

NARRATIVE REPORT ROUTING SLIP

X

PLACE

DEVILS LAKE

PERIOD

September - December 1963

OFFICE OF THE CHIEF: Mr. Gillett _____ Mr. Acherknecht _____

Mr. Fermanich _____ Miss. Baum _____ Mr. Goldman _____

WILDLIFE MANAGEMENT: Mr. Webster _____ Mr. Stiles _____

RESOURCE MANAGEMENT: Mr. Stollberg _____ Mr. Lumb _____

OPERATIONS: Mr. Huenecke _____ Mr. Regan _____

PUBLIC USE: Mr. DuMont _____ Mr. Monson _____

WATERFOWL PRODUCTION AREAS
 Devils Lake Wetland Management District
 Devils Lake, North Dakota

Introductory Statement. At this time no formalized outline has been prepared for reporting of data relative to management of waterfowl production areas. The following information is presented to provide a brief historical record for future use.

Water Conditions. Waterfowl production areas in this district were nearly all day at freeze-up, 1963. Data presented in Table I illustrate water conditions. The severity of drought in northeastern North Dakota is emphasized by the fact that marshes purchased under the waterfowl production area program are among the most permanent in the area. Ground water lakes in the vicinity of Devils Lake are at their lowest levels since the 1930's. Printed reports of "improved water conditions in the Dakota's" during 1963 did not apply to this district.

Dry surface soils at freeze-up contributed to poor conditions for maximum run-off in the spring of 1964. Snow cover at the present time (December 29) is very light, with a total fall of 6 inches at Devils Lake.

Final freeze-up of all existing water areas in northeastern North Dakota occurred on November 23 in 1963.

Table I. Water Levels at Freeze-up 1963 (as of 11/23/63)

	<u>Gauge Reading*</u>	<u>Maximum Depth</u>	<u>Change from July</u>
Knote			none
East Marsh (Unit 3)		dry	none
West Marsh (Unit 2)		dry	none
West pothole (Unit 1)		dry	none
Pothole A-J		dry	none
Lone Tree			
East Marsh (Unit 1)	0"	dry	-24"
West Marsh (N) (Unit 2)	0"	3"	-24"
West Marsh (S) (Unit 3)	0"	6"	-24"
Melaas		dry	none
Neer		dry	none
Olson			
Main Marsh		dry	none
Potholes A-I		dry	none
Pfau		dry	none
Plummer		dry	none
Severinson		dry	-7"
Volk			
West Lake		dry	-6"
East Lake		dry	-4"
Wurgler		dry	none
Atchinson		dry	none
Billings Lake			
Main Lake	4"	34"	-14"

Potholes A-AA		P, Q & GP held less than 6" of water. All others dry.	
Brudevig			
Main Marsh		dry	none
Potholes A-U		dry	none
Howitz			
East Marsh (Unit 1)	0"	dry	-8"
West Marsh (Unit 2)		dry	none
Potholes A-D		dry	none
Pung			
Main Marsh		?	-14"
Potholes A-N		dry	none
Ullyott			
Iverson			
Boostrom	0"	dry	-10"
Bothen	0"	dry	none
Erickson		dry	none
Potholes A-W		dry	none
Goldammer		4"	-18"
Hanson	0"	dry	none
Jacobson	0"	dry	none
Roscoe (main lake)	6"	37"	-11"
Potholes A-E		dry	none
Sahl	0"	dry	-10"
Potholes A-C		dry	none
Solberg+	0"	dry	none
Wehe (Rose Lake)		60" (est.)	-10" (est.)
Avocet (US)			
Becker (main marsh)		dry	-9"
Potholes A-L		dry	none
Bye (main marsh)	0"	0"	-6"
Potholes A-D		dry	none
Doyon (US)		dry	-6"
Kenner (main marsh)	0"	dry	-5"
Potholes A-B		dry	none
Miller	0"	dry	none
Stautz			
North Lake	0"	dry	-16"
South Lake		dry	-14"
Potholes A-F		dry	none
Brightbill		dry	-8"
C. Johnson		dry	none
M. Johnson		dry	none
Rod			
Bjerke		36" (est.)	-6" (est.)
Hove		dry	none

*Absence of numbers in this column indicates that no gauge has been established.

