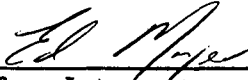
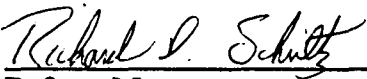


SIGN PLAN
MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE
BLOOMINGTON, MINNESOTA

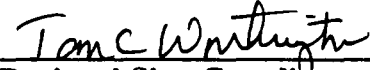
Prepared by: 
Refuge Interpreter

Submitted by: 
Refuge Manager

Date: 3/7/95

Concurrence by: 
Regional Refuge Supervisor

Date: 3/27/95


Regional Sign Coordinator

Date: 3/24/95

~~Approved by:~~ N/A
Assistant Regional Director

Date: _____

TABLE OF CONTENTS

A. INTRODUCTION	1
B. PUBLIC USE DESCRIPTION	2
C. SIGN STANDARDS	3
D. REFUGE SIGN INVENTORY	
Background and Organization, Key to Function & Location Codes and Abbreviations ..	4
1. Entrance Signs	6
2. Information/Guide Signs	17
a. Pole Signs	17
b. Post Signs	18
3. Regulatory Signs	48
4. Kiosk Signs	60
5. Interpretive Signs	71
6. Advance Notice Signs	76
7. Boundary Signs	83
8. Exterior Visitor Center Signs	84
9. Miscellaneous Signs	87
E. SIGN MAINTENANCE	
1. Annual Maintenance Criteria	90
2. Daily Maintenance Criteria	90
F. SIGN STORAGE	91
G. SIGN REVIEW & ORDERING PROCEDURES	92
H. GENERAL RECOMMENDATIONS	
1. Entrance Signs	93
2. Information/Guide Signs	93
3. Regulatory Signs	94
4. Kiosk Signs	94
5. Interpretive Signs	95
6. Advance Notice Signs	95
7. Boundary Signs	96
8. Exterior Visitor Center Signs	96
9. Miscellaneous Signs	96
I. APPENDICES	
1. Public Use Report Summary for 1994	97
2. Kiosk Theme Development: Draft Text and Sketches:	100
3. Entrance Sign Mounting Standards	112

LIST OF FIGURES

FIGURE NUMBER	CONTENT	PAGE(S)
1	Entrance Sign Maps	8-11
2	Entrance Sign List	12-15
3	Information Sign Maps	21-24
4	Information Sign List	25-46
5	Regulatory Sign Maps	50-53
6	Regulatory Sign List	54-58
7	Kiosk Sign Map	64
8	Kiosk Sign List	65-69
9	Interpretive Sign Map	72
10	Interpretive Sign List	73-74
11	Advance Notice Sign Map	78
12	Advance Notice Sign List	79-81
13	Boundary Sign List	83
14	Exterior Visitor Center Sign List	85-86

A. INTRODUCTION

The Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail was established in 1976 to protect the lower Minnesota River Valley as a result of the effort of local citizen groups.

Located along a 72 mile stretch of the Minnesota River between Fort Snelling and Le Sueur, approximately 30,000 acres of floodplain marsh, grasslands and forests will ultimately be included within the refuge, recreation area, and state trail.

The refuge portion will be 18,200 acres when completed and managed to provide for a diversity of plants and animals and to provide opportunities for people to observe and learn about the valley's wildlife. The 8,000 acres currently in the refuge are scattered in the seven separate units of the refuge.

The Recreation Area and State Trail are managed by city and county governments and the Minnesota Department of Natural Resources. Upon completion, the State Trail will link the refuge units and provide hiking, bicycling, horseback riding, and cross-country skiing opportunities for the 2.3 million people who live in the Twin Cities metro area.

The refuge is a green belt of large marsh areas bordered by grain terminals, highways, residential areas, office buildings and farm fields. A typical Valley cross section starting at the blufftop ranges from an oak-dominated hillside forest to oak savannas; then wetlands ranging from bogs and seeps to marshy lakes. The cottonwood-lined Minnesota River completes the environment.

The dry grasslands are characterized by encroaching shrubs like sumac and prickly ash. Native prairie grasses include big and little bluestem, switchgrass and Indian grass. Remnant prairies and savannas provide nesting habitat for dabbling ducks, pheasants and a variety of songbirds.

Hillside forests include an overstory of ash, elm, maple and other trees, with dogwood, chokecherry and other shrubs beneath. Forested areas on the floodplain are dominated by silver maple, willow, cottonwood and elm trees. Small willows, dogwoods and alders line forest edges, while inside the woods, there is a carpet of nettles with occasional river bank grape.

Wetlands in the Valley's bottoms are thick with reed canary grass, cattail and river bulrush. Water lilies, duckweed and pondweeds thrive in open water areas. Over 260 species of birds use the area, either year-round or during migration (About 121 of these species nest in the Valley). Bald eagles use the area for resting and feeding each winter, spring and fall. This wildlife diversity is complemented by at least 50 species of mammals and 30 species of reptiles and amphibians.

B. PUBLIC USE DESCRIPTION

From 1982 - 1991, Minnesota Valley National Wildlife Refuge experienced a 20% increase in visitation each year. Visitation peaked at 150,000 in 1991 with the opening of the new Visitor Center. It then stabilized at approximately 131,000 visitors per year. Almost half of our visitors receive some level of interpretation or environmental education. Wildlife observation was 59% of the total visitation in 1994.

Visitation to Minnesota Valley may be depressed because the management units which comprise it are not yet joined by a proposed State Corridor Trail and because the Visitor Center is separated from other refuge lands. Private land still comprises significant portions of the Long Meadow Lake, Wilkie, Upgrala and Chaska units. The Long Meadow Lake Unit, Black Dog Preserve and Louisville Swamp have trails and interpretive facilities.

Peak public use on the refuge and in the Visitor Center occurs in Spring and Fall. For a more complete breakdown of public use on the refuge, please refer to the RMIS Public Use Report for 1994 in Appendix 1.



Refuge signs represent the U.S. Fish and Wildlife Service 24 hours a day!

C. SIGN STANDARDS

These standards have been established:

1. The number of signs will be limited to the least number to communicate refuge objectives and regulations.
2. All new signs will be brown in color with white letters except for:
 - Standard "R" series boundary and related signs.
 - Traffic control signs near trailheads covered in the Manual On Uniform Traffic Control Devices.
 - Regulatory signs used to restrict vehicle travel at gates and service road approaches.
 - Most Interpretive signs.
 - Special event signs (e.g. for hunts)
3. Materials for new signs will be aluminum, plywood, or an acceptable wood substitute approved by the Regional Sign Coordinator.
4. Posts used for wood signs will be square, treated 4x4, 6x6, 8x8 etc. Round posts will not be used as sign supports. Supports will be stained dark brown.
5. Posts used for metal signs will be standard 8' two-pound green steel "U" posts with 1" hole spacing
6. Sign panels and supports for interpretive signs may deviate substantially from these standards to complement specific sites.

D. REFUGE SIGN INVENTORY

Background

The standards of the 1980 Sign Plan for Minnesota Valley NWR helped the refuge achieve visual coherence and consistency. These standards for identification signs, entrance signs, trail information signs and post details have generally been followed over the years. Most of the signs on the Minnesota Valley National Wildlife Refuge are of the standard U.S. Fish and Wildlife Service format and have a brown background with white letters. Refuge signs are made of 3/4 inch plywood covered with a reflective vinyl sheeting. Supports are 4, 6, and 8 inch wood posts. Refuge signs are placed near main entrances, road intersections, and along trails so visitors can easily locate their destination.

Organization

The refuge sign inventory is divided into functional categories. Each functional category is a separate section. Each section begins with a description and photos for signs in that category. Then, a map displays the location of each sign within that category. After the map, the inventory of signs for the category that are in the field and in storage is shown in a table. A discussion of sign needs for the category completes the section. Within each section, signs are listed in a sequence that begins with the Long Meadow Lake Unit and continues up river to the Louisville Swamp Unit.

The following keys list the abbreviations used in the inventory.

KEY TO FUNCTION & LOCATION CODES AND ABBREVIATIONS

Function Codes

E	Entrance Signs
I	Information Signs
R	Regulatory Signs
K	Kiosk
It	Interpretive Signs
B	Boundary Signs
A	Advance Notice Signs
VC	Exterior Visitor Center Signs

Location Codes and Sign List Sequence

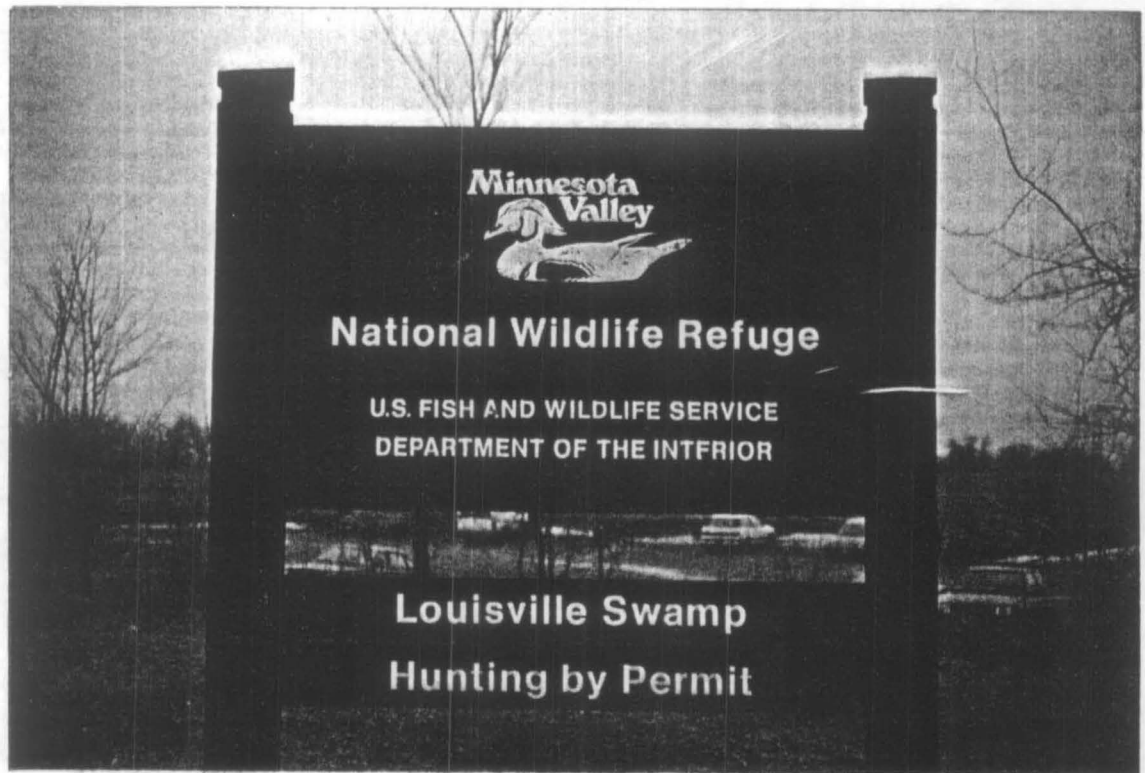
- | | |
|------------|--------------------------|
| 1. LM | Long Meadow Lake Unit |
| a) VC | Visitor Center |
| b) BP | Bass Ponds |
| c) OC | Old Cedar Ave. |
| 2. BD | Black Dog Preserve |
| a) BD(N) | North Black Dog Preserve |
| b) BD(S) | South Black Dog Preserve |
| c) BD(MTC) | MTC Trailhead |
| 3. BF | Bloomington Ferry Unit |
| 4. W | Wilkie Unit |
| 5. U | Upgrala Unit |
| 6. C | Chaska Unit |
| 7. LV | Louisville Swamp Unit |
| a) LV(N) | North Entrance |
| b) LV(M) | Middle Road |
| c) LV(S) | South Hunter Parking Lot |

Sign Inventory Abbreviations

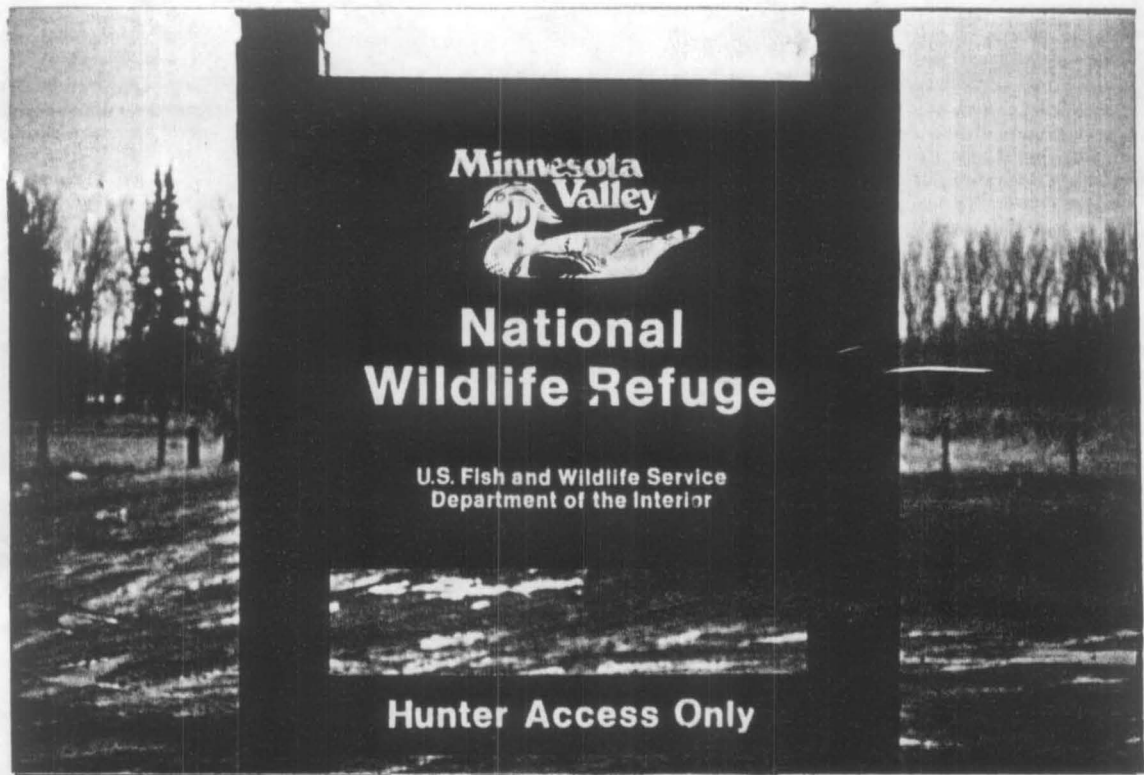
MNVNWR	Minnesota Valley National Wildlife Refuge
MNDNR	Minnesota Department of Natural Resources
ESA	Environmental Study Area
TNC	The Nature Conservancy
P.S.	Pole Sign
(DS)	Double Sided
(SS)	Single Sided
RW	Refuge-wide
ALUM	Aluminum
Wh	White
Bl	Black
Blu	Blue
Gr	Green
Rd	Red
Br	Brown
Cr	Cream
St	Storage

Entrance Signs

Entrance signs for Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail deviate from national and regional criteria. The Wood Duck logo has become the recognized symbol of the cooperative effort among the Service, Minnesota DNR, and various communities and organizations. Six of the seven refuge units now have one or more entrance signs of various sizes: 3'x 3', 4'x 4', 4'x 5' and 4'x 6' mounted between 8"x 8" posts. Photos of representative signs are below and on the next page. On the following page, their locations are plotted on a map. An inventory list is next and a discussion of Entrance Sign Needs completes this section.



ELV (N) 1 = a 4'x 6' Entrance Sign at the North entrance of the Louisville Swamp Unit.

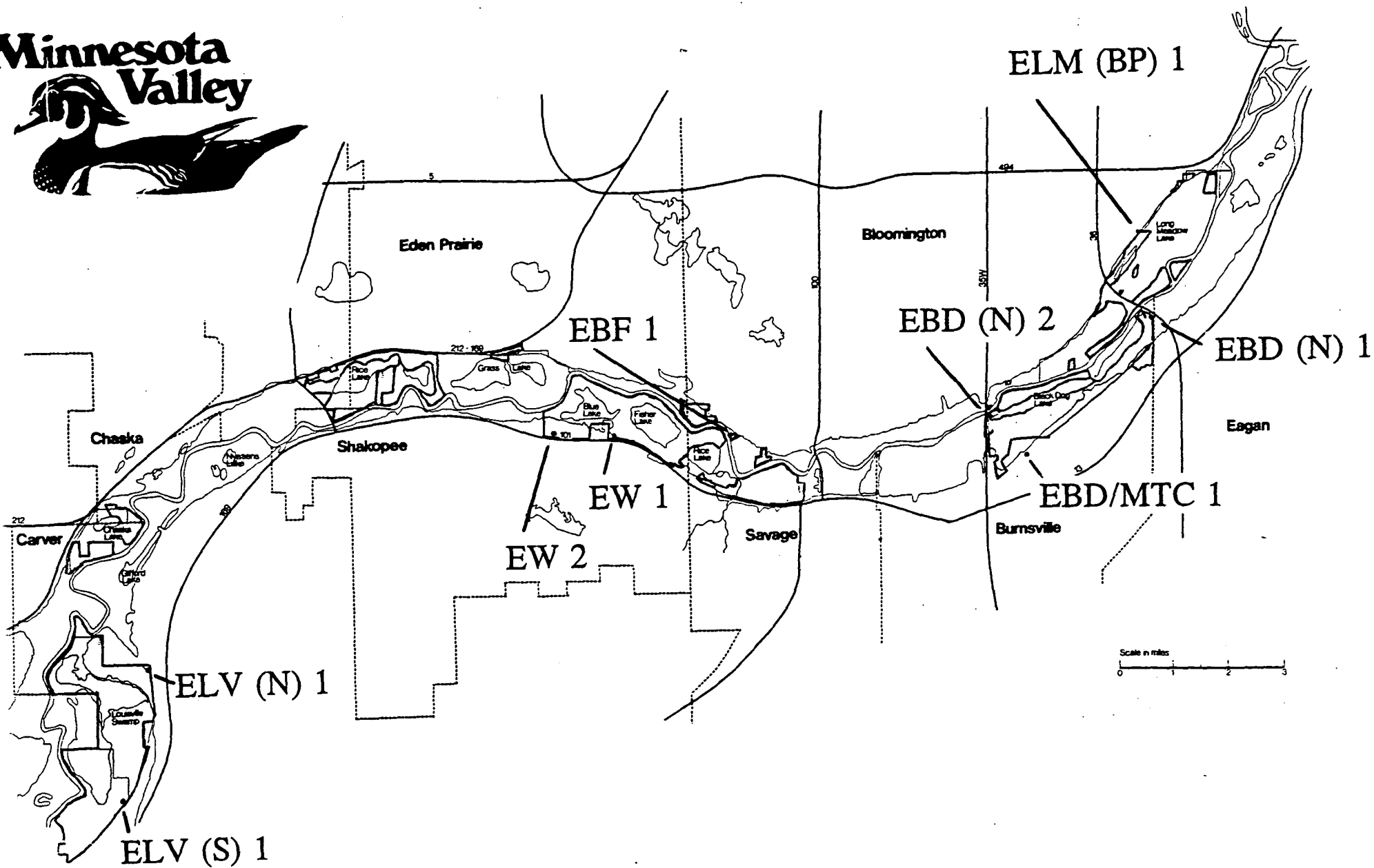


ELV (S) 1 = a 3'x 3' Entrance Sign at the South entrance of the Louisville Swamp Unit. Note the perforated Wood Duck. This sign was replaced.



ELV (S) 1 = the new 4' x 8' Non-standard Entrance Sign is a larger target. Note that the Wood Duck logo has been retained.

Minnesota Valley





The Caretaker's Walk...

A self-guided trail

Do you have a few minutes, some imagination, and want to know more about the Bass Ponds? If so, a special experience begins along the trail around the ponds. Numbered points on the trail and map correspond with the numbered paragraphs in this leaflet.

- 1.** Imagine if you will that you are a former Caretaker of the once Izaak Walton League Fish Rearing Ponds returning here after many years of absence. There were two cabins nearby and one was your home. Your's burned and the larger cabin was removed more than 20 years ago. Notice steps from that cabin to the left and how trees are reclaiming its foundations. This natural regeneration of an area is what biologists call succession.

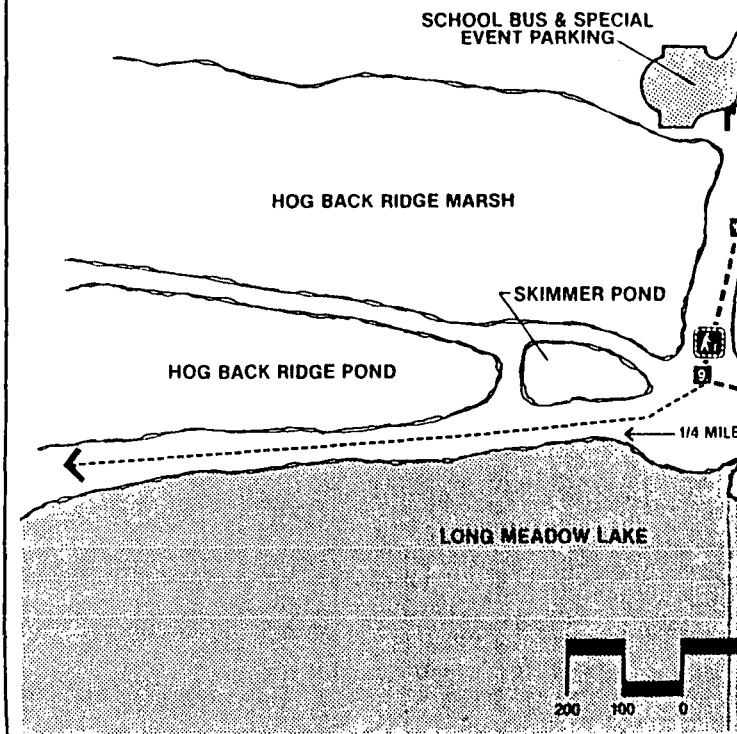
- 10.** The Bass Ponds have gone from raising fish to teaching young people. Those refuge folks call it an "Environmental Study Area." Nowadays, schools are getting back to basics and I'll bet a lot of people think this is just something extra. They should think again. Learning about the real world isn't icing on the cake. It is the cake.

- 9.** The largest of the original bass rearing ponds was out there. That gravel operation in the 60's before this was a refuge and a storm-sewer outlet have changed things a lot. A friend said there's a marsh boardwalk and observation blind down the road about a quarter mile. It should be a good place to go if you want to see waterfowl and other marsh critters.

- 8.** Can't quite get used to how much this place has grown over since the 1930's. We kept it mowed and trimmed up pretty well. Look at the size of those cottonwoods and willows on the left. Succession again! The land is going back to what it wants to be. Come to think of it, that's probably better for wildlife.



