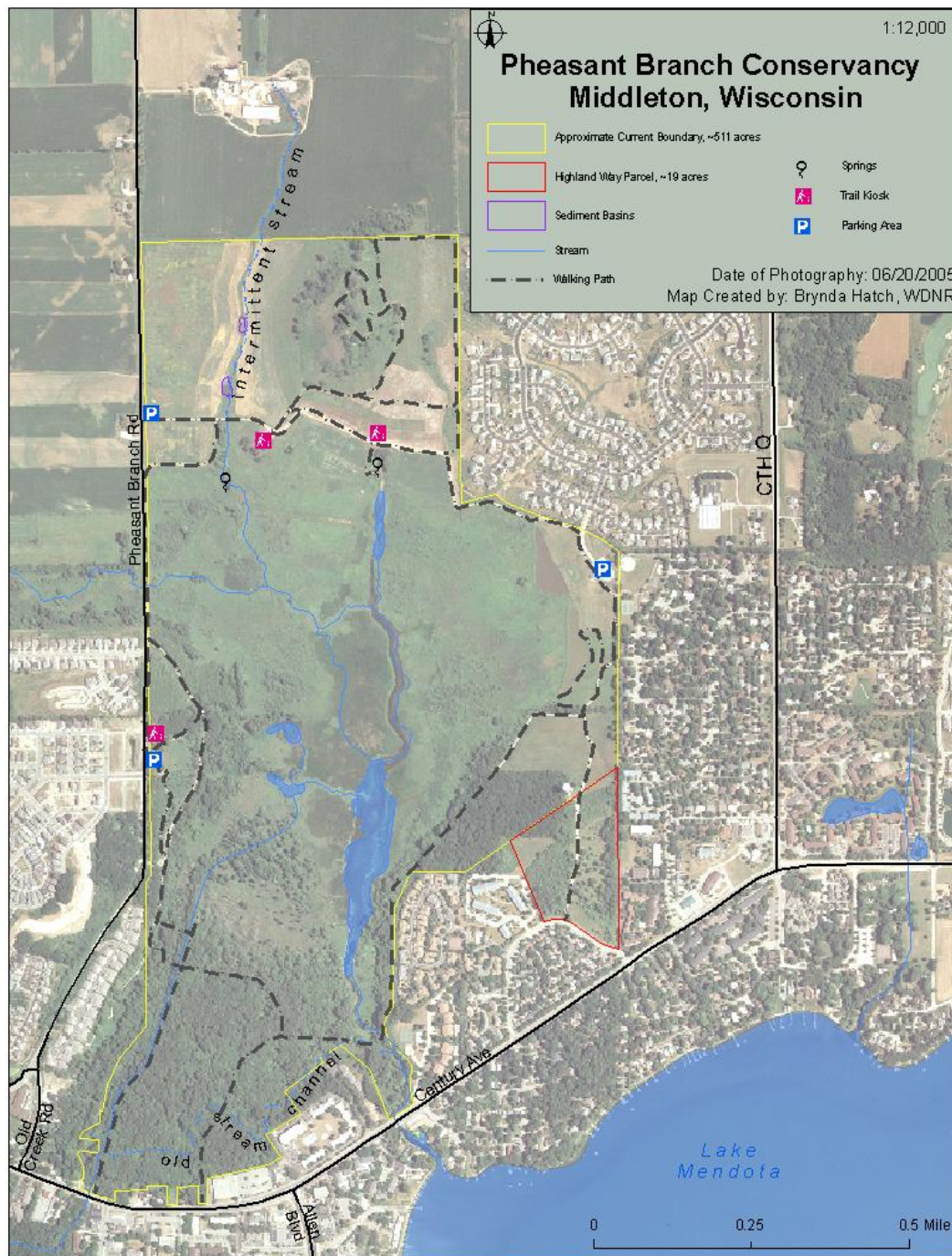


20 years of Community Building and Restoration at Pheasant Branch Conservancy

The story of the Friends of Pheasant Branch

Tom Bernthal
