

IV Wildlife Conservation Plan Unit 2 Draft

Updated 5-10-16 Ron Hoffman

Location: Unit 2 is located in the east half of T2S, R1E, section 3. The southeast corner is in Eagle Lake (42.32.46° N, -84.2895°W) and extends north along the east line of section 3 to the northeast corner of the section (42.3360°N,- 84.2894). The north boundary is land owned by Zone 4 extending along the north line of section 3 to 42.3358°N, -84.2956°W. The west boundary extends south along a ditch to oak woods, west and then south along the west side of the oak woods until it reaches land owned by Judy Cory. The west boundary then follows the Judy Cory property line south to a point in Eagle Lake (42.3246°N, -84.2956°W) and then east along the north edge of the SE1/4 of the SE1/4 of section 3 to the point of beginning.

Size: ~168 acres

Soil Types: See Figure 1. Unit 2 soil map.

Soil Name	Acres	Percent
14 B Spinks sand	7.1	4.3
18 Gilford-Colwood	22.6	13.6
20 Houghton muck	28.2	16.9
30 Edwards muck, substrate marl	9.9	5.9
35B Arkport-Okee loamy fine sand, 2-6% slope	18.9	11.3
35C Arkport-Okee loamy fine sand, 6-12% slope	11.6	7.0
37 Palms muck	21.2	12.7
43A Dixboro very fine sandy loam	34.7	20.9
63 Henrietta muck	5.0	3.0
W Water	7.2	4.3
Total	166.4	100.0

Presettlement Vegetation: (See Presettlement Vegetation Map in *Concept of Management for the Phyllis Haehnle Memorial Sanctuary*).

- Oak Forest
- Inland Wet Prairie
- Emergent Marsh

Vegetation:

Cover Type	Acres	Percent
Oak Forest	87	52
Wetland Shrub	56	33
Lake	11	7
Upland Grass	9	6
Wetland Marsh	4	2
Total	167	100

Management Units: Unit 2 is divided into 8 Management Units based on cover types. (See Figure 2. Unit 2 Management Units).

Human Impacts:

Archaeological and Historic Sites: Robert Whiting recovered 43 pieces of earthen pottery in 1968 from an archaeological dig on the north side of Eagle Lake. A dug hole, ~12 ft x 12 ft (part of an old cabin foundation?) is located at 42.3267°N, - 84.29285°W about 100 yds. north of Eagle Lake. Another possible foundation is located to the north at 42.32793°N and -84.29383°W. A deteriorated drive crosses the wetland north of Eagle Lake at 42.32671°N and -84.29591°W. In the 1960s a plane crashed

at 42.32687°N and 84.29290°W starting a small fire. Michigan Audubon received \$1,000.00 compensation for damages from the fire.

Land acquisition and restrictions: Casper Haehnle donated NE 1/4 of NE 1/4 in 1955. Eighty acres were purchased from Charles Whipfler in 1963 for \$12,100.00 and the remaining land was given by Judy Cory in 1986. In 2002, 120 acres of Unit 2 (Unit 2.03 north of 42.32730°N, Unit 2.04 west of - 84.29475° north to 42.3283°N and then east across 2.05 north to east side of section 3 including, all of 2.06, 2.07, and 2.08) were enrolled in Wetland Reserve Program (see Figure 2). A license to hunt deer in Unit 2.08 was granted to Zone 4 March 11, 2003 in exchange for a gift of 9 acres in Unit 3.

Developments include a drive/nature trail, bench, large piles of stones, permanent deer stand, and nest boxes.

Goals and Objectives

- 1.00 Conserve the native flora and fauna at the sanctuary, especially Sandhill Cranes.
 - 1.04 Restore, enhance and maintain native biotic communities.
 - 1.05 Manage individual native plants and animals.
 - 1.07 Reduce invasive plants and animals.
- 2.00 Increase public understanding of the sanctuary, its wildlife and environment.
 - 2.03 Provide opportunities for self-guided wildlife viewing.

Unit 2.01 Eagle Lake

Size: 11 acres of Eagle Lake

Soil: n/a

Vegetation: *Chara sp.*, water-milfoil, water lily, pickerel-weed, etc. are sparse

Human Impacts: Limited fishing is allowed by other landowners.

Objectives and Actions:

- 1.04 Restore, enhance and maintain a shallow lake community.
 - 1.04a No active management is needed at this time.