Waterfowl. Wetland habitat available for waterfowl use during the fall migration period was extremely limited. Only the following water areas held any water at freeze up: Lone Tree, Billings Lake, Pung, Ulliyott, Iverson, Roscoe, Rod and Bjerke. The Stautz area held about 5 inches of water on October 1, but was dry by freeze-up.

Billings Lake and Lone Tree were closed to public hunting and all other areas were open. The two above areas were held in the closed status because of local sentiment favoring closure.

Comments relative to waterfowl use and hunting activity will be presented separately for each area which held water.

Billings Lake. This area received good duck use all during the period. Goose use was poor. A population of 200-850 mallards was present from October 1 until final freeze-up (11/23), with the peak of 850 on 10/23. Ducks of other species including redheads, canvasback, ruddy duck, baldpate, gadwall, blue-winged teal, green-winged teal and pintail were present in varying numbers until mid-November. The combined total of these species did not ever exceed 100.

On 9/12 seven greater Canada geese were observed. Fifty snow geese were feeding within the area on 10/23. These two observations constitute the only goose records for the period.

A few hunters took advantage of fence line shooting, but hunting pressure on ~~bir~~ birds using this area believed to be very light.

Pung. On 9/20 the following ducks were observed: 3 mallard, 10 gadwall, 5 baldpate, 3 ruddy ducks. Hunters on area on opening day of duck season. Ducks present on main marsh during remainder of season varied from few to none.

Ulliyott. On 9/25 200 ducks and 3 snow geese reported by Victor Hall. Heavy hunting pressure during first two weeks of duck season reported by resident in SW33. Also indicated by car tracks. On 10/8 there were approximately 10 ducks on area. Thirty-five snow geese flew over marsh on this date but did not land.

Iverson. On 9/4 the following ducks observed: B.W. teal - 175; shoveler - 35; pintail - 50; G.w. teal - 50; mallard - 10; Canvasback - 5; coot - 50. Not visited during hunting season. Observations during fall of 1962 indicated much hunter activity, many from Grand Forks Air Force Base.

Rod. Observed on 10/10. Eight redheads present. Some hunter activity indicated by car tracks. Waterfowl use during fall believed to be very low.

Bjerke. On 10/9 the following waterfowl observed: 5 gadwall and 10 coot. Light hunter activity during first week of season.

Stautz. On 8/29 estimated 1,000 ducks. Mallards dominant, many pintails, a few baldpates, gadwalls and shovelers. Four black ducks. On 10/2: 350

ducks--mostly mallards and pintails; snow geese - 35; lesser Canada geese - 50. Good duck hunting and some goose hunting available early in season. Hunter activity light.

Wehe (Rose Lake). On 10/2 estimated 850 ducks, 25 lesser Canada's on lake. Canvasback - 100; redhead - 100; 650 mixed dabblers. 10/3 - 500 ducks, mostly all dabblers; 200 lesser Canada's feeding in stubble on west side of lake. 10/7 - 150 ducks, 50 Canvasbacks, rest mixed dabblers. 10/29 - 25 mallards; 25 lesser scaup.

Goose hunting success was good in this vicinity early in season. Mr. Basil Foley of Bartlet reported many lesser Canada's were shot on October 1, 2 and 3. He estimated he saw between 800 and 1,000 geese each morning. Hunting pressure heavy all season.

Roscoe. On 8/29 the following ducks observed: redhead - 75; Canvasback - 50; ring-necked duck - 75; baldpate - 2; coot - 50. On 11/2 Victor Hall estimated 80 mallards and 20 other ducks present. Hunting activity believed to be very light during fall.

Furbearers. Due to the poor water conditions, aquatic furbearer populations are currently at a low level on waterfowl production areas. Muskrats are present only on the following: Roscoe, Rod, Bjerke, Iverson and Billings Lake. The combined winter muskrat population on all these areas is not believed by the writer to be more than 100 animals. Mink in low numbers are also present on the above areas.

Foxes, badgers, raccoons, weasels, jackrabbits and other terrestrial furbearers are present on waterfowl production areas but no estimate of numbers is available.

