



	Ref. Manager	RS
✓	Asst. Ref. Mgr	
✓	Recr. Plan.	
	Biol. Tech.	
	Admin.	
	Clerk	
	Annada	
	Brussels	
	Wapello	

MIGRATORY BIRD DISEASE CONTINGENCY PLAN

LOUISA NWR
WAPELLO, IA

Submitted by:

Wayne Stanley 16-30-83

Reviewed by:

Paul C. Cummings 7-13-83
Division II Biologist

John W. Elkin

Concurrence by:

John W. Winslow 7/28/83
Regional Disease Coordinator

Approved by:

Harold W. Benson 8/19/83
Assistant Regional Director
Wildlife Resources

Introduction

The refuge is located in the Mississippi River floodplain 6 miles east of the city of Wapello in Louisa County, Iowa. The refuge encompasses 2,609 acres of which 800 acres is cropland, 650 acres open water/marsh/moist soil units, and the remaining 1,159 acres in timber and upland habitat.

The refuge is bounded on the east by the Mississippi River, on the south by the 4,000+ acre Lake Odessa State Wildlife Management Area, and on the north and west by private farmland.

The nearest towns are Wapello (6 miles west), Muscatine (18 miles north), and Burlington (22 miles south).

The refuge is farmed (800 acres) extensively each year to provide hot foods and browse for migratory waterfowl. Principle crops are corn, soybeans, millet, and winter wheat. All of the agricultural fields are adjacent to or near large bodies of water (i.e. Goose Pond, Muscatine Slough, Lake Odessa, and moist soil units).

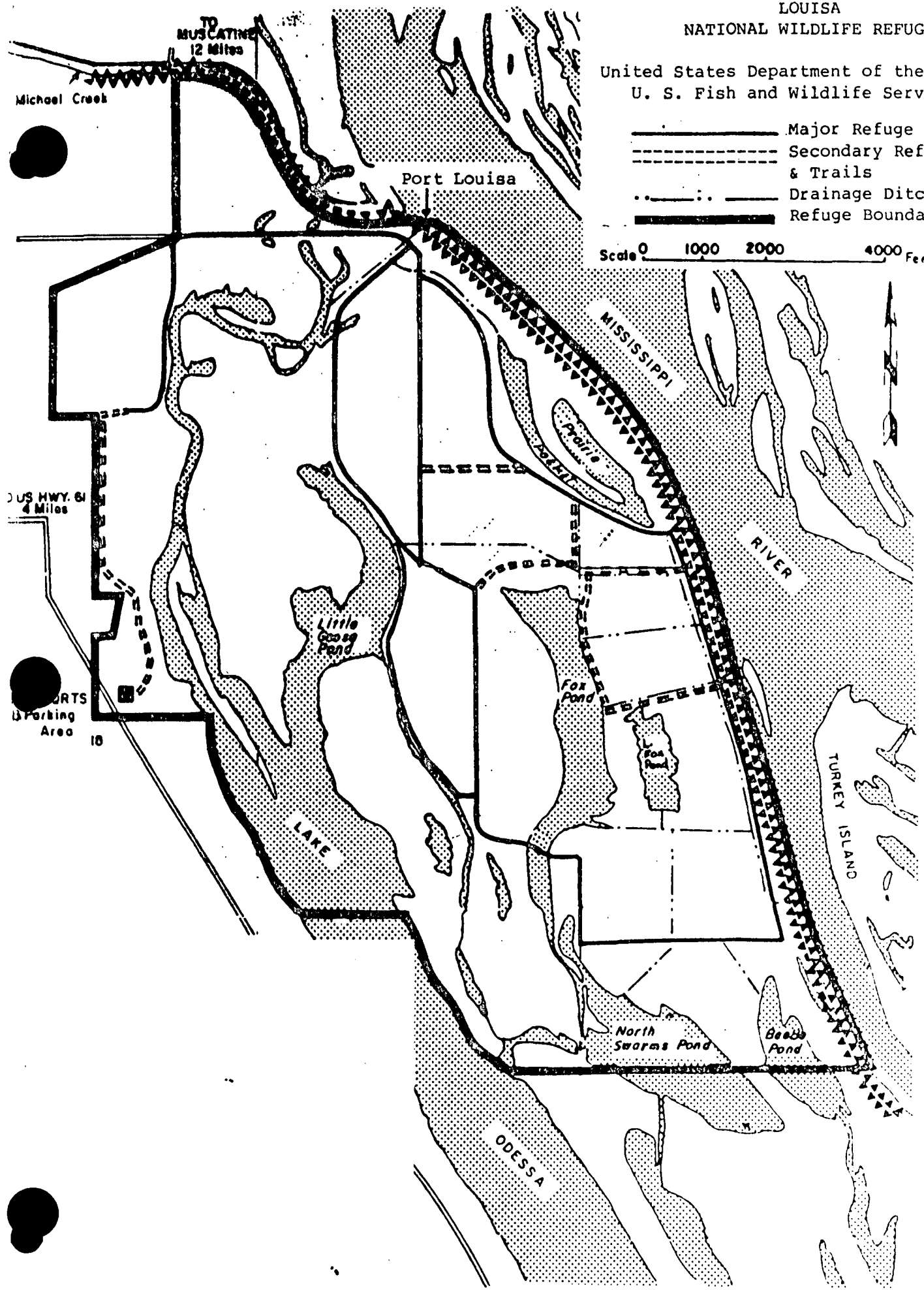
Refuge water supplies come entirely from the Mississippi River and precipitation. The refuge controls the inlet for water from the Mississippi, and the State controls the outlet for both the refuge and the State Wildlife Management Area.

