

Lake Koshkonong Lake and Wetland Survey

October 17, 2008

Observers: Stephen Hjort and Stanley Nichols, PhD

Conditions: 9 am cloudy, calm winds @ 38° F

Hjort and Nichols observations at the following locations.

Haight's Bay Shallow Marsh (approximate location of Lake Study Plot)



The top photograph is of the approximate location of the Lake Study Plot and the bottom photograph is of the short point east of the Lake Study plot. The rock armor that was placed during the \$10K grants is still in place and working as a shoreline stabilization structure. Haight's

Bay normally contains a substantial area vegetated by sago pondweed but no submergent or emergent plants were observed outside of the armoring during the survey.

The Lake Study Plot was dominated by river bulrush and is vegetated out to the rock armor. The monotypic river bulrush community contrasts to other years studied and reflects extended flooding conditions that created an inundation amplitude and duration that selected for species that could survive high water conditions. Previous studies typically included numerous obligate and facultative wetland species in this area. The extended flooding essentially ‘drowned out’ the normal assemblage of species.

The absence of leaves on the lower portion of the sandbar willow in the second photograph shows the amplitude of floodwaters along the armored point. The willow survived the flood however the lower portions are likely permanently damaged.

Vinne Ha Ha Floodplain Forest (approximate location of Lake Study Plot)



This Lake Study Plot looks similar to previous studies and the extended high water level is evident by the horizontal line of leaves and watermarks on the trees. It appears that additional sand and gravel was deposited along this shoreline similar to high water years of the recent past. It appeared that there was ponded surface water approximately 100 meters east of the shoreline. This area was previously an ephemeral pond. This lake area normally contains a substantial area vegetated by sago pondweed but no submergent or emergent plants were observed during the survey.

## WDNR Public Land Shoreline



The lakeward or leading edge of the shallow marsh area does not appear to have been eroded by the high water. This lake area normally contains a substantial area vegetated by sago pondweed but no submergent or emergent plants were observed during the survey.

## Blackhawk Island Southern River Mouth Floodplain Forest



Numerous tip-overs were observed and there was loss of some of the former leading edge trees on the point. The amount of acreage lost is uncertain but numerous tree stumps and large branches were noted.

## HAI Wetland



The shallow marsh appears to have lost a large amount of cattail and the open water area has increased significantly. Numerous cattail bogs settled on top of the rock armor after water levels receded.

Carcajous Shallow Marsh (approximate location of Lake Study Plot)



The shallow marsh plant community was similar to Haight's Bay in density and limited species diversity. It appears that the lakeward or leading edge of the shallow marsh plant community has extended lakeward towards the rock armor and is comprised of river bulrush and cattail. The rock armor cut has silted in (right central portion of photograph) to the approximate elevation of the rock armor. Sandbar willow colonized portions of the rock armor.



Photograph of rock armor extending west towards Carcajou Point. Rock armor appears to be maintaining position and effectiveness.

Carcajou Floodplain Forest (approximate location of Lake Study Plot)



The Lake Study Plot was not armored and showed evidence of continued erosional losses. Extreme high water mark (top of gray) and extended high water mark (white line) are easily observed on trees. Scattered sago pondweed was observed in this area of the lake.

Rock armor along the western Carcajou shoreline appears to be effective for shoreline maintenance and reduction of tip-overs.



The Gilberts Bay wetland complex appears to