Other Wildlife. Among upland game birds, sharp-tailed grouse, pinnated grouse, Hungarian partridges and pheasants are represented on waterfowl production areas in this district. The most common species is the partridge. Sharp-tailed grouse use many of the areas. Pinnated grouse and pheasants are rare.

Observations during the period are as follows: sharp-tailed grouse: Wurgler - 7 (10/7); Stautz - 8 (12/15); Billings Lake - 13 (11/3); Plummer - 2 (9/1). Hungarian partridge: Billings Lake - 18 (10/6); 7 (9/25). Pheasant: Wehe - 3 (10/29).

Hunting activity for upland game birds on waterfowl production areas believed to be very light.

Posting. Posting is up-to-date. One hundred and fifty posts and signs are on hand which should be adequate for anticipated needs in the immediate future.

No problems are being encountered in posting waterfowl production areas in this district.

Fencing. Fencing of waterfowl production areas is in the beginning stages. Five miles of barbed wire boundary fence were constructed at Billings Lake during the period. The total cost of this project was \$5,329.56 or \$1,065.91 per mile. Following is a cost analysis of this project.

T-posts, 6'	1600 @\$.84 ea.	\$1,344.00
Tubular steel posts, 2½" O.D. x 8'	50 @\$15.92 ea.	796.00
Barbed wire	60 - 80 rod spools @\$9	540.00
Cement	28 bags @\$1.65	46.20
Gate fasteners	3 @\$5	15.00
Labor	827 hours @\$1.68	1,388.36
Equipment rental*	240 hours @\$5.00	<u>1,200.00</u>

*includes one 1 ton truck, 1 tractor with loader, miscellaneous small tools

TOTAL \$5,329.56

In addition to the above actual fence construction cost the following projects were completed at Billings Lake:

1. Removal of old fences and rubbish
 - 80 hours equipment rental @\$5.00 = \$400.00
 - 252 hours of labor @\$1.68 = \$423.36
2. Burial of old stone foundations
 - basement filling, leveling and tree removal
 - (caterpillar rental, George Tokheim, Loma, North Dakota)
 - 8 3/4 hours @\$10.00 = \$87.50

These projects were necessary to place the area in suitable condition for future grazing.

The fencing crew consisted of Richard Spenst, Sr., who lives one mile east of the area, his twin sons, Richard Spenst, Jr. and Robert Spenst, and Kenneth Smyth of Munich, North Dakota. This crew performed very good work and Richard Spenst, Sr. was outstanding in displaying wise leadership and independent judgment. It is hoped that Mr. Spenst can be utilized to construct fence on other waterfowl production areas in the future. He has indicated that he is interested in more work and is willing to travel reasonable distances.

A county road grader and operator sloped about three-fourths of a mile of roadside adjacent to tract (12a). This made fence construction easier and will facilitate future mowing of roadsides.

Fencing materials on hand at present include: 400 - 6 foot T-posts; 100 - 2½ inch O.D. 8' tubular posts; 40 - 80 rod spools of barbed wire.

Grass Seeding. Conversion of cropland to permanent grass progressed very well during the period. Nearly all seeding was done by permittees under a combination cooperative farming grass seeding agreement. Generally 85-90 per cent of the crop went to the permittee in return for his additional effort to seed grass.

Approximately 800 acres of cropland were seeded to grass during the period in this district. All was done during September, October and November. Various mixtures of native grasses were used including the following species: green needlegrass, western wheatgrass, switchgrass, slender wheatgrass, Canada wildrye, big bluestem, little bluestem, blue grama, sideoats grama and Indian grass. All of these species were not necessarily used in one mixture, but from four to six species were used in each. Green needlegrass and western wheatgrass were generally the dominants.

A total of 991 acres were seeded to grass on waterfowl production areas in this district during 1963. Seed used totaled 10,850 pounds at a cost of \$6,607.28 or \$6.67 per acre. This cost is for seed only and does not include freight or administrative costs. The writer believes that \$8.00-\$8.50 per acre is a reasonable estimate for total cost of grass seeding.

Detailed data for the 1963 grass seedings are recorded in station files. A copy of this summary is included at the end of this report and provides a record of the grass mixture and seeding rate for each tract.