NATIONAL WILDLIFE REFUGE

United States Department of the Interior
U. S. Fish and Wildlife Service

- Major Refuge Roads
- Secondary Refuge Roads & Trails
- Drainage Ditches
- Refuge Boundary

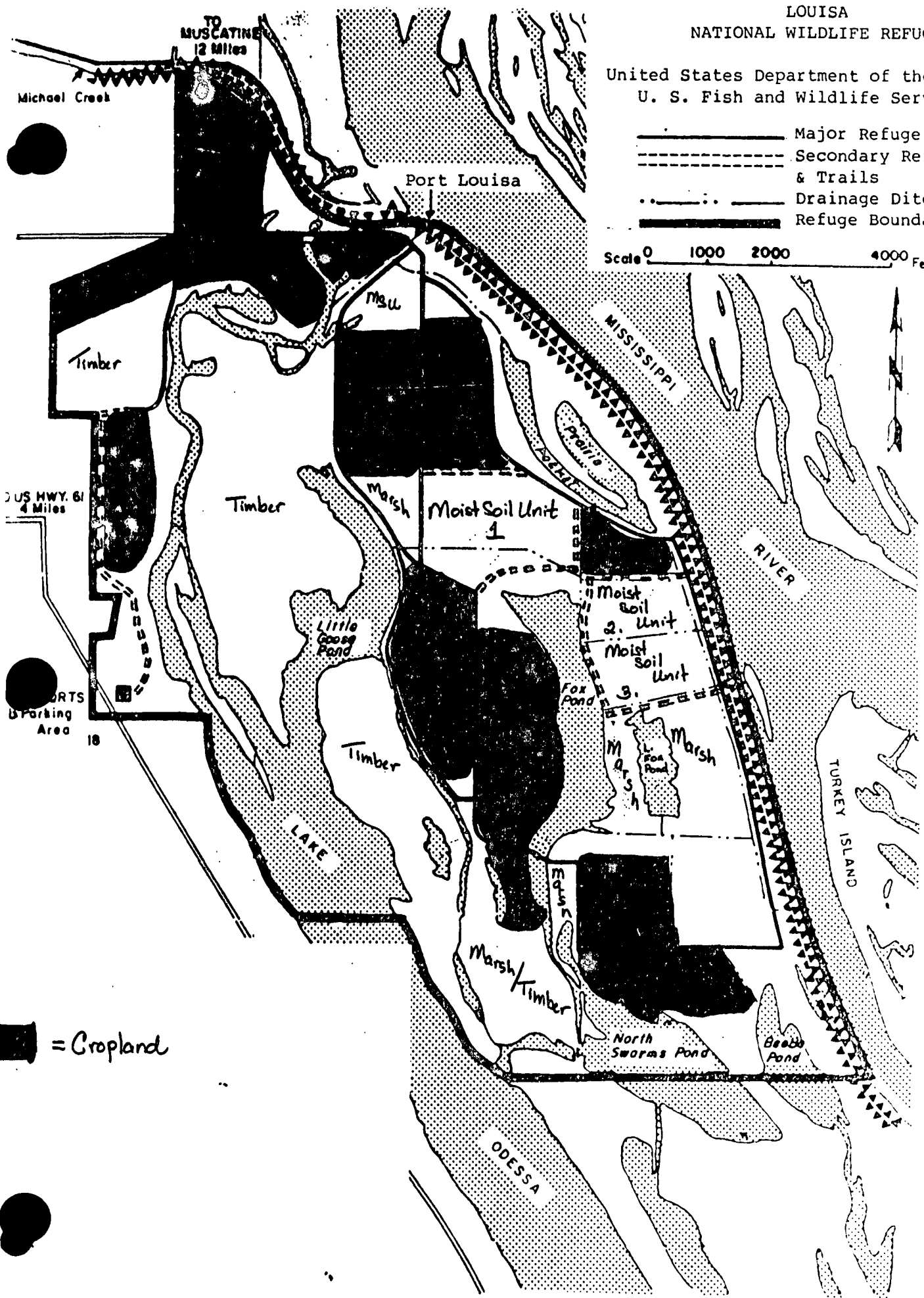
Scale 0 1000 2000 4000 Feet



United States Department of the Interior
U. S. Fish and Wildlife Service

- Major Refuge Roads
- Secondary Refuge Roads & Trails
- Drainage Ditches
- Refuge Boundary

Scale 0 1000 2000 4000 Feet



= Cropland

Disease Surveillance

No formal disease surveillance activities are conducted on the refuge. Personnel working in the field are advised to watch for signs of wildlife mortality throughout the year. Special emphasis is given during spring and fall waterfowl migrations while conducting weekly aerial and ground censuses. Staff censuses are conducted via roads, dikes, and levees while aerial census work is conducted by the Illinois Natural History Survey. With these methods it would be quite easy to miss observing dead or dying waterfowl due to the numerous secluded wooded sloughs and marshes.

Reporting and notification procedures in the case of a disease outbreak are those found in 7 RM 17.8. The first person to be notified will be the Refuge Manager - Louisa NWR.

Disease Response

I. Logistical Considerations

A. Personnel Sources

1. Local - See Attachment 1
2. Other - See Attachment 1

B. Equipment

1. Vehicles - See Attachment 2
2. Aircraft - See Attachment 2
3. Heavy Equipment - See Attachment 2
4. Boats - See Attachment 2
5. Radios - See Attachment 2
6. Incinerators - None
7. Decontamination Units - See Attachment 2
8. Scaring Devices - See Attachment 2

C. Supply Sources

1. Disinfectants and Chemicals - See Attachment 3
2. Plastics Bags - See Attachment 3
3. Fuel for Carcass Burning - See Attachment 3
4. Field Clothes - See Attachment 3
5. Plastic Trash Barrels, Tubs, Brushes - See Attachment 3
6. Scaring Devices - See Attachment 3
7. Dry Ice/Liquid Nitrogen - See Attachment 3

D. Lodging for Temporary Personnel Assigned to Disease Control Operation

Roy-El Motel	Wapello, IA	319/523-2111
Muskie Motel	Muscatine, IA	319/263-2601
Redwood Motel	Muscatine, IA	319/263-4801
Lamplight Inn	Muscatine, IA	319/263-7191

E. Food

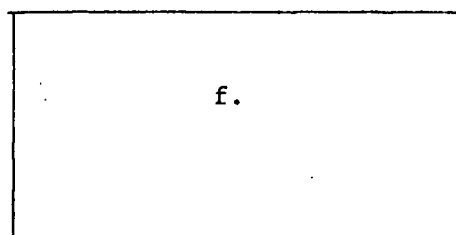
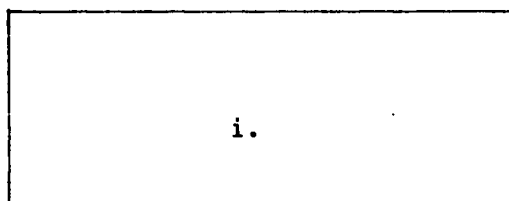
On-Site Capabilities - None

Pats 66 Cafe	Grandview, IA	319/729-9901
The Capitol	Wapello, IA	319/523-8130
Arrowhead Cafe	Wapello, IA	319/523-5201
Tom-A-Hawk	Wapello, IA	319/523-8388
Ray & Barbs	Wapello, IA	319/523-8123

F. Identification of Working Areas

- a. Command post
- b. Press and briefing room
- c. Parking
- d. Eating area
- e. Staff congregation and rest area
- f. Equipment and supply receipt
- g. Decontamination of personnel
- h. Decontamination of equipment
- i. Laboratory investigations

c. g. h.



c.

b.	a.	d. e.
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 = Carcass Disposal Site

II. Biological Considerations

- A. Species - See Attachment 4
- B. Population Data - See Attachment 4
- C. Animal Movement Patterns

The only major movements are waterfowl feeding flights during the fall period. Waterfowl leave the refuge around 6:00 to 7:00 AM and return to the refuge around 10:00 AM. The evening feeding flights depart around 3:30 to 4:30 PM and return around 6:00 PM. Movement is generally to the north and to the west with birds departing to feed in private cropland around the refuge. Some movement between refuges (Big Timber and Keithsburg) is suspected, but the degree is not known. During mild weather geese and ducks roost overnight on the Iowa River approximately 6 to 8 miles west of the refuge.