Wisconsin Wetlands Science Conference 2017

Hilltop Marsh View Summer 2006





Conservancy and Urbanization October 2005



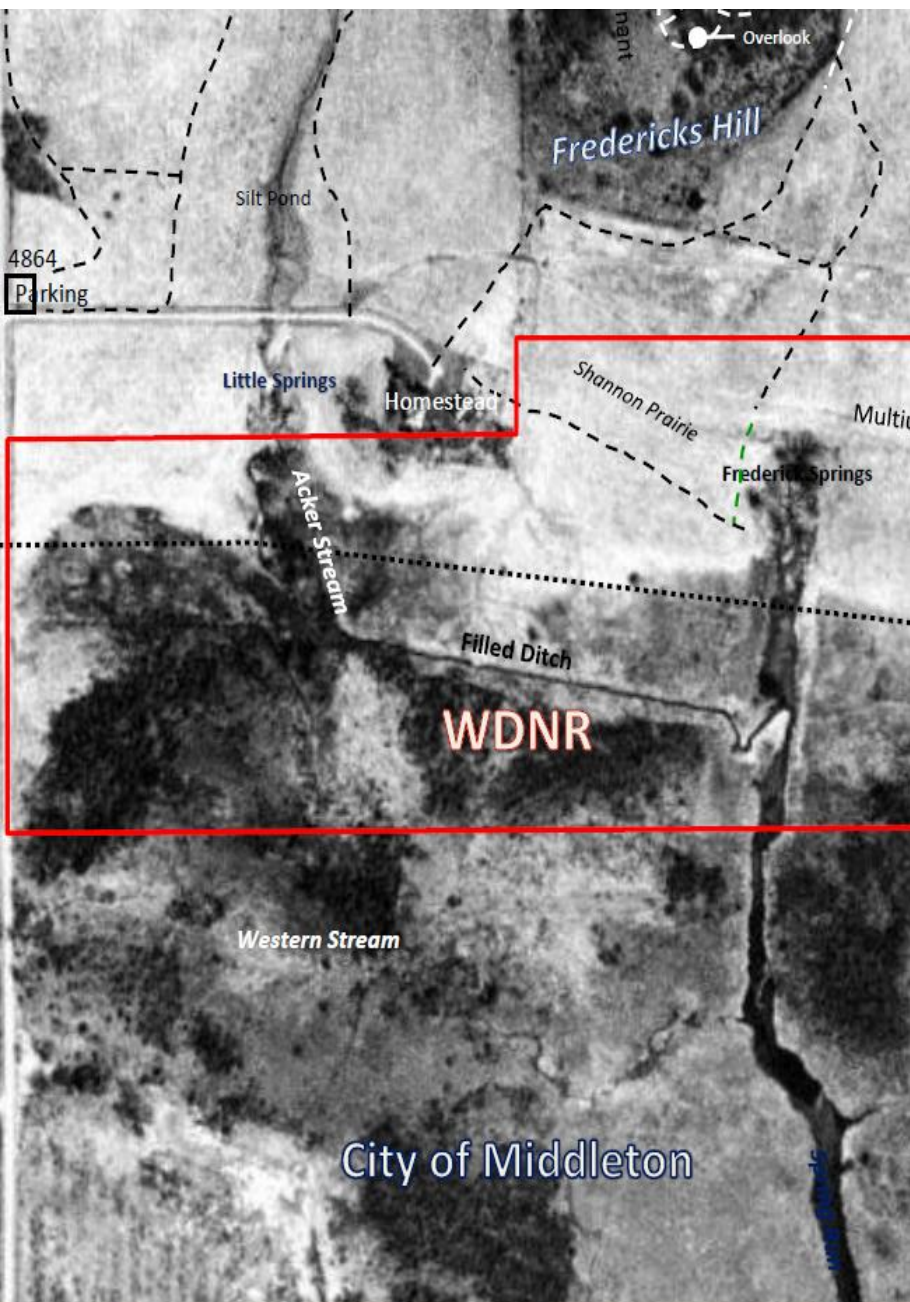
Pheasant Branch Conservancy October 2005