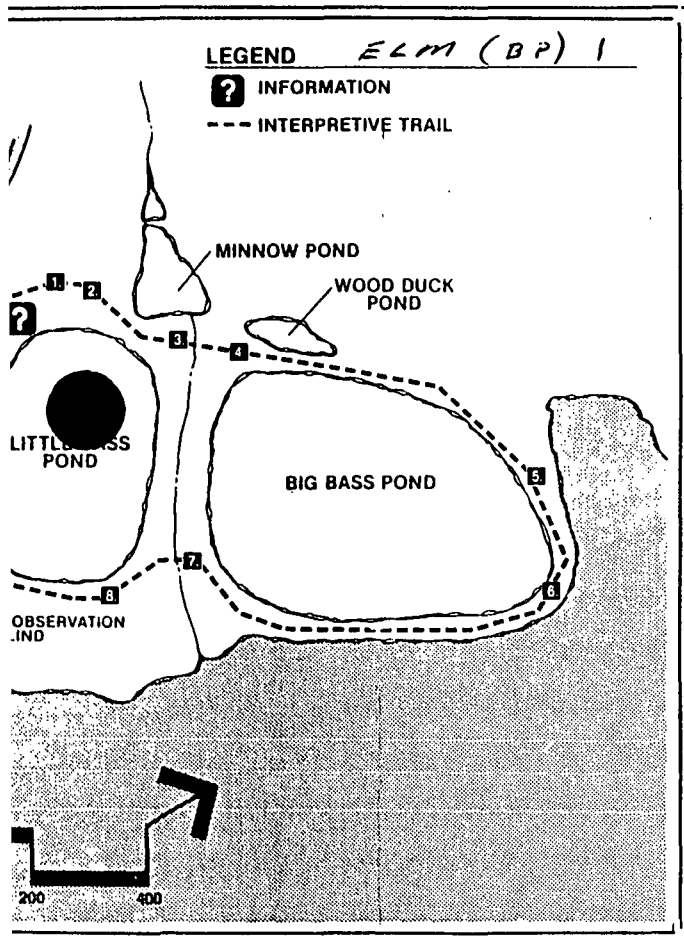
Bass Ponds Environmental Study Area



- 7.** I can remember eating watercress from this stream...it has a wonderful peppery taste in salads. Who knows what is coming from upstream now so maybe it's not a good idea to eat cress from here anymore. Good clean water is getting harder to find. We ought to treasure what we have.

2. On the darkest of nights, your ears could tell the difference between all the water control structures here. Water flowing through this one always has a special bubbling sound as it is diverted through tile supply lines to ponds 2, 3, and 4. With a light touch of poetry perhaps, these ponds are now called the Hog Back Ridge Pond and Little and Big Bass Ponds.

3. Does this old "stoplog" structure jog your memory? You must have raised and lowered water levels in this pond hundreds of times by adding or removing one or more of the wood beams (stop logs) set into the steel-lined channels below. It's simple and effective. Gravity does the rest. Similar structures are used by fisheries and wildlife biologists throughout the world for management purposes.



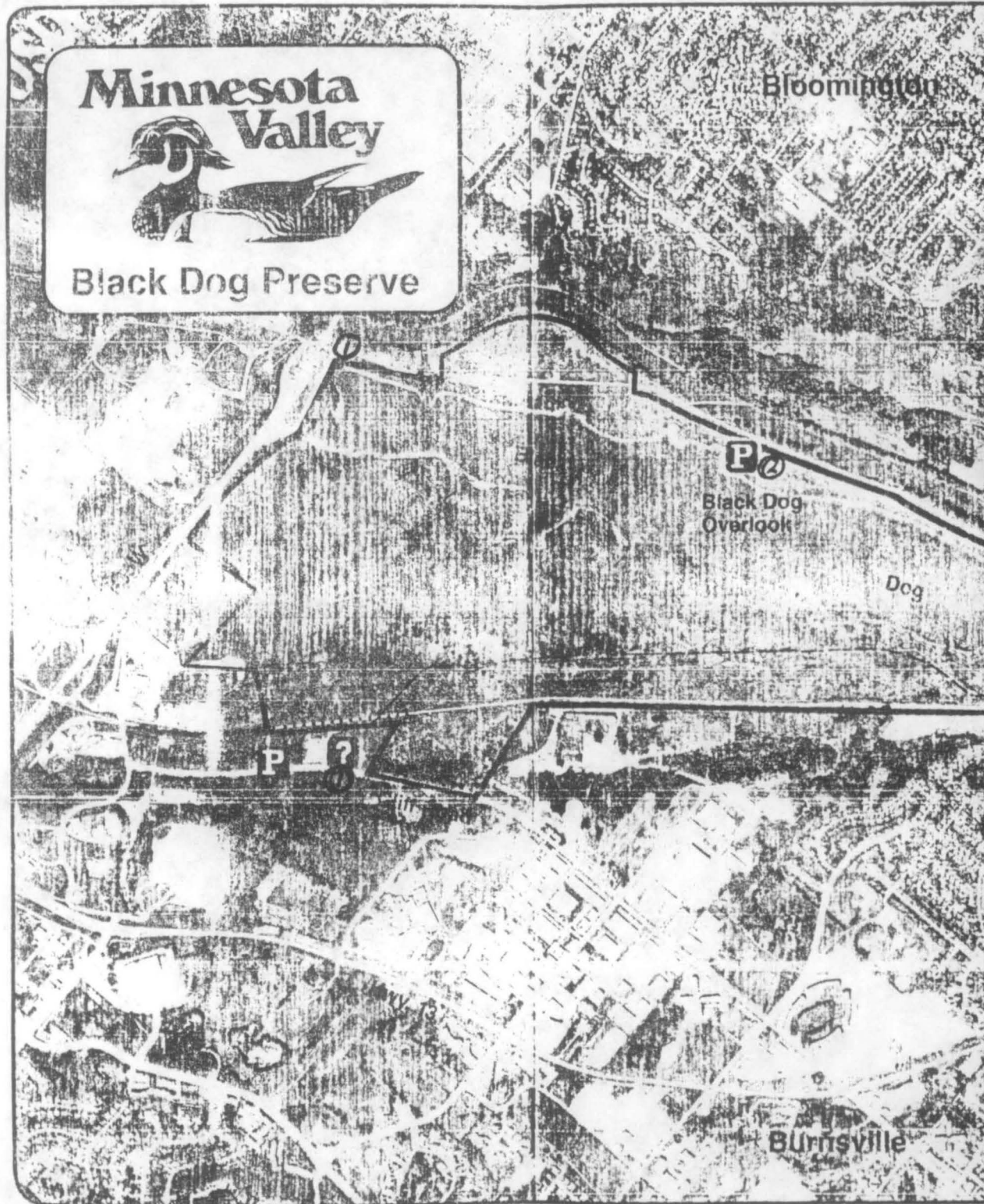
4. This little pond demonstrates a management technique used at other wildlife refuges on a much larger scale. It's called a "green tree reservoir." They're great places for dabbling ducks like mallards, teal, and wood ducks to feast on seeds and acorns which drop from the trees. Timing is important! Add a few inches of water when ducks are migrating through and they'll be feeding "bottoms up" everywhere. Leave the stop logs in too long and the standing water will kill the trees.

5. The "Big Bass Pond"...this was one of the new ponds put in by the Work Projects Administration (WPA) and the National Youth Administration back in '38. Imagine a hundred men with shovels and wheelbarrows digging it out. When I was here, the pond sloped from about a foot on the right to 6' on the left and was managed for fish only. Things are different on a refuge though. Some years a conservation club called Muskies Incorporated will raise muskie fingerlings to stocking size. In other years, refuge managers may draw the water down to encourage the growth of waterfowl food plants.

6. This water control structure empties into Long Meadow Lake. Now there's a story! In the 1870's it was Long Lake, then around the turn of the century it was known as Long Meadow. The water was mostly gone then and parts of it were being farmed. Later it was flooded for carp production and now Long Meadow Lake is known as a premier wildlife marsh. Fact is, there's been a private duck hunting club down here for more than 100 years!

EBD (N) 1 & 2

EBD / MRC. 1

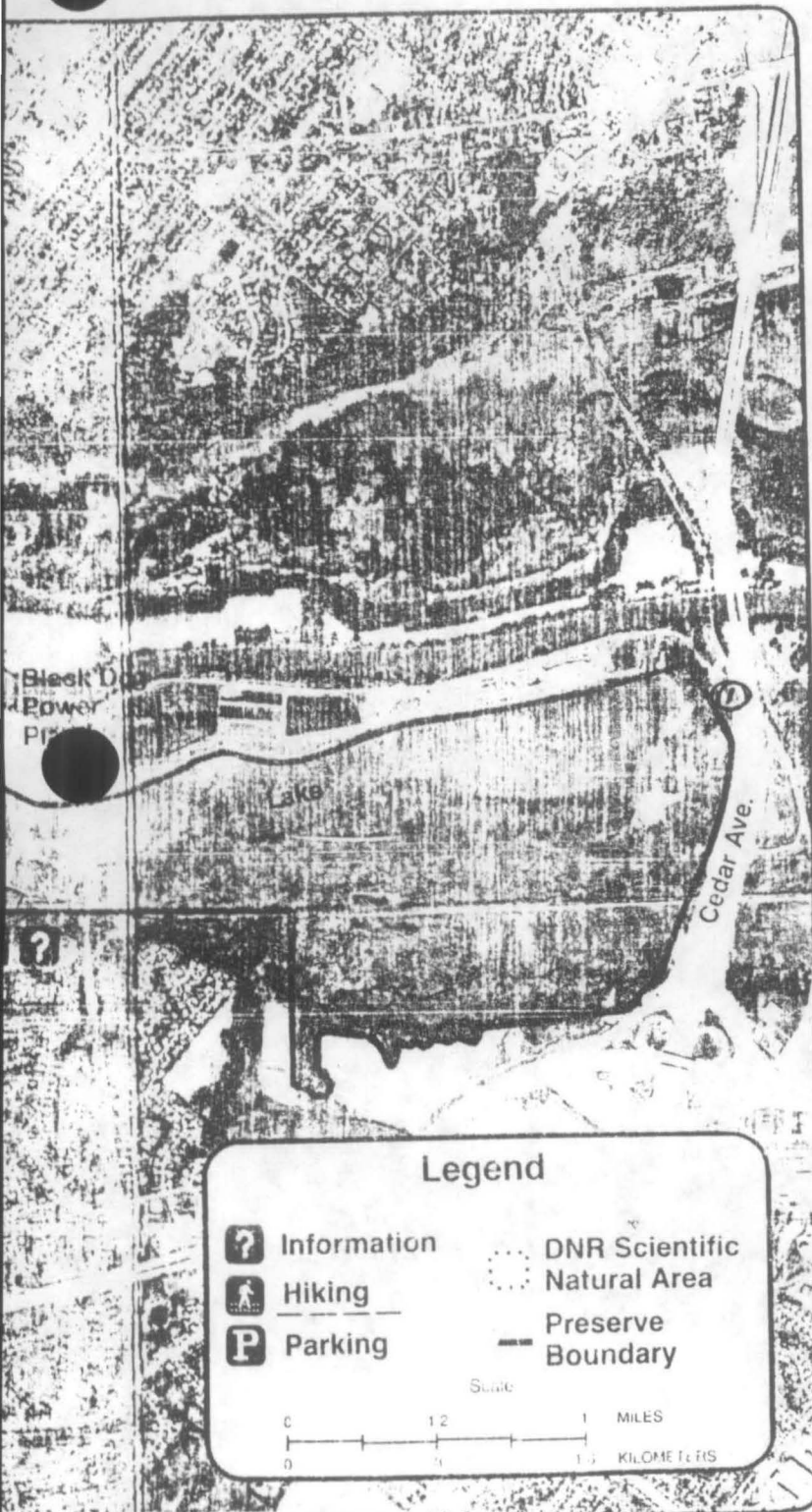


Welcome!

SNA
(State)Sanctuary:
Off Limits
To Public
(Federal)

To preserve and protect the natural resources and lands marked with one of the above symbols, please observe these rules:

- Do not disturb, injure, or damage any plants.
- Fishing on the river and in backwater lakes is allowed but you should consult Health Department guidelines before eating any fish.
- Pets are not permitted on DNR Scientific & Natural Areas (SNA's). All pets must be restrained by a leash in the Preserve.
- Snowmobiling and horseback riding are permitted on trails specifically marked for these uses.
- All Terrain Vehicles (ATV's) are not permitted on state or federal lands.
- Swimming is not allowed in any waters on Federal lands.
- Camping is restricted to designated campsites.
- Fires may be built only in fire rings and fireplaces for that purpose.
- Trails shall not be used as access to private farmland.
- Hunting and trapping are allowed only in designated areas of federal land by special permit. Contact headquarters for information on how to obtain permits.
- Firearms (including airguns) are not permitted on state or federal land except with a special hunting permit. Target shooting are not allowed on state or federal land.

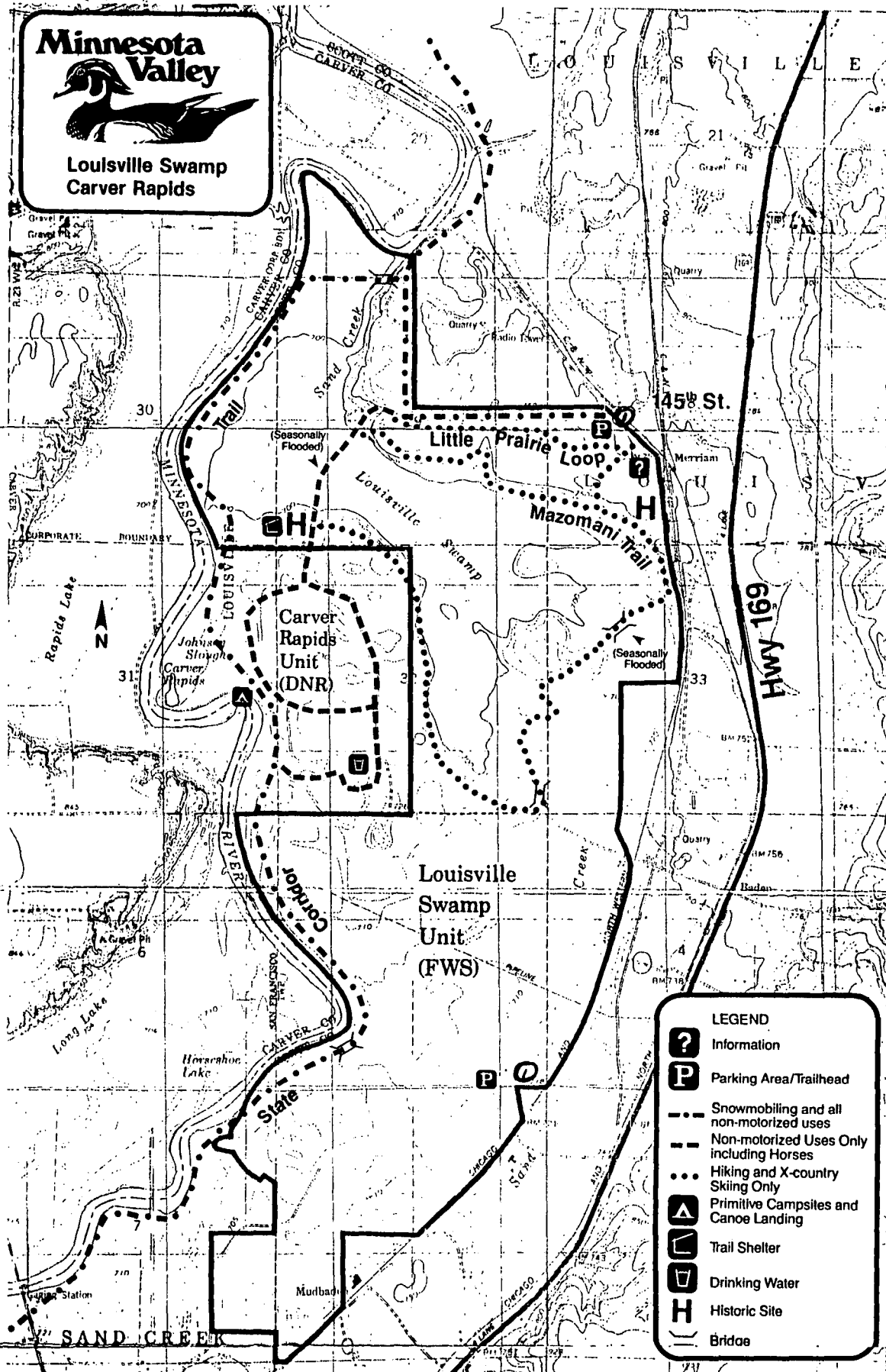


ELV(N) 1 (S) 1

Minnesota Valley



Louisville Swamp
Carver Rapids



There are four established trails within the Louisville Swamp. Each is special.

Mazomani Trail — (4½ miles, 2 bridges)

This trail goes S.W. for ¼ mile on the edge of prairie to a bluff overlooking Louisville Swamp. It follows the bluff edge down past the Ehmler homestead into bottomland forest where a bridge crosses Sand Creek to a forested island. It exits bottomland near a large glacial boulder, turns right, and follows a bluff edge for a mile to the Jabs Farm. The next trail junction is ¼ mile across the creek and up the hill. The trail turns right there going ¾ mile through upland forests and past marsh and prairie to the beginning.

Mazomani Trail/Little Prairie Loop — (2 miles)

This short loop turns right at the junction near the Ehmler Farm and goes along the bluff base for ¼ mile. It climbs

the bluff into upland forest for ½ mile to a trail junction above Sand Creek. There it goes right on an old roadbed to the Little Prairie Loop which meanders through 60 acres of remnant prairie to the trailhead.

Johnson Slough — (1½ mile)

The trail leaves Jabs Farm going south to a junction where it turns right and passes through an oak savannah to the Johnson Slough Overlook. Beyond the slough, the trail passes through a prairie to a junction where it turns left back to the Jabs Farm.

State Corridor Trail — (3½ miles and continuing, 2 bridges)

This trail passes through the Louisville Swamp and Carver Rapids Units generally along the river's edge. It can be reached by taking a spur trail from the trailhead west to the first trail, then north for ½ mile where it meets the State Trail.

LEGEND

?

 Information

P

 Parking Area/Trailhead

 Snowmobiling and all non-motorized uses

 Non-motorized Uses Only including Horses

 Hiking and X-country Skiing Only

A

 Primitive Campsites and Canoe Landing

H

 Trail Shelter

V

 Drinking Water

H

 Historic Site

B

 Bridge

ELV(N)1
ELV(S)1

SIGN INVENTORYENTRANCE SIGN LIST

Figure 2

Page 1

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ELM (BP)1	48x48	4"	3/4 PLY		X	Wh/Br	1	2	MNVNWR U.S. Fish & Wildlife Service, Dept of the Interior w/ 24" Wood Duck
ELM (BP)1	6x48	2"	3/4 PLY		X	Wh/Br	1	0	Bass Ponds
ELM (BP)1	6x48	2"	3/4 PLY		X	Wh/Br	1		Daylight Hours Only
EBD (N)1E	48x96	9 1/2"	3/4 PLY	X		Wh/Br	2	3	34" Wood Duck MNV - 9 1/2" NWR - 6"
EBD (N)1E	18x96	5 1/2"	3/4 PLY	X		Wh/Br	1	3	12" FWS shield, Black Dog Preserve, USFWS
EBD (N)1W	48x72	4"	3/4 PLY		X	Wh/Br	1	1	24" Wood Duck (DS) MNVNWR, USFWS, DOI
EBD (N)1W	8x72	2 3/4"	3/4 PLY		X	Wh/Br	2	0	Blackdog Lake (DS)
EBD (N)1W	8x72	2"	3/4 PLY		X	Wh/Br	2	0	Managed in Cooper- ation w/Northern States Power Co.
EBD (N)2	48x48	4"	3/4 PLY		X	Wh/Br	1	2	24" Wood Duck Wildlife Observation Area (DS) w/right & left arrows
EBD (N)2	6x48	2"	3/4 PLY		X	Wh/Br	2	0	Daylight hours only single sided (SS)

EBD/MTC 1	48x48	5"	3/4 PLY	X	Wh/Br	1	1	Blackdog Preserve Wood Duck (DS)
-----------	-------	----	---------	---	-------	---	---	-------------------------------------

SIGN INVENTORY

ENTRANCE SIGN LIST

Figure 2

Page 2

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
EBD/MTC 1	6x48		3/4 Ply	X	Wh/Br	1	0	8" Left & Right arrows ← & → (DS)
EBF 1	48x48	3-1/2"	3/4 Ply	X	Wh/Br	1	0	Wood Duck (DS) MNVNWR, USFWS DOI
EW 1	48x72	4"	3/4 Ply	X	Wh/Br	1	0	30" Wood Duck (DS) MNVNWR, USFWS, DOI
EW 1	8x72	4"	3/4 Ply	X	Wh/Br	1	0	Wilkie Unit (DS)
EW 2	48x48	4"	3/4 Ply	X	Wh/Br	1	0	25" Wood Duck MNVNWR, USFWS, DOI
EW 2	8x48	3"	3/4 Ply	X	Wh/Br	1	0	Service Area
ES 1	48x60	3"	3/4 Ply	X	Wh/Br		1	30" Wood Duck MNVNWR, USFWS, DOI
ES 2	48x60	4"	3/4 Ply	X	Wh/Br		1	30" Wood Duck MNVNWR, USFWS, DOI
ELV (N) 1	48x72	3-1/2"	3/4 Ply	X	Wh/Br	1	0	24" Wood Duck MNVNWR, USFWS, DOI
ELV (N) 1	8x72	3-1/2"	3/4 Ply	X	Wh/Br	1	0	Louisville Swamp
ELV (S) 1	48x96	9-1/2"	3/4 Ply	X	Wh/Br	2	3	34" W.D., MNV, NWR

SIGN INVENTORYENTRANCE SIGN LIST

Figure 2
Page 3

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ELV (S) 1	18x96	5-1/2"	3/4 Ply	X	Wh/Br	1	1	Louisville Swamp Unit, USFWS
ES 3	6x48	2"	3/4 Ply	X	Wh/Br	NA	1	Long Meadow Lake
ES 4	6x48	2"	3/4 Ply	X	Wh/Br	NA	2	Chaska Lake
ES 5 (LM/OC)	6x48	2"	3/4 Ply	X	Wh/Br	NA	1	Old Cedar Trail Access
ES 6 (LM/OC)	6x59- 3/4	2"	3/4 Ply	X	Wh/Br	NA	1	Old Cedar Ave Trailhead
ES 7 (LM)	8x72	2-3/4"	3/4 Ply	X	Wh/Br	NA	1	Long Meadow Lake

Entrance Sign Needs

Ultimately, all refuge Entrance Signs will be replaced with a 4'x 8' format non-standard Entrance Sign designed with input from two of the refuge's TQM Teams, the Regional Sign Coordinator and the Regional Landscape Architect. We have received 5 of these new panels. They have 3" radius corners, feature the Minnesota Valley Wood Duck logo and have the text: "Minnesota Valley National Wildlife Refuge" done with Optima letters.

18" X 8' bottom panels feature 12" full-color FWS emblems, the unit name and "U.S. Fish and Wildlife Service". We have 3 for the Black Dog Preserve, 2 for the Long Meadow Lake Unit and 2 for the Louisville Swamp Unit.