Seasonal movements are more subtle. Populations build slowly from late September and peak during the end of November. Populations decline moderately in early December and by the middle of December nearly all waterfowl have departed. Spring populations begin building in late February and normally the length of time spent on the refuge is quite short - no more than one week to 10 days. In mild years waterfowl may overfly the refuge entirely.

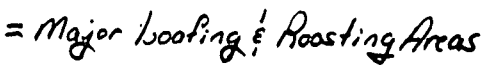
Use on the refuge is confined primarily to MSU's, Fox Pond, Little Goose Pond, and Muscatine Slough. Use on these areas is in the form of loafing and roosting. Geese spend the majority of the day in ag. fields - primarily winter wheat ground.

D. Weather Patterns

1. Freeze-up and ice out periods - Freeze-up on refuge impoundments on the average is complete by the middle of December. MSU's freeze over first followed in order by Fox Pond, Prairie Pocket, Little Goose Pond, Goose Pond, and Muscatine Slough.
2. Precipitation on the refuge averages 32.5 inches annually with a monthly distribution ranging from 1.9 to 4.4 inches. The driest months are August, December, January, and February.
3. Temperatures may range from 100°+ to -30°. 80° to 90° temperatures are not uncommon during the months of August, September, and October.

_____ Major Refuge Roads
 - - - - - Secondary Refuge Roads
 & Trails
 Drainage Ditches
 _____ Refuge Boundary

4000 Feet



E. Habitat and Population Manipulation Potential

1. Water manipulation during any period of the year on the refuge is dependent on water levels in the Mississippi River. Gravity flow is the only means of raising or lowering water levels on major impoundments on the refuge and Lake Odessa. If river levels are high, drawdowns are not possible, and if river levels are low, raising levels on the refuge is not possible. Therefore, water level manipulation as a means of deterring or favoring use cannot be assured.
2. Farming may be used to disperse geese. Plowdown of crops would be possible during most years and could be accomplished with local cooperative farmers in a short period of time.
3. Hazing would be feasible on all impoundments, but the most practical would be with boats and air boats. Night operations would be hazardous in the areas of Muscatine Slough and Goose Pond due to the wooded habitat. Aircraft would have a difficult time operating around the wooded sloughs, marshes, and bluffs.
4. Feeding would be feasible with an abundance of grains available from local farmers and elevators.

F. Past History of Disease - Nothing to report.

III. Communications

A. State Agencies

Iowa Conservation Commission - Bill Ode, Biologist, Wapello, IA
319/523-8319
Iowa Conservation Commission - Don Pfeiffer, District Supervisor,
Brighton, IA 319/694-2430
Iowa Department of Agriculture - Wayne Messerly, Wallace Bldg.,
Des Moines, IA 515/281-5633
Iowa Department of Health - Don Soliday, Lucas Bldg., Des Moines, IA
515/281-3806
Iowa State Patrol - Highway 218 S., Mt. Pleasant, IA 319/385-8715
Iowa State University - Dr. Bob Dahlgren, USFWS, Ames, IA 515/294-3056

B. Federal Agencies

USDA - SCS - Wapello, IA 319/523-6411
Public Health Service - None
EPA - Tom Gillard, Chief, Water Branch 816/374-6514

C. Media

1. TV - See Attachment 12
2. Radio - See Attachment 12
3. Newspapers - See Attachment 12

D. Local Agencies

County Sheriff - Wapello, IA	319/523-4371
County Conservation Board - Wapello, IA	319/523-8381
ASCS - Wapello, IA	319/523-6381

Attachment 1

Local & Other Personnel Sources

Louisa NWR - 2 PFT and 1 PPT employees

Contact: Wayne Stanley, Refuge Manager (319/523-6982)

Iowa Conservation Commission - 5 PFT employees

Contact: Bill Ode, Biologist, Lake Odessa WMA
(319/523-8319)

Louisa County Conservation Board - 3 PFT employees

Contact: Steve Atherton, Director, Wapello (319/523-8381)

Mark Twain NWR Complex - 7 PFT employees

Contact: Bob Stratton, Project Leader, Quincy, IL
(218/224-8580)

Chautauqua NWR, Havana, IL

Contact: Tom Sanford, Refuge Manager (309/535-2290)

USFWS, Law Enforcement Office, Des Moines, IA

Contact: Dennis Crouch, SA (515/284-4125)

USFWS, Habitat Preservation Field Office, Rock Island, IL

Contact: Tom Groutage, Field Supervisor (309/793-5800)

U. S. Army, Corps of Engineers, Rock Island, IL

Contact: Dave Boric (309/788-6361)

Other manpower may be available through various organizations and clubs in the local community as well as refuge cooperative farmers.

Attachment 2

Equipment

On-Site Vehicles:

Stake bed/tiltbed Truck - 1
Pick-up, ½ ton 2X4 - 1
Pick-up, compact 2X4 - 1
Willy's Jeep 4X4 - 1
Honda ATC - 1

Off-Site Vehicle Sources:

ICC, Lake Odessa WMA
Contact: Bill Ode, Biologist (319/523-8319)

Mark Twain NWR Complex
Contact: Bob Stratton, Project Leader, Quincy, IL
(218/224-8580)

Louisa County Conservation Board
Contact: Steve Atherton, Director, Wapello, IA
(319/523-8381)

U. S. Army Corp of Engineers
Contact: Dave Boric, Rock Island, IL (309/788-6361)

On-Site Aircraft:

None

Off-Site Aircraft:

Midwest Aviation Corp. - Davenport, IA	(319/391-5650)
Stan-Rick Flying Service - Davenport, IA	(319/391-8200)
Straley Flying Service - Davenport, IA	(319/323-9413)
Port City Flying Service, Muscatine, IA	(319/263-8672)
Sharar Flying Service - Mediapolis, IA	(319/394-3769)