Unit 2.02 Wetland Shrub

Size: 4 acres

Soil: Palms muck

Vegetation: Silky dogwood, gray dogwood, willow. During periods of high lake levels, water flows from Eagle Lake north through Unit 2.02.

Human Impacts: None

Objectives and Actions:

- 1.04 Restore, enhance and maintain native wetland shrub community.
 - 1.04a No active management is needed at this time.

Unit 2.03 Wetland Shrub

Size: 3 acres

Soil: Palms muck

Vegetation: Silky dogwood, gray dogwood, willow

Human Impacts: An overgrown east/west, historic drive crosses the wetland to adjacent property.

Objectives and Actions:

- 1.04 Restore, enhance and maintain native wetland shrub community.
 - 1.04a No active management is needed at this time.

Unit 2.04 Mature Oak Forest

Size: 68 acres

Soil: 14B Spinks sand, 18 Gilford-Colwood, 35 B & C Arkport-Okee loamy fine sand, 43A Dixboro very fine sandy loam, and 63 Henrietta muck.

Vegetation: White oak and black oak dominant. Many trees >24" DBH. Sassafras, flowering dogwood autumn olive, spicebush are common. Two vernal ponds are surrounded by buttonbush. The larger pond is located 42.326976°N and -84.294342°W.

Human Impacts: A drive/nature trail passes through the southern part of the unit (Figure 2). The dug holes with stone foundations are of historic interest. The 1960s plane crash site is indistinguishable.

Objectives and Actions:

- 1.04 Restore, enhance and maintain dry-mesic forest community including vernal ponds.
 - 1.04a Protection management is prescribed for the unit. No active management is needed at this time.
 - 1.04b Plant species native to oak forest.
 - 1.04b Care should be taken to protect the vernal ponds. No active management is needed at this time.
- 1.05 Manage individual native plant and animal species
 - 1.05a Preserve stone pile for snakes. No active management needed at this time.
- 2.03 Provide opportunities for self-guided wildlife viewing.
 - 2.03a Trim and chemically treat stumps of brush encroaching on the drive. Ongoing
 - 2.03b Mow drive several times a year. Ongoing
 - 2.03c Establish a nature trail with educational stations. Completed 2006
 - 2.03d Maintain nature trail signs. Ongoing

Unit 2.05 Native Grassland (Whipfler North Grassland)

2.05 was subdivided into two parts 2.05.1 and 2.05.2 in 2015.

Size: 9 acres of entire 2.05

Soil: 35 B & C Arkport-Okee loamy fine sand

Vegetation: Big bluestem and Indian grass dominant

Human Impacts: A drive/nature trail bisects the unit, one bench, several large brush piles, four nest boxes, and a large pile of stones. This area was probably farmed until 1960. About 5.5 acres north of 42.3283°N is enrolled in WRP.

Objectives and Actions:

- 1.04 Restore, enhance and maintain native grassland biotic community.
 - 1.04a Prepare the area for planting native grasses and forbs. Completed 2001
 - 1.04b Plant native warm season grasses (NWSG) and forbs. Completed 2001
 - 1.04c Burn half of the unit every 3 – 5 years, or as needed to control woody plant invasion. Ongoing
 - 1.04d Spray invasive woody plants (autumn olive, honey suckle and multi-flora rose) with a herbicide (*Crossbow*). Ongoing
 - 1.04e Use transects to monitor and evaluate vegetation. Ongoing (need to standardize methods)
 - 1.04d Use point counts to monitor and evaluate bird abundance. Needs to be implemented
- 1.05 Manage individual native plant and animal species.
 - 1.05a Place and maintain four nest boxes for bluebirds. Ongoing
 - 1.05b Maintain a record of use and nesting success of birds using boxes. Ongoing
 - 1.05c Preserve stone pile for snakes. No active management needed at this time.
- 2.03 Provide opportunities for self-guided wildlife viewing.
 - 2.03a Establish a nature trail with educational stations. Completed 2006
 - 2.03b Maintain a self-guided nature trail stations and bench. Ongoing
 - 2.03c Mow nature trail several time a year. Ongoing

Unit 2.05.1 Pollinator Proposal (Whipfler North Grassland South of Trail) Draft 3-1-16

Location: Management Unit 2.05.1 is a subdivision of Unit 2.05. Unit 2.05 is north of Eagle Lake. Unit 2.05.1 is located south of the drive/nature trail. Oak woods forms the south boundary of the unit.