A flood-damaged sign at the Black Dog Preserve was the first replaced and a shot-up sign at the Louisville Swamp Hunter Access was the second. No bottom panel was available for the Hunter Lot until Dec. 94 because it was far down our priority list and had not been ordered yet.

Entrance Signs will be replaced at all refuge units. They will be mounted consistently (See Appendix 3.) The level of visitation/visibility and condition of the old signs determines installation priority.

Priority list:

- | | |
|----------|--|
| EBD(N) | Signs at both the east and west ends of Black Dog Road with the sign at the east end to be replaced first. |
| ELM(Lyn) | New sign at the Lyndale Avenue Marina. |
| ELM(BP) | Replacement sign at the Bass Ponds Environmental Study Area. |
| ELM(OC) | New sign at the Old Cedar Avenue Trailhead. |
| ELV(N) | Replacement sign at the Louisville Swamp north trailhead. |
| EW | Replacement sign at the Wilkie Unit trailhead. |
| EBF | New sign at the Bloomington Ferry trailhead as it is developed. |
| EU(W) | New sign for the Upgrala Unit at the west end near the new Hwy 169 bridge. |
| EC(N&S) | New signs at both of the Chaska Unit trailheads as soon as the refuge has acquired the Lano property. |

Information/Guide Signs

The refuge has two distinctly different Information/Guide signs based upon how they are mounted: posts or poles. Many of them have symbols that indicate authorized uses and could therefore be considered regulatory. For the purpose of this Sign Plan, regulatory signs are either those classified as such in the Manual On Uniform Traffic Control Devices or they are refuge signs prohibiting some activity. These are discussed more thoroughly in the next section.

a. Pole Signs

Pole signs were identified in the 1980 Refuge Sign Plan as "Trail Information Signs". They are now 3/4" marine plywood panels mounted in a beveled and grooved 6"x 6"x 12' pressure treated post.

Ordering the panels from the Sign Shop is straight-forward enough; but mounting them in these posts takes time, skill and specialized equipment. The sequence is:

- 1) 6"x6"x12' posts need to be sawed in half lengthwise at a mill and the halves kept together for each post.
- 2) Edges of these poles are routed to a 1" radius on the top 8-1/2'.
- 3) Tops are sawed to a bevel 2" higher on the back.
- 4) Two heavy-duty routers are set to make 1/2" cuts; one with a cove bit and the other with a straight bit.
- 5) Using an angle-iron jig, each post needs a 2" wide, half-inch deep groove routed 2" down from the lower part of the bevel.
- 6) Halves of the 6"x 6"x 12's are then separated and a 3/8"x 22" section is routed on the inside of each beginning 6" down from the top. This is to accommodate 22"x 56"x 3/4" panel mounted through the post.
- 7) If the post will be for a 3-way pole sign, the slot on the front for the 22"x 28"x 3/4" panel is cut most safely with a "Saws All".
- 8) Panels are mounted with 1/4"x 6" round-head carriage bolts counter sunk slightly on the nut end to reduce the likelihood of theft.

b. Post Signs

Wood Informational/Guide signs are generally mounted on 6"x 6"x 8' pressure treated posts that are set about 3' into the ground. These also are beveled and routed with a 2" wide 1/2" deep groove at the top. The top of the sign panel should be mounted 2" down from the bottom edge of the groove. 3/8" lag bolts work best where vandalism is heavy and signs must be replaced often.

Metal Information/Guide signs are bolted onto an 8' two-pound green steel post. The top of the sign is set even with the top of the post after it has been driven into the ground about 3 feet.

Many of the refuge's Information/Guide post signs (wood and metal) are designed with a half inch white border approximately 1/2" in from the edge of the sign. The border does not extend all the way around the sign perimeter, but rather underscores the sign's "headline" approximately 1/4th of the way into the sign.



ILM (OC) 3 P.S. & ILM (OC) 4 P.S. = 22"x 56" & 22"x 28" Information pole signs on the Long Meadow Lake Unit at Old Cedar Ave; numbers 3 & 4 in the inventory sequence.



ILV (N) 11



ILV (M) 1



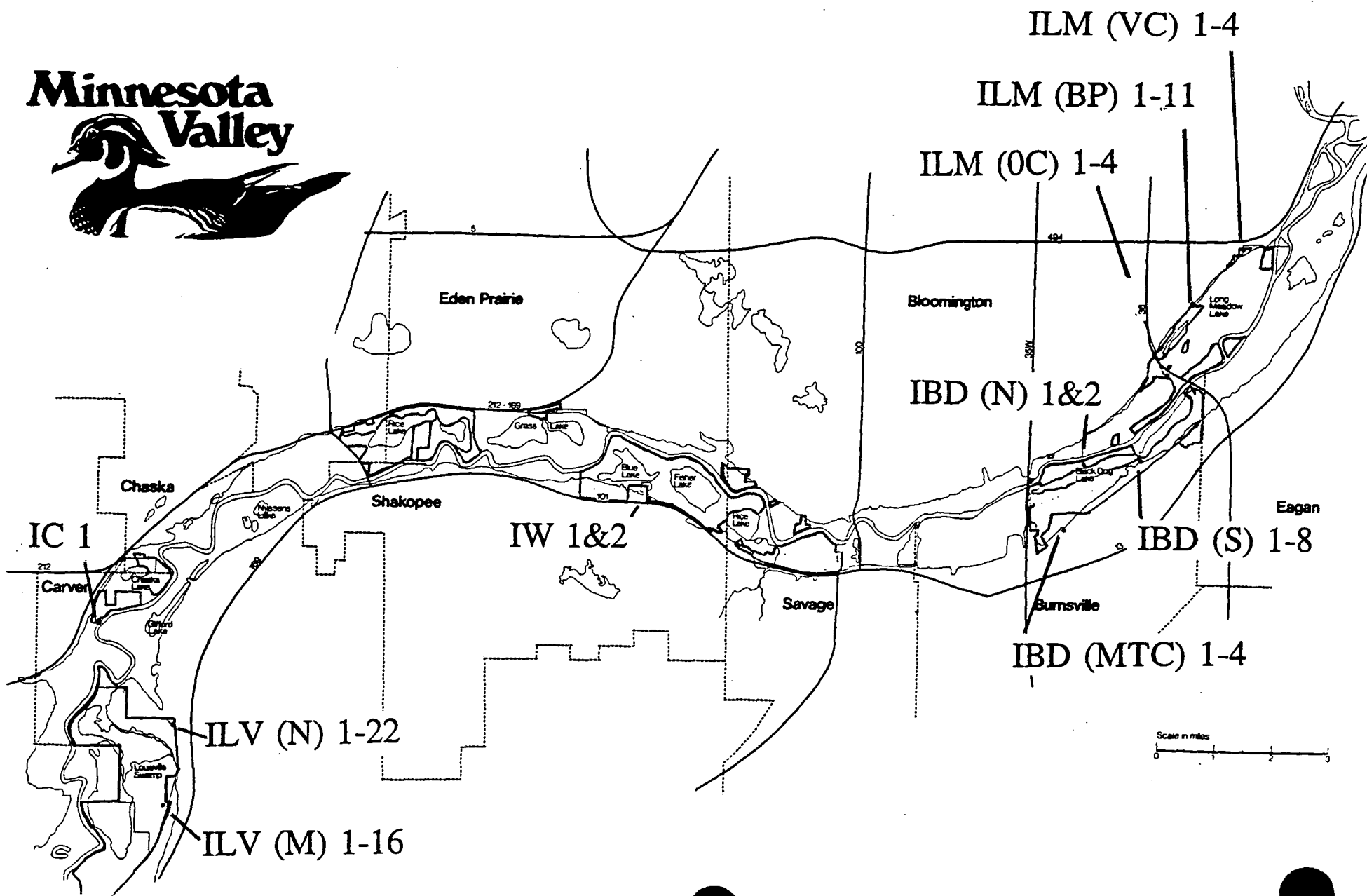
IBD (MTC) 4 = an Information Sign at the Black Dog Preserve MTC Entrance. Someone blasted the "Chuck" with a shotgun. Later, this sign disappeared and was replaced.



ILV (N) 3 & ILV (N) 4 Refer to the Information Sign List on page 31 for more information!

INFORMATION SIGNS

**Minnesota
Valley**





The Caretaker's Walk...

A self-guided trail

Do you have a few minutes, some imagination, and want to know more about the Bass Ponds? If so, a special experience begins along the trail around the ponds. Numbered points on the trail and map correspond with the numbered paragraphs in this leaflet.

ILM (BP) 1-11

10. The Bass Ponds have gone from raising fish to teaching young people. Those refuge folks call it an "Environmental Study Area." Nowadays, schools are getting back to basics and I'll bet a lot of people think this is just something extra. They should think again. Learning about the real world isn't icing on the cake. It is the cake.

9. The largest of the original bass rearing ponds was out there. That gravel operation in the 60's before this was a refuge and a storm-sewer outlet have changed things a lot. A friend said there's a marsh boardwalk and observation blind down the road about a quarter mile. It should be a good place to go if you want to see water fowl and other marsh critters.

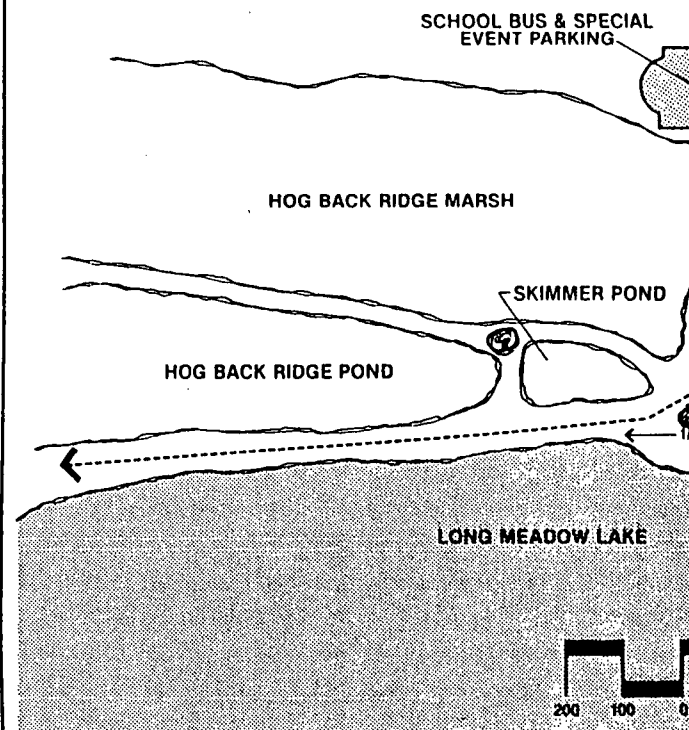


8. Can't quite get used to how much this place has grown over since the 1930's. We kept it mowed and trimmed up pretty well. Look at the size of those cottonwoods and willows on the left. Succession again! The land is going back to what it wants to be. Come to think of it, that's probably better for wildlife.

1. Imagine if you will that you are a former Caretaker of the once Izaak Walton League Fish Rearing Ponds returning here after many years of absence. There were two cabins nearby and one was your home. Your's burned and the larger cabin was removed more than 20 years ago. Notice steps from that cabin to the left and how trees are reclaiming its foundations. This natural regeneration of an area is what biologists call succession.



Bass Ponds Environmental Study Area



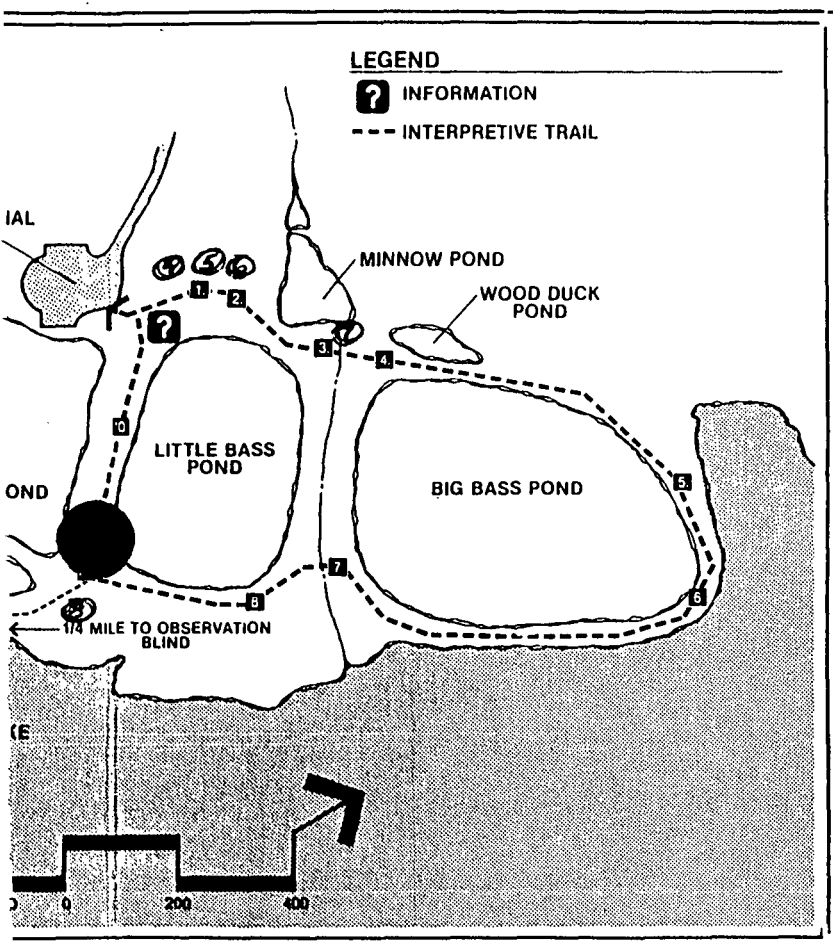
7. I can remember eating watercress from this stream...It has a wonderful peppery taste in salads. Who knows what is coming from up-stream now so maybe it's not a good idea to eat cress from here anymore. Good clean water is getting harder to find. We ought to treasure what we have.

re-
ar-
ab-
one
ger
No-
ow
ral
all

2. On the darkest of nights, your ears could tell the difference between all the water control structures here. Water flowing through this one always has a special bubbling sound as it is diverted through tile supply lines to ponds 2, 3, and 4. With a light touch of poetry perhaps, these ponds are now called the Hog Back Ridge Pond and Little and Big Bass Ponds.

①
②
③

3. Does this old "stoplog" structure jog your memory? You must have raised and lowered water levels in this pond hundreds of times by adding or removing one or more of the wood beams (stop logs) set into the steel-lined channels below. It's simple and effective. Gravity does the rest. Similar structures are used by fisheries and wildlife biologists throughout the world for management purposes.



is
in
p-
at
is
at

6. This water control structure empties into Long Meadow Lake. Now there's a story! In the 1870's it was Long Lake, then around the turn of the century it was known as Long Meadow. The water was mostly gone then and parts of it were being farmed. Later it was flooded for carp production and now Long Meadow Lake is known as a premier wildlife marsh. Fact is, there's been a private duck hunting club down here for more than 100 years!

4. This little pond demonstrates a management technique used at other wildlife refuges on a much larger scale. It's called a "green tree reservoir." They're great places for dabbling ducks like mallards, teal, and wood ducks to feast on seeds and acorns which drop from the trees. Timing is important! Add a few inches of water when ducks are migrating through and they'll be feeding "bottoms up" everywhere. Leave the stop logs in too long and the standing water will kill the trees.

5. The "Big Bass Pond"...this was one of the new ponds put in by the Work Projects Administration (WPA) and the National Youth Administration back in '38. Imagine a hundred men with shovels and wheelbarrows digging it out. When I was here, the pond sloped from about a foot on the right to 6' on the left and was managed for fish only. Things are different on a refuge though. Some years a conservation club called Muskies Incorporated will raise muskie fingerlings to stocking size. In other years, refuge managers may draw the water down to encourage the growth of waterfowl food plants.

IBD (N) 1-2
" (S) 1-8

IBD (MTC) 1-4

Minnesota Valley



Black Dog Preserve

Bloomington

Black Dog
Overlook

Dog

Black Dog
Power
Plant

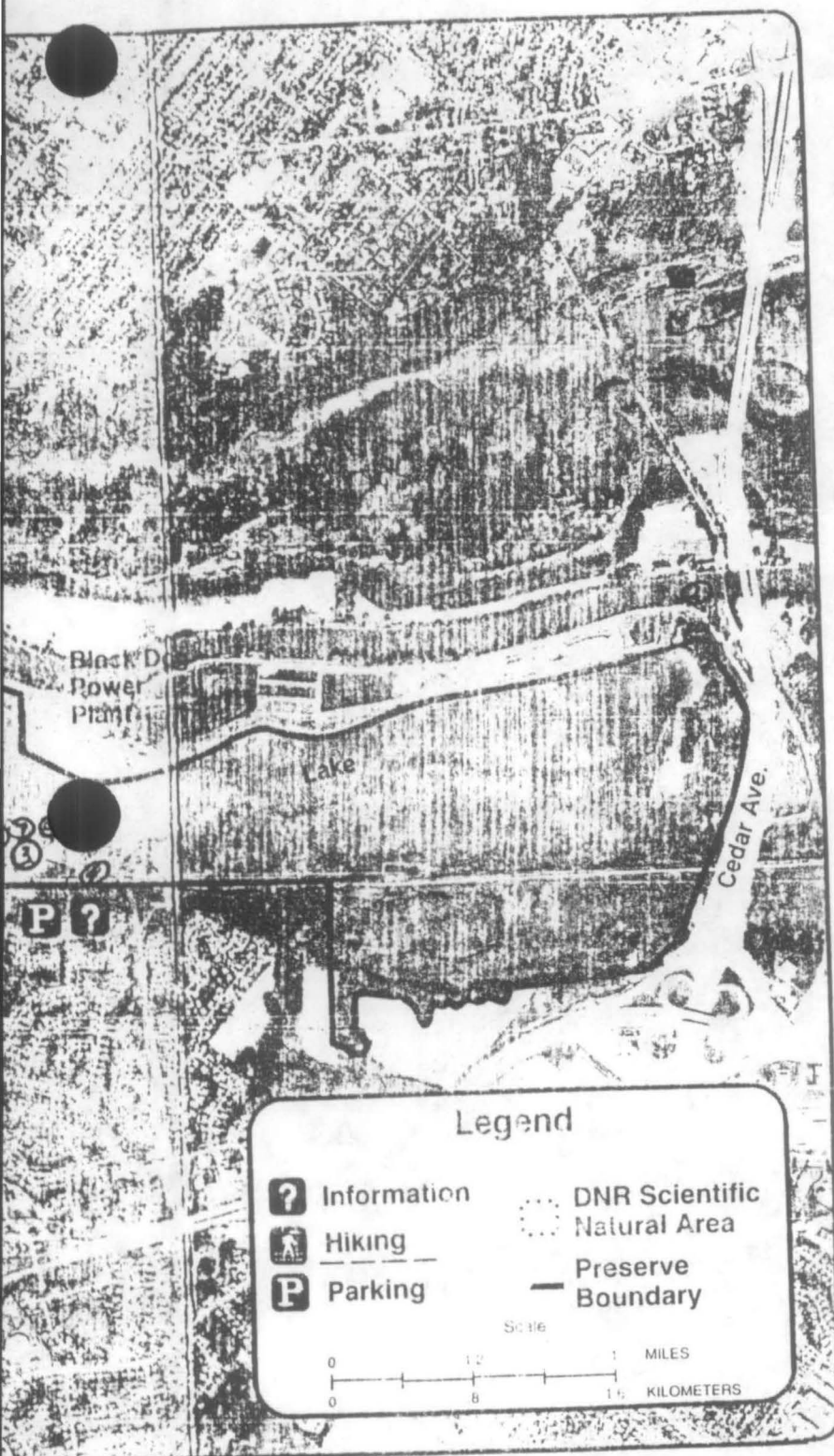
P ?

P ?

Burnsville

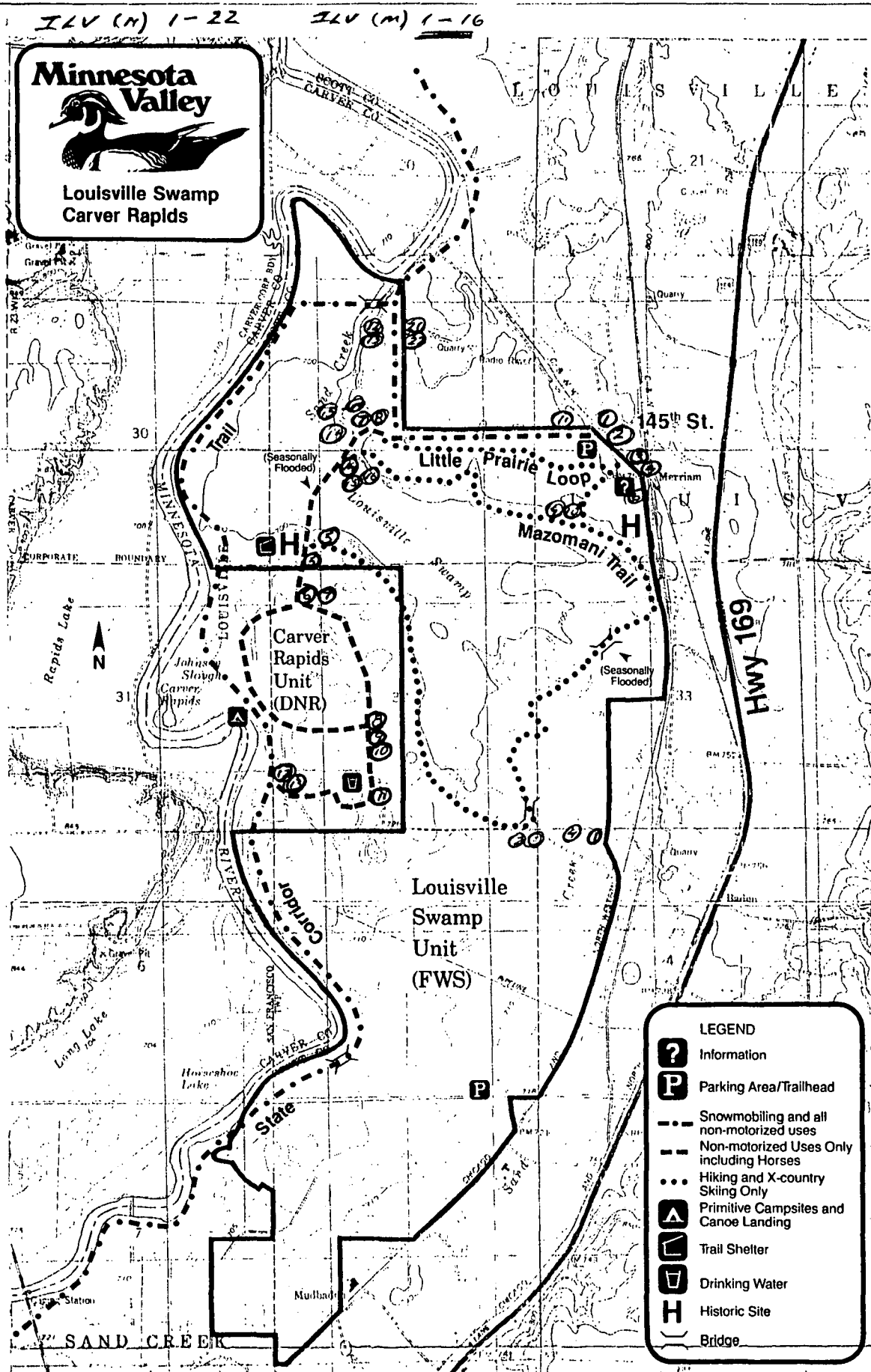
Welcome!