Grass seed on hand at the end of this period includes (units in pounds): big bluestem - 250; sideoats grama - 350; western wheatgrass - 200; switchgrass - 500; green needlegrass - 300; blue grama - 80; bluestem mixture - 200; sweet clover - 50.

Based on current estimates, there will be approximately 500 acres of cropland to seed to grass in 1964. This will require about 3500 pounds of seed in addition to that on hand. It would be desirable to obtain 1500 pounds of green needlegrass, 1500 pounds of western wheatgrass and 500 pounds of switchgrass.

Small Wetland Easements. During November and December, 102 small wetland easement ownerships were inspected. Most were inspected by airplane. Thirty burned potholes were found on 16 easement tracts. Of the 30 burnings, 27 were located contiguous to burned roadsides or burned wetlands on other ownerships. Three burned potholes were located in the interior of fields and, in my opinion, were deliberate burnings. Two were on Ramsey (16X) and one was on Cavalier (23X-1). Detailed records of the inspection are on file in the office.

There were 116 easement tracts under the supervision of this office as of December 8. The remaining 14 easements were not checked because of their isolated location.

Much time was spent in executing the Certificate of Inspection and Possession in connection with closing new easement cases. This is a time consuming and expensive task.

The Devils Lake Acquisition Office has been acquiring new easements at the rate of 20-30 per month since September. This suggests that the workload in connection with easements will soon be considerable. As of this writing, there are approximately 200 ownerships totaling about 50,000 acres under easement in this management district.

Fee Ownerships. As of the end of this period, the total acreage of waterfowl production areas in this district is 7773.73 acres. The acreage by counties is: Benson - 2053.10; Cavalier - 1388.01; Grand Forks - 397.38; Nelson - 1132.68; Pierce - 1335.92; Rolette - 24.32; Ramsey - 844.30; Towner - 514.88; Walsh - 83.14. Tracts in final stages of acquisition (fee) include: (approved by Co. Comm.) Walsh (53) - 160.00 acres and (56) - 80.00 acres. Signed agreements (not approved by county commissioners) include: Benson - 120.00 acres; Cavalier - 160.00 acres; Ramsey - 80.00 acres.

Miscellaneous. Good storage space for grass seed, fencing and posting materials and other items has been rented in Devils Lake (a portion of the Monteith Cold Storage Plant). This space is in a separate room in a brick building with a large outside door. Cost to the service is \$25.00 per month.

Office space in the Ramsey County Courthouse is very good. The writer believes that the relationship with the Area Acquisition Office contributes to better operation of the various phases of Bureau programs.

A uniform outline for reporting management progress on waterfowl production areas would be desirable. This would ensure complete recording of all essential historical data and also comparisons of data between the various management districts.

Prepared by:

Report Completed:

Harold F. Duebbert
Harold F. Duebbert

Edward J. Smith
Regional Office Approval

1-22-64

Asst. Regional Refuge Supv'r.

