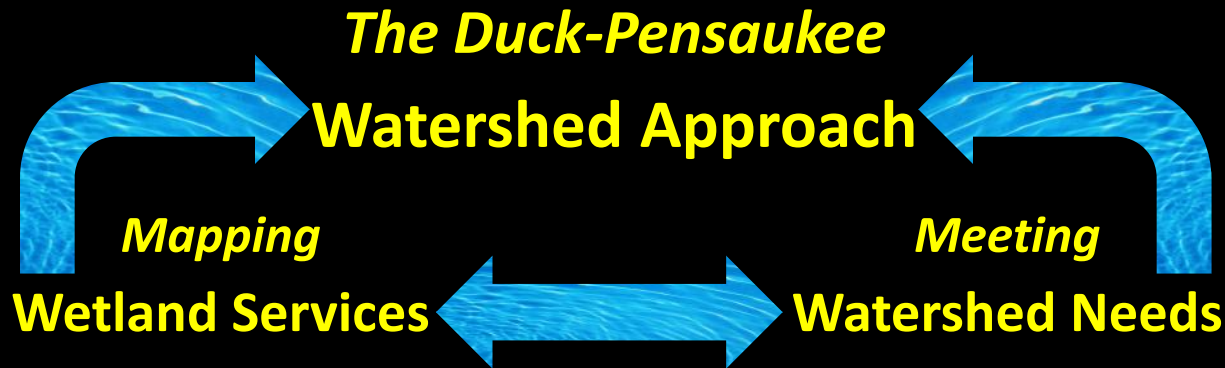




**US Army Corps
of Engineers®**



ENVIRONMENTAL
LAW • INSTITUTE®



Nick Miller, Tom Bernthal, John Wagner,
Mike Grimm, Gary Casper, Joanne Kline

The Nature Conservancy
Wisconsin Department of Natural Resources
UW-Milwaukee Field Station





