	Evanson/Anderson	10/97	no cost
State Highway Dept.	Even	10/97	no cost
Donald Wucherpfenning	Saunders	10/97	no cost
(Forman Township)	L. Olson	10/97	no cost
Donny Marquette	Mahrer	10/97	Haying
Roger Gibbon	Gainor	10/97	Grazing

#### Paid Mowers

	<u>WPA</u>	
Thomas Geffre	Widmer/Palensky	10/97
Lester Bjerke	South Evanson	10/97
Dennis Miller	Lunstad	10/97

## 1997 HERBICIDE COST SUMMARY

### SARGENT COUNTY (WPA)

CHEMICAL	6.25 GAL. TORDON 22K @ \$72.75/GAL.....	\$455
	12.5 GAL. 2,4-D @ 10.95/GAL.....	\$137
SALARY	1 PERSON - 76.5 HOURS.....	\$1400
TRUCK	313 MILES @ \$.45/MILE.....	<u>\$141</u>
		\$2133

### SARGENT COUNTY (REFUGE)

CHEMICAL	21.25 GAL. 2,4-D @ \$10.95/GAL.....	\$233
	10.63 GAL. TORDON 22K @ \$72.75/GAL.....	\$773
SALARY	1 PERSON - 89 HOURS.....	\$1629
TRUCK	327 MILES @ \$.45/MILE.....	<u>\$147</u>
		\$2782

TOTAL COST \$4915

### RICHLAND and RANSOM COUNTIES

No chemical applied this year due to success with biological control insects, sheep grazing, mowing, and haying.

### ACREAGES SPRAYED:

SARGENT COUNTY (REFUGE)	85	(SPURGE)
SARGENT COUNTY (WPA)	50	(SPURGE)
RICHLAND COUNTY (WPA)	0	
RANSOM COUNTY (WPA)	0	

TOTAL ACREAGES SPRAYED 135

COST PER ACRE:      \$4915/135 acres treated = \$36.41/acre

## 1997 Grazing - Noxious Weed Control

### Sheep Areas

<u>WPA</u>	<u>Acres</u>	<u>Length of Time</u>	<u># of Animals</u>	<u>Animals/Acre</u>	<u>Total AUM</u>
Metzen	27	05-15 to 09-20(east) 05-29 to 09-20(west)	10(east) 13(west)	0.85	17.8
Cutler Wds. (Refuge Unit)	35	06-29 to 09-29	15	0.43	9
LaBelle Crk. (Refuge Unit)	65	06-29 to 09-29	15	0.23	9
Boehning	54	05-25 to 10-11	30	0.56	25.2
Bladow	65	06-08 to 10-04	70	1.08	54.18
Hartleben	75	06-01 to 06-15	40(ewes) 40(non-weaned lambs)	0.53	4

TOTAL GRAZED ACRES: 100ac. (Refuge) + 221ac. (District)= 321 acres Total

### 1997 Labor Costs:

48 hours were spent on administrative functions.....	\$ 715.00
40 hours spent on constructing fences.....	\$ 433.00
40 hours spent monitoring the progress of the grazing....	\$ 596.00
16 hours spent removing the poly-wire fences and solar chargers...	\$ 158.00*
 1997 LABOR COST .....	 \$1,900.00

\* due to woven wire fence construction in 1993, only one poly wire fence was erected

### 1997 Supplies:

no supplies were purchased for sheep grazing this year

1997 SUPPLIES COST ..... \$0.00

1997 GRAND TOTAL..... \$1,900.00

### 1997 COST COMPARISON

It is expected that the woven wire fences erected in 1993 will last approximately 10 years, with minimal labor inputs in maintaining fence integrity. When the initial costs of building the woven wire fence (\$11,262) are spread out over this 10 year period, the cost per year is approximately \$1,126. Added to this figure will be administrative and monitoring costs of approximately \$1900. A total yearly cost would then be approximately \$3000 (discounted labor costs over 10 years and administrative/monitoring costs). When divided by 321 acres (the treated area) we arrive at approximately \$9/acre/year vs. approximately \$36/acre/year average herbicide costs.