Conservancy and Agriculture February 2009



Ditch Fill and Sediment Basins Winter 2004



1995



2014



Ditch Fill Revegetation August 2006



Willow Clone Removal December 2014

Restoration Timeline

Upland Prairie Plantings: 2001 to 2006

Shrub Removal on Savanna Hilltop: 1998 to 2008 and continuing

Large Scale Prairie Burns: 2010 - 16

Wetland Ditch Fill, Sediment Basins: 2003-4

Wetland Shrub Removal: 2004 – 07

Wetland Shrub Removal: 2010 – 17

Springs Reed Canary Mowing: 2009 – 11

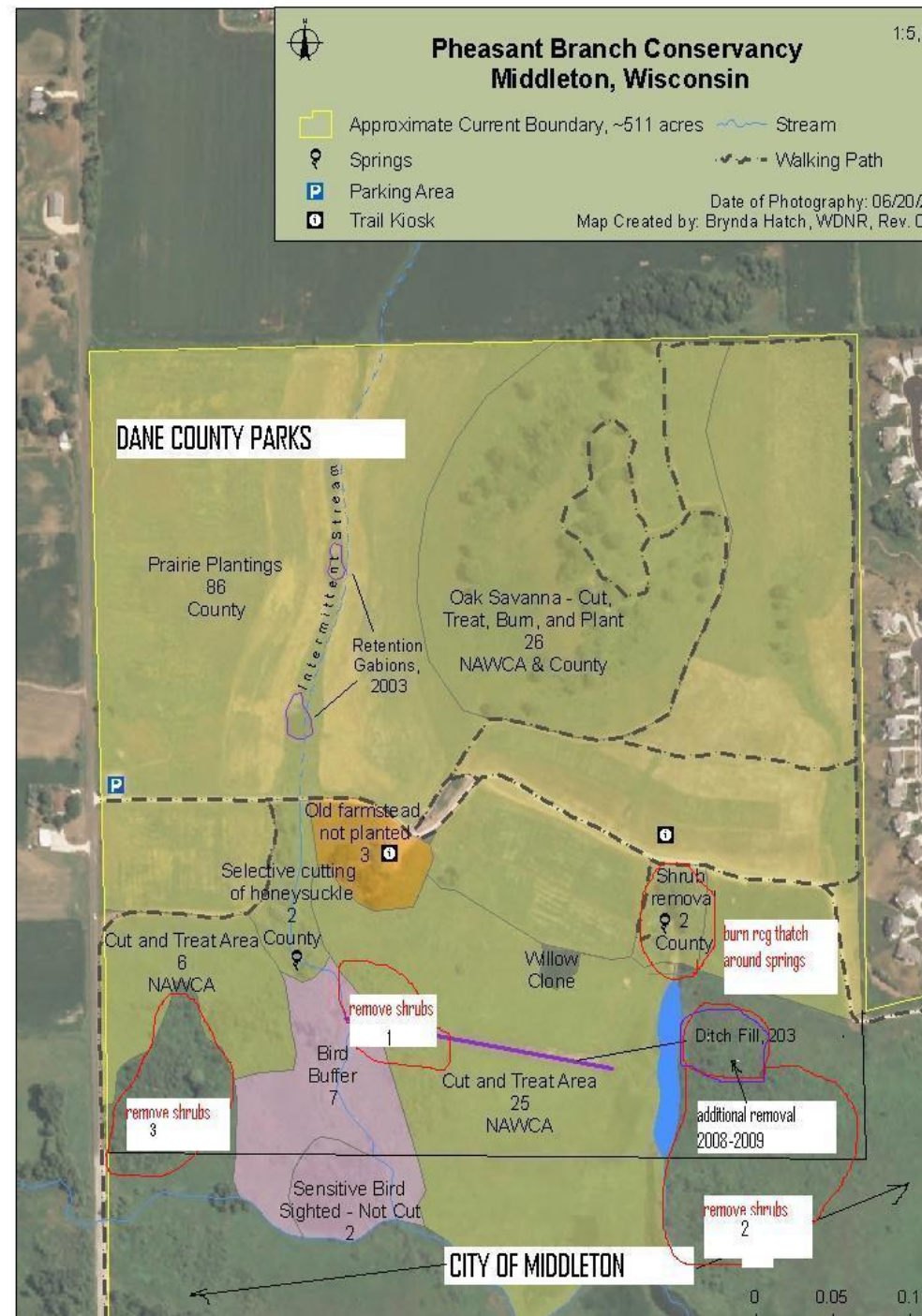
Springs Reed Canary Treatment: 2012–19

2011		2015		2019	
75% cover		15% cover		7% cover	
wC	wFQI	wC	wFQI	wC	wFQI
0.9	4.2	3.0	19.5	4.5	33.5

Wetland Burns: 2017 – 2019

Sedge Meadow Recovery (Area C)

	2013	2015	2018
Target Shrub Cover	40%	21%	2%
Reed Canary Cover	4%	1%	1%
Weighted Mean C	4.2	4.2	4.6
Weighted FQI	30.6	31.0	40.2



Sediment Trap Effectiveness

Table 1. Tributary to Pheasant Branch Tributary 430734089291500 (Upper site)

Date	Time	Inst. Disch. (cfs)	TSS (mg/L)	TKN (mg/L)	NO ₃ -NO ₂ as N (mg/L)	Total P (mg/L)
03/15/03	15:45	0.4	66	62.5	0.059	12.9
05/09/03	2:30	1.6-3.2	2400	74.2	0.096	21.6
05/10/03	22:30	1.6- >3.2	7880	43.1	0.108	18.4
09/28/03	sediment traps installed					
11/02/03	11:30	1.6	385	59.5	4.6	18.3
11/04/03	2:00	>5	500	42.1	0.043	13.0
11/23/03	9:00	5.8	720	27.6	<0.019	12.9
03/26/04	1:00	2.0	4940	53.7	0.033	2.2
05/21/04	9:50	4.5	960	52.2	2.960	13.9
5/21/04	17:30	>6	1920	98.5	1.870	37.7
05/30/04	12:00	2.3	803	44.6	<0.019	14.0
buffer vegetation established						
08/03/04	21:00	>2.5- >5	980	78.5	<0.019	15.3