On-Site Heavy Equipment:

Crawler Tractor - D-7 - 1
Crawler Tractor - D-4 - 1
Truck Mounted Crane - 1
Road Grader - Cat 12 - 1
Farm Tractors - 2

Off-Site Sources Heavy Equipment:

ICC Lake Odessa WMA

Contact: Bill Ode, Biologist, Wapello, IA (319/523-8319)

Mark Twain NWR Complex

Contact: Bob Stratton, Project Leader, Quincy, IL
(217/224-8580)

Chautauqua NWR

Contact: Tom Sanford, Refuge Manager, Havana, IL
(309/535-2290)

U. S. Army Corp of Engineers

Contact: Dave Boric, Rock Island, IL (309/788-6361)

On-Site Boats:

Jon Boat - 2 (w/35 and 25 HP Outboards)

Off-Site Boats:

ICC Lake Odessa WMA

Contact: Bill Ode, Biologist, Wapello, IA (319/523-8319)

Mark Twain NWR Complex

Contact: Bob Stratton, Project Leader, Quincy, IL
(217/224-8580)

U. S. Army Corp of Engineers

Contact: Dave Boric, Rock Island, IL (309/788-6361)

On-Site Radios:

Base Station - 1

Mobiles - 2

Hand Held - 1

State Frequency Mobile - 1

Off-Site Radios:

Mark Twain NWR Complex

Contact: Bob Stratton, Project Leader, Quincy, IL
(217/224-8580)

On-Site Decontamination Units:

250 gallon farm sprayer - 1

250 gallon slip-on fire pumper - 1

Off-Site Decontamination Units:

U. S. Army Corps of Engineers

Contact: Dave Boric, Rock Island, IL (309/788-6361)

On-Site Scaring Devices:

None

Off-Site Scaring Devices:

U. S. Fish & Wildlife Service Habitat Preservation Field Office

Contact: Tom Groutage, Field Supervisor, Rock Island, IL
(309/793-5800)

U. S. Fish & Wildlife Service Wildlife Assistance Office

Contact: Lyle Stemmerman, Kansas City, MO
(816/374-6166)

U. S. Fish & Wildlife Service Wildlife Assistance Office

Contact: Ron Ogden, Springfield, IL (217/492-4308)

Attachment 3

Supply Sources

1. Disinfectants & Chemicals:

Monsanto	Muscatine, IA	319/263-0093
Reagent Chemical	Muscatine, IA	319/264-0323
Thompson Hayward	Davenport, IA	ZENITH 3215

2. Plastic Bags:

Jack & Jill Foods	Wapello, IA	319/523-2241
Rick's Super Value	Wapello, IA	319/523-6051
Hy-Vee Food Store	Muscatine, IA	319/264-2420
Sun-Mart	Muscatine, IA	319/263-6515

3. Fuel for Carcass Burning:

Wapello Oil Co.	Wapello, IA	319/523-3011
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4. Field Clothes:

True Value	Wapello, IA	319/523-2441
Farmers Elevators	Wapello, IA	319/523-8421
Foor's Fashions	Wapello, IA	319/523-6261
Dehners Sport Center	Burlington, IA	319/754-8488

5. Plastic Trash Barrels, Tubs, Brushes:

True Value	Wapello, IA	319/523-2441
Farmers Elevator	Wapello, IA	319/523-8421

6. Scaring Devices:

U. S. FWS Wildlife Assistance Office	- Kansas City, MO	816/374-6166
" " "	" " - Springfield, IL	217/492-4308

7. Dry Ice/Liquid Nitrogen:

Hiller Carbonic West Inc	Webster City, IA	515/832-6270
Iowa Carbonic Dry Ice	Muscatine, IA	319/263-1645
Thermice Corp	Muscatine, IA	319/263-1262

Attachment 4

Species

<u>Species</u>	<u>Season</u>	<u>Relative Abundance</u>
Canada Goose	*F, Sp	100 - 10,000
Snow Geese	*F	0 - 2,500
Mallard	*F, Sp, Su	300 - 125,000
Pintail	*F, Sp	100 - 2,000
Black Duck	*F, Sp	50 - 3,500
Widgeon	*F, Sp	500 - 4,000
Ringneck	F, *SP	1,500 - 5,000
L. Scaup	F, *Sp	200 - 4,000
Canvasback	F, *Sp	200 - 1,500
Redhead	F, *Sp	200 - 1,500
Gadwell	*F	4,000
H. Merganser	F, *Sp, Su	50 - 800
C. Merganser	F, *Sp	50 - 900
Bufflehead	F, *Sp	50 - 300
Blue-wing Teal	*F, Sp	400 - 3,000
Green-wing Teal	*F, Sp	200 - 4,000
Coot	F, *Sp, Su	100 - 9,000
White Pelican	F	0 - 40
Great Blue Heron	F, Sp, *Su	5 - 100
Great Egret	Sp, *Su	0 - 30
Cattle Egret	Sp, *Su	0 - 10
Green Heron	Sp, *Su	0 - 50
B. Crown Night Heron	Sp, *Su	0 - 20
A. Bittern	Sp, *Su	0 - 25
Bald Eagle	F, *W, Sp	15 - 60
Peregrine Falcon	F, Sp	0 - 5

*Major Period

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM

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AVERAGE MONTHLY WATERFOWL POPULATIONS

LOUISA
3-3631-LSA

SPECIES NAME

OCT 81 NOV 81 DEC 81 JAN 82 FEB 82 MAR 82 APR 82 MAY 82 JUN 82 JUL 82 AUG 82 SEP 82

WATERFOWL MAINTENANCE
GEESE

SNOW GOOSE	1300	1400	300	0	0	50	35	30	0	0	0	25
WHITE-FRONTED GOOSE	0	0	0	0	0	0	9	0	0	0	0	0
CANADA GOOSE	5200	5500	3900	2	15	250	10	0	5	0	14	2200
SMALL CANADA GOOSE	450	0	0	0	0	0	0	0	0	0	0	0