Site ID: *Types of Opportunities*

- **Restoration**

 - **Re-establishment**

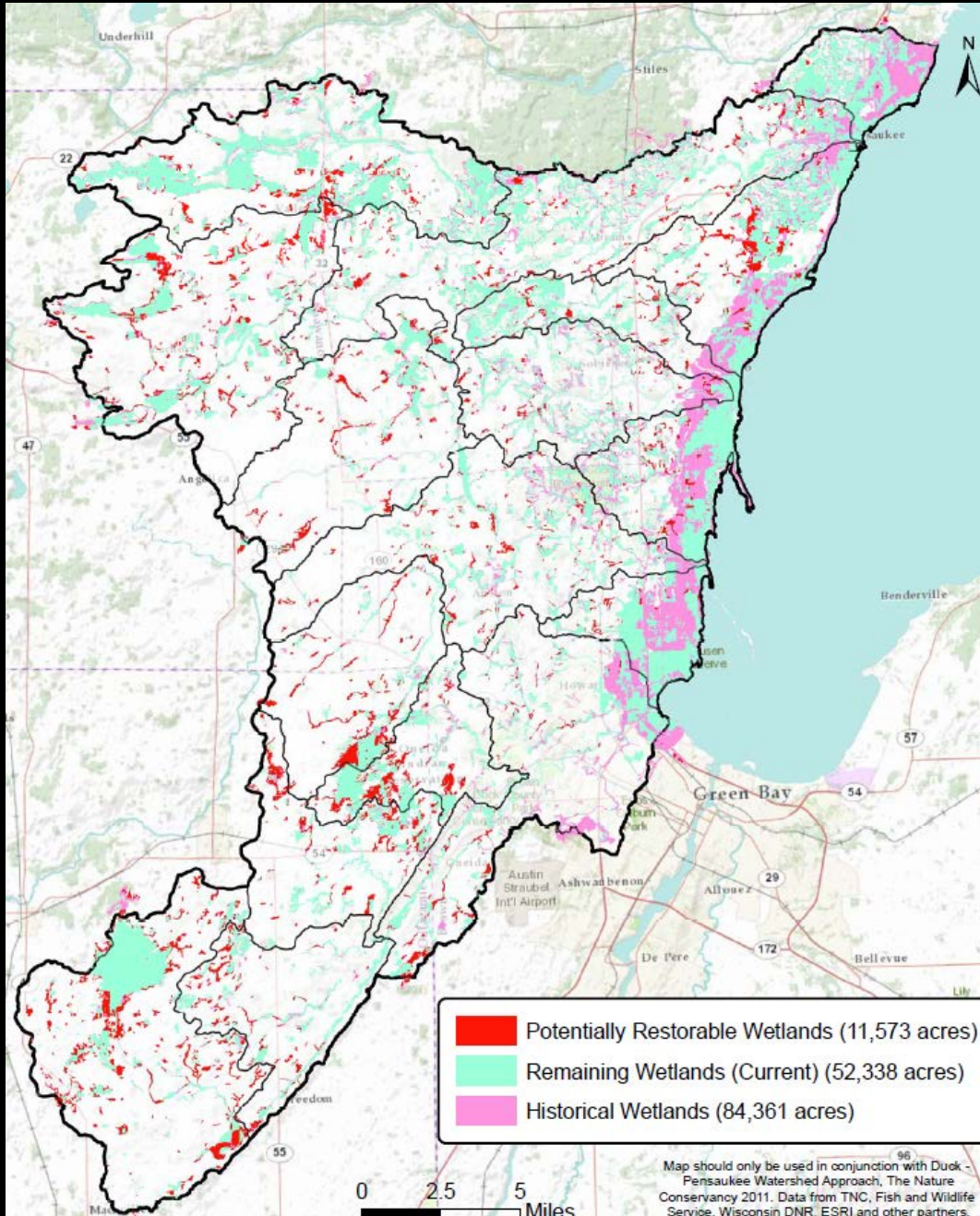
 - **Rehabilitation**

- Creation

- Enhancement

- **Protection**

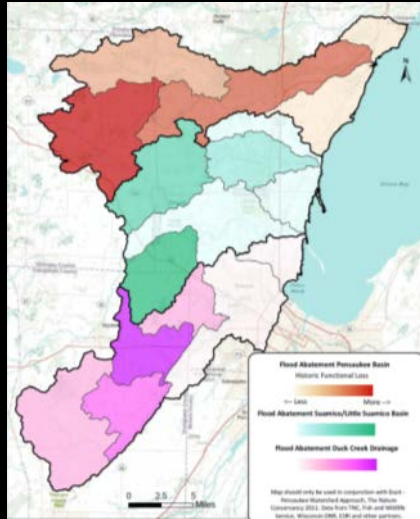
Site ID: Results



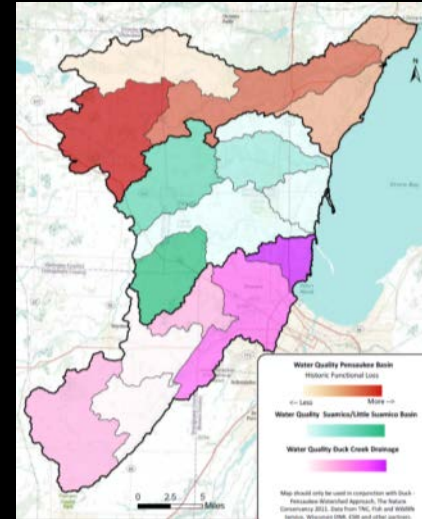
Watershed Profile: *Ecosystem Service Losses*

(Based on NWI+)