GRASS SEEDING SUMMARY - 1963 SEASON - DEVILS LAKE WETLAND MANAGEMENT DISTRICT

WPA	Acres Seeded	Pounds - Mixture	Origin	Cost Per Pound	Total Cost	Seeding Date	
KNOTE	75	200# Green needlegrass	S.D. (Bober)	.90	\$180.00	Drilled in oats, barley and wheat stubble - early September. Topsoil very dry, subsoil dry. Tenant: R. Burns.	
		190 Switchgrass	S.D. (Wickle)	.30	57.00		
		150 Canada wildrye	Nebr. (Miller)	.90	135.00		
		80 Slender wheat	N.D. (Bober)	.23	18.40		
		150 Native grass mix	Nebr. (Miller)	.38-4/10	57.60		
		Big bluestem 24.79%					
		Little bluestem 12.70%					
		Indian grass 9.28%					
Totals	800#	30 Blue grama		.48	14.40		
					\$462.40		
PFAU	17	60# Green needlegrass	S.D. (Bober)	.90	54.00	Drilled in flax stubble in early September. Topsoil and subsoil very dry. Tenant: Carl Helgeson. Reported mixture very hard to drill.	
		42 Switchgrass	S.D. (Wickle)	.30	12.60		
		30 Canada wildrye	Nebr. (Miller)	.90	27.00		
		12 Slender wheat	N.D. (Bober)	.23	2.76		
		30 Native grass mix	Nebr. (Miller)	.38-4/10	11.52		
		(See above for composition)					
		6 Blue grama	S.D. (Bober)	.48	2.88		
		Totals	180#				\$110.76
MURGLER (W. field)	12	40# Green needlegrass	S.D. (Bober)	.90	36.00	Drilled in fall in barley stubble - early September.	
		28 Switchgrass	S.D. (Wickle)	.30	8.40		
		20 Canada wildrye	Nebr. (Miller)	.90	18.00		
		8 Slender wheat	N.D. (Bober)	.23	1.84		
		20 Native grass mix	Nebr. (Miller)	.38-4/10	7.68		
		(See above for composition)					
		4 Blue grama	S.D. (Bober)	.48	1.92		
		50 Switchgrass	Nebr. (Miller)	.36	18.00		
Totals	170#			\$ 91.84			
MURGLER (S. field)	20	200# 1962 mixture transferred from Sullys Hill. Appeared to contain slender wheat as dominant, with small amounts of big and little bluestem, sideoats grama and switchgrass.				Drilled in with flax in early June.	
			(est.)	.50	\$100.00		
Totals	200#						

WPA	Acres Seeded	Pounds - Mixture	Origin	Cost Per Pound	Total Cost	Seeding Data
PLUMMER	10	150#	1962 mixture transferred from Sullys Hill. Appeared to contain slender wheat as dominant, with small amounts of big and little bluestem, sideoats grama and switchgrass.			Drilled in oats stubble in September.
<u>Totals</u>		<u>150#</u>		(est.) .50	<u>\$ 75.00</u>	
VOLK	10	150#	1962 mixture transferred from Sullys Hill. Appeared to contain slender wheat as dominant, with small amounts of big and little bluestem, sideoats grama and switchgrass.			Drilled in with flax in spring.
<u>Totals</u>		<u>150#</u>		(est.) .50	<u>\$ 75.00</u>	
VOLK (S. field)	4	50#	Same mixture as above.			Drilled in with barley in spring.
<u>Totals</u>		<u>50#</u>		(est.) .50	<u>\$ 25.00</u>	
ANDERSON	40	400#	1962 mixture obtained from Sullys Hill. Appeared to contain slender wheat, western wheat and alfalfa.			Drilled in with oats in spring (late May).
<u>Totals</u>		<u>400#</u>		(est.) .50	<u>\$200.00</u>	
Small area hand seeded with big and little bluestem and sideoats grama on 10/21/63.						
OLSON	16	200#	1962 mixture obtained from Sullys Hill. Appeared to be slender wheat dominant, with small amounts of big and little bluestem, sideoats grama and switchgrass.			Drilled in flax stubble in late fall.
<u>Totals</u>		<u>200#</u>		(est.) .50	<u>\$100.00</u>	
BRIDEVIC (W. fields)	50	200#	Green needlegrass	N.D. (Sexauer) \$1.00	\$200.00	Drilled in September in barley and wheat stubble.
		200	Western wheatgrass	S.D. (Interstate) .55	110.00	
		100	Switchgrass	Nebr. (Miller) .36	36.00	
		50	Big bluestem	N.D. (Frojen) 1.00	50.00	
<u>Totals</u>		<u>550#</u>			<u>\$396.00</u>	
BILLINGS LAKE (15a,b)	150±	400#	Green needlegrass	N.D. (Sexauer) \$1.00	\$400.00	Drilled in late October in oats, barley and wheat stubble.
		400	Western Wheatgrass	S.D. (Interstate) .55	220.00	