IBD(MTC)1-4

SNA
(State)Nature
ConservancySanctuary,
Off Limits
To Public
(Federal)Authorized
Activities
Permitted
(Federal)

To preserve and protect the natural resources of the lands marked with one of the above signs, please observe these rules:

- Do not disturb, injure, or damage any plants or animals.
- Fishing on the river and in backwater lakes is permitted, but you should consult Health Department guidelines before eating any fish.
- Pets are not permitted on DNR Scientific & Natural Areas (SNAs). All pets must be restrained by a leash elsewhere in the Preserve.
- Snowmobiling and horseback riding are permitted on trails specifically marked for these uses.
- All Terrain Vehicles (ATVs) are not permitted on state or federal lands.
- Swimming is not allowed in any waters on Federal lands.
- Camping is restricted to designated campsites.
- Fires may be built only in fire rings and fireplaces provided for that purpose.
- Trails shall not be used as access to private land.
- Hunting and trapping are allowed only in designated areas of federal land by special permit. Contact refuge headquarters for information on how to obtain refuge permits.
- Firearms (including airguns) are not permitted on federal land except with a special hunting permit. Target or bow shooting are not allowed on state or federal lands.



There are four established trails within the Louisville Swamp. Each is special.

Mazomani Trail — (4½ miles, 2 bridges)

This trail goes S.W. for ¼ mile on the edge of prairie to a bluff overlooking Louisville Swamp. It follows the bluff edge down past the Ehmler homestead into bottomland forest where a bridge crosses Sand Creek to a forested island. It exits bottomland near a large glacial boulder, turns right, and follows a bluff edge for a mile to the Jabs Farm. The next trail junction is ¼ mile across the creek and up the hill. The trail turns right there going ¾ mile through upland forests and past marsh and prairie to the beginning.

Mazomani Trail/Little Prairie Loop — (2 miles)

This short loop turns right at the junction near the Ehmler Farm and goes along the bluff base for ¼ mile. It climbs

the bluff into upland forest for ½ mile to a trail junction above Sand Creek. There it goes right on an old roadbed to the Little Prairie Loop which meanders through 60 acres of remnant prairie to the trailhead.

Johnson Slough — (1½ mile)

The trail leaves Jabs Farm going south to a junction where it turns right and passes through an oak savannah to the Johnson Slough Overlook. Beyond the slough, the trail passes through a prairie to a junction where it turns left back to the Jabs Farm.

State Corridor Trail — (3½ miles and continuing, 2 bridges)

This trail passes through the Louisville Swamp and Carver Rapids Units generally along the river's edge. It can be reached by taking a spur trail from the trailhead west to the first trail, then north for ½ mile where it meets the State Trail.

SIGN INVENTORY**INFORMATION SIGN LIST**

Figure 4
Page 1

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM (VC) 1 P.S.	18x24	2"	1/2 Ply	X	Wh/Br	1	3	Visitor Parking w/8" "P" glyph
ILM (VC)2	10x30	1-1/2"	3/4 Ply	X	Wh/Br	1	UNK	National Wetlands
ILM (VC)3	24x36	2"	3/4 Ply	X	Wh/Br	1	UNK	Twin Cities Ecological Services Field Office (TCESFO) w/8" FWS shield
ILM (BP)1	24x36	4"	3/4 Ply	X	Wh/Br	1	1	Bass Ponds Environ- mental Study Area + Daylight Hours Only w/11" Wood Duck
ILM (BP)2	11x14	5/8"	Alum	X	Dk Bl Lt Blue	1	6	Valley Watch
ILM (BP)3	11x14	1"	Alum	X	Wh/Br	1	4	Please Pack Your Trash Back Home With You

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 2

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM (BP)4	5x5	2-3/4"	Alum	X	Wh/Br	1 each #'s 1-10	1 each #'s 1-10	Numbers 1-10 for Caretaker's walk
ILM (BP)5	5x5		Alum	X	Wh/Br	16		Interpretive Trail glyphs
ILM (BP)6	5x5		Alum	X	Wh/Br	6		3" Arrows; 1 diagonal
ILM (BP)7	7-1/2 x 20	1-1/4"	3/4 Ply	X	Wh/Br	1	1	The Nicole M. Neimy Outdoor classroom
ILM (BP)8 P.S.	22x28	2"	3/4 Ply	X	Wh/Br	1	1	Hog Back Ridge Trail, Old Cedar Ave 1-1/4 mile→ w/6" Hike & XC Ski glyph
ILM (BP)9	11x14	1-1/4"	Alum	X	Wh/Br	3	5	WARNING w/6" dia. fish glyph (Fish Consumption warning sign)
ILM (BP) 10	11x14	1-1/2"	Alum	X	Wh/Br	1	5	CAUTION Slippery When Wet

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 3

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM (BP) 11 P.S.	22x28	2"	3/4 Ply	X	Wh/Br	1	1	Hog Back Ridge Trail Old Cedar Ave 1/2 mile ← w/6" Hike & XC Ski glyph
ILM (OC) 3 P.S.	22x56	2"	3/4 Ply	X	Wh/Br	1	1	Hog Back Ridge Trail ← Bass Ponds 1/2 mile and → Bass Ponds 1/2 mile (DS) w/6" Hike & XC Ski rec. symbols Bluff Trail Lyndale Ave 4 miles and ← (DS) → w/6" glyphs as above

SIGN INVENTORYINFORMATION SIGN LISTFigure 4
Page 4

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM (OC) 4 P.S.	22x28	2"	3/4 Ply	X	Wh/Br	1	1	Bluff Trail Lyndale Ave 4 miles ↑ and Hog Back Ridge Trail Bass Ponds 1/2 mile ↑ (DS)
IBD (N) 1	11x14	5/8"	Alum	X	DkB1/ LtB1	1	0	Valley Watch
IBD (N) 2	11x14	5/8"	Alum	X	Wh/Br	1	5	New PCB Warning
IBD (S) 1	11x14	5/8"	Alum	X	Dk B1 Lt B1	1	0	Valley Watch
IBD (S) 2	11x14	5/8"	Alum	X	Wh/Br	1	4	Please Pack Your Trash Back Home With You
IBD (S) 3 P.S.	22x31	2"	3/4 Ply	X	Wh/Br	1	1	Black Dog Trail ← Cliff Rd 2-1/4 miles w/6" Hike & XC Ski Glyphs
IBD (S) 4	11x14	1-1/2"	Alum	X	Wh/Br	2	5	Caution Slippery When Wet

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 5

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
IBD (S) 5 P.S.	22x31	2"	3/4 Ply	X	Wh/Br	1	0	Black Dog Trail ← & → (DS) Territorial Drive 1/4 mile w/6" Hike & XC Ski glyphs
IBD (S) 6 P.S.	22x28	2"	3/4 Ply	X	Wh/Br	1	1	Black Dog Trail ← & → (DS) w/6" Hike & XC Ski glyphs
IBD (S) 7 P.S.	11x14	1"	Alum	X	Wh/Br	1	6	CAUTION Watch For Chuckholes
IBD (S) 8	22x26	2"	3/4 Ply	X	Wh/Br	1	1	Black Dog Trail ← Territorial Drive 1/4 mile Cliff Road → 2 miles w/4" Hike & XC Ski glyphs
IBD (MTC) 1 P.S.	20x28	2"	3/4 Ply	X	Wh/Br	1	1	Black Dog Trail ← & → (DS) w/3-1/2 " Hike & XC Ski glyphs
IBD (MTC) 2	11X14	5/8"	Alum	X	Dk Bl Lt Bl	1	0	Valley Watch
IBD (MTC) 3	11x14	1"	Alum	X	Wh/Br	1	4	Please Pack Your Trash Back Home With You

SIGN INVENTORYINFORMATION SIGN LISTFigure 4
Page 6

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
IBD (MTC) 4	11x14	1"	Alum	X	Wh/Br	1	6	CAUTION . . . Watch For Chuckholes
I (W) 1	11x14	5/8"	Alum	X	Dk Bl Lt Bl	1	0	Valley Watch
I (C) 1	48x48	4-1/4"	3/4 Ply	X	Wh/Br	0	1	32" Mn Valley Wood Duck w/CARVER BOAT LANDING (DS)
ILV (N) 1	48x96	4"	3/4 Ply	X	Wh/Br	1	0	24" MN Valley Wood Duck + Louisville Swamp Carver Rapids Wayside Welcome Mazomani Trail ← Info ← Hike ← XC State Corridor Trail Horseback riding → & Snowmobile → (4" Rec. Symbols)
ILV (N) 2	6x48	2"	3/4 Ply	X	Wh/Br	1	0	Daylight Hours Only

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 7

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILV (N) 3	11x14	5/8"	Alum		X	Dk Bl Lt Bl	1	0	Valley Watch
ILV (N) 4	11x14	1"	Alum		X	Wh/Br	1	4	Please Pack Your Trash Back Home With You
ILV (N) 5 P.S.	22x28	2"	1/2 Ply		X	Wh/Br	1	0	Mazomani Loop Trail → w/6" XC & Hike Glyphs (DS)
ILV (N) 6	22x28	2"	1/2 Ply		X	Wh/Br	1	0	State Corridor Trail ← w/4" Hike, XC Ski, Horseback, & Snowmobile glyphs
ILV (N) 7	22x28	2"	1/2 Ply		X	Wh/Br	1	1	Little Prairie Loop ← & → w/6" Hike & XC Ski Glyphs (DS)
ILV (N) 8	22x31	2"	1/2 Ply		X	Wh/Br	1	1	Mazomani Trail ← & → (DS) w/6" Hike & XC Ski Symbols

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 8

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (N)9	19x22	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Trailhead .5 miles ← & → (DS) w/4" Hike & XC Ski glyphs
ILV (N) 10 P.S.	19x44	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Mazomani Trail Long Loop 4.5 miles ← w/ 4" Hike & XC Ski glyphs (&) Mazomani Trail Short Loop, 2 miles → w/same glyphs
ILV (N)11	14-1/2 x 19	1-3/4"	1/2 Ply	X	Wh/Br	1	3	State Trail Authorized Uses: w/4" Hike, XC Ski, Horseback riding, & Snowmobile glyphs
ILV (N)12 P.S.	22x28	2"	1/2 Ply	X	Wh/Br	1	0	State Corridor Trail ← & → (DS) w/4" Hike, XC Ski, Horseback riding, & Snowmobile glyphs
ILV (N)13 P.S.	22x56	2"	1/2 Ply	X	Wh/Br	1	0	Parking Lot 3/4 mile w/6" Hike, XC Ski. Horseback riding & Snowmobile glyphs

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 9

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILV (N)14	14-1/2 x 19	1-1/2"	1/2 Ply		X	Wh/Br	3	4	Mazomani Trail Authorized uses w/4" Hike & XC Ski glyphs
ILV (N)15	22x28	2"	1/2 Ply		X	Wh/Br	1	0	Little Prairie Loop (DS) ← & → w/6" Hike & XC Ski glyphs
ILV (N)16	22x56	2"	1/2 Ply		X	Wh/Br	1	2	Mazomani Loop Trail ← w/6" Hike, XC Ski & Horseback riding symbols & State Corridor Trail → w/6" Hike, Horseback riding & Snowmobile symbols
ILV (N)17	22x22	3-1/2"	1/2 Ply		X	Wh/Br	1	2	CAUTION - Do Not Cross During High Water

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4
Page 10

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (N)18	22x28	2"	1/2 Ply	X	Wh/Br	1	0	Little Prairie Loop ← & → (DS) w/6" Hike, XC Ski and Horseback riding glyphs
ILV (N)19	22x56	2"	1/2 Ply	X	Wh/Br	1	0	Mazomani Loop Trail → w/6" Hike, XC Ski & Horseback glyphs Mazomani Loop Trail w/6" Hike & XC Ski glyphs
ILV (N)20	14-1/2 x 19	1-3/4"	1/2 Ply	X	Wh/Br	1	0	State Trail Authorized Uses w/ 4" Hike, XC Ski, Horseback Riding & Snowmobile glyphs
ILV (N)21	19x22	1-3/4"	1/2 Ply	X	Wh/Br	1	0	Carver Rapids 2 MI (DS) ← & → w/4" Hike, XC Ski, Horseback Riding & Snowmobile glyphs
ILV (N)22	19x44	1-3/4"	1/2 Ply	X	Wh/Br	1	0	Same glyphs as #21 Trailhead 1.25 Mi → & Hwy 41, 3 Mi

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 11

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (M)1	24x48	3-1/2"	3/4 Ply	X	Wh/Br	1	0	Service Road Official Use Only Public Access 2 Mi North Hunter Access 1 Mi South
ILV (M)2	19x22	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Carver Rapids (DS) ← & → w/4" Hike, XC Ski & Horseback Riding glyphs
ILV (M)3	22x56	2"	1/2 Ply	X	Wh/Br	1	0	Mazomani Loop Trail w/ ← & 6" Hike, XC Ski & Horseback Riding glyphs
							0	Mazomani Loop Trail → w/ 6" Hike & XC Ski glyphs
ILV (M)4	12x16	1-1/4"	1/2 Ply	X	Wh/Br	1	4	Please Pack Your Trash Back Home
ILV (M)5	14-1/2 x 19	1-1/2"	1/2 Ply	X	Wh/Br	2	1	Trail Shelter Ahead Day Use Only w/4" Shelter glyph

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4
Page 12

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (M)6 (P.S.)	19x44	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Jabs Homestead .25 Mi ← w/4" Hike, XC Ski & Horseback Riding glyphs & State Trail 1.25 Mi Water .75 Mi → w/4" Hike, XC Ski & Horseback Riding glyphs
ILV (M)7	19x21- 1/2	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Johnson Slough Loop w/4" Hike, XC Ski & Horseback Riding glyphs ← & → (DS)
ILV (M)8	19x44	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Jabs Homestead .75 Mi ← w/4" Hike, XC Ski & Horseback Riding glyphs & State Trail .60 Mi Water .25 Mi w/4" glyphs as above

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 13

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILV (M)9	19x21- 1/2	1-1/2"	1/2 Ply		X	Wh/Br	1	0	Johnson Slough Loop 1.5 Mi w/4" Hike, XC Ski & Horseback Riding glyphs ← & → (DS)
ILV (M)10	19x44	1-1/2"	1/2 Ply		X	Wh/Br	1	0	Jabs Homestead 1 mi ← w/4" Hike, XC Ski & Horseback Riding glyphs & Service Road Authorized Use Only → (no glyphs)
ILV (M)11	19x21- 1/2	1-1/2"	1/2 Ply		X	Wh/Br	1	0	State Trail .5 mi Water 100 yds w/4" Hike & Horseback Riding Glyphs plus ← & → (DS)

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 14

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (M)12	19x44	1-1/2"	1/2 Ply	X	Wh/Br	1	0	State Trail County Rd 9 3 miles ← w/4" Hike, XC Ski, Horseback Riding, and Snowmobile glyphs and State Trail, Hwy 41, 5 miles → w/glyphs as above
ILV (M)13 P.S.	19x21- 1/2	1-1/2"	1/2 Ply	X	Wh/Br	1	0	Picnic Area, Shelter and Water .40 mile → and ← w/ XC Ski, Hike, and Horseback Riding glyphs
ILV (M)14 P.S.	22x28	2"	1/2 Ply	X	Wh/Br	1	1	Mazomani Loop Trail w/6" XC Ski and Hike glyphs ← & → DS and Mazomani Loop Trail w/6" glyphs as above ←

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 15

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV (M)15 P.S.	22x28	2"	1/2 Ply	X	Wh/Br	1	1	Mazomani Loop Trail w/6" XC Ski and Hike glyphs ← & → (DS) and Mazomani Loop Trail w/glyphs as above and →
ILV (M)16	14-1/2 x19	1-1/2"	1/2 Ply	X	Wh/Br	2	0	Mazomani Trail Authorized Uses w/4" XC Ski and Hike glyphs
ILM/VC (St)1	12x16	1-1/2"	1/2 Ply	X	Wh/Br	NA	1	Entry w/ Wheelchair glyph and →
ILM/VC (St)2	24x36	3-1/4"	3/4 Ply	X	Wh/Br	NA	1	MNVNWR Office Hours
ILM/VC (St)3	16x26	2"	Alum	X	Wh/Gr	NA	2	17" MNVNWR Wood Duck
ILM/BP (St)1	11x14	5/8"	Alum	X	Wh/Br	NA	4	Biological Research
ILM/BP (St)2	22x22	2"	3/4 Ply	X	Wh/Br	NA	1	Hogback Ridge Hiking Trail
ILM/BP (St)3	15x19	1-1/2"	3/4 Ply	X	Wh/Br	NA	2	Bluff Trail ↑ 1/4 mile XC Ski and Hike glyphs

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 16

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM/VC (St)4	15x19	3"	3/4 Ply	X	Wh/Br	NA	2	Trail ↑ w/ Hike glyph
ILM/VC (St)5	15x19	1-1/2"	3/4 Ply	X	Wh/Br	NA	2	Bluff Prairie Path ↑ w/Hike and No Bike glyphs
ILM/VC (St)6	15x19	1-1/2"	3/4 Ply	X	Wh/Br	NA	2	Visitor Center → w/Parking glyph
ILM/VC (St)7	15x19	1-1/2"	3/4 Ply	X	Wh/Br	0	1	Observation Area → w/"Watchable Wildlife" glyph
ILM/OC (St)1	11x14	1-1/2"	Alum	X	Wh/Br	0	11	Notice Primitive Hiking Trail
ILM/OC (St)2	15x19	1-1/2"	3/4 Ply	X	Wh/Br	NA	2	Bluff Trail ↑ Old Cedar Ave - 4 mi. w/XC Ski and Hike glyphs
ILM/OC (St)3	15x19	1-1/2"	3/4 Ply	X	Wh/Br	0	1	Bluff Trail 1/8 mi. ↑
ILM/OC (St)4	15x19	1-1/2"	3/4 Ply	X	Wh/Br	1	1	Bluff Trail Lyndale Ave ↑ 4 mi.
ILM/OC (St)5	15x19	1-1/2"	3/4 Ply	X	Wh/Br	0	2	Hog Back Ridge Trail ↑ Bass Ponds 1/2 mi.

SIGN INVENTORYINFORMATION SIGN LISTFigure 4
Page 17

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILM/OC (St)6	15x19	1-1/2"	3/4 Ply		X	Wh/Br	0	2	Bluff Trail ↑ 1/8 mi. w/XC Ski and Hike glyphs
ILM/OC (St)7	15x19	1-1/2"	3/4 Ply		X	Wh/Br	0	2	Bluff Trail ↑ w/XC Ski & Hike glyphs
ILM/OC (St)8	15x19	1-1/2"	1/2 Ply		X	Wh/Br	0	2	Old Cedar Ave Trail XC Ski, Hike, & Bike glyphs
ILM/OC (St)9 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Parker Picnic Area 1/8 mi. ← & → DS w/6" XC Ski & Hike glyphs
ILM/OC (St)10 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Indian Mounds Park 1/4 mi. ← & → (DS) w/6" XC Ski & Hike symbols
ILM/OC (St)11 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Bluff Trail Old Cedar Ave 4 mi. ←&→ w/glyphs above
ILM/OC (St)12 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Mound Springs Park ← & → (DS) w/ glyphs above

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4
Page 18

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILM/OC (St)13 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Parker Picnic Area ← & → DS w/ XC Ski & Hike glyphs
ILM/OC (St)14 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Bluff Trail ↑
ILM/OC (St)15 P.S.	22x28	2"	1/2 Ply		X	Wh/Br	0	1	River Crossing ← & → DS w/6" Hike & Bike glyphs
ILM/OC (St)16 P.S.	22x28	2"	1/2 Ply		X	Wh/Br	0		Old Cedar Ave Trailhead .7 mi. ← & → DS <u>No Glyphs</u>
ILM/OC (St)17 P.S.	22x56	2"	3/4 Ply		X	Wh/Br	0	2	Bluff Trail ← Old Cedar Ave 1 mi. Mound Springs Park 1/2 mi. w/6" XC Ski & Hike glyphs

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4
Page 19

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILM/OC (St)18 P.S.	22x56	2"	3/4 Ply	X	Wh/Br	0	2	Bluff Trail ← Mound Springs Park 3/4 mi. Lyndale Ave 1-1/2 mi. → w/6" Hike & XC Ski (SS)
ILM/OC (St)19 P.S.	22x56	2"	3/4 Ply	X	Wh/Br	0	2	Bluff Trail ← Mound Spring Park 1/2 mi. & Lyndale Ave 1-3/4 mi. (DS)
ILM/OC (St)20 P.S.	22x56	2"	3/4 Ply	X	Wh/Br	0	2	Bluff Trail ← Indian Mounds Park 1.2 mi. & Parker Picnic Area 1/2 mi. → (SS)
ILM/OC (St)21 P.S.	22x56	2-1/4"	1/2 Ply	X	Wh/Br	0	1	State Corridor Trail ← w/ Hike, Bike & XC Ski and Old Cedar Ave Trailhead .7 mi. →

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 20

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ILM/OC (St)8	12x16	1-1/2"	3/4 Ply		X	Wh/Br	0	1	Entry → w/ Handicapped glyph
IBD/S (St)1 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Hog Back Trail ← & → w/2-6" Rec Symbols Hike & XC Ski
IBD/MTC (St)1 P.S.	22x28	2"	3/4 Ply		X	Wh/Br	0	2	Black Dog Trail Territorial Drive 2-1/4" ← & → (DS)
IBD/MTC (St)2 P.S.	22x56	2"	3/4 Ply		X	Wh/Br	1	1	Black Dog Trail ← & → w/ Hike & XC Ski glyphs
ILV/N (St)1 P.S.	22x28	2"	1/2 Ply		X	Wh/Br	0	1	Parking Lot 4/5 mi. → (DS)
ILV/N (St)2	15x19	2"	1/2 Ply		X	Wh/Br	0	4	Notice, Long Loop Flooded During High Water Use Caution
ILV/N (St)3	12x16	1-1/2"	1/2 Ply		X	Wh/Br	0	2	Toilet ←
ILV/N (St)4	12x16	1-1/2"	1/2 Ply		X	Wh/Br	0	2	Toilet →

SIGN INVENTORYINFORMATION SIGN LIST

Figure 4

Page 21

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV/N (St)5 P.S.	22x28	2"	3/4 Ply	X	Wh/Br	0	2	State Corridor Trail ← & → w/ 4 - 5" Rec. Symbols: Hike, XC Ski, Horseback Riding & Snowmobile (DS)
ILV/N (St)6 P.S.	19-1/8" x44	1-1/4"	1/2 Ply	X	Wh/Br	0	1	Mazomani Trail ← w/ 4" Hike , XC Ski & Horseback Riding glyphs & Mazomani Trail w/ Hike & XC Ski glyphs
ILV/N (St)7 P.S.	22x56	2"	3/4 Ply	X	Wh/Br	0	2	Parking Lot ← w/ Hike, XC Ski, Horseback Riding & Snowmobile glyphs and Mazomani Loop Trail → w/ Hike, XC Ski & Horseback Riding glyphs
ILV/N (St)8 P.S.	22x28	2"	1/2 Ply	X	Wh/Br	0	1	MNDNR Carver Rapids w/ Hike, XC Ski & Horseback Riding glyphs (DS)

SIGN INVENTORYINFORMATION SIGN LISTFigure 4
Page 22

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ILV/N (St)9	27x36	2-3/4"	3/4 Ply	X	Wh/Br	0	1	Information and Regulations sign
IW (St)1	11x14	1-1/4"	Alum	X	Bl/Wh	0	11	Waterfowl Hunting Only
IRW (St)1	11x14	1-1/2"	Alum	X	Bl/Wh	0	3	Public Fishing Area
IRW (St)2	11x14	1-1/2"	Alum	X	Wh/Br	0	9	WARNING ... Fish may contain PCB's
IRW (St)3	11x14	5/8"	White PVC	X	Wh/Rd	0	54	NOTICE ... You are entering a _____ hunting area (Used)
IRW (St)4	11x14	5/8"	White PVC	X	Wh/Rd	0	15	As Above (Not Used)
IRW (St)5	8-1/2 x 11	5/8"	Cardboard	X	Wh/Rd	0	20	NOTICE ... You are entering a _____ hunting area
IRW (St)6	4-3/4 x 17	1-3/8"	3/4 Ply	X	Wh/Br	0	9	MNVNWR Wood Duck w/ "Leaflets"
IRW (St)7	24x32	4"	3/4 Ply	X	Wh/Br	0	4	TRAIL ACCESS w/17" MNVNWR Wood Duck logo

Information/Guide Sign Needs

This is the largest category of signs on the refuge and the highest priority is to maintain them to acceptable standards. Flood damage, vandalism, and prescribed burns damage many.