DUCKS

COMMON MERGANSER	0	0	0	0	30	500	200	0	0	0	0	0
HOODED MERGANSER	5	0	0	0	0	10	0	0	6	0	0	0
MALLARD	6000	110000	105000	40	2000	2000	450	125	20	60	200	300
BLACK DUCK	50	500	1000	0	500	20	25	0	0	0	0	0
GADWALL	200	100	0	0	0	0	35	5	0	0	0	40
AMERICAN WIGEON	700	1000	875	0	0	50	100	5	0	0	0	250
GREEN-WINGED (COMM.) TEAL	325	400	100	0	0	0	1200	0	2	0	0	150
BLUE-WINGED (CINN.) TEAL	300	80	0	0	0	0	2000	50	6	5	10	250
NORTHERN SHOVELER	30	20	0	0	0	20	40	5	0	0	0	20
PINTAIL	270	300	200	0	0	50	75	0	0	0	0	0
WOOD DUCK	150	300	1500	0	0	100	250	100	200	170	275	300
REDHEAD	100	50	50	0	0	100	150	0	0	0	0	0
CANVASBACK	200	50	75	0	0	100	250	0	0	0	0	0
LESSER SCAUP	75	100	100	0	0	300	2000	0	0	0	0	0
RING-NECKED DUCK	50	100	50	0	0	75	250	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	70	0	0	0	0	0	0	0
BUFFLEHEAD	10	30	0	0	0	100	40	0	0	0	0	0
RUDDY DUCK	20	0	0	0	0	190	75	0	0	0	0	10

OTHER MIG. BIRD MAINT.

MARSH & WATER BIRDS

AMERICAN COOT	400	1575	50	0	0	300	175	70	10	0	0	60
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TOTAL SWANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE	6950	6900	4200	2	15	300	54	30	5	0	14	2225
TOTAL DUCKS	8485	113030	108950	40	2600	3615	7140	290	234	235	485	1320
TOTAL WATERFOWL	15435	119930	113150	42	2615	3915	7194	320	239	235	499	3545

1 of 2

ATTACHMENT 5

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM

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PEAK MONTHLY WATERFOWL POPULATIONS

LOUISA
3-3631-LSA

SPECIES NAME

OCT 81 NOV 81 DEC 81 JAN 82 FEB 82 MAR 82 APR 82 MAY 82 JUN 82 JUL 82 AUG 82 SEP 82

WATERFOWL MAINTENANCE

GEESE

SNOW GOOSE	2000	2100	800	0	0	75	35	30	0	0	0	50
WHITE-FRONTED GOOSE	0	0	0	0	0	0	9	0	0	0	0	0
CANADA GOOSE	6000	5900	5000	2	65	500	50	0	12	0	40	3000
SMALL CANADA GOOSE	700	0	0	0	0	0	0	0	0	0	0	0

DUCKS

COMMON MERGANSER	0	0	0	0	300	1500	300	0	0	0	0	0
HOODED MERGANSER	5	0	0	0	0	20	0	0	7	0	0	0
MALLARD	10000	15000	169000	40	10000	5000	1500	200	45	150	230	500
BLACK DUCK	50	500	1500	0	1000	50	75	0	0	0	0	0
GADWALL	450	150	0	0	0	0	60	8	0	0	0	40
AMERICAN WIGEON	900	1500	2100	0	0	75	200	5	0	0	0	300
GREEN-WINGED (COMM.) TEAL	350	750	275	0	0	0	2000	0	4	0	0	200
BLUE-WINGED (CINN.) TEAL	400	150	0	0	0	0	2500	75	12	5	100	400
NORTHERN SHOVELER	30	40	0	0	0	25	50	5	0	0	0	40
PINTAIL	475	900	800	0	0	50	125	0	0	0	0	0
WOOD DUCK	150	600	5000	0	0	250	300	250	375	220	275	450
REDHEAD	200	100	100	0	0	155	900	0	0	0	0	0
CANVASBACK	250	100	75	0	0	250	2000	0	0	0	0	0
LESSER SCAUP	150	450	175	0	0	555	5000	0	0	0	0	0
RING-NECKED DUCK	50	250	75	0	0	275	350	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	500	0	0	0	0	0	0	0
BUFFLEHEAD	10	30	0	0	0	100	240	0	0	0	0	0
RUDDY DUCK	30	0	0	0	0	275	250	0	0	0	0	25

OTHER MIG. BIRD MAINT.

MARSH & WATER BIRDS

AMERICAN COOT	500	3000	150	0	0	350	250	125	25	0	0	100
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TOTAL SWANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE	8700	8000	5800	2	65	575	94	30	12	0	40	3050
TOTAL DUCKS	13500	155520	179100	40	11800	8580	15850	543	443	375	605	1955
TOTAL WATERFOWL	22200	163520	184900	42	11865	9155	15944	573	455	375	645	5005

2 of 2

ATTACHMENT 5

Big Timber NWR

Introduction

The 1,700 acre refuge is located 6 miles north of the Louisa refuge in Louisa County, Iowa. The refuge is comprised almost entirely of back-water sloughs and marshes with a very small amount of cropland (26 acres). The remainder of the refuge is in bottomland timber.

The refuge is entirely within the Mississippi River levee system, and as a result all habitat is at the mercy of river fluctuations.