Size: 3 acres

Soil: 35 B & C Arkport-Okee loamy fine sand

Vegetation: Big bluestem and Indian grass are dominant in most of the unit, but goldenrod dominates a central area of about one acre. A few native forbs are scattered throughout the eastern and western part of the unit.

Human Impacts: A drive/nature trail forms the north boundary of the unit. The field was farmed until about 1960. As a result of plant succession, the abandoned field converted into an upland shrub cover type. In 2000, woody plants were bulldozed into two piles and later the unit was sprayed with a herbicide. Two mounds of woody debris and dirt are remnants of that action. Native grasses and forbs were planted in 2001. Unit 2.05.1 was burned in 2004.

Objectives and Actions:

1.04 Restore, enhance and maintain a native grassland biotic community with an emphasis on providing flowering plants for native bees and honey bees.

1.04a Prepare the area for planting native grasses and forbs.

- Spray herbicide - late summer 2016
 - 1 acre dominated by goldenrod and non-target species - use a high concentration of glyphosate to kill all vegetation.
 - 2 acres where warm season grasses and some forbs are present - use a lower concentration of herbicide to reduce grass density. An alternative would be light disking the 2 acres.
- Consider leveling the two mounds - winter, 2016
- Burn the unit - early spring, 2017
- If needed, again spray areas dominated by goldenrod and non-native plants - spring 2017

1.04b Plant a mixture high in native forbs and lesser amounts of short stature warm season grasses - spring 2017

1.04c Burn the unit every 3–5 years, or as needed to control woody plant invasion. Burning should be scheduled in years when the rest of Unit 2.03 is not burned. Ongoing

1.04d Spot spray invasive woody plants (e.g. autumn olive, honey suckle and multi-flora rose) with a herbicide (e.g. *Garlon*, *Crossbow*). Ongoing

1.05 Manage individual native plant and animal species.

1.05a Maintain nest boxes for bluebirds - ongoing

1.05b Place and maintain hives of honey bees within one mile of Unit 2.05.1 - spring 2016 and ongoing

2.03 Provide opportunities for self-guided wildlife viewing.

2.03a Establish an educational station along the nature trail explaining Pollinator Project - spring 2017

2.03b Maintain the self-guided nature trail stations and bench - ongoing

Unit 2.06 2nd Growth Oak Forest

Size: 21 acres

Soil: 35 B & C Arkport-Okee loamy fine sand, 43A Dixboro very fine sandy loam

Vegetation: Wild black cherry, red maple, pignut, autumn olive, multi-flora rose are common. Trees are mostly < 12" BHD.

Human Impacts: Apparently this unit was once cleared and farmed. There are several large piles of stones.

Objectives and Actions:

- 1.04 Restore, enhance and maintain oak forest community.
 - 1.04 Allow the area to develop into a mature oak forest. No active management is needed at this time.
- 1.05 Manage individual native plant and animal species.
 - 1.05a Construct a snake hibernation mound for Massasauga Rattlesnakes at 42.32947°N and 84.29475°W. Completed 2000
 - 1.05b Monitor use by snakes. Ongoing
 - 1.05c Preserve stone piles for snakes. No active management needed at this time.

Unit 2.07 Wetland Shrub

Size: 48 acres

Soil: 20 Houghton muck, 30 Edwards muck with marl substrate, and 37 Palms muck

Vegetation: Quaking aspen is scattered throughout with an understory of silky dogwood, gray dogwood. American elm and black ash were common before being killed by insects and disease. Glossy buckthorn is dominant in some areas. Some of the unit may be a degraded fen.

Human Impacts: Before channelization in 1921-22, the Portage River flowed through the north part of the unit. Water flowing from Mud Lake marsh enters the old river channel. Ditches lower the water level permitting some farming for a few years.

Objectives and Actions:

- 1.04 Restore, enhance and maintain native wetland shrub community.
 - 1.04a No active management is recommended at this time.

Unit 2.08 Emergent Wetland

Size: 4 acres

Soil: mostly 63 Henrietta muck, small part 37 Palms muck

Vegetation: Reed canary grass is dominate

Human Impacts: A ditch forms the west boundary. Unit 2.08 was once farmed and has since reverred to a wet meadow. Zone 4 was granted deer hunting privileges in exchange for their gift of 9 acres in Unit 3. They have a permanent deer stand in the southwest corner.

Objectives and Actions:

- 1.04 Restore, enhance and maintain emergent wetland community.
 - 1.04a No active management is needed at this time.