The highest priority is to maintain and order cautionary and safety warning signs. Others are maintained on an "as needed" basis. The "Valley Watch" program will be continued with new signs, contact phone numbers, and aggressive PR.

Informational signs were ordered for the Bluff Trail in anticipation of refuge acquisition and authority to post them. We have not been able to post them. We have learned a lesson and we will not order signs again before their installation is more certain.

Cautionary and safety signs will be done immediately in-house as situations dictate. If they identify long-term problems, sign orders will be completed quickly and forwarded through appropriate channels.

Regulatory Signs

Regulatory signs are those that limit or prohibit some activity, use the word "prohibited", have a prohibitive red slash through a recreation symbol, or fall within the MUTC classification of a regulatory sign. Some are seasonal. The seasonal ones are listed in the inventory as "in storage" and are not plotted on the map.

We have about 56 "Area Closed" signs at the Black Dog Preserve and 10 at Old Cedar Avenue on the Long Meadow Lake Unit. The Blue Lake portion of the Wilkie Unit has approximately 50 special signs: "Heron Nesting Area -AREA CLOSED- Beyond This Sign- March 1 - August 31".

Note: The "Blue Goose" National Wildlife Refuge boundary sign uses the word "prohibited" but it is not considered a regulatory sign.



RLM (BP) 6 = a Regulatory Sign on the Long Meadow Lake Unit at the Bass Ponds; 6th sign in the inventory sequence there. Moving water keeps the ice treacherous. Swimming is prohibited everywhere on the refuge.



RBD (S) = a Regs Sign at Black Dog South.

REGULATORY SIG

RLM (VC) 1&2

RLM (BP) 1-6

RLM (OC) 1-3

RBD (N) 1

RBD (S) 1

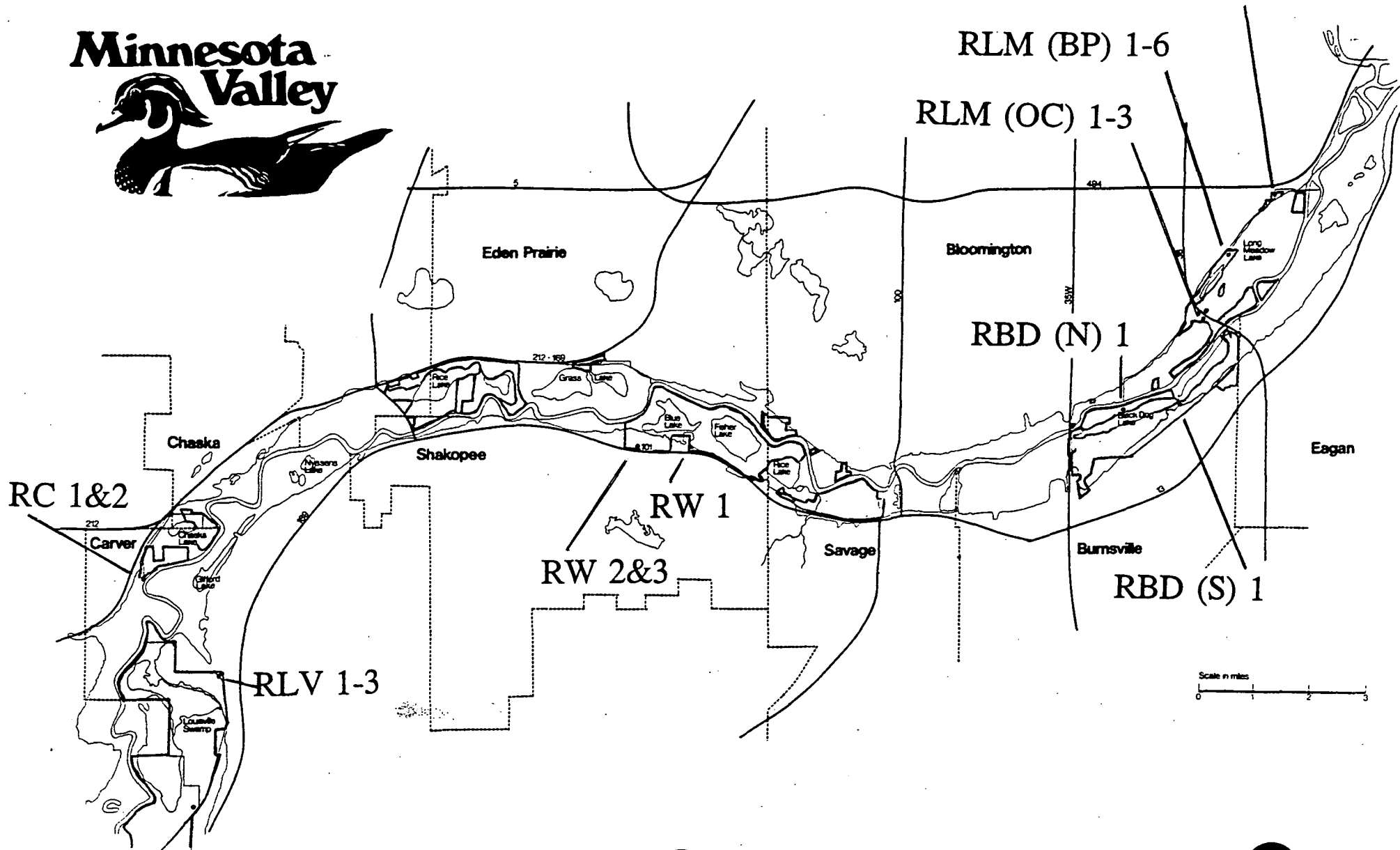
RW 1

RW 2&3

RLV 1-3

RC 1&2

**Minnesota
Valley**





The Caretaker's Walk...

A self-guided trail

Do you have a few minutes, some imagination, and want to know more about the Bass Ponds? If so, a special experience begins along the trail around the ponds. Numbered points on the trail and map correspond with the numbered paragraphs in this leaflet.

1. Imagine if you will that you are a former Caretaker of the once Izaak Walton League Fish Rearing Ponds returning here after many years of absence. There were two cabins nearby and one was your home. Your's burned and the larger cabin was removed more than 20 years ago. Notice steps from that cabin to the left and how trees are reclaiming its foundations. This natural regeneration of an area is what biologists call succession.

10. The Bass Ponds have gone from raising fish to teaching young people. Those refuge folks call it an "Environmental Study Area." Nowadays, schools are getting back to basics and I'll bet a lot of people think this is just something extra. They should think again. Learning about the real world isn't icing on the cake. It is the cake.

3

1

9. The largest of the original bass rearing ponds was out there. That gravel operation in the 60's before this was a refuge and a storm-sewer outlet have changed things a lot. A friend said there's a marsh boardwalk and observation blind down the road about a quarter mile. It should be a good place to go if you want to see waterfowl and other marsh critters.

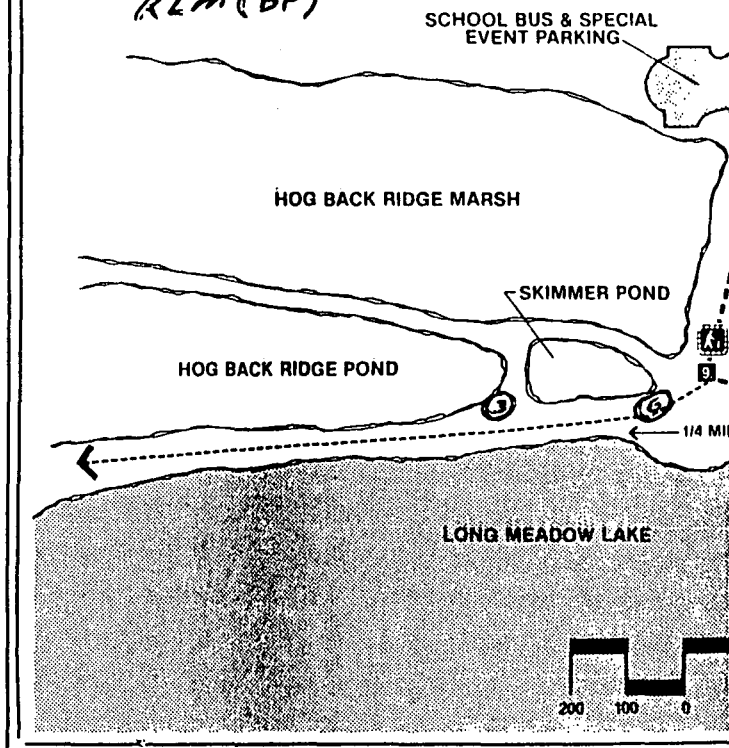
5 3

8. Can't quite get used to how much this place has grown over since the 1930's. We kept it mowed and trimmed up pretty well. Look at the size of those cottonwoods and willows on the left. Succession again! The land is going back to what it wants to be. Come to think of it, that's probably better for wildlife.



Bass Ponds Environmental Study Area

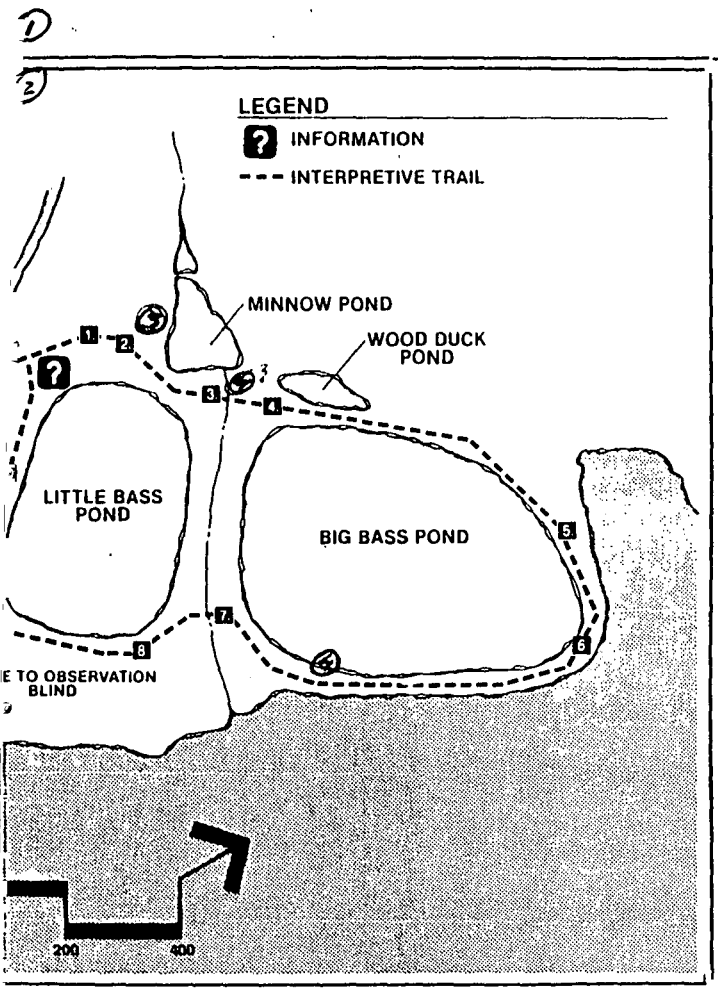
RLM (BP)



7. I can remember eating watercress from this stream...it has a wonderful peppery taste in salads. Who knows what is coming from up-stream now so maybe it's not a good idea to eat cress from here anymore. Good clean water is getting harder to find. We ought to treasure what we have.

2. On the darkest of nights, your ears could tell the difference between all the water control structures here. Water flowing through this one always has a special bubbling sound as it is diverted through tile supply lines to ponds 2, 3, and 4. With a light touch of poetry perhaps, these ponds are now called the Hog Back Ridge Pond and Little and Big Bass Ponds.

3. Does this old "stoplog" structure jog your memory? You must have raised and lowered water levels in this pond hundreds of times by adding or removing one or more of the wood beams (stop logs) set into the steel-lined channels below. It's simple and effective. Gravity does the rest. Similar structures are used by fisheries and wildlife biologists throughout the world for management purposes.



4. This little pond demonstrates a management technique used at other wildlife refuges on a much larger scale. It's called a "green tree reservoir." They're great places for dabbling ducks like mallards, teal, and wood ducks to feast on seeds and acorns which drop from the trees. Timing is important! Add a few inches of water when ducks are migrating through and they'll be feeding "bottoms up" everywhere. Leave the stop logs in too long and the standing water will kill the trees.

6. This water control structure empties into Long Meadow Lake. Now there's a story! In the 1870's it was Long Lake, then around the turn of the century it was known as Long Meadow. The water was mostly gone then and parts of it were being farmed. Later it was flooded for carp production and now Long Meadow Lake is known as a premier wildlife marsh. Fact is, there's been a private duck hunting club down here for more than 100 years!

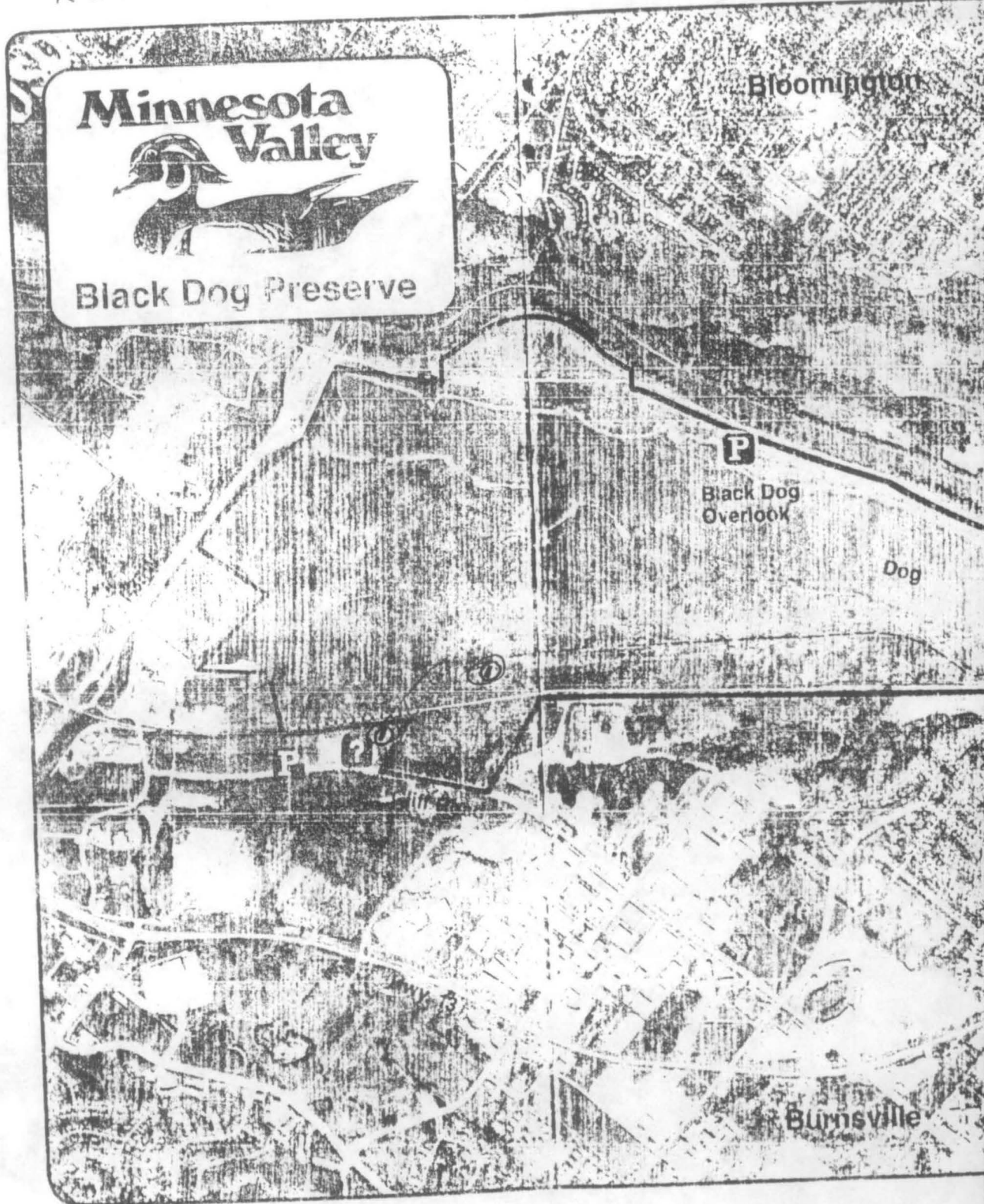
5. The "Big Bass Pond"...this was one of the new ponds put in by the Work Projects Administration (WPA) and the National Youth Administration back in '38. Imagine a hundred men with shovels and wheelbarrows digging it out. When I was here, the pond sloped from about a foot on the right to 6' on the left and was managed for fish only. Things are different on a refuge though. Some years a conservation club called Muskies Incorporated will raise muskie fingerlings to stocking size. In other years, refuge managers may draw the water down to encourage the growth of waterfowl food plants.

RBD

Minnesota Valley



Black Dog Preserve



Welcome!



SNA
(State)



Nature
Conservancy



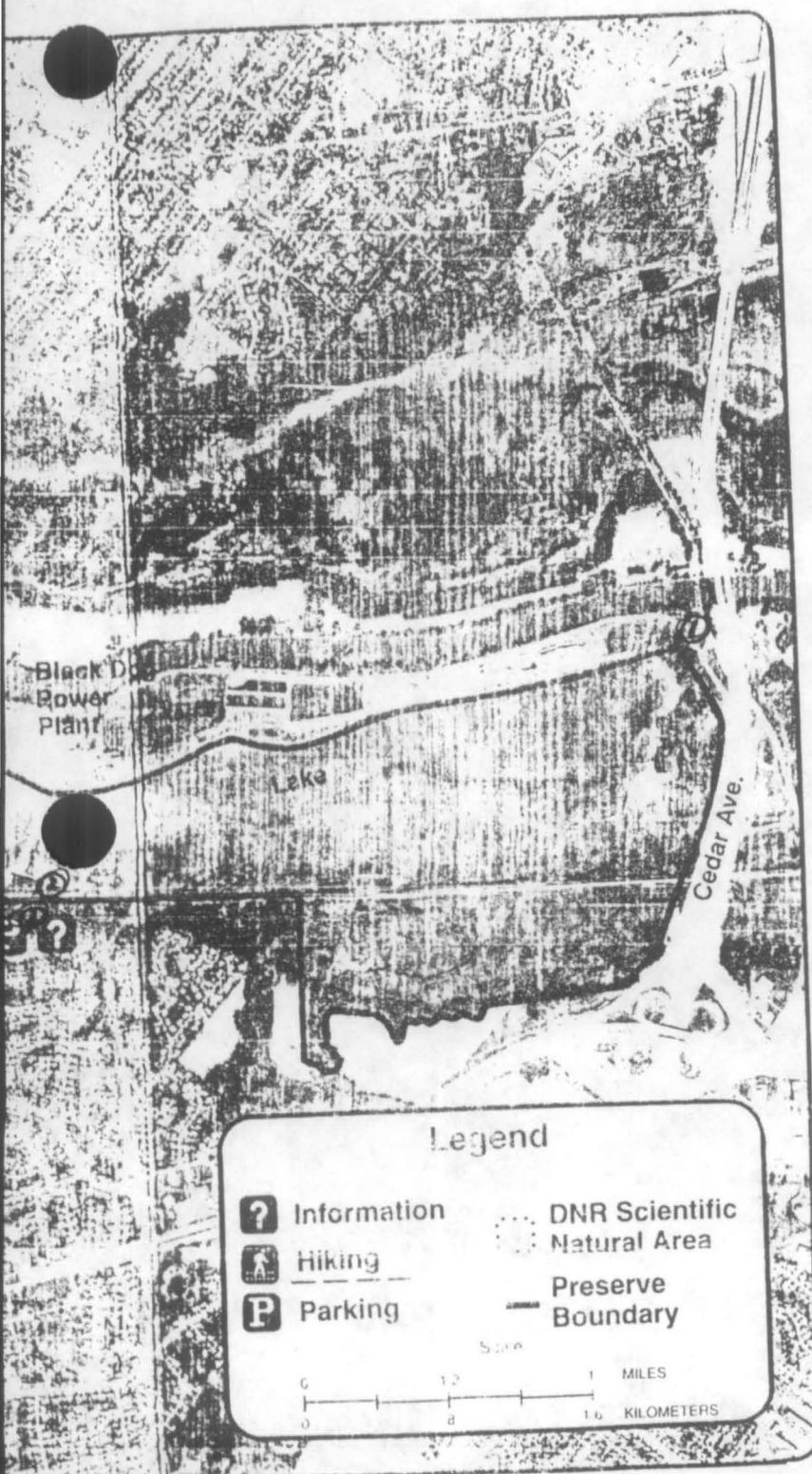
Sanctuary:
Off Limits
To Public
(Federal)