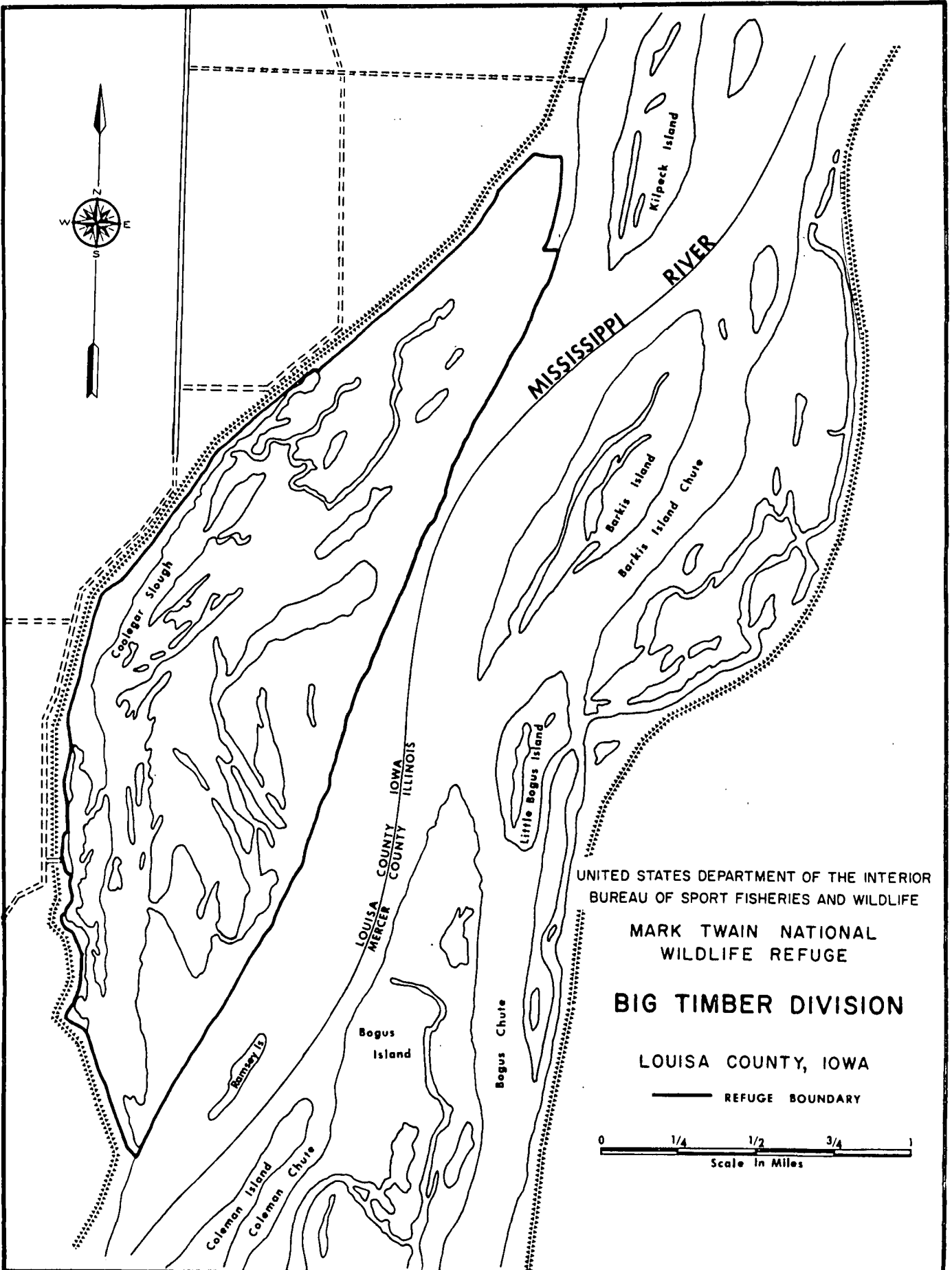
The nearest towns are Muscatine (10 miles north) and Grandview (8 miles west).

All disease surveillance, response, and contacts are the same as those for the Louisa NWR.

Biologically, species utilizing the refuge are the same as those at the Louisa NWR except in much smaller numbers. Refer to Attachments 7, 8, and 9.

Habitat and Population Manipulation potential would be extremely low due to the wooded nature of the area. Boats and airboats would be the only feasible methods and would be difficult at best.

There have been no reported incidents of disease on the refuge in the past.



DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM

PAGE 234

AVERAGE MONTHLY WATERFOWL POPULATIONS

BIG TIMBER
3-3633-BGT

SPECIES NAME	OCT 81	NOV 81	DEC 81	JAN 82	FEB 82	MAR 82	APR 82	MAY 82	JUN 82	JUL 82	AUG 82	SEP 82
WATERFOWL MAINTENANCE												
GEESE												
SNOW GOOSE	20	10	0	0	0	0	0	0	0	0	0	0
CANADA GOOSE	30	25	20	0	0	50	0	0	0	0	0	25
DUCKS												
COMMON MERGANSER	0	0	0	0	0	250	30	0	0	0	0	0
MALLARD	70	200	600	50	10	200	100	10	10	20	30	75
BLACK DUCK	5	10	15	0	0	7	5	0	0	0	0	0
GADWALL	10	10	0	0	0	0	20	0	0	0	0	25
AMERICAN WIGEON	190	75	60	0	0	20	30	0	0	0	0	30
GREEN-WINGED (COMM.) TEAL	100	90	75	0	0	0	100	0	0	0	0	75
BLUE-WINGED (CINN.) TEAL	200	70	0	0	0	0	200	20	3	0	5	100
NORTHERN SHOVELER	10	25	0	0	0	20	40	0	0	0	0	20
PINTAIL	60	60	75	0	0	0	60	0	0	0	0	0
WOOD DUCK	300	325	200	0	0	100	250	220	300	200	355	300
REDHEAD	10	0	20	0	0	100	30	0	0	0	0	0
CANVASBACK	10	0	40	0	0	100	30	0	0	0	0	0
LESSER SCAUP	10	50	80	0	0	200	110	0	0	0	0	0
RING-NECKED DUCK	5	25	10	0	0	75	100	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	30	0	0	0	0	0	0	0
BUFFLEHEAD	10	10	0	0	0	75	20	0	0	0	0	0
RUDDY DUCK	12	0	0	0	0	190	20	0	0	0	0	10
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	110	200	30	0	0	100	150	20	0	0	0	50
TOTAL SWANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE	50	35	20	0	0	50	0	0	0	0	0	25
TOTAL DUCKS	1002	950	1175	50	40	1337	1145	250	313	220	390	635
TOTAL WATERFOWL	1052	985	1195	50	40	1387	1145	250	313	220	390	660

ATTACHMENT 7

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM
PEAK MONTHLY WATERFOWL POPULATIONS

PAGE 234

BIG TIMBER
3-3633-BGT

SPECIES NAME	OCT 81	NOV 81	DEC 81	JAN 82	FEB 82	MAR 82	APR 82	MAY 82	JUN 82	JUL 82	AUG 82	SEP 82
WATERFOWL MAINTENANCE												
GEESE												
SNOW GOOSE	25	50	0	0	0	0	0	0	0	0	0	0
CANADA GOOSE	50	300	50	0	0	50	0	0	0	0	0	50
DUCKS												
COMMON MERGANSER	0	0	0	0	0	350	60	0	0	0	0	0
MALLARD	115	625	1500	100	25	300	200	15	10	20	30	150
BLACK DUCK	5	20	20	0	0	10	10	0	0	0	0	0
GADWALL	15	40	0	0	0	0	40	0	0	0	0	25
AMERICAN WIGEON	225	195	200	0	0	25	50	0	0	0	0	40
GREEN-WINGED (COMM.) TEAL	200	250	250	0	0	0	250	0	0	0	0	100
BLUE-WINGED (CINN.) TEAL	250	300	0	0	0	0	400	40	6	0	40	200
NORTHERN SHOVELER	30	50	0	0	0	25	50	0	0	0	0	20
PINTAIL	75	120	150	0	0	0	100	0	0	0	0	0
WOOD DUCK	400	510	450	0	0	250	350	220	325	250	355	450
REDHEAD	15	0	45	0	0	190	75	0	0	0	0	0
CANVASBACK	10	0	45	0	0	100	60	0	0	0	0	0
LESSER SCAUP	30	250	200	0	0	350	190	0	0	0	0	0
RING-NECKED DUCK	10	90	40	0	0	100	175	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	75	0	0	0	0	0	0	0
BUFFLEHEAD	10	10	0	0	0	75	20	0	0	0	0	0
RUDDY DUCK	15	0	0	0	0	220	40	0	0	0	0	10
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	250	600	150	0	0	100	250	30	0	0	0	50
TOTAL SWANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE	75	350	50	0	0	50	0	0	0	0	0	50
TOTAL DUCKS	1405	2460	2900	100	100	1995	2070	275	341	270	425	995
TOTAL WATERFOWL	1480	2810	2950	100	100	2045	2070	275	341	270	425	1045