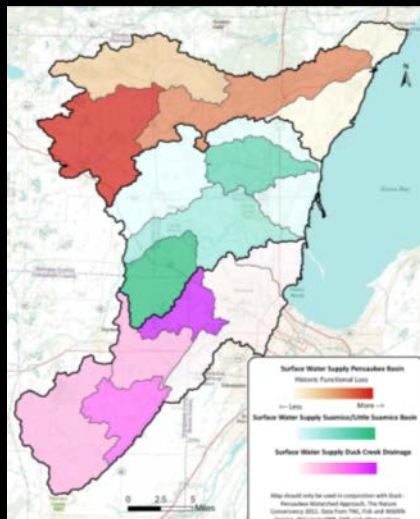
Flood Abatement



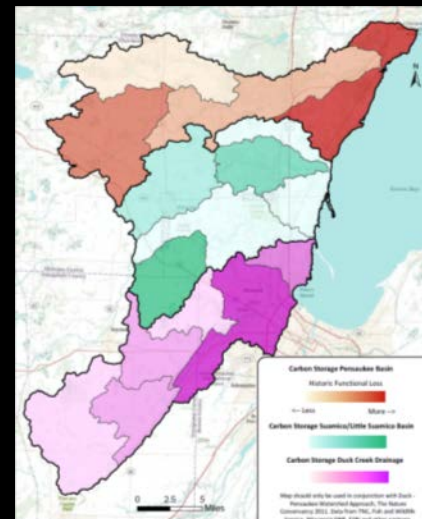
Water Quality Protection



Surface Water Supply

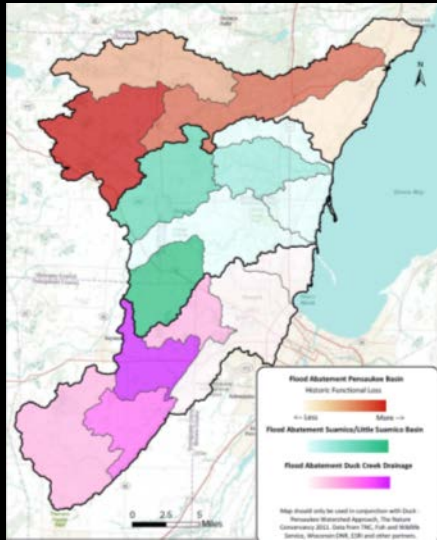


Carbon Storage

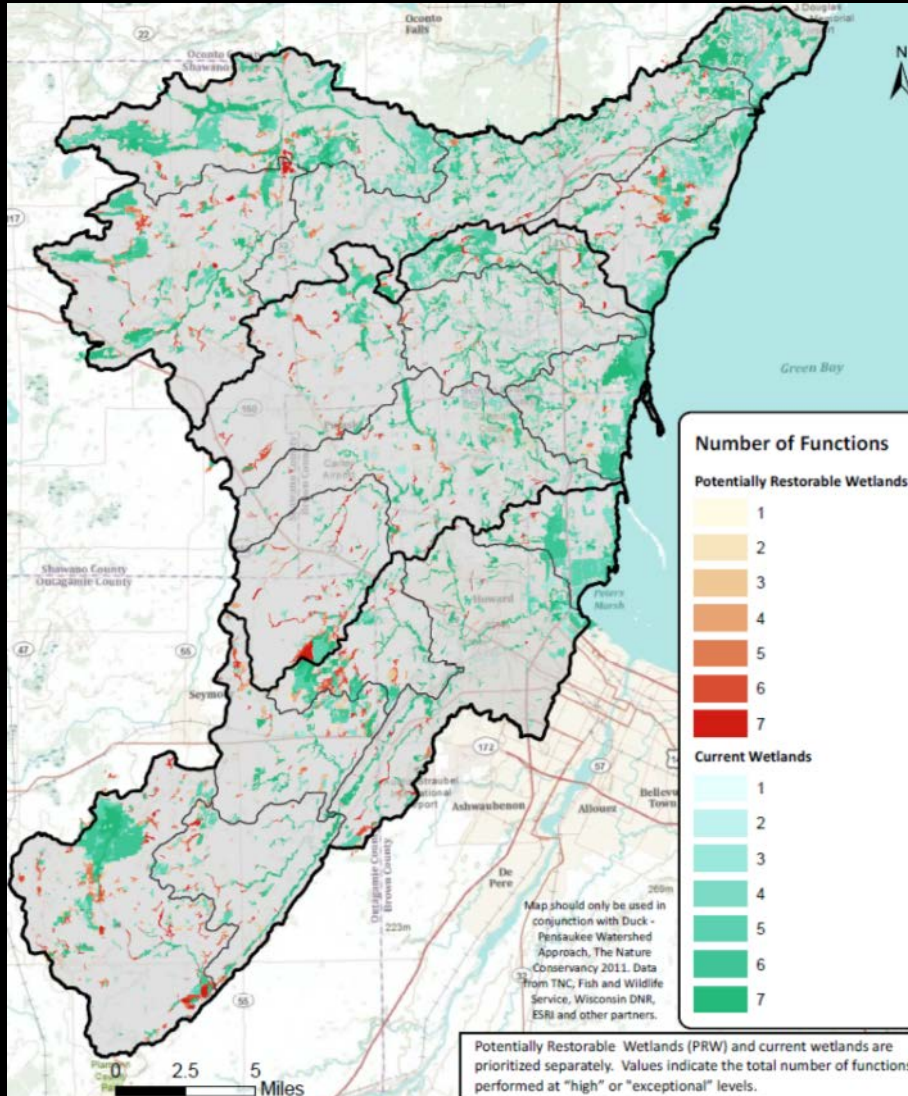


Site Selection

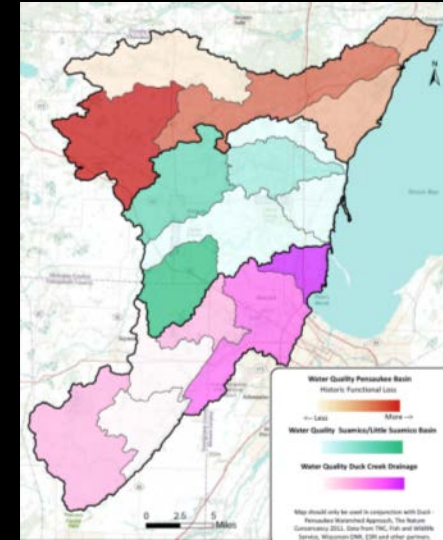
Flood Abatement



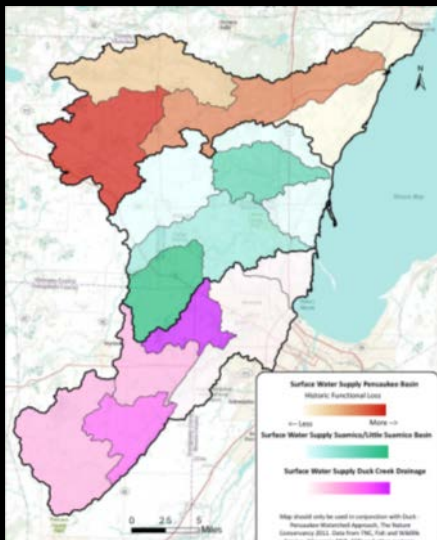
Ecosystem Services



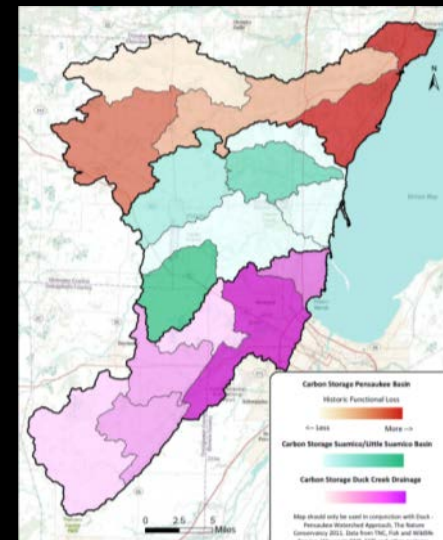
Water Quality



Surface Water Supply



Carbon Storage





But What About Wildlife?
Site Prioritization: *Wildlife Habitat*
Forested Swamps



Table 5a. Wildlife Tool Matrix: Habitat targets, representative species, and habitat associations in the Duck-Pensaukee Watershed.

Conservation targets & Representative species	Wetlands											Uplands								