Authorized
Activities
Permitted
(Federal)

To preserve and protect the natural resources of lands marked with one of the above signs, please observe these rules:

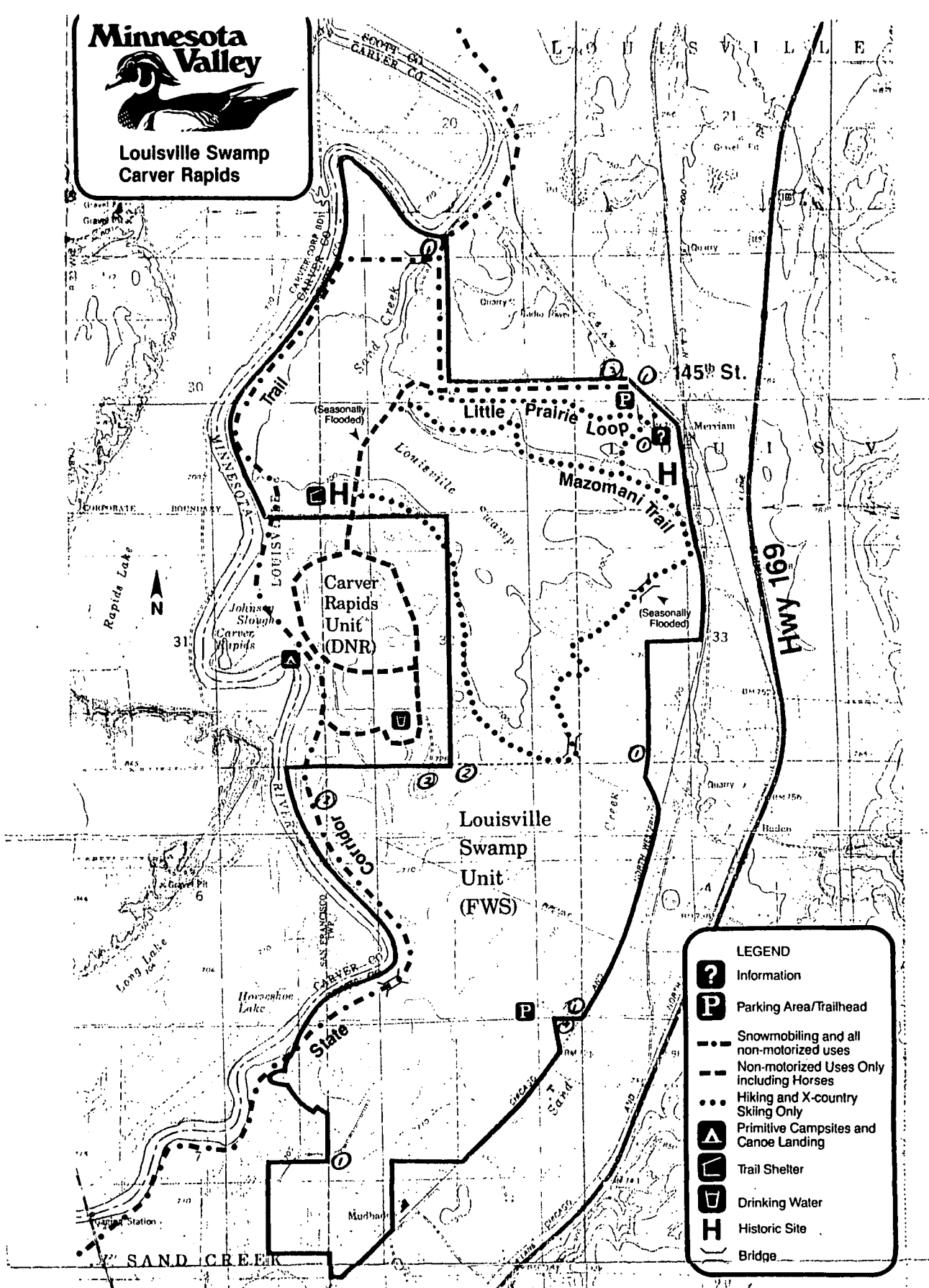
- Do not disturb, injure, or damage any plants or animals.
- Fishing on the river and in backwater lakes is permitted but you should consult Health Department guidelines before eating any fish.
- Pets are not permitted on DNR Scientific & Natural Areas (SNA's). All pets must be restrained by a leash else in the Preserve.
- Snowmobiling and horseback riding are permitted on trails specifically marked for these uses.
- All Terrain Vehicles (ATV's) are not permitted at any time on state or federal lands.
- Swimming is not allowed in any waters on Federal lands.
- Camping is restricted to designated campsites.
- Fires may be built only in fire rings and fireplaces for that purpose.
- Trails shall not be used as access to private land.
- Hunting and trapping are allowed only in designated areas of federal land by special permit. Contact refuge headquarters for information on how to obtain refuge permits.
- Firearms (including airguns) are not permitted on federal land except with a special hunting permit. Target or shooting are not allowed on state or federal lands.



Minnesota Valley



Louisville Swamp
Carver Rapids



There are four established trails within the Louisville Swamp. Each is special.

Mazomani Trail — (4½ miles, 2 bridges)

This trail goes S.W. for ¼ mile on the edge of prairie to a bluff overlooking Louisville Swamp. It follows the bluff edge down past the Ehmler homestead into bottomland forest where a bridge crosses Sand Creek to a forested island. It exits bottomland near a large glacial boulder, turns right, and follows a bluff edge for a mile to the Jabs Farm. The next trail junction is ¼ mile across the creek and up the hill. The trail turns right there going ¾ mile through upland forests and past marsh and prairie to the beginning.

Mazomani Trail/Little Prairie Loop — (2 miles)

This short loop turns right at the junction near the Ehmler

the bluff into upland forest for ½ mile to a trail junction above Sand Creek. There it goes right on an old roadbed to the Little Prairie Loop which meanders through 60 acres of remnant prairie to the trailhead.

Johnson Slough — (1½ mile)

The trail leaves Jabs Farm going south to a junction where it turns right and passes through an oak savannah to the Johnson Slough Overlook. Beyond the slough, the trail passes through a prairie to a junction where it turns left back to the Jabs Farm.

State Corridor Trail — (3½ miles and continuing, 2 bridges)

This trail passes through the Louisville Swamp and Carver Rapids Units generally along the river's edge. It can be reached by taking a spur trail from the trailhead west to the first trail, then north for ½ mile where it meets the State

SIGN INVENTORYREGULATORY SIGN LIST

Figure 6

Page 1

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
RLM (VC)1	30x30	10"	Alum	X	Wh/Rd	2	3	"STOP" sign
RLM (VC)2	24x24	8"	Alum	X	Wh/Rd	1	"	"STOP" sign
RLM (BP)1	11x14	3/8"	Alum	X	Wh/Br	2	26 + 9 with E. 80th St. address	MNVNWR "Regulations"
RLM (BP)2	11x14	1-1/2"	Alum	X	Wh/Br	1	6	No Vehicles Beyond This Point W/4" prohibitive glyph
RLM (BP)3	18x24	1-3/4"	1/2 Ply	X	Wh/Br	3	1	Dangerous Water Keep Out W/4" No Swimming & No Skating glyphs
RLM (BP)4	11x14	1-1/4"	Alum	X	Wh/Br	3	7	Dangerous Water Keep Out W/4" No Swimming glyph
RLM (BP)5	15x19	1-1/2"	1/2 ply	X	Wh/Br	1	3	MARSH BLIND Use Caution W/4" No Firearms & No Bikes glyphs
RLM (BP)6	18x24	2"	3/4 ply	X	Wh/Br	1	4	DANGEROUS WATER Keep out W/4" No Swimming & No Skating glyphs

SIGN INVENTORYREGULATORY SIGN LISTFigure 6
Page 2

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
RLM (OC)1	11x14	3/8"	Alum	X	Wh/Br	2	9	MNVNWR "Regulations"
RLM (OC)2	8x8	NA	Alum	X	Wh/Br	5	12	"No Bikes" Recreation symbol
RLM (OC)3	11x14	1-1/2"	Alum	X	WH/Br	2	6	NO VEHICLES BEYOND THIS POINT w/4" glyph
RBD (N)1	11x14	3/8"	Alum	X	Wh/Br	2	9	MNVNWR "Regulations"
RBD (S)	11x14	1-1/2"	Alum	X	Wh/Br	2	4	Notice Bridge Closed when Icy w/4" No Hiking glyph
RW 1	11x14	3/8"	Alum	X	Wh/Br	7	9	MNVNWR "Regulations"
RW 2	11x14	1-1/2"	Alum	X	Wh/Br	1	8	Road Closed to Unauthorized Vehicles
RW 3	11x14	1"	Alum	X	Bl/Wh	7	48	Notice Gov. Property No Trespassing
RC 1	11x14	3/8"	Alum	X	Wh/Br	1	9	MNVNWR "Regulations"

SIGN INVENTORYREGULATORY SIGN LIST

Figure 6

Page 3

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
RC 2	11x14	1-1/2"	Alum	X	Wh/Br	1	8	Road Closed To Unauthorized Vehicles w/4" No Vehicles glyph
RLV 1	11x14	3/8"	Alum	X	Wh/Br	5	9	MNVNWR "Regulations"
RLV 2	14-1/2 x 19	1-1/2"	1/2 Ply	X	Wh/Br	3	2	Service Road Prohibited Uses w/4" Horse & Snowmobile glyphs
RLV 3	12x18	1-3/8"	Alum	X	Bl/Wh	1	NA	No Motorized Vehicles Permitted Except Snowmobiles (MN DNR)
RLV(S)1	11x14	1-1/2"	Alum	X	Wh/Br	1	6	No Vehicles Beyond This Point glyphs
R (St) 1	11x14	1"	Alum	X	Wh/Br	0	25	Caution Dangerous Ice Area Closed
R (St) 2	8x8	NA	Alum		Wh/Br	0	3	8" Horseback Riding Prohibited glyphs
RLM/VC (St) 1	15x21	2"	1/2 ply	X	Wh/Br	0	4	Prairie Grasses DO NOT Mow or Spray

SIGN INVENTORYREGULATORY SIGN LIST

Figure 6

Page 4

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
RLM/BP (St)1	15x19	1-3/4"	1/2 Ply	X	Wh/Br	0	4	DANGER Thin Ice Keep Off w/No Skating No Hiking glyphs
RLV(St)1	15x19	2"	3/4 Ply	X	Wh/Br	0	2	CAUTION Do Not Cross During High Water (No Hike glyph)
R(OC)(St) 1	14-1/2 x19	1-1/2"	1/2 Ply	X	Wh/Br	0	1	River Trail Car, Motorcycle, and snowmobile glyphs prohibited uses
R (St)3	15x19	1-1/2"	1/2 Ply	X	Wh/Br	0	2	Observation Point w/ No Fishing, No Vehicles & No Bikes glyphs
R(LV)(St) 2	15x24	1-1/2"	3/4 Ply	X	Wh/Br	1	1	Louisville Swamp No Boats or Firearms Beyond This Point
R(RW)(St) 2	8x8	NA	Alum	X	Wh/Br	2	6	No Boating Glyph

SIGN INVENTORYREGULATORY SIGN LISTFigure 6
Page 5

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
R (LM/OC) St 3	8x8	NA	Alum		X	Wh/Br	2	2	No Drinking glyph
R (LM/OC) St 4	8x8	NA	Alum		X	Wh/Br		5	No Canoeing glyph
R (W)St 1	11x14	1-1/4"	Alum		X	Wh/Br	50	20	Heron Nesting Area AREA CLOSED
R (St)5	11x14	1-1/2"	Alum		X	Bl/Wh	66	125	AREA CLOSED Beyond This Sign
R (St)6	24x36	3"	1/2 Ply	X		Wh/Rd	NA	8	NOTICE - Unauthor- ized Entry Prohib- ited while Deer Hunting is in Progress
R (St)7	24x36	3"	3/4 Ply	X		Wh/Rd	NA	9	(As Above)
R (St)8	15x19	3"	3/4 Ply		X	Wh/Br	0	7	Notice - No Bikes w/8" No Biking glyph

Regulatory Sign Needs

Regulatory signs often address safety or law enforcement situations. Maintenance is therefore a highest priority. They will be replaced as soon as possible and fabricated quickly as new situations are identified.

Where regulations change periodically, signs will be done in-house and posted at trailheads. Special regulatory signs will be posted at Louisville Swamp for small game hunting.

Minnesota Valley NWR "Regulations" signs will be updated with a current refuge phone number and address. In addition to that, we will add: "Bicycling is permitted on all trails unless posted otherwise."

Kiosk Signs

Minnesota Valley built a three-panel kiosk west of the old office at 4101 E. 80th St. This stood empty for more than two years. Ultimately, staff wrote a Scope of Work and solicited bids to produce original art, mylars and approximately 128 signs for this and other areas on the refuge. The contract was awarded to Hartmann Design of Wisconsin Rapids, Wisconsin.

Kiosks began sprouting around the refuge like mushrooms. Ultimately, 11 structures were present on the refuge:

- Headquarters Area = one 3-panel and two 1-panel structures
- Bass Ponds = two 2-panel kiosks,
- Old Cedar Avenue = a 2-panel kiosk
- Black Dog Preserve = three 2-panel structures
- Wilkie Unit = one 2-panel kiosk
- Louisville Swamp = a 3-panel structure.

After the new Visitor Center was built, the old headquarters kiosk panels were removed. Vandals repeatedly hit the 2-panel kiosk at the north Black Dog Observation area and that kiosk was removed. Other kiosks were vandalized exhausting back-up signs from the Hartmann contract. However, the mylars produced under that contract are now used to produce sign panels at the Regional Sign Center at Winona.

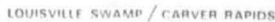
Seven kiosks now exist on the refuge and more are anticipated as staff develop other trailheads. Art and layout should be contracted for additional signs but the Winona Sign Shop should fabricate them for us this time.



K1A, K1B, K1C/D Kiosk Signs deviate from the Function / Location codes because of the way they were originally inventoried and stored. Many of these signs are also not unique to a particular location. This is Panel 1 at the Louisville Swamp North Entrance.



K10A,B,C,& D comprise Panel 2 of the Louisville Swamp kiosk.



10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525
 526
 527
 528
 529
 530
 531
 532

[illegible]

• SPECIAL PROGRAMS •

- [illegible]

► PLEASE NOTE ◀

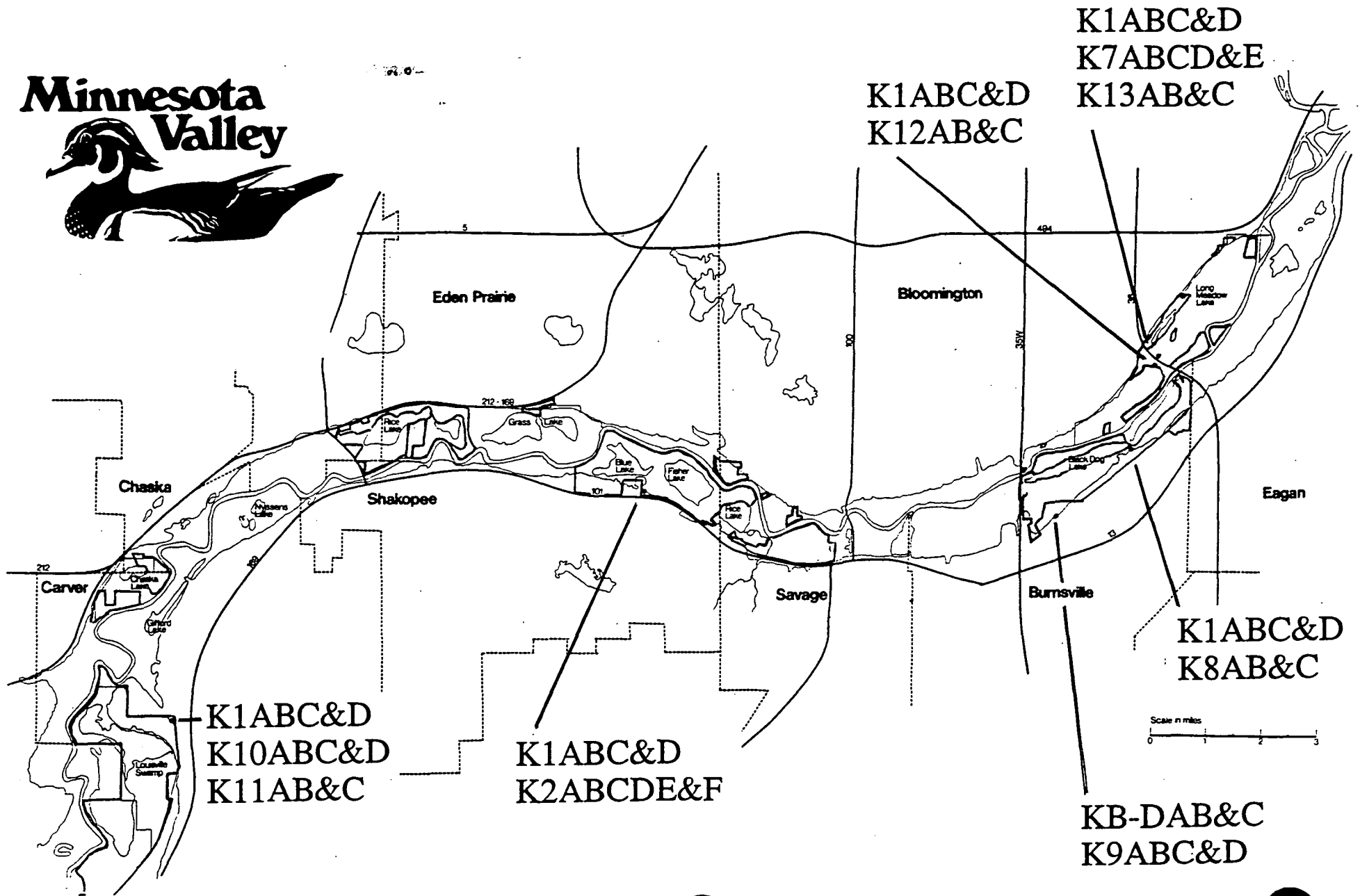
- * Dogs must be restrained by a leash. * Swimming is prohibited. * You may not feed, harass or argue with your pet(s) on the refuge except by Special Refuge Permit.

QUESTIONS?

Please ask: call or write Refuge Manager, Minnesota
Valley National Wildlife Refuge, 4101 East 80th St.,
Bloomington, MN 55425. (612) 854-5900

63

Minnesota Valley



SIGN INVENTORY

KIOSK SIGN LIST

Figure 8

Page 1

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
K1 A "	16x54 & (12x48)	2" 2"	3/4 Ply (Alum)		X X	B1/Cr B1/Cr	1 (4)	7 (3)	MNVNWR Wood Duck logo plus "Welcome to MNVNWR"
K1 B "	28x54 (24x48)		3/4 Ply (Alum)		X X	4 color 4 color	1 (4)	7 (3)	You Are Here Map
K1 C/D "	25x54 (15x21)	3/4" 3/4"	3/4 Ply (Alum)		X X	B1/Cr B1/Cr	1 (4)	7 (5)	Things to Enjoy ... & Please protect ..
K2 A "	12x54 (8x48)	2" 2"	3/4 Ply (Alum)		X X	B1/Cr B1/Cr	1	2 (0)	MNV is part of the NWR System
K2 B/C "	19x54 (15x19)	Varies "	3/4 Ply (Alum)		X X	B1/Cr B1/Cr	(1)	2 (0)	Citizens concerned and the NWR System
K2 D "	27x54 (24x48)	Varies "	3/4 Ply (Alum)		X X	B1/ Blu/ CR	1	2	National Wildlife Refuge System Map
K2 E/F "	12x54 (8x20)	Varies "	3/4 Ply (Alum)		X X	B1/Cr B1/Cr	1	2	From Pelican Is... MN Valley ... Part of the NWR System ...

SIGN INVENTORYKIOSK SIGN LIST

Figure 8
Page 2

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
K7 A	16x54	Varies	3/4 Ply	X	Bl/Cr	2	2	Bass Ponds ESA
K7 B "	32x54 (28x38)	Varies 1-1/2"	3/4 Ply (Alum)	X X	Bl/Cr Bl/Cr	1	1 (6)	Long Meadow Lake Unit Map
K7 C	19x54		Alum	X	Bl/Cr	1	1	Airplane & Auto ... Large Spring Fed Marshes ... The Long Meadow Lake Unit ...
K7 D	28x54	Varies	3/4 Ply	X	4 color /Cr	1	1	Bass Pond Trails Map
K7 E	25x54	Varies	3/4 Ply	X	Bl/Cr	1	1	In 1927 ... Short Hiking Trails ... The Bass Ponds Area
K8 A "	9x54 (5x48)		3/4 Ply (Alum)	X	Bl/Cr Bl/Cr		2	Black Dog Lake
K8 B "	30x54 (26x48)		3/4 Ply (Alum)	X	Bl/Cr		2	Changing Seasons Bring Different Animals to Black Dog Lake
KB-DA "	16x54 (12x48)	Varies "	3/4 Ply (Alum)	X X	Bl/Cr Bl/Cr	1	1	Conservation through Cooperation

SIGN INVENTORYKIOSK SIGN LIST

Figure 8
Page 3

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
KD-KB "	28x54 (24x48)	Varies "	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	1	Black Dog Preserve Map
KB-DC "	24x54 (20x28)	Varies "	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	1	(Agency Credits: TNC, DNR, FWS, & City of Burnsville)
K9 A "	16x54 (12x48)	3" 3"	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	1	Black Dog Preserve Holds Special Treasures
K9-B/C "	39x54 (23x36)	3/4" 3/4"	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	1	Prairies ... Fens ...
K9 D "	16x54 (12x48)	3/4" 3/4"	3/4 Ply	X X	B1/Cr B1/Cr	1	1 1	You can help Protect the Black Dog Preserve
K12 A "	19x54 (15x48)	Varies "	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	2 1	Bridging Time ...
K12 B "	30x54 (27x48)	Varies "	3/4 Ply (Alum)	X X	B1/Cr B1/Cr	1	2 1	The New Bridge The Dakota Indians
K12 C "	19x54 (15x48)	Varies "	3/4 Ply	X	B1/Cr	1	2 1	Today Much of the Minnesota River Valley

SIGN INVENTORYKIOSK SIGN LIST

Figure 8

Page 4

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
K13 A "	11x54 (8x48)	2" 2"	3/4 Ply (Alum)	X X	Bl/Cr	1	1 1	Wetland Management Benefits Wildlife
K13 B	29x54	2"	3/4 Ply	X	4 color /Cr	1	1	A Spring Fed Stream ... When the Bass Ponds ...
K13 C	29x54	2"	3/4 Ply	X	Bl/Cr	1	1	The Best Habitat for Many Kinds of Ducks
(K10 A)	(8x48)	1-3/4"	(Alum)	X	Bl/Cr	1	1	Louisville Swamp/ Carver Rapids Wayside
(K10 B)	(12x48)	3/4"	Alum	X	Bl/Cr	1	1	First there was the land ...
(K10 C)	(21x48)	3/4"	Alum	X	Bl/Cr	1	1	And its life ...
(K10 D)	(18x48)	3/4"	Alum	X	Bl/Cr	1	1	Then Fur Traders & Settlers
(K11 A)	(8x48)	1-1/2"	Alum	X	Bl/Cr	1	1	Recreational Opportunities
(K11 B)	(23x52)	3/4"	Alum	X	4 color /Cr	1	1	Louisville Swamp (Map)

SIGN INVENTORYKIOSK SIGN LIST

Figure 8

Page 5

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
(K11 C)	(23x52)	2"	Alum		X	Bl/Cr	1	1	Louville Swamp Welcome/Regs
(K3 A)	(12x48)	2-1/2"	Alum		X	Bl/Cr		1	Long Meadow Lake Overlook 1/4 mile
(K3 B)	(30x48)	3/4"	Alum		X	Bl/Cr		1	Biologists Call It The Edge Effect
(K3 C)	(15x48)	3/4"	Alum		X	Bl/Cr		1	As You Follow The Short Trail
(K4 A)	(8x38)	2-1/4"	Alum		X	Bl/Cr		1	MNVNWR HDQTRS
(K4 B)	(8x38)	2-1/4"	Alum		X	Bl/Cr		1	Office Hours ...
(K6 B)	(12x15)	1/2"	Alum		X	Bl/Cr		2	Airplane & Automobile ...
(K6 C)	(12x15)	1/2"	Alum		X	Bl/Cr		2	Large Spring Fed Marshes
(K6 D)	(12x15)	1/2"	Alum		X	Bl/Cr		2	The Long Meadow Lake Unit

Kiosk Sign Needs

Priority for sign orders and funding will be determined by levels of visibility & visitation plus the condition and appropriateness of existing kiosk signs, if any. Proposed interpretive text for new kiosks are shown in Appendix 2. The themes and text will be refined as the need arises.