ATTACHMENT 8

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
ENDANGERED SPECIES REPORT
FY 1982 SURVEY
FY-82

PAGE 180

BIG TIMBER
3-3633-BGT

SPECIES NAME	LINE CODE	*****--USE DAYS--*****					FY-NO.	FY-NO.	FY-PEAK	DATE
		OCT-DEC 81	JAN-MAR 82	APR-JUN 82	JUL-SEP 82	FY TOTAL				
THREATENED SPECIES										
ENDANGERED										
~~SOUTHERN~~ BALD EAGLE	701 3521	750	1440	0	0	2190	0	0	16	03/19
TOTAL ENDANGERED		750	1440	0	0	2190	0	0		
TOTAL THREATENED SPECIES		750	1440	0	0	2190	0	0		
GRAND TOTAL		750	1440	0	0	2190	0	0		

ATTACHMENT 9

Keithsburg NWR

Introduction

The refuge is located in the Mississippi River floodplain 1 mile north of the town of Keithsburg in Mercer County, Illinois. The refuge encompasses 1,400 acres of which 100 acres is cropland, 700 acres open water/marsh, and the remainder in bottomland timber.

The refuge is bounded on the west by the Mississippi River, on the south by Pope Creek and the town of Keithsburg, and on the north and east by private land - predominately farmland. The nearest towns are Keithsburg (1 mile south), New Boston (10 miles north), Aledo (20 miles NE), and Muscatine, Iowa (24 miles north).

Refuge water supplies are from precipitation, runoff from the Edwards River on the north, and from the Mississippi River. The refuge contains a pumping station capable of dewatering and flooding the refuge.

Disease Surveillance

No formal disease surveillance activities are conducted. Due to the "isolated" (45 miles one way from HQ) nature of the refuge, it is seldom if the refuge is visited by the staff more than once a month.

Reporting and notification procedures would be the same as those found in 7 RM 17.8. The first person to be notified would be the Refuge Manager - Louisa NWR.

Disease Response

I. Logistical Considerations:

Logistics will be a major problem due to the isolation of the area. No facilities are located on the refuge and the nearest adequate lodging would be in Aledo, IL or Muscatine, IA. Therefore, it would be more practical to handle all base operations and logistics from the Louisa Headquarters and follow the plan outlined in the Louisa NWR plan.

Carcass disposal would need to be accomplished by means of portable incinerators as none are available locally, and burial is not possible due to high water tables on the area.

II. Biological Considerations

A. Species - See Attachment 11

B. Population Data - See Attachment 11

- C. Animal Movement Patterns - Major movements are confined to morning and evening feeding flights of waterfowl during the fall. Flights leave the refuge around sunrise and return around 10:00 AM. The flights begin again around 3:30 PM and continue until sunset. Movement is to the north and northeast towards private farmland, but some movement back and forth between the Louisa NWR occurs.

Use on the refuge is confined to the larger bodies of water and is in the form of loafing and roosting. Goose use has historically been light on the area.

- D. Weather Patterns - Same as the Louisa NWR.
- E. Habitat and Population Manipulation Potential - Same as Louisa NWR.
- F. Past History of Disease - Nothing to Report.

III. Communications

A. State Agencies:

Illinois Department of Conservation - Springfield, IL 217/782-6302

Illinois Department of Agriculture - Springfield, IL 217/782-2172

Illinois Department of Health - Springfield, IL 217/782-4977

Illinois State Patrol - Moline, IL 309/755-0428

B. Federal Agencies:

USDA - SCS - Aledo, IL 309/582-5154

Public Health Service - None

EPA - Springfield, IL 217/782-3397

C. Media:

See Attachment 12

D. Local Agencies:

County Sheriff - Aledo, IL 309/582-5194

ASCS - Aledo, IL 309/582-5153

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM

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AVERAGE MONTHLY WATERFOWL POPULATIONS

KEITHSBURG
3-3632-KTS

SPECIES NAME	OCT 81	NOV 81	DÉC 81	JAN 82	FEB 82	MAR 82	APR 82	MAY 82	JUN 82	JUL 82	AUG 82	SEP 82
WATERFOWL MAINTENANCE												
GEESE												
SNOW GOOSE	0	50	15	0	0	50	20	0	0	0	0	0
CANADA GOOSE	0	75	100	0	0	75	10	0	0	0	0	50
DUCKS												
COMMON MERGANSER	0	0	0	0	50	200	75	0	0	0	0	0
HOODED MERGANSER	0	0	0	0	0	20	0	0	0	0	0	0
MALLARD	2000	68000	49500	20	500	3000	275	25	22	60	70	250
BLACK DUCK	10	500	400	0	100	30	10	0	0	0	0	0
GADWALL	30	50	0	0	0	0	10	2	0	0	0	20
AMERICAN WIGEON	420	1700	350	0	0	50	75	4	0	0	0	100
GREEN-WINGED (COMM.) TEAL	200	275	55	0	0	0	200	0	0	0	0	200
BLUE-WINGED (CINN.) TEAL	125	50	0	0	0	0	400	20	5	0	9	300
NORTHERN SHOVELER	20	40	0	0	0	40	50	4	0	0	0	25
PINTAIL	175	600	75	0	0	50	30	0	0	0	0	0
WOOD DUCK	400	500	300	0	0	190	300	275	225	270	350	350
REDHEAD	20	40	40	0	0	100	50	0	0	0	0	0
CANVASBACK	40	60	20	0	0	150	50	0	0	0	0	0
LESSER SCAUP	30	250	100	0	0	175	190	0	0	0	0	0
RING-NECKED DUCK	10	50	15	0	0	100	100	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	60	0	0	0	0	0	0	0
BUFFLEHEAD	15	20	0	0	0	75	25	0	0	0	0	0
RUDDY DUCK	10	0	0	0	0	125	50	0	0	0	0	10
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	0	500	20	0	0	300	200	20	10	0	0	40
TOTAL SWANS												
	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE												
	0	125	115	0	0	125	30	0	0	0	0	50
TOTAL DUCKS												
	3505	72135	50855	20	710	4305	1890	330	252	330	429	1255
TOTAL WATERFOWL												
	3505	72260	50970	20	710	4430	1920	330	252	330	429	1305