WPA	Acres Seeded	Pounds - Mixture	Origin	Cost Per Pound	Total Cost	Seeding Date
		300# Switchgrass	S.D. (Wickle)	.30	90.00	Drilled fairly good by using a small amount of barley with it.
		200 Big bluestem	N.D. (Frojen)	1.00	200.00	
		100 Sideoats grama	S.D. (Bober)	.50	50.00	
		100 Slender wheat	S.D. (Sexauer)	.40	40.00	
<u>Totals</u>	<u>1,500#</u>				<u>\$1,000.00</u>	
		Used approximately 200# of following mixture to complete: green needlegrass, western wheatgrass, switchgrass, sideoats grama and sweet clover. (Drilled very easily without any grain mixed with it.) Estimated cost:			\$270.00	
BILLINGS LAKE 80± (12a)		400# Green needlegrass	N.D. (Sexauer)	1.00	\$400.00	Drilled in barley and wheat stubble in late October. Stubble fairly clean.
		200 Slender wheatgrass	N.D. (Sexauer)	.40	80.00	
		200 Switchgrass	S.D. (Wickle)	.30	60.00	
		50 Big bluestem	N.D. (Frojen)	1.00	50.00	
<u>Totals</u>	<u>850#</u>				<u>\$590.00</u>	
		Used approximately 400# of following mixture to complete: green needlegrass, western wheatgrass, switchgrass, sideoats grama and sweet clover. Estimated cost:			\$135.00	
PUNG (West two fields)	60	200# Green needlegrass	N.D. (Sexauer)	1.00	\$200.00	Drilled in barley, wheat stubble in mid-October. Stubble fairly clean.
		200 Western wheatgrass	S.D. (Interstate)	.55	110.00	
		150 Switchgrass	S.D. (Wickle)	.30	45.00	
		50 Big bluestem	N.D. (Frojen)	1.00	50.00	
<u>Totals</u>	<u>600#</u>				<u>\$405.00</u>	
ULLYOTT	30	300# 1962 mixture obtained from Sullys Hill.				Drilled in oats stubble in October.
		Appeared to contain slender wheat as dominant.				
<u>Totals</u>	<u>300#</u>			Estimated cost:	<u>\$150.00</u>	
		Small area hand seeded with big and little bluestem and sideoats grama.				
SAHL	100	300# Green needlegrass	N.D. (Sexauer)	1.00	\$300.00	Drilled in barley and wheat stubble in October. NE portion heavily infested with <u>Kochia</u> and Russian thistle.
		300 Switchgrass	S.D. (Wickle)	.30	90.00	
		200 Western wheatgrass	S.D. (Interstate)	.55	110.00	
		100 Sideoats grama	S.D. (Bober)	.50	50.00	
		50 Big bluestem	N.D. (Frojen)	1.00	50.00	
		50 Sweet clover	N.D. (Haroldson)	.05	2.50	
<u>Totals</u>	<u>1,000#</u>				<u>\$602.50</u>	

WPA	Acres Seeded	Pounds - Mixture	Origin	Cost Per Pound	Total Cost	Seeding Date
WEHE (S. field)	35	200# Green needlegrass	S.D. (Bober)	.90	\$180.00	Seeded in late May in oats and wheat stubble with Wikomi broadcast seeder.
		100 Switchgrass	Nebr. (Miller)	.36	36.00	
		100 Slender wheatgrass	N.D. (Bober)	.23	23.00	
		50 Sideoats grama	Nebr. (Miller)	.42	21.00	
		50 Sweet clover	N.D. (Haroldson)	.05	2.50	
<u>Totals</u>		<u>500#</u>			<u>\$262.50</u>	
WEHE (N. field)	30	120# Native grass mixture	Nebr. (Miller)	.38-4/10	46.08	Seeded in November with Wikomi broadcast seeder.
		(See above for species composition)				
		100 Slender wheatgrass	S.D. (Sexauer)	.40	40.00	
		80 Switchgrass	S.D. (Wickle)	.30	24.00	
		25 Sideoats grama	S.D. (Bober)	.50	12.50	
<u>Totals</u>		<u>325#</u>			<u>\$122.58</u>	
JACOBSON	15	150# Green needlegrass	S.D. (Bober)	.90	\$135.00	Seeded in early June with flax.
		20 Native grass mixture hand seeded in late June.	Estimated cost:		8.00	
		20 Native grass mixture hand seeded in October.	Estimated cost:		10.00	
BYE	80	200# Western Wheat	S.D. (Interstate)	.55	\$110.00	Drilled in October in oats, barley and wheat stubble.
		200 Green needlegrass	N.D. (Sexauer)	1.00	200.00	
		200 Switchgrass	S.D. (Wickle)	.30	60.00	
		150 Sweet clover	N.D. (Haroldson)	.05	7.50	
		50 Slender wheatgrass	N.D. (Sexauer)	.40	20.00	
		25 Big bluestem	N.D. (Frojen)	1.00	25.00	
<u>Totals</u>		<u>825#</u>			<u>\$422.50</u>	
BECKER (W. field)	30	100# Western wheat	S.D. (Interstate)	.55	\$ 55.00	late October Drilled in September in barley and wheat stubble.
		100 Green needlegrass	N.D. (Sexauer)	1.00	100.00	
		100 Switchgrass	Nebr. (Miller)	.36	36.00	
		25 Big bluestem	N.D. (Frojen)	1.00	25.00	
<u>Totals</u>		<u>325#</u>			<u>\$216.00</u>	
KENNER	25	Seeded by Mr. Kenner in spring with flax. He used a grass mixture which he had on hand from previous pasture seeding on his own land. Believed to consist of brome, crested wheat, Russian wildrye and alfalfa. No cost to F&WS.				