Updated 7-26-12 Ron Hoffman

Table 1. Unit 2 five-year schedule for performing management actions.

Action	Description	Season of Year				
		2012	2013	2014	2015	2016
Unit 2.04 Oak Woods						
2.03a	Trim and chemically treat shrubs along drive	sp f	sp f	sp f	sp f	sp f
2.03b	Mow drive several times a year	s	s	s	s	s
2.03c	Maintain nature trail signs	all	all	all	all	all
Unit 2.05 Native Grassland (Whipfler North)						
1.04c	Burn south half of unit every 3-5 years	sp				
1.04c	Burn north half of unit every 3-5 years				sp	
1.04d	Spray invasive woody plants	s	s	s	s	s
1.04e	Monitor and evaluate vegetation	s	s	s	s	s
1.04d	Use point counts to monitor and evaluate birds	sp s	sp s	sp s	sp s	sp s
1.05a	Maintain nest boxes	sp s	sp s	sp s	sp s	sp s
1.05b	Monitor nest box use	sp s	sp s	sp s	sp s	sp s
2.03b	Maintain nature trail signs and bench	all	all	all	all	all
2.03c	Mow drive several times a year	s	s	s	s	s
Unit 2.06 2nd Growth Oak Forest						
1.05b	Monitor snake hibernation mound	sp s	sp s	sp s	sp s	sp s