DATE 03/01/83

NATIONAL WILDLIFE REFUGE SYSTEM
PEAK MONTHLY WATERFOWL POPULATIONS

PAGE 233

KEITHSBURG
3-3632-KTS

SPECIES NAME	OCT 81	NOV 81	DEC 81	JAN 82	FEB 82	MAR 82	APR 82	MAY 82	JUN 82	JUL 82	AUG 82	SEP 82
WATERFOWL MAINTENANCE												
GEESE												
SNOW GOOSE	0	100	40	0	0	100	20	0	0	0	0	0
CANADA GOOSE	0	450	150	0	0	100	10	0	0	0	0	100
DUCKS												
COMMON MERGANSER	0	0	0	0	100	675	125	0	0	0	0	0
HOODED MERGANSER	0	0	0	0	0	55	0	0	0	0	0	0
MALLARD	2350	74000	78000	50	1000	6000	325	150	25	100	100	300
BLACK DUCK	20	1100	500	0	100	60	20	0	0	0	0	0
GADWALL	80	50	0	0	0	0	40	4	0	0	0	20
AMERICAN WIGEON	650	2900	700	0	0	125	280	4	0	0	0	100
GREEN-WINGED (COMM.) TEAL	250	450	300	0	0	0	500	0	0	0	0	300
BLUE-WINGED (CINN.) TEAL	125	100	0	0	0	0	600	29	10	0	75	500
NORTHERN SHOVELER	40	50	0	0	0	40	75	6	0	0	0	25
PINTAIL	250	1100	225	0	0	75	120	0	0	0	0	0
WOOD DUCK	400	500	1800	0	0	225	450	275	375	270	350	450
REDHEAD	20	50	50	0	0	100	50	0	0	0	0	0
CANVASBACK	50	110	50	0	0	175	50	0	0	0	0	0
LESSER SCAUP	30	600	400	0	0	225	285	0	0	0	0	0
RING-NECKED DUCK	15	200	50	0	0	100	100	0	0	0	0	0
COMMON GOLDENEYE	0	0	0	0	150	0	0	0	0	0	0	0
BUFFLEHEAD	15	20	0	0	0	75	25	0	0	0	0	0
RUDDY DUCK	10	0	0	0	0	220	50	0	0	0	0	10
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	0	4100	50	0	0	300	400	60	10	0	0	75
TOTAL SWANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GEESE	0	550	190	0	0	200	30	0	0	0	0	100
TOTAL DUCKS	4305	81230	82075	50	1350	8150	3095	468	410	370	525	1705
TOTAL WATERFOWL	4305	81780	82265	50	1350	8350	3125	468	410	370	525	1805

ATTACHMENT 11

KEITHSBURG
3-3632-KTS

*****-----USE DAYS-----***** FY-NO. FY-NO. FY-PEAK

SPECIES NAME	LINE CODE	OCT-DEC 81	JAN-MAR 82	APR-JUN 82	JUL-SEP 82	FY TOTAL	PRODUCED	HARVESTED	POPULATION	DATE
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THREATENED SPECIES

ENDANGERED

SOUTHERN BALD EAGLE	701	3521	900	1360	0	0	2260	0	0	18	12/15
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TOTAL ENDANGERED	900	1360	0	0	2260	0	0
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TOTAL THREATENED SPECIES	900	1360	0	0	2260	0	0
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GRAND TOTAL	900	1360	0	0	2260	0	0
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ATTACHMENT 12

Larry A. Stone
Des Moines Register
& Tribune
St. Olaf, Iowa 52072

WOC
805 Brady St.
Davenport, IA 52808

KCII
P. O. Box 370
Washington, IA 52353

18th Street
Rock Island, IL 61201

Muscatine Journal
301 E. Third
Muscatine, IA 52761

KXIC
P. O. Box 751
Iowa City, IA 52240

Burlington Hawkeye
800 S. Main
Burlington, IA 52601

Rock Island Argus
1724 Fourth Ave.
Rock Island, IL 61201

KOKX
Eppers Hotel
Keokuk, IA 52632

Quad Cities Times
Attn: Randy Pribyl
124 E. 2nd Street
Davenport, IA 52808

Washington Evening Journal
P. O. Box 471
Washington, IA 52353

WQUA
1801-6th Avenue
Moline, IL 61265

Ft. Madison Evening Demo.
1226 Avenue H
Ft. Madison, IA 52627

Aledo Times Record (W)
113 S. College Avenue
Aledo, IL 61231

WRAM
P. O. Box 367
Monmouth, IL 61462

Des Moines Register Mail
S. Prairie
Des Moines, IL 61401

Columbus Gazette (W)
Columbus Junction, IA
52738

KWPC
Box 116
Muscatine, IA 52761

Iowa City Press Citizen
319 E. Washington
Iowa City, IA 52240

Dallas City Enterprise (TH)
Dallas City,
Illinois 62330

KBIZ
Broadcast Center Bldg.
Ottumwa, IA 52501

Keokuk Daily Gate City
1016 Main Street
Keokuk, IA 52632

Mediapolis New Era (TH)
Mediapolis,
Iowa 52637

KLEE
212½ E. Main
Ottumwa, IA 52501

Moline Dispatch
1720 Fifth Avenue
Moline, IL 61625

Wapello Republican (TH)
Wapello,
Iowa 52653

WQAD
3003 Park 16 Street
Moline, IL 61265

Monmouth Review Atlas
Public Square
outh, IL 61462
en: Carol Clark

KBUR
Roosevelt Ave.
Burlington, IA 52601

KTVO
Broadcast Center
Ottumwa, IA 52501

Mt. Pleasant News
P. O. Box 240
Mt. Pleasant, IA 52641

KKUZ
408 N. Main Street
Burlington, IA 52601

memorandum

DATE: November 27, 1984

PLY TO
ATTN OF: Refuge Manager, Louisa NWR, Wapello, Iowa

SUBJECT: Your November 15, 1984 Memo--Management Plans

TO: Regional Director, FWS, Twin Cities, MN (RF2)

Per subject memo the attached listing and copies of "plans" are provided. Note most of the "plans" are quite old and are of the Complex variety.


Wayne Stanley