WPA	Acres Seeded	Pounds - Mixture	Origin	Cost Per Pound	Total Cost	Seeding Date
BRIGHTBILL	32	100# Western wheatgrass	S.D. (Interstate)	.55	\$ 55.00	Drilled in barley stubble in September. (Disced first.)
		100 Green needlegrass	N.D. (Sexauer)	1.00	100.00	
		50 Slender wheatgrass	N.D. (Sexauer)	.40	20.00	
		50 Switchgrass	Nebr. (Miller)	.36	18.00	
		10 Sideoats grama	Nebr. (Miller)	.42	4.20	
<u>Totals</u>		<u>310#</u>			<u>\$197.20</u>	
JOHNSON, C.	70	400# Western wheatgrass	S.D. (Interstate)	.55	\$220.00	Drilled in late October in flax and barley stubble.
		150 Green needlegrass	N.D. (Sexauer)	1.00	150.00	
		100 Switchgrass	S.D. (Bober)	.60	60.00	
		25 Sideoats grama	S.D. (Bober)	.60	15.00	
<u>Totals</u>		<u>675#</u>			<u>\$445.00</u>	

TOTAL ACRES SEEDED 991 acres

TOTAL SEED 10,850 pounds

TOTAL COST \$6,607.28

TOTAL COST PER ACRE (SEED ONLY) \$6.67

GRASS SEED ANALYSIS - 1963 SEEDING

Species	Origin	Purity	Germination	Inert	Weeds	Cost Per Pound
Switchgrass	Nebr. (Miller)	99.00%	83.00%	.15%	.85%	\$.36
Green needlegrass	S. D. (Bober)	97.84%	85.00%	1.40%	.43%	.90
Canada wildrye	Nebr. (Miller)	85.50%	75.00%	13.28%	.10%	.90
Switchgrass	S. D. (Wickle)	98.43%	97.00%	.07%	1.50%	.30
Slender wheatgrass	N. D. (Bober)	98.56%	90.00%	1.22%	.10%	.23
Sideoats grama	Nebr. (Miller)	63.76%	87.00%	36.00%	.04%	.42
Green needlegrass	N. D. (Sexauer)	99.54%	72.00%	.38%	.04%	1.00?
Slender wheatgrass	N. D. (Sexauer)	98.10%	90.00%	1.90%	.00%	.40?
Western wheatgrass	S. D. (Interstate)	92.00%	85.00%	7.90%	.10%	.55
Big bluestem	N. D. (Frojen)	74.80%	63.00%	21.37%	3.35%	1.00
Native grass mixture	Nebr. (Miller)	46.77%		48.89%	2.01%	.38-4/10
Big bluestem			68.00%			
Little bluestem			62.00%			
Indian grass			74.00%			
Switchgrass	S. D. (Bober)	98.86%	71.00%	.60%	.46%	.60
Sideoats grama	S. D. (Bober)	49.21%	64.00%	46.53%	3.96%	.50