To: Supervisor, ND Wetland Habitat Office  
Bismarck, ND

From: Asst. Refuge Manager, Tewaukon NWR Complex (62660)  
Cayuga, ND

Subject: Annual Reports for ND-FWS Agreements

**DEPREDATION CONTROL****BLACKBIRD/CATTAIL CONTROL**

<u>COUNTY</u>	<u>ACRES</u>	<u>METHODS USED</u>	<u>TARGET</u>	<u>REASON FOR ACTION</u>
SARGENT	0	N/A	N/A	N/A
RICHLAND	0	N/A	N/A	N/A
RANSOM	0	N/A	N/A	N/A

**WATERFOWL CONTROL**

<u>COUNTY</u>	<u>ACRES FARMED</u>	<u>CROPS</u>	<u>NO. OF FOOD PLOTS</u>	<u>OTHER MANAGEMENT</u>
SARGENT	0	0	0	0
RICHLAND	0	0	0	0
RANSOM	0	0	0	0

\* CROPS GROWN ON TEWAUKON NWRC ARE USED BY WATERFOWL, AND PROBABLY PROVIDE SOME MEASURE OF DEPREDATION CONTROL; HOWEVER, THESE CROPS ARE NOT SPECIFICALLY PLANTED FOR THIS PURPOSE. CROPLAND ACRES ARE REPORTED UNDER THE "CROPLAND" SECTION OF THIS REPORT.

**WEED CONTROL**

<u>COUNTY</u>	<u>ACRES/NO. TRACTS TREATED W/CHEMICALS</u>	<u>ACRES/NO. TRACTS TREATED W/O CHEMICALS</u>	<u>PRIMARY TARGET</u>
SA-REFUGE	85 AC / 21 TRACTS	102 AC./ 4 TRACTS 233 AC./ 10 TRACTS	LEAFY SPURGE C. THISTLE
SA-WPA	50 AC./ 11 TRACTS	13 AC./ 4 TRACTS 13 AC./ 4 TRACTS	LEAFY SPURGE C. THISTLE
RI-WPA	0 AC./ 0 TRACTS	207 AC./ 10 TRACTS 215 AC./ 7 TRACTS	LEAFY SPURGE C. THISTLE/BROADLEAF WEEDS
RA-WPA	0 AC./ 0 TRACTS	35 AC./ 5 TRACTS 1 AC./ 1 TRACT	LEAFY SPURGE C. THISTLE
<b>TOTALS</b>	<b>135 AC/ 32 TRACTS 0 AC/ 0 TRACTS</b>	<b>357 AC./ 23 TRACTS 462 AC./ 22 TRACTS</b>	<b>LEAFY SPURGE C. THISTLE</b>

<u>HAYING- WEED CONTROL:</u>	<u>COUNTY</u>	<u>ACRES</u>	<u>NO. OF PERMITEES</u>
	SA-REFUGE	40	2
	SA-WPA	10	1
	RI-WPA	10	1
	RA-WPA	0	0
	<b>TOTAL</b>	<b>60</b>	<b>4</b>

<u>GRAZING- WEED CONTROL</u>	<u>COUNTY</u>	<u>ACRES</u>	<u>NO. OF PERMITEES</u>
	SA-REFUGE	100	1
	SA-WPA	0	0
	RI-WPA	194	3
	RA-WPA	27	1
	<b>TOTAL</b>	<b>321</b>	<b>5</b>

<u>MOWING- WEED CONTROL</u>	<u>COUNTY</u>	<u># OF TRACTS</u>	<u>ACRES</u>
	SA-REFUGE	5	190
	SA-WPA	0	0
	RI-WPA	1	200 *
	RA-WPA	0	0
	<b>TOTAL</b>	<b>6</b>	<b>390</b>