Priority

Function and Interpretive Theme

Bluff Trail (E), single panel

Orientation. Succession from prairie to forest in the absence of fire.

Bluff Trail (W), double panel at Lyndale Ave.

Orientation/Regulations. Succession from prairie to forest in the absence of fire.

Wilkie Unit, double panel east of the present trailhead.

Orientation/Regulations. Acknowledgement of James W. Wilkie as a conservation visionary and the evolution of a Landscape Plan. (Or, "Management: Preservation-Manipulation-Mitigation-Restoration-Education" proposed 2/7/93.)

Wilkie Unit, single panel at the hunter access

Orientation/Regulations

Bloomington Ferry Trailhead, double panel at the north end of the old bridge.

Orientation/Regulations. Theme: Crossings through bottoms and paradigm shifts: 2 for 1 never justifies a project. Letting the land go back to what it wants to be.

Upgrala (W), northeast of Hwy 169 at the Minnesota River

Orientation/Regulations. The Battle of Shakopee, marsh dynamics and accelerated eutrophication from increased siltload in the Minnesota River's floodwaters.

Savage Fen

Orientation/Regulations. The last of its kind! Endangered and fragile habitats and our management responsibilities.

Izaak Walton League

Orientation/Regulations. Conservation with an old partner and wetland dynamics.

Interpretive Signs

Interpretive signs are those that aim to communicate some aspect of the natural or cultural history of the refuge with the ultimate goal of changing perceptions, attitudes or behavior. Interpretive signs go beyond maps, orientation and information to the "Hows" and the "Whys" of this place. Some kiosk signs fill this niche also, but were listed in the Kiosk section as a matter of administrative convenience.



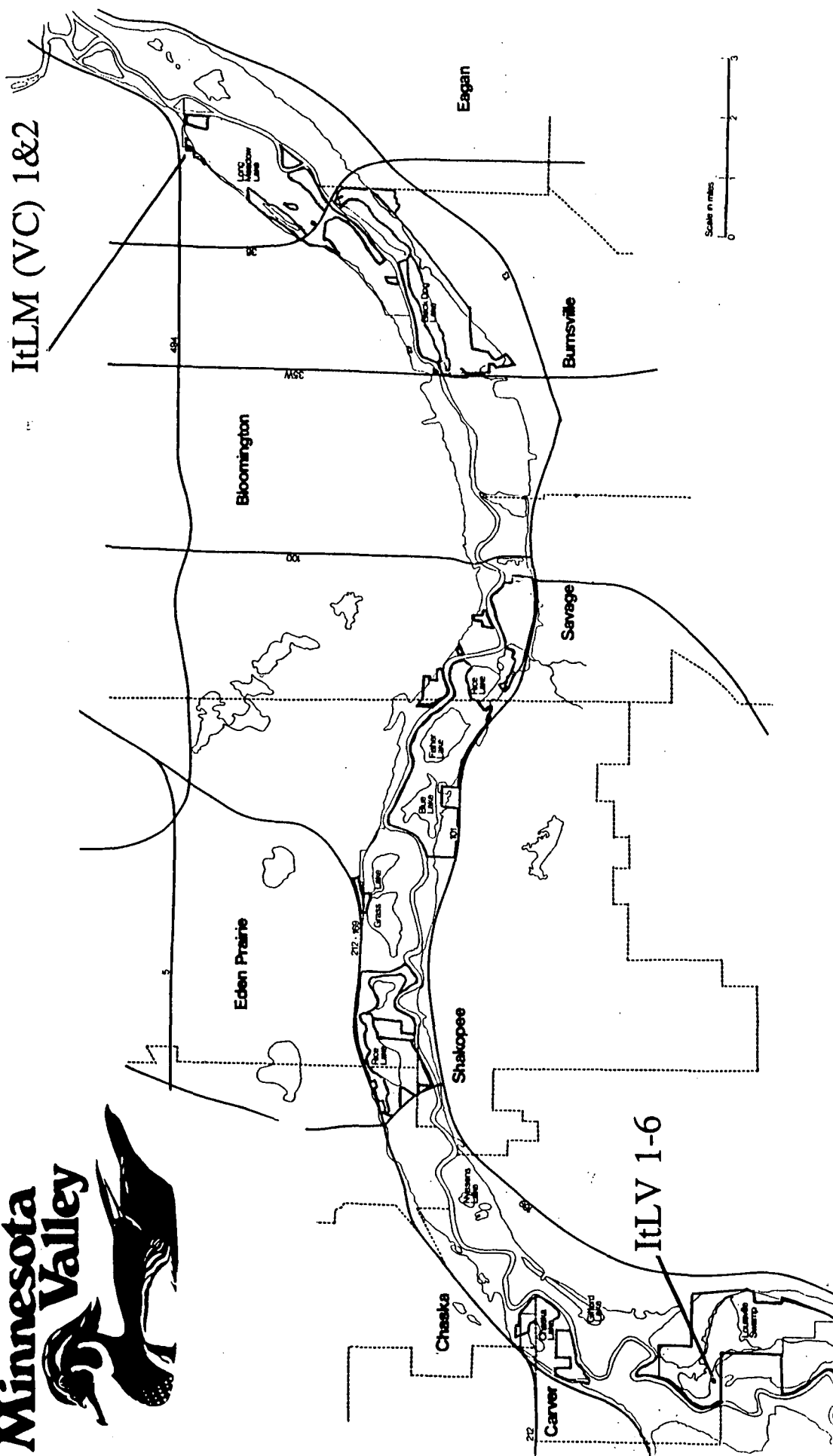
ItLM (VC) 2 = Interpretive Sign on the Long Meadow Lake Unit at the Visitor Center.

INTERPRETIVE SIGNS

**Minnesota
Valley**



ItLM (VC) 1&2



SIGN INVENTORYINTERPRETIVE SIGN LIST

Figure 10

SIGN CODE	SIZE INCHES	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ITLM(VC)2	24x36	1-3/4"	3/4 Ply	X	4 Color / White	1	1	Visitor Center Trails
ITLV 1	11-1/2 x20	1/2"	Alum Photo Metal	X	NA	1	1	Once a Farmstead
ITLV 2	12x 20-1/4	1/2"	Alum Photo Metal	X	NA	1	1	The Kingdom Farm
ITLV 3	11-5/8x 19-5/8	1/2"	Alum Photo Metal	X	NA	1	1	The Land Provided
ITLV 4	11-1/2x 19-1/4	1/2"	Alum Photo Metal	X	NA	1	1	Dakota Indians
ITLV 5	11-7/8x 19-3/4	1/2"	Alum Photo Metal	X	NA	1	1	The Owners
ITLV 6	12x 19-1/4	1/2"	Alum Photo Metal	X	NA	1	1	Refuge Management

SIGN INVENTORYINTERPRETIVE SIGN LIST

Figure 10

Page 2

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
ITLM(VC)3	14x17	1/4"	3/4 Ply		X	Gr/Cr	1	1	A Kaleidoscope of Color (Prairie Interp.)
ITLM(VC)4	14x17	1/4"	3/4 Ply		X	Gr/Cr	0	2	Building On the Edge (V.C. Interp.)

Interpretive Sign Needs

Beyond interpretive theme development for kiosk signs, little more is anticipated at this time except for a few signs along sections of the State Corridor Trail within or adjacent to refuge units.

Examples include:

Thompson Ferry
Carver Rapids
Louisville Townsite
Bloomington Ferry
Lyndale Avenue

These signs will be developed jointly and in close coordination with the Minnesota Department of Natural Resources.

Advance Notice Signs

There are some truly huge (23.5' wide x 9' high) white on green advance notice signs along I-494 and T.H. 5 which provide directions to the Visitor Center. There are a number of smaller signs at various intersections that lead to the building. Smaller white on brown Wood Duck signs are posted at each end of the Highway 77 bridge and before the 145th St. exit to Louisville Swamp off of Highway 169. All are maintained by the Minnesota Department of Transportation. To inquire about these signs, contact:

District Traffic Engineer
Minnesota Department of Transportation
District 5
2055 North Lilac Drive
Golden Valley, Minnesota 55422
(612) 591-4605



ALM (VC) 2 is a "truly huge" Minnesota Department of Transportation Advance Notice Sign for the Visitor Center. The letters are 13.3" high. Its color should be white on brown.



ALV (N) 1 is an older MNDOT sign with the Wood Duck logo.



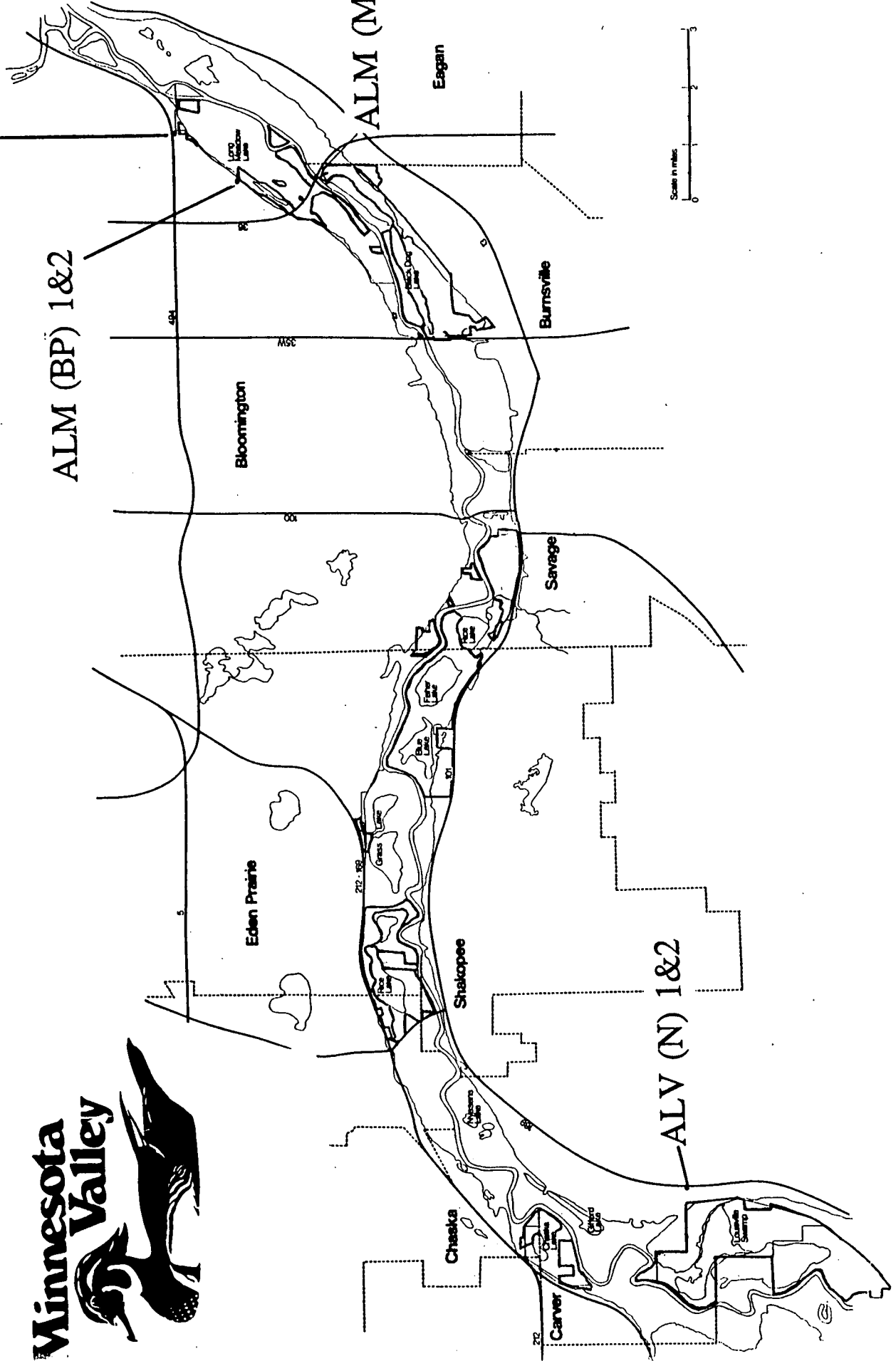
ALM (VC) 4



ALM (VC) 1-4

ALM (BP) 1&2

ALM (Misc.) 1



SIGN INVENTORYADVANCE NOTICE SIGNS

Figure 12
Page 1

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ALM (VC)1	48x78	6"	Alum	X	Wh/Gr	1	NA	Wildlife Visitor Center ← w/ 30" MN Valley Wood Duck Overlay
ALM (VC)2	282x108	13.3"	Alum	X	Wh/Gr	1	NA	National Cemetery National Wildlife Refuge Visitor Center - Follow 34th Ave.
ALM (VC)3	192x72	8"	Alum	X	Wh/Gr	1	NA	National Cemetery ← HHH Term. National Wildlife Refuge Visitor Center →

SIGN INVENTORYADVANCE NOTICE SIGNS

Figure 12

Page 2

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ALM (VC)4	192x72	8"	Alum	X	Wh/Gr	1	NA	National Wildlife Refuge Visitor Center ← National Cemetery HHH →
ALM (BP)1	18x24	3"	Alum	X	Wh/Br	1	1	"Bass Ponds" w/ 11" Wood Duck & ←
ALM (BP)2	18x24	3"	Alum	X	Wh/Br	1	1	AS ABOVE w/ →
ALM (Misc)1	60x60	8"	Alum	X	Wh/Br	2	NA	Minnesota Valley w/ 28" Wood Duck logo + Wildlife Refuge Misc - N & S of MN River on Hwy 77 Bridge alignment
ALV (N) 1	60x60	6"	Alu,	X	Wh/Br	1	NA	Minnesota Valley w/ 28" Wood Duck logo+ 12x60 Louisville Swamp →

SIGN INVENTORYADVANCE NOTICE SIGNS

Figure 12

Page 3

SIGN CODE	SIZE	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
ALV (N) 2	60 x 60	6"	Alum	X	Wh/Br	1	NA	Minnesota Valley w/ 28" Wood Duck logo+ 12x60 Louisville Swamp w/ +

Advance Notice Sign Needs

Advance Notice Signs are a part of the Bloomington Ferry Bridge mitigation package and will identify the refuge and exits to the Wilkie Unit. We will need to analyse traffic flow and question refuge visitors at the new trailhead to determine if they are effective.

We will replace existing Advance Notice Signs for Louisville Swamp and the Hwy 77 bridge. In both cases, the Minnesota Valley Wood Duck will be screened white on a brown background.

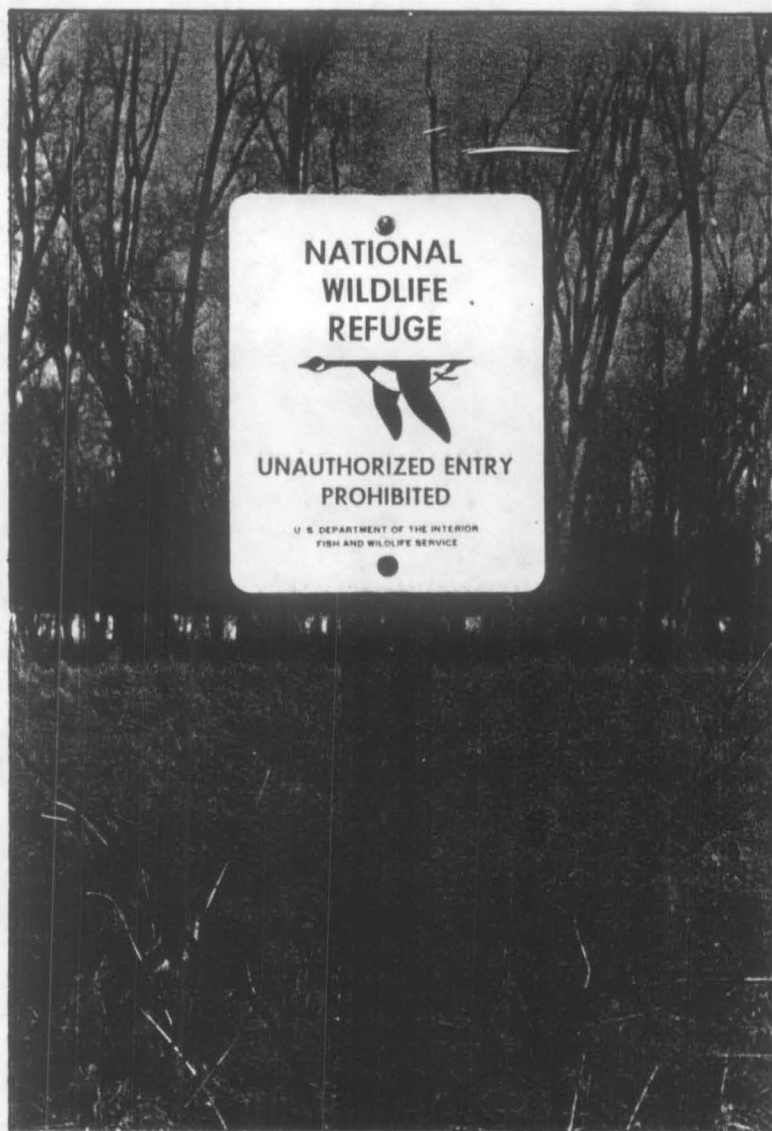
Visitor Center Advance Notice Signs will be screened white on brown as the white on green signs are replaced. (See Recommendations Section, pages 95 & 96.)

Boundary Signs

Most of the refuge boundary is posted with the standard 11"x 14" Blue Goose signs on 8' two-pound green steel posts at an interval of one sign for every tenth of a mile. With the exception of a few signs at the Bass Ponds, we do not use wood posts for boundary signs at Minnesota Valley. Our preference is to use metal posts for metal signs. There are approximately 710 boundary signs throughout the refuge. Here is a breakdown/Unit:

Figure 13: Boundary Sign List

Long Meadow Lake	150
Black Dog Preserve	110
Wilkie Unit	120
Bloomington Ferry	30
Upgrala	90
Chaska	50
Louisville Swamp	120
Round Lake	<u>40</u>
TOTAL:	710



Exterior Visitor Center Signs

The exterior Visitor Center signs are considered a separate category for the purposes of this Sign Plan because they deviate from FWS standards. Though they function as Entrance, Information or Regulatory Signs, they are part of the contract the Service had with Arkay Construction Co., who won the bid to construct the Visitor Center. Signs were fabricated by Designer Sign Systems, 3601 85th Avenue North, Suite K, Minneapolis, Minnesota 55443. Phone: (612) 424-7957.

The main backlit entrance sign panel measures 2' x 24' 9". It has 6" and 3" white letters in either Berling Bold Or Berling Semi-bold. It also has a 1' 6" U.S. Fish and Wildlife Service shield and a 3" wide green accent bar. Cabinet and sign face are black. The secondary sign face has the Minnesota Valley Wood Duck logo and a 3" wide green accent bar. It measures 2' x 10' 6". Ellerbe Becket, Inc. designed these "Series 925 Cabinets with lexan faces-ILLUMINATED" panels.

Ellerbe Becket also designed the information and regulatory signs in place around the Visitor Center. There are 22 of them. Known technically as "Series 300 POST PANEL" or "SERIES 300 FLAG" signs, the stanchions and faces are aluminum with a black finish. Copy is Berling Semi-bold applied as a pressure sensitive vinyl.



SIGN INVENTORYEXTERIOR VISITOR CENTER SIGNS

Figure 14

Page 1

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ?		COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
				YES	NO				
VC (E)1	24-1/2 x 298	6"	Backlit Plastic		X	Wh/GR & B1	1	0	MNVNWR Visitor Center 3815 E. 80th
VC (E)2	24-1/2 x 126	3-1/2"	Backlit Plastic		X	Wh/Gr & B1	1	0	Minnesota Valley & Wood Duck
VC (I)1	18x60 x 2-1/4	3"	Alum		X	Wh/B1	1	0	↑ Visitor Entrance → Staff Parking → Shipping/ Receiving
VC (I)2	18x60 x 2-1/4	3"	Alum		X	Wh/B1	1	0	← Visitor Parking ↑ Bus/RV Parking ↑ Exit
VC (I)3	18x60 x 2-1/4	3"	Alum		X	Wh/B1	1	0	↑ Visitor Parking ↑ Bus/RV Parking ↑ Exit
VC (I)4	18x60 x 2-1/4	3"	Alum		X	Wh/B1	1	0	← Visitor Entrance Administrative ↑ Offices
VC (R)1	15x15	1-1/2"	3/4 Ply		X	Wh/B1	1	0	Trail Closed for Winter
VC (R)2	15x15 x 2-1/4	2"	Alum		X	Wh/B1	8	0	No Parking Fire Lane (DS)
VC (R)3	15x15 x 2-1/4	2"	Alum		X	Wh/Br	2	0	Bus Unloading Only (DS)

SIGN INVENTORYEXTERIOR VISITOR CENTER SIGNS

Figure 14

Page 2

SIGN CODE	SIZE inches	LETTER SIZE	MATERIAL	REFLECTIVE ? YES NO	COLOR	NO. IN FIELD	NO. IN STORAGE	MESSAGE
VC (R)4	12x12 x 2-1/4	NA	Alum	X	Wh/Br	4	4	Wheelchair Glyph

Miscellaneous Signs

This category has been added as an afterthought and was spurred by the question, "What about FmHA and WPA signs?" Because these signs were not on the refuge and in many cases were not ordered by the Refuge Sign Coordinator, they were not a part of the Sign Plan. Now they are.

FmHA Signs:

These are the blue on white aluminum Conservation Easement Boundary signs. They measure 3" x 4 1/2" and have two 3/8th inch holes drilled 3" apart. Minnesota Valley NWR has 6 projects, two in Chisago and one in each of the other counties below. The number of signs used in each county is shown in parenthesis.

<u>County:</u>	<u>Signs</u>
Dakota	31
Scott	41
Rice	35
Le Sueur	45
Chisago	<u>55</u>

207

There are approximately 500 Conservation Easement Boundary signs in storage.

WPA Signs:

There are 28 Waterfowl Production Area Boundary signs in the field and 120 in storage.

The Soberg WPA has two 18x24 aluminum signs with arrows, a 3'x6' ID sign with a 9"x6' Minnesota Valley National Wildlife Refuge plus Wood Duck bar and a 3'x5' sign that identifies the Soberg WPA as a cooperative project honoring Minnesota Duck Stamp artists. Backups for all these signs are in storage.

A non-typical 3'x5' black on light purple FWS/Partners for Wildlife sign was ordered from Winona to identify "The Vinland Center Native Prairie & Wetland Restoration Project". The color was requested to match existing signs at the area. There is no backup for this sign.

Private Lands:

There are 12 green on white 9" x 17" Private Lands signs in the field:

8 Roger Preuss (Le Sueur Co.)

4 James and Michael Kreger (Sibley Co.)

None are in storage.

In 1993, 21 11" X 14" Partners for Wildlife signs were ordered to identify cooperative projects between the U.S. Fish and Wildlife Service and these individuals and organizations:

Landowners

Partners

Calvin Hotzler

Delta Waterfowl Foundation
Minnesota Waterfowl Association
Pheasants Forever
New Market Sportsmens Club
Prior Lake Sportsmens Club

Michael and James Kreger

Sibley Wings Chapter of the Minnesota Waterfowl Association

Doris Zeiher

Sibley Wings Chapter of the Minnesota Waterfowl Association

Delores Williams

Minnesota Waterfowl Association

Thomas Kullman

Minnesota Waterfowl Association

Paul Nesvold

Minnesota Waterfowl Association

In 1994, 20 Partners signs were ordered to identify these cooperative projects:

Landowners

Partners

Thomas and Ruth Bowersox

Delta Waterfowl Foundation
Minnesota Waterfowl Association
Pheasants forever

Ed Sorgatz

U.S. Department of Agriculture
Minnesota Waterfowl Association

Charles Sherlock

Sibley Wings Chapter of the Minnesota Waterfowl Association

Darrell Knish

LeSueur County Chapter of Pheasants Forever
U.S. Department of Agriculture

David and Chris Holzer

New Prague Sportsmen's Club

Fish Lake Sportsmen's Club

Private Lands Staff ordered and distributed these signs. It is unknown how many are the field and how many remain in storage.

E. SIGN MAINTENANCE

Annual inspection and cleaning non-boundary signs on Minnesota Valley National Wildlife Refuge will be conducted with YCC or "Youth In Natural Resources" assistance in the summer. This work should be completed by Fall. Signs will be cleaned with a mild detergent and soft brush to loosen surface dirt. When surface dirt has been removed, the signs should be rinsed with clean water. Back pack pumps or one of the fire pumps could be used to expedite this process. Signs will be inspected and problems noted during the cleaning process. A list of signs requiring repair or replacement will be made.

1. Annual Maintenance Criteria

- Minor cuts or holes through 3-M reflective sheeting can not satisfactorily be repaired with small patches of pressure-sensitive sheeting and should be tolerated.
- Major cuts or holes in the sign face dictate sign replacement.
- Minor scratches in kiosk signs can be touched up with colored paints kept after they were silkscreened. These paints can be thinned to proper consistency with mineral spirits.
- Major damage cannot be repaired and the signs will be removed and replaced as soon as possible.
- All sign hardware should be checked for tightness and tightened as necessary.
- All signs should be checked with a carpenter's level and releveled as needed.

2. Daily Maintenance Criteria:

- Refuge-specific signs will be repaired or replaced as soon as possible after discovery of a downed or damaged sign.
- Traffic control devices and Service standard signs will be replaced on an "as needed basis", determined by vandalism or annual inventory of condition.
- Signs with damage due to firearms will generally be replaced following the annual inspection, unless totally ineffective.
- When changing signs, care should be taken during transport to assure that surfaces are not scuffed or scratched.

F. SIGN STORAGE

Backup and second signs will be conveniently stored where they will be protected from abuse or damage from equipment and weathering. Storage has been consolidated in one location on the refuge. Metal shelving and wall lockers partition the last bay in the Visitor Center garage. This area has been designated for sign storage only. Adjustable metal shelves accommodate all but Entrance Signs and these are leaned against the south wall of the garage. All signs are stored on edge and upright to facilitate access. Packing material and cardboard spacers are saved and used between signs to prevent damage to sign faces.

G. SIGN REVIEW & ORDERING PROCEDURES

A review of the Sign Plan and inventory should be conducted periodically. Additional signs will be needed, inventories depleted and new situations will occur.

Signs should always be kept as backup in anticipation of loss or damage from vandalism or flooding. An adequate stock of routed sign posts should also be maintained.

Standard 11" x 14" aluminum "R" Series signs and traffic signs are currently available from FPI, UNICOR and are ordered with a Purchase Order. It is not necessary to go through the Regional Sign Coordinator to procure them.

Non-standard "R" series signs are fabricated by the FWS Regional Sign Center at Winona, Minnesota. They also produce all plywood signs.

The Winona Sign Shop has all of the mylars for our kiosk signs except for the Louisville Swamp kiosk. Signs for the last panel of this kiosk need to be revised.

Special purpose interpretive signs have been ordered directly through other vendors when the materials or process complemented specific sites better and could not be procured through Winona or UNICOR.

H. RECOMMENDATIONS

It has taken months to compile all of the data for this Sign Plan. Along the way, some perspectives have been gained that are discussed below by sign category.

1. Entrance Signs

We have completed the final design phase and have ordered 4' X 8' non-standard entrance signs that will be used at all refuge trailheads. We have kept the refuge Wood Duck logo. Existing Entrance signs will be replaced with these signs. Installation priority will be determined by the condition of the old signs and the level of visitation/visibility at the particular site.

2. Information/Guide Signs

a. Pole Signs:

In the past, pole sign panels were all fabricated of 1/2" marine plywood and there are four different sized panels on the refuge. Newer pole signs are standardized: 22"x28"x3/4" marine ply for a single panel and 22"x56"x3/4" for a panel that is mounted through the pole.

Old pole signs will be removed and retrofitted with new sign panels when replacement is considered necessary. To expedite future maintenance, the Refuge will consider pouring cement bases and casting in steel collars. The Refuge could then use less expensive 10' posts and replace sign panels and poles without digging them up.

b. Post Signs:

Generally, metal signs will be on metal posts and wood signs on wood posts. There should never be more than two signs per post. There will be a 1" space between two signs on a post. Wood signs will be mounted with 3/8" lag bolts 2" down from the bottom of the routed groove on the sign post.

3. Regulatory Signs

For traffic control, the Manual On Uniform Traffic Control Devices (MUTC) dictates sign size, mounting height and distance from the road. These standards will be followed as much as possible.

For refuge signs, prohibitive signage will be kept to a minimum. It is always best to include a reason why some activity is limited. The AREA CLOSED signs on the Wilkie Unit are a good example.



4. Kiosk Signs

Whenever possible, the stock of metal signs will be used before converting to the new silkscreened plywood panels done for us at Winona. However, the two will not be mixed on one kiosk.

As completely new panels are ordered from the sign shop, they will be set up with Helvetica letters. Present signs are not done in Helvetica, but it's very similar. If there is noticeable visual inconsistency, the Refuge needs to convert the "Welcome", "You Are Here" maps, and "Things to Do" panels to Helvetica or identify a font and acquire it for the Fish and Wildlife Service Sign Shop.

5. Interpretive Signs

Other than some of the kiosk panels, there are few interpretive signs on the refuge. The Visitor Center trails sign has been reordered at a new size using the Center's exhibit fonts and a revised text.

At the Visitor Center, visual consistency with signs inside the building dictates that interpretive signs outside match font style and colors as much as is possible. Elsewhere on the refuge, interpretive signs will be designed to complement the environments in which they are situated. They should have provocative titles, graphics and minimal text.

Realistically, budget considerations often dictate whether a sign panel is to be done in photometal or anodized aluminum, fiberglass embedment process or silkscreened on plywood. Still ... size, color, font style and method of mounting will be dictated by the environment in which these signs are placed.

"Standard" interpretive signs are available from the Winona Sign Shop and Wilderness Graphics. These can be modified in certain instances to interpret the resource at far less cost than generating new signs.

Based upon a recent study of historic sites in the lower Minnesota River Valley, the Minnesota Department of Natural Resources is considering a series of interpretive of signs at specific points along the State Corridor Trail. The refuge will work with the DNR to interpret sites on those sections of the State Trail through the refuge.

6. Advance Notice Signs

According to the MUTC, Section 2D-44 "Recreational and Cultural Interest Area Signs" (D7-1,2), these signs may be either rectangular or trapezoidal. If rectangular, they may either be white on green or white on brown.

Since white on green may be used for many other highway guide signs, the staff would prefer white on brown. This was relayed to the Minnesota Department of Transportation (MNDOT) on numerous occasions, most recently by Outdoor Recreation Planner, Ed Moyer, (telecom Larry McKenzie - Ed Moyer 3-19-92 and telecom Joel Katz - Ed Moyer 5-28-92).

During the March 19th conversation, it was generally agreed that the Advance Notice Signs on highway I-494 should eventually be white on brown. To convert now would cost \$10,000.00 - \$20,000.00.

In a subsequent Letter of Understanding drafted by Joel Katz of Minnesota Department of Transportation (MNDOT) on March 20, 1992, there was no agreement that the preferred color be white on brown. The Refuge would like to phase in white on brown as the white on green signs need to be replaced. The Refuge may need to get FWS legal involvement to see who is going to pay for these signs since MNDOT provided and installed them as part of an agreement

to mitigate adverse impacts of I-494 Bridge construction and highway realignments that impacted Service lands.

There are two other sets of highway Advance Notice Signs for the refuge; at either end of the new Highway 77 bridge and north and south of the junction of 145th St. and Hwy 169. Both sets have a brown Minnesota Valley Wood Duck on a white background that should be reversed to white on brown when these signs are replaced. The Advance Notice Signs on Hwy 77 should also have the word "National" added to them; ie: "Minnesota Valley National Wildlife Refuge".

7. Boundary Signs

The current R-2 "Blue Goose" boundary sign is inappropriate. The blue goose symbolizes the National Wildlife Refuge System but the wording is negative, confusing and unacceptable. No one knows what "Unauthorized Entry Prohibited" means. The new FWS Sign Manual cautions Refuge Managers to "use good judgement when placing Boundary signs. For example, Boundary signs with Unauthorized Entry Prohibited should not be placed directly adjacent to trailheads or entrances to boardwalks." We propose to exercise good judgement.

8. Exterior Visitor Center Signs

Initially, there was some doubt whether the sign panels and stanchions for them were anodized aluminum or painted. During a recent prescribed burn at the Visitor Center, it was apparent to everyone that they are painted. The Refuge will match this paint and have some on hand for touch-ups.

With the exception of four Handicapped Parking signs, there are no backup signs for the Visitor Center. These will be ordered before they are needed.

9. Miscellaneous / All Signs

All signs, other than backup, should be installed within 1 year after they are received from the Sign Shop.

R. M. I. S.
P U B L I C U S E M O D U L E
P U B L I C U S E R E P O R T
01/14/95

PAGE: 1

ORGID: 32590 MINNESOTA VALLEY NWR

DATA FROM: 01/94 TO 01/95

Categories	# Uses	% Usage
I. INTERPRETATION	58,543	24.6%
A. WILDLIFE TRAILS	1,300	0.5%
1. INTERPRETED (PROGRAMMED ACTIVITY)	0	0.0%
2. SELF-INTERPRETED	1,300	0.5%
B. WILDLIFE TOUR ROUTES	0	0.0%
1. INTERPRETED (PROGRAMMED ACTIVITY)	0	0.0%
2. SELF-INTERPRETED	0	0.0%
C. VISITOR CENTER	37,560	15.8%
D. VISITOR CONTACT STATION	0	0.0%
E. OTHER INTERPRETIVE EXHIBITS	15,655	6.6%
F. STAFF CONDUCTED ACTIVITIES	3,990	1.7%
1. TALKS	974	0.4%
2. TOURS	1,593	0.7%
3. DEMONSTRATIONS	0	0.0%
4. OTHER STAFF CONDUCTED ACTIVITIES	1,423	0.6%
G. OTHER INTERPRETATION	38	0.0%
II. EDUCATIONAL SERVICES	12,594	5.3%
A. STAFF CONDUCTED	12,384	5.2%
1. TEACHERS PARTICIPATING IN WORKSHOPS	16	0.0%
2. TEACHING STUDENTS ON-SITE	4,860	2.0%
3. TEACHING STUDENTS OFF-SITE	7,508	3.2%
* # OF TEACHER WORKSHOPS	5	
B. NON-STAFF CONDUCTED	210	0.0%

* Not calculated into totals or percentages.

R. M. I. S.
P U B L I C U S E M O D U L E
P U B L I C U S E R E P O R T (Continued)
01/14/95

PAGE: 2

ORGID: 32590 MINNESOTA VALLEY NWR

DATA FROM: 01/94 TO 01/95

Categories	# Uses	% Usage
III. WILDLIFE ORIENTED RECREATION	154,562	65.0%
A. HUNTING	10,504	4.4%
1. MIGRATORY BIRDS	672	0.3%
a. DUCKS	672	0.3%
b. GEESE	0	0.0%
c. SWANS	0	0.0%
d. OTHER MIGRATORY BIRDS	0	0.0%
2. UPLAND GAME	0	0.0%
3. BIG GAME	9,342	3.9%
a. DEER (GUN)	42	0.0%
b. DEER (BOW)	9,300	3.9%
c. OTHER BIG GAME	0	0.0%
4. OTHER HUNTING		0.2%
B. FISHING	2,450	1.0%
1. WARMWATER	2,450	1.0%
2. COLDWATER	0	0.0%
3. SALTWATER	0	0.0%
4. CLAMS, CRABS, OYSTERS, FROGS	0	0.0%
5. OTHER FISHING	0	0.0%
C. TRAPPING	11	0.0%
D. WILDLIFE/WILDLANDS OBSERVATION	140,797	59.2%
1. FOOT	134,850	56.7%
2. LAND VEHICLE	0	0.0%
3. BOAT	0	0.0%
4. PHOTOGRAPHY	1,960	0.8%
5. OBSERVATION TOWER/PLATFORMS	0	0.0%
6. OTHER (FIELD TRIALS, ETC.)	3,987	1.7%
E. CAMPING	0	0.0%
F. OTHER (MUSHROOMING, BERRY PICKING, ETC.)	800	0.3%

R. M. I. S.
P U B L I C U S E M O D U L E
P U B L I C U S E R E P O R T (Continued)
01/14/95

PAGE: 3

ORGID: 32590 MINNESOTA VALLEY NWR DATA FROM: 01/94 TO 01/95

Categories	# Uses	% Usage
IV. NON-WILDLIFE ORIENTED RECREATION	4,967	2.1%
A. CAMPING	0	0.0%
B. PICNICKING	0	0.0%
C. SWIMMING	0	0.0%
D. BOATING	0	0.0%
E. WATERSKIING	0	0.0%
F. X-C SNOWSKIING	1,487	0.6%
G. BICYCLING	3,480	1.5%
H. OFF-ROAD VEHICLING	0	0.0%
I. OTHER NON-WILDLIFE ORIENTED RECREATION	0	0.0%

V. OFF-SITE PUBLIC CONTACTS	7,123	3.0%
A. GROUP PRESENTATIONS	10	0.0%
B. EXHIBITS	1	0.0%
C. OTHER OFF-SITE PUBLIC CONTACTS	7,112	3.0%
*NUMBER OF NEWS RELEASES	81	
*NUMBER OF RADIO/TV SPOTS	47	

TOTAL NUMBER OF USES ON FIELD STATION: 237,789

TOTAL NUMBER OF VISITORS TO FIELD STATION: 176,913

* Not calculated into totals or percentages.

THE BLUFF TRAIL

FROM PRAIRIE TO FOREST

You may sense a permanence of the land when you walk this trail. But, that is an illusion.

160 years ago, Captain Seth Eastman began painting scenes of Dakota villages along the Minnesota River. In the background of his vibrantly detailed watercolors, south-facing bluffs were covered with tall-grass prairie. Forest edged the ravines.

(MAP)

FIRE SHAPED THIS LAND

Fire was no friend of this forest. Prairie fires were started randomly by lightening or with a sense of purpose by Native Americans. They often burned for days over seemingly endless miles of prairie. Brief, intense heat killed young trees but did not harm prairie species that evolved with it.

WE'VE CHANGED THE RULES

When settler's plows broke the prairie, fires lost their fuel, sputtered and ceased to be a natural force. Urbanization has dramatically altered this area. Trees have claimed this landscape.

WILL WE CHANGE?

Prairie remnants still cling to some of the slopes you will walk past. They are waiting for a shift in perception that may not come in time for them: Fire can be good.

Bluff Trail

From Prairie To Forest

(MAP)

Fire Shaped This Land

We've Changed The Rules

Will We Change?

THE WILKIE UNIT

A MAN

James W. Wilkie knew land surrounding this part of the Minnesota Valley was going to be subdivided, paved over and forever altered by urban sprawl. He literally filmed it before it happened!

(MAP)

HIS VISION

Wilkie lived in an era when you bought the land to preserve it and he donated 800 acres here. He also created 8 award-winning nature films that helped shape public opinion to save more.

THE HOPE

We are learning that people cannot preserve ecosystems in isolation nor will they be saved without people. By learning enough, we may gain the wisdom to let the land go back to what it wants to be. We will learn that we are part of the process.

The Wilkie Unit

A Man

(MAP)

His Vision

The Hope

BLOOMINGTON FERRY UNIT

THE HOUSE

Bloomington Ferry was an important river crossing. That is reflected by the size of the ferryman's house and its name which has been preserved while dozens of others have been forgotten.

(MAP)

THEN AND NOW

The Minnesota River was the original highway, corridor of transportation and trade and remains an important migratory route for wildlife. Our relationships with the river have changed with each advance in transportation. From canoes to steamboats to locomotives that left it, we now have highways and bridges that dominate the land. Each separates us further from the Minnesota and encourages us to forget it.

THE LAND REMAINS

We encourage you to experience the Bloomington Ferry Unit. Walk its trails. Sense changes through annual cycles of wildlife and weather. Let this land speak to you of different times... of the past, present, and future. Your future.

Bloomington Ferry Unit

The House

(MAP)

Then and Now

The Land Remains

THE UPGRALA UNIT

UPGRALA...

More than a century ago, Upper Grassy Lake became the site of a famous hunting club that still exists. It also witnessed one of the last battles between the Dakota and Ojibwas.

(MAP)

THE MARSH

Separated from the Minnesota River by natural levees and fed by seeps and springs, Upgrala Marsh teems with life. Neighboring Rice Lake is sterile by comparison. Is that because of an old landfill, too many carp, or both?

THE FUTURE

Freshwater marshes are relatively stable ecosystems. Upgrala may be 8,000 years old. When prairie embraced the Minnesota's watershed in a interlocking mat of roots, the river flowed cleaner and clearer. Now, each flood carries sewage and sediment that chokes these wetlands. If we continue to tolerate it, Upgrala will be gone in the next century.

Upgrala Unit

Upgrala...

(MAP)

The Marsh

The Future

THE SAVAGE FEN

FADING FENS...

Once a continuous strip at the base of the bluff for 40 miles in this area, calcareous fens have become an endangered landscape.

(MAP)

WHY?

We've introduced alien species, paved over the land, intercepted rainfall in storm sewers and drained away the fen's water.

CAN THEY BE SAVED?

Prescribed burns can kill encroaching trees that were not here historically. Open space can be preserved and groundwater maintained. The choice goes beyond refuge boundaries and involves us all in an ethical dilemma.

How far should we go to preserve life that has become endangered through our actions and ignorance? Must we wait until it is almost extinct?

Savage Fen

Fading Fens...

(MAP)

Why?

Can They Be Saved?

BLOOMINGTON FERRY UNIT (IZAAK WALTON LEAGUE)

CONSERVATION WITH AN OLD PARTNER

The "Ikes" were pioneers in America's conservation movement. Their informed support came at critical times when our natural resources seemed inexhaustible. Now we know differently.

(MAP)

CARETAKERS

The Ikes were the original caretakers of the Bass Ponds at the end of East 86th Street in Bloomington. When their lease could no longer be renewed, the Minneapolis Izaak Walton League moved here.

A SENSE OF PLACE

The Ikes have always studied issues thoroughly before acting on their convictions. But, when they act, they are solid friends to have in your corner. Hands-on restoration and management of lands have also given them a sense of place. Heads and hearts will save the world... one living piece at a time.

Bloomington Ferry Unit

Conservation With An Old Partner

(MAP)

Caretakers

A Sense Of Place

Entrance Sign Standards

Our Entrance Signs are non-standard 4'X 8'X 3/4" marine plywood panels with 3" radius corners. They are faced with 3-M brown reflective vinyl and have white die-cut letters. They will be mounted on rough-sawn 8"X 8"X 14' pressure treated posts that are stained brown.

The bevel at the top of the 8X8 post slopes up 2" from the front of the post to the back. This is how the post should be set into the ground; with the slope going up into the refuge as you view it from the front. A 2" wide collar is routed into the post 2" below the bevel. This is done with 2 routers; one set up with a straight bit and the other set up with a cove bit. Routing jigs are kept at the Refuge Maintenance Facility.

The top of the 4'X 8' Entrance Sign will be mounted level at a point 2" below the routed collar. Sections of 2"X 2" X 42" angle iron should be lag bolted to the posts so that the sign will be mounted in the middle of the 8X8's. First, drill 5/16's holes in them every 8" beginning 1" from the end for the sign bolts.

Bottom panels for the Entrance Signs are 18"X 8'X 3/4" plywood. These will be mounted level 6" below the 4'X 8' panel using 14" sections of 2"X 2" angle iron. Panels are mounted to the 2X2 angle iron with 1/4"X 1 1/2" carriage bolts. The bolt heads should be primed and painted brown to match the color of the sign face.

Using a 14' 8X8 post gives you these measurements from the top of the bevel to ground level: 8" to the sign panel + 48" + 6" space + 18" + 42" to G.L.. 46" of post should be in the hole and anchored with at least 2 bags of Sakrete concrete mix per hole. Pour it in dry. It will be rock solid in a few days.

See rough sketch on the next page.

Mounting Standards

Entrance Sign Post Measurements: Side View