	Shrub swamp	Shrub bog	Forested wetland (broadleaf deciduous)	Forested wetland (evergreen)	Forested wetland (tamarack)	Floodplain forest	Forested wetland (ridge & swale)	Emergent wetland	Stream (cold)	Stream (cool)	Stream (warm)	River (warm)	Inland lakes, ponds, impoundments	Coast: Beach	Upland Forest (deciduous)	Upland Forest (mixed)	Upland Forest (evergreen)	Grassland/ Herbaceous	Pasture/Hay (surrogate grassland)	Upland Scrub/Shrub
OPEN WETLANDS & WATERS <i>Am. Bittern, Blue-winged Teal, Black Tern</i>		2						3					3					2	2	
BEACHES <i>Caspian Tern, Common Tern</i>								1					1	3						
SHRUB SWAMP <i>Am. Woodcock, Willow/Alder Flycatchers</i>	3		1		1										1					1
FORESTED SWAMP <i>Canada Warbler, Northern Flying Squirrel</i>			3	3	2	1	3		1	1	1	1	1		2	2	2			
INTEGRATED LANDSCAPE <i>Blanding's Turtle</i>	2	2	2		1	1	3	3			1	3	3		2	2	1	3	3	2
RIPARIAN HABITAT <i>Wood Turtle</i>	3	1	2	1	1	3	1	1	3	3	3	3	1		2	2		3	2	2
SHOREBIRD STOPOVER HABITAT	Scores adapted from Migratory Shorebird Stopover Model ¹																			

