Agencies and partners need to concentrate efforts towards this endeavor.

Chlorophyll-*a.* Chlorophyll-*a* is the green pigment in plants and algae. Measuring chlorophyll-*a* in a water sample is a means of measuring the amount of algae in that water sample. High levels of phosphorous can lead to high levels of algae growth, which in turn can lead to high levels of chlorophyll-*a*. Very clear lakes have chlorophyll-*a* levels of <5 μg/l, while lakes with levels above 30 μg/l are considered very poor (Betz and Howard, 2005).

Chlorophyll-*a* was measured in Moon Bay, Little Lake Wissota, and the main basin of the lake in 1993. Samples indicated chlorophyll-*a* levels generally <25 μg/l but peak concentrations were up to 100 μg/l during August. Samples were also collected in 2001 and 2003 and "exhibited a peak in early July, 2001, and declined in concentration between late July and September, 2001. Chlorophyll concentrations were very low for an extended period between May and July, 2002. A peak in chlorophyll of 39 mg/m^3 was observed in August, 2002" (United States Army Corp of Engineers 2004). "Simulated decreases in external P[hosphorous] loading from Paint Creek resulted in predicted decreases in the average summer concentration of total P[hosphorous] and chlorophyll of the surface waters and increases in Secchi transparency (United States Army Corp of Engineers 2004).

Figure 17. People enjoying Lake Wissota by canoe. *Photo courtesy of Robert Wierman.*

Water Use

Lake Wissota is an important regional recreational lake for the state of Wisconsin and the Chippewa Valley (Figure 15). It is a destination lake and in 1991 was ranked the 2nd most visited water in the Wisconsin DNR's Western District behind the Mississippi River (WDNR 1991). **The recreational value of Lake Wissota is directly linked to the water quality of the lake,** therefore it is essential that the water quality be improved. Guidelines provided by the previously described TMDL can help guide water quality improvements. In 1996, Lake Wissota received well over 50,000 visitors to the lake whom are estimated to have contributed nearly $6 million dollars to the local economy as a result of their use of the lake (Olson and Johnson 1998). Those visitors may be lost to other water bodies if the water quality of Lake Wissota is not improved.

Public Access. (Map and text for the Public Access section of this report were written and created by Roger Kees 2008). There are eight public boat landings on Lake Wissota as identified in Figure 18. There are an estimated 185 parking spaces available at these landings. The Chippewa County landing has additional parking at the Old Abe Bike Trail parking lot a short distance from the landing. There is also a parking area and potential carry in site for canoes, and kayaks and smaller boats at the Hwy 178 bridge over O'Neill Creek.

In the summer of 2007, the Town of Lafayette and the Wisconsin DNR identified 34 platted access points with widely varied

use and availability for public use. These access points were mapped and photographed. The map and text from the report are available on the Town of Lafayette website (www.lafayettetownship.org). In addition, a listing and map created by the DNR fisheries biologist in 2006 closely parallels the Lafayette study (Joe Kurz, pers comm., 2009).

Lake Wissota is an important regional recreational lake for the state of Wisconsin and the Chippewa Valley. It is a destination lake and in 1991 was ranked the 2nd most visited water in the Wisconsin DNR's Western District behind the Mississippi River (WDNR 1991).

Of these 34 identified access points in the Town of Lafayette, 13 are apparently being used regularly by the public and one has been recently abandoned by the Chippewa County Circuit Court. Most of the remaining sites are either not used by the public (due to lack of knowledge of the site or because the site is too difficult to identify) or only used by adjacent landowners.

An examination of plats recorded at the Chippewa County Register of Deeds since 2006 did not reveal any further plats that border Lake Wissota, thus no other access points have been recorded in subdivision plats. There are a few discrepancies between the two listings generated in these two studies that should be examined. There are an additional 15 subdivisions on the lake that do not have platted access points.

Table 5. List of Public access points on Lake Wissota as mapped in Figure 17.