Above Traps

99% Agriculture
Barnyard Runoff

Table 2. Tributary to Pheasant Branch Tributary 054279505 (Lower site)

Date	Time	Inst. Disch. (cfs)	TSS (mg/L)	TKN (mg/L)	NO ₃ -NO ₂ as N (mg/L)	Total P (mg/L)
03/15/03	15:30	0.4	35	43.2	0.027	9.5
05/09/03	2:45	1.6	3200	150.0	0.005	37.1
05/10/03	22:40	1.6->3.2	4470	37.1	0.152	16.0
09/28/03	sediment traps installed					
11/02/03	No sample					
11/04/03	9:30	>1.6 - >5	735	19.6	0.022	0.7
11/23/03	9:35	5.1	1020	28.6	<0.019	10.0
03/26/04	No sample					
05/21/04	10:20	1.6	655	18.0	0.346	4.98
5/21/04	18:30	>6	1240	27.0	0.074	9.54
05/30/04	12:40	3.5	725	22.9	<0.019	6.2
buffer vegetation established						
08/03/04	23:30	>5	1700	8.07	0.301	2.5

Below Traps

Conservancy
Marsh



WETLANDS: WATERSHED WONDERS

"High horns, low horns, silence, and finally a pandemonium of trumpets, rattles, croaks and cries that almost shakes the bog with its nearness, but without yet disclosing whence it comes. At last a glint of sun reveals the approach of a great echelon of birds. On motionless wing they emerge from the lifting mists, sweep a final arc of sky, and settle in clangorous descending spirals to their feeding grounds. A new day has begun on the crane marsh." -Aldo Leopold

Marshland Elegy

When Aldo Leopold wrote these words in the 1940s, sandhill cranes were in serious decline and he believed they might soon disappear from Wisconsin.

BUT ALDO WAS WRONG! Aldo would have been overjoyed to see the recovery of sandhill cranes in the state. As he wrote, the pendulum was just starting to swing from the era of wetland drainage to the wetland restoration activity that continues today.

We don't know if Aldo Leopold came to visit Pheasant Branch Marsh when he lived in Madison. We do know that attempts were made to drain the marsh, but they were largely unsuccessful because



While you may not have as earth-shaking an experience here as Leopold describes in his marshland elegy, the Conservancy is well-visited by cranes. Photo taken by Michael Knapstein.

it is almost at the same elevation as Lake Mendota - there was not enough drop between the springs-fed marsh and the lake for water to drain out of the marsh soil.

This sign was funded by a grant from REI and designed by the Friends of Pheasant Branch Conservancy. Background photo taken by Michael Knapstein.

Groundwater is the Secret

The springs that we visit today are not the only ones in the marsh. There are other, smaller springs, and there are squishy areas called seeps and even fens that occur all along the edges of the marsh. They are places where clean cold groundwater bubbles up, keeping the soil waterlogged.

Specialized plants grow in these areas. When you see angelica and marsh marigold you are seeing markers of groundwater discharge.



Angelica



Marsh marigold

What's so Great About Groundwater?

Because it's coming from underground, the water is low in nutrients and pollutants, much lower than rain water that has run off of our oily parking lots, salty roads, barnyards, heavily fertilized lawns and crop lands. Surface water that hits bare soil erodes soil particles, carrying them into our wetlands, stream and lakes. When water with high concentrations of nitrogen and phosphorus enters Lake Mendota, the nutrients trigger harmful and unsightly algal blooms.

The Marsh: a Water Filter

Wetlands can be a "sink" for nutrients but, like your car's oil filter, wetlands can be overwhelmed by the amount of pollution they receive, and unlike your oil filter, they can't be changed. Once wetlands are overloaded they become infested with invasive species like reed canary grass, purple loosestrife and giant reed grass (Phragmites). The wetlands in the south end of the marsh have changed from lowland woods to dead trees and reed canary grass because they receive large volumes of stormwater.



Purple loosestrife

Giant reed grass / Phragmites

In order to effectively catch sediments and nutrients, conservation practices need to be installed upstream of wetlands, not in them. Two sediment ponds were dug in the prairie north of the marsh, to catch surface water from nearby crop land. The sediment ponds constructed in 2003 were nearly full in about 6 years. The ponds were dredged and deepened in April 2009 by Dane County to improve their efficiency - keeping



The sediment ponds seen from the top of Frederick's Hill. Photo taken by Herb Garn.

sediment and nutrients out of the wetland and Lake Mendota.

For an online version of this sign with links to more information, please visit: www.pheasantbranch.org/wetlands