Strength of Association: 3 = significant, 2 = moderate, 1 = minimal, Null = none

¹Wisconsin model unpublished, adapted from model developed in Lake Erie Basin (Ewert et al. 2005)

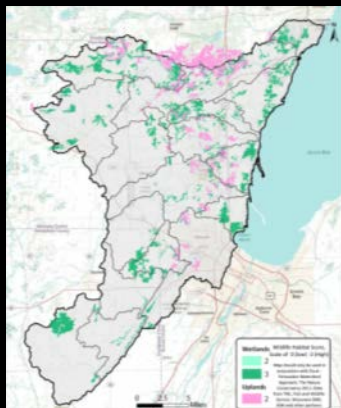
Table 5b. Wildlife Tool: "proximity factors" for target habitats and representative species of the Duck-Pensaukee Watershed.

<u>Conservation targets & Representative species</u>	<u>Proximity factors</u>
Open wetlands and waters: Am. Bittern, Blue-winged Teal, Black Tern	Grassland or surrogate grassland must be adjacent to wetland and >32 ha; emergent marsh patches must be >10 ha.
Beaches: Caspian Tern, Common Tern	Emergent wetland and open water must be within 2 miles of beach habitat
Shrub swamp: Am. Woodcock, Willow/Alder Flycatchers	Non-shrub-swamp habitats must be within 600m of shrub swamp (otherwise, scored 0)
Forested swamp: Canada Warbler, Northern Flying Squirrel	Wetland forests must be >6 ha and occur within a patch of contiguous forest (upland and/or wetland) >48 ha. Upland forests must be >48 ha and occur on soils that can support mesic (maple-beech) or wetter forests. Streams & lakes must occur within forest (upland and/or wetland) >28 ha.
Integrated landscape: Blanding's Turtle	If "3" wetland types are adjacent to "3" upland types, then all types within 300m receive the indicated scores. If not, then none of the habitat types (wetland or upland) are scored.
Riparian habitat: Wood Turtle	Rivers/streams must be adjacent to natural landcover. All habitats must be within 300m of "clean" channels (i.e., no 303(d) designation or other polluted status). Ponds/lakes must be <1 ha.
Shorebird stopover habitat	N/A

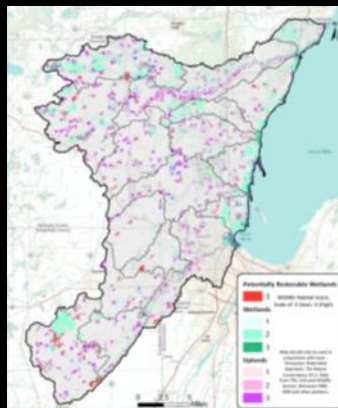
Site Prioritization: *Wildlife Habitat*



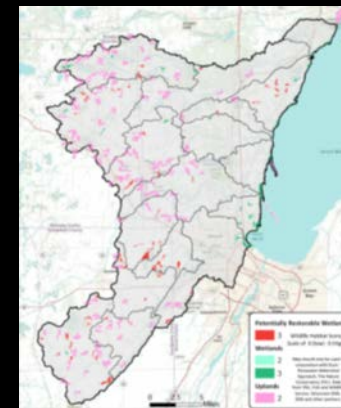
Forested Swamps



Integrated Landscapes



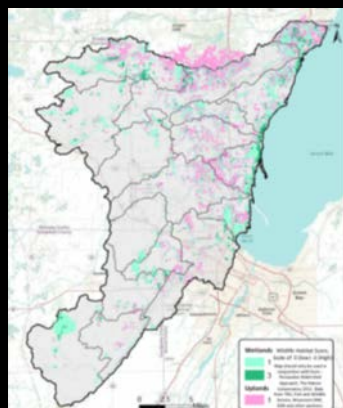
Open Wetlands & Waters



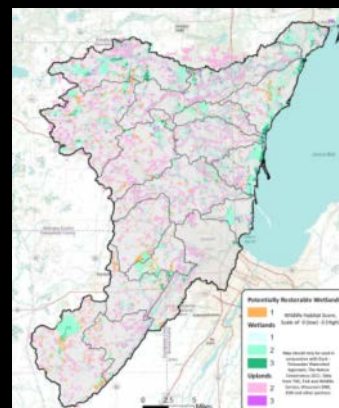
Beaches



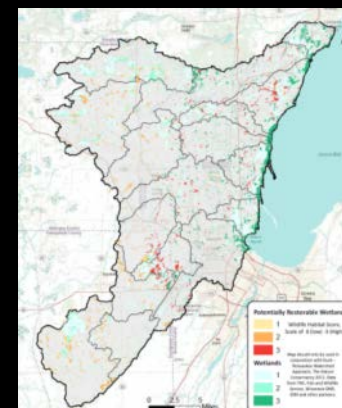
Shrub Swamps



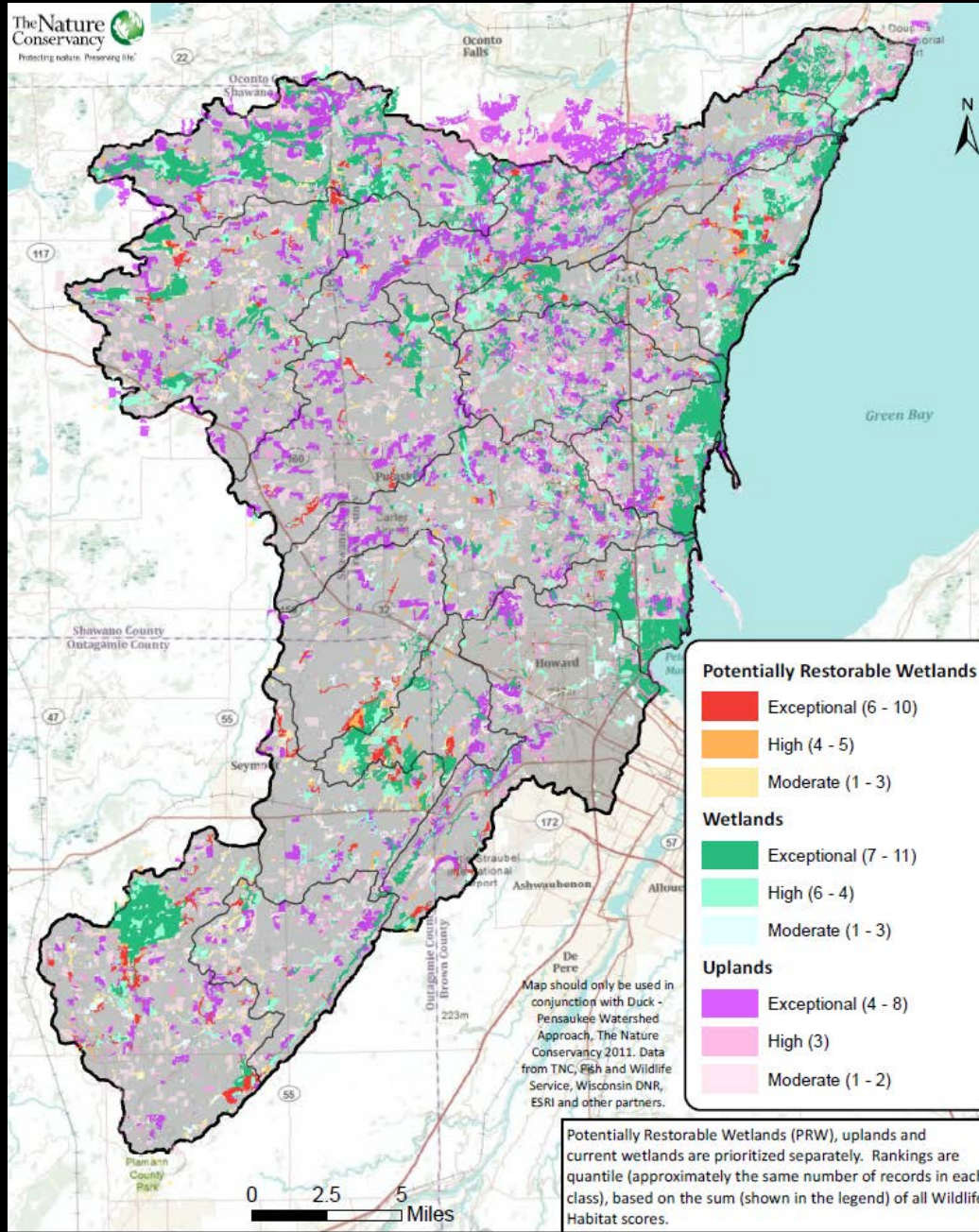
Riparian Areas



Migratory Shorebirds



Site Prioritization: Wildlife Habitat



Site Prioritization: *Ecosystem Services*