Map Key	Name	Estimated Parking
1	Town of Anson – Jim Falls	15
2	Chippewa County	7
3	Lake Wissota State Park	30
4	Town of Anson – Moon Bay	3
5	Chippewa Rod and Gun Club (Fee)	60
6	Town of Lafayette (Fee)	40
7	Wissota View (Fee)	20
8	Town of Lafayette – Paint Creek	10

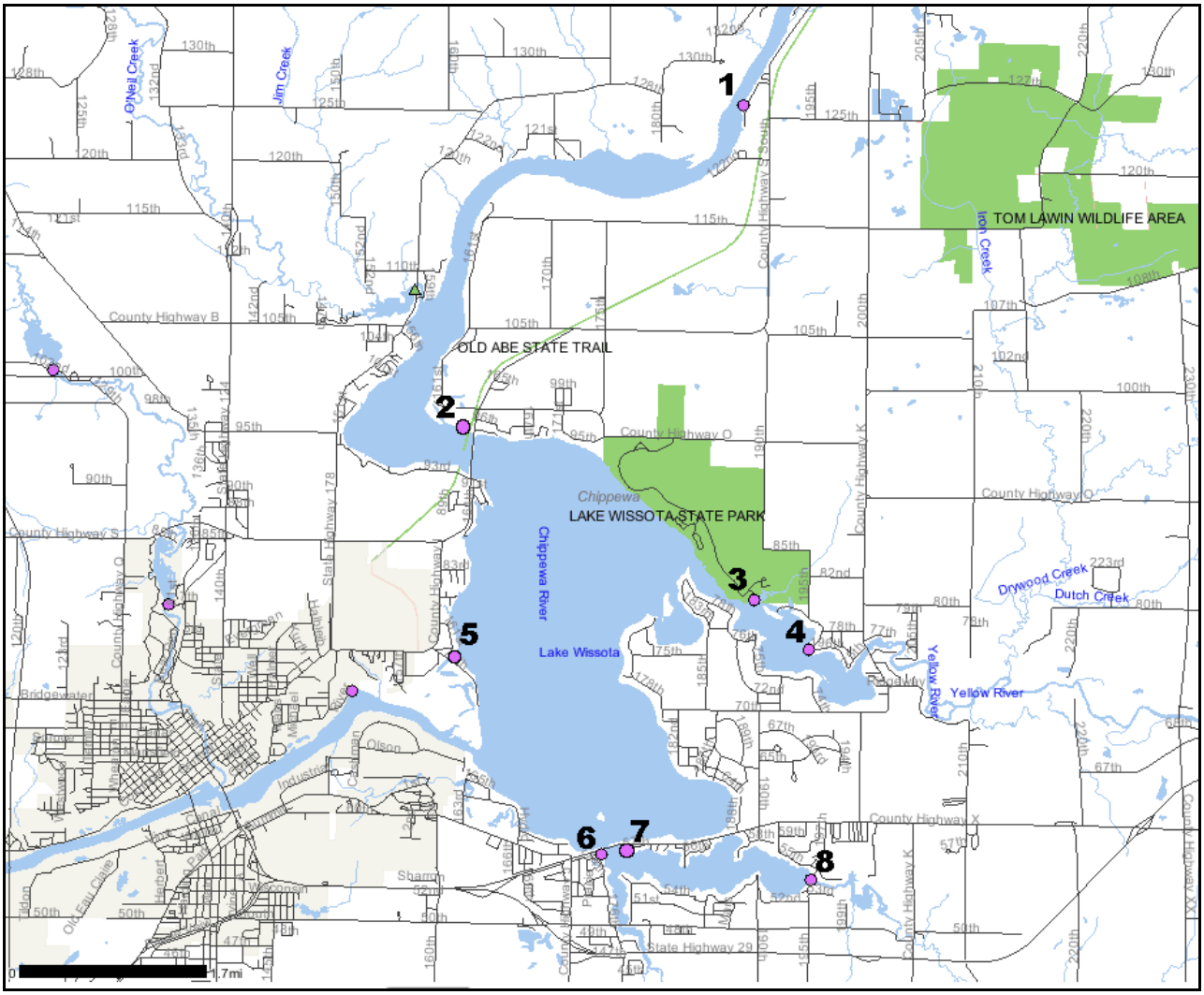

Figure 18. Public boat landings on Lake Wissota.