\*BROADLEAF WEEDS

#### Insect Biological Weed Control

In 1997 Tewaukon continued to work with APHIS, NDSU, local weed boards, and sportsmen's clubs to release approximately 438,000 *Apthona czwalinae*/*A. lacertosa* flea beetles to control leafy spurge (36 sites). The Refuge also released 1125 *Ceutorhynchus litura* stem mining weevil galls to control Canada thistle (12 sites). Each release site is approximately 1 acre in size, and will hopefully become larger over time. A total of over 1,145,000 insects/galls (5 species which attack leafy spurge, and 2 species which attack Canada thistle) have been released on the Tewaukon Complex since 1993.

<u>INSECT- WEED CONTROL</u>	<u>COUNTY</u>	<u># OF TRACTS</u>	<u>ACRES</u>
<u>L. SPURGE</u>			
(A. czwalinae/lacertosa)	SA-REFUGE	2	2
(A. czwalinae/lacertosa)	SA-WPA	4	13
(A. czwalinae/lacertosa)	RI-WPA	7	13
( A. czwalinae/lacertosa)	RA-WPA	4	8
	<b>TOTALS</b>	<b>17</b>	<b>36</b>
<u>C. THISTLE</u>			
	SA-REFUGE	3	3
(C. litura)	SA-WPA	3	3
(C. litura)	RI-WPA	5	5
	RA-WPA	1	1
	<b>TOTALS</b>	<b>12</b>	<b>12</b>

HAYINGHAYING OF FWS LANDS

<u>COUNTY</u>	<u>TOTAL HAY AVAILABLE(AC)</u>	<u>TOTAL HAY USED(AC)</u>	<u>AVAIL. HAY NOT USED(AC)</u>	<u># OF PERMITEES</u>	<u># OF PERMITEES W/ EMERGENCY NEED</u>
SA-REFUGE	493	493	0	22	0
SA-WPA	88	30	58	2	0
RI-WPA	191	146	45	6	0
RA-WPA	67	0	67	0	0
<b>TOTALS</b>	<b>839</b>	<b>669</b>	<b>170</b>	<b>30</b>	<b>0</b>

\* HAYING PERMITS FOR WEED CONTROL ARE NOT INCLUDED IN THIS SECTION.

GRAZINGGRAZING OF FWS LANDS

<u>COUNTY</u>	<u>TOTAL GRAZING AVAILABLE (AC)</u>	<u>ACRES GRAZED</u>	<u>GRAZING NOT USED (AC)</u>	<u># OF PERMITEES</u>	<u># OF PERMITEES W/EMERGENCY NEED</u>
SA-WPA	259	259	0	1	0
SA-REFUGE	0	0	0	0	0
RI-WPA	0	0	0	0	0
RA-WPA	0	0	0	0	0
<b>TOTALS</b>	<b>259</b>	<b>259</b>	<b>0</b>	<b>1</b>	<b>0</b>

\* SHEEP AND GOAT GRAZING PERMITS FOR WEED CONTROL ARE NOT INCLUDED IN THIS SECTION.

CROPLANDCROPPING OF FWS LANDS

<u>COUNTY</u>	<u># OF TRACTS</u>	<u>ACRES</u>
SA-REFUGE	5	723 (INCLUDES 180 AC. SEEDED TO GRASS W/COVER CROP)
SA-WPA	2	36
RI-WPA	2	50
RA-WPA	0	0
<b>TOTALS</b>	<b>9</b>	<b>809</b>

GRASSHOPPER CONTROL ON FWS LANDS

<u>COUNTY</u>	<u># OF TRACTS</u>	<u># OF ACRES</u>	<u>TREATMENT (NOSEMA, SEVIN)</u>
SA-REFUGE	0	0	N/A
SA-WPA	0	0	N/A
WPA	0	0	N/A
RA-WPA	0	0	N/A

NO AREAS WERE DEEMED IN THE HIGH TO SEVERE CATEGORIES.