all - all seasons, f - fall, sp - spring, su - summer, w - winter

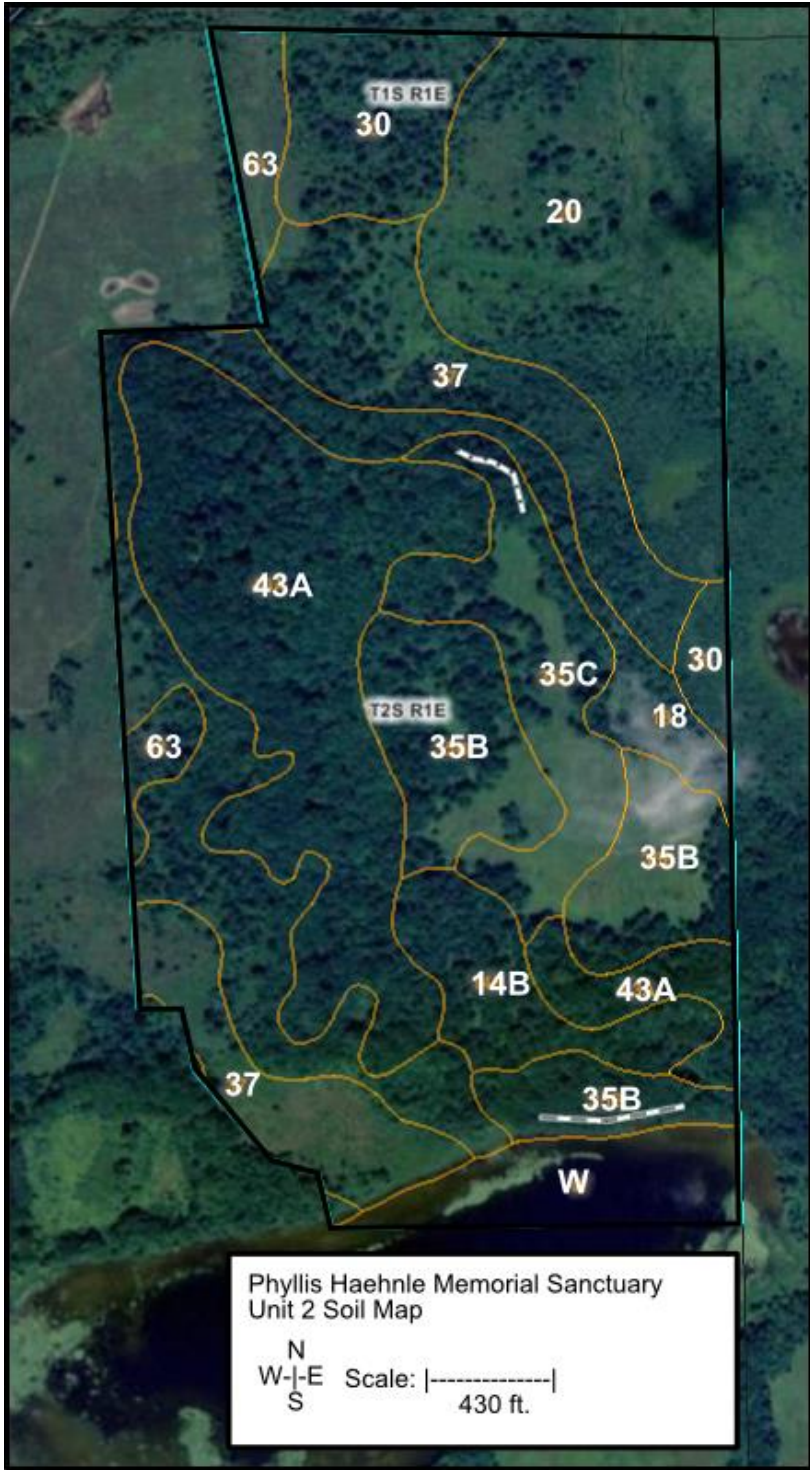


Figure 1. Unit 2 soil map.

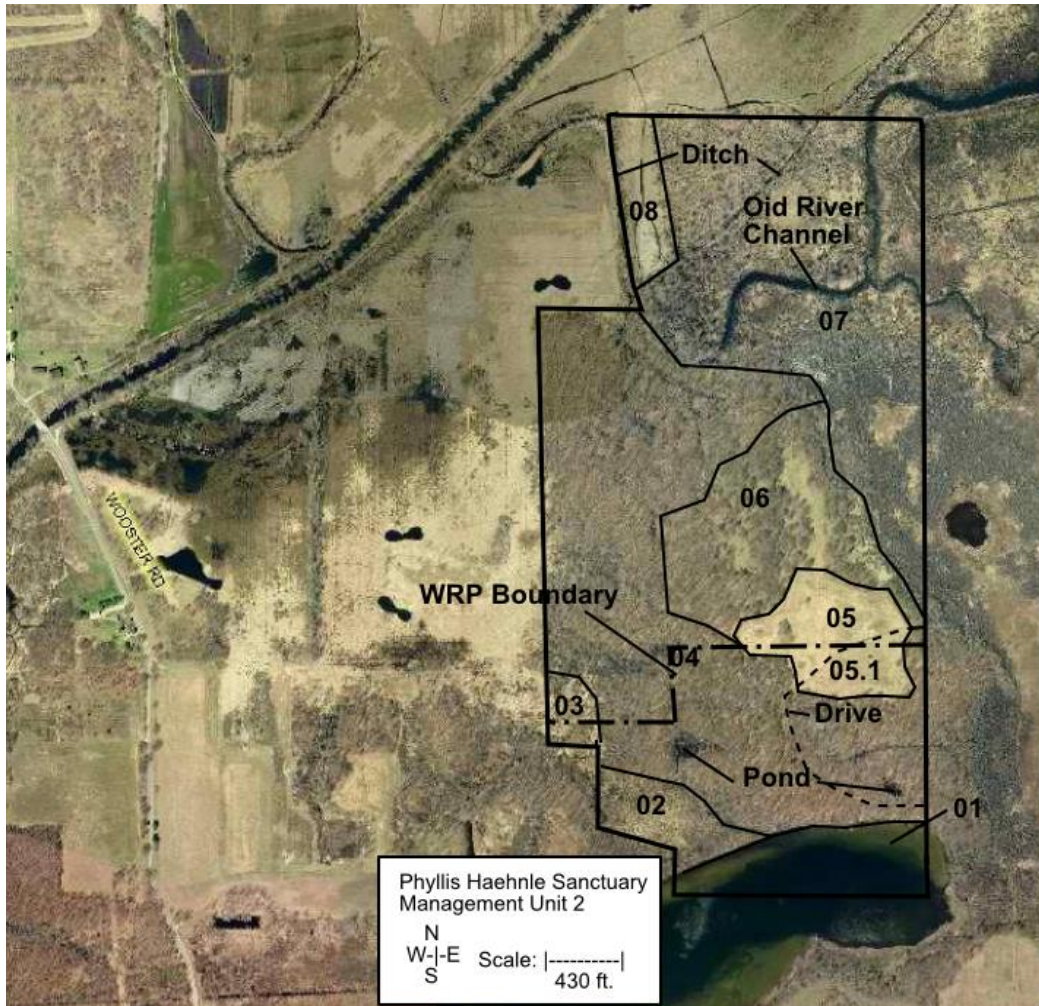


Figure 2. Unit 2 management units.