Key Use Areas. Key use areas of Lake Wissota include the main body of the lake (sometimes referred to as "the big lake"), Little Lake Wissota, Moon Bay, the Chippewa River, Pine Harbor, Lake Wissota State Park and the State Park beach, Ray's Beach, and the Chippewa Rod and Gun Club (Figure 19).

Figure 19. Key use areas of Lake Wissota.

Surface Use Ordinances. While all of Wisconsin's lake ordinances should be understood and followed by boaters, two in particular should receive special attention on Lake Wissota. The first deals with slow no-wake and the second with personal watercraft (PWC).

Wisconsin Act 31 designates a slow no-wake zone for all motorboats within 100 feet of the lake's shoreline beginning February 24, 2010. This is a state designation and applies to all Wisconsin lakes.

Sect. 30.66(3)(b) states that personal watercraft (PWC) cannot operate within 100' of another craft or 200' of the shoreline of a lake and cannot operate within 100' of a boat towing a skier, the ski rope, or the skier (WDNR 2007).

Slow no-wake problem areas for Lake Wissota include the Hwy X bridge between the Lake Wissota main body and Little Lake Wissota as well as the Lake Wissota State Park area between the Lake Wissota Main Body and Moon Bay (Cody Adams, pers. comm., 2009). Boaters should take extra

care to follow slow no-wake rules in these areas.

Watershed Description

The Lake Wissota watershed, as defined here, encompasses 5,548 square miles of land. **The land use activities occurring within those 5,548 square miles will directly affect water quality in Lake Wissota.** For the purposes of this aquatic plant management plan, only a small portion of the entire basin is being considered. The watershed focus region reaches north to encompass Cornell Flowage, east to the eastern edge of the Chequamegon Waters Flowage, west almost to Bloomer, and south to just over the Eau Claire County border (Figure 20). This watershed includes the sub-watersheds of 19 creeks whose waters eventually combine and drain into Lake Wissota.

Watersheds. The watersheds of Lake Wissota, as determined by the WDNR, are McCann Creek /Fisher River and Lower Yellow River as depicted in Figure 20.

Subwatersheds. The subwatersheds included in Figure 21 are similar to those depicted by the WDNR, but are based on the United States Geological Survey Hydrologic Unit Codes (HUCs). These subwatersheds are slightly different than the WDNR watersheds and are broken down into smaller sections. The subwatersheds include: McCann Creek, Marsh-Miller Lake-O'Neill Creek, Bob Creek, French Creek-Chippewa River, Buck Creek-Fisher River, Pike Creek, Witt Flowage-Fisher River, Elder Creek, Yellow River, Play Creek, Otter Creek, Lotz Creek-Yellow River, Big Drywood Creek, Little Drywood Creek, Old Abe Lake-Chippewa River, Jim Creek-O'Neill Creek, Lake Wissota, South Fork of Paint Creek-Paint Creek, and Sherman Creek-Paint Creek.

Land Cover. Land cover within the Lake Wissota watershed will directly influence water quality in the lake, as water flowing off of the land in the watershed will pick up nutrients, sediment, and potential pollutants as it flows to the lake. Within the watershed are 15 different land cover types including: water, developed open space, developed low intensity, developed medium intensity, developed high intensity, barren land, deciduous forest, evergreen forest, mixed forest, shrub/scrub, grassland/herbaceous, pasture/hay, cropland, woody wetlands, and herbaceous wetlands. The most prominent cover type in the watershed is deciduous forest (38.75%) followed closely by cropland (38.47%) (Figure 22). The distribution of the two dominant cover types is such that the deciduous forest land is more dominant in the northern part of the watershed, while the cropland is more dominant in the southern part of the watershed, especially near Lake Wissota. Developed land (high, medium, and low) makes up 0.73% of the watershed land cover, while wetlands (woody and herbaceous) make up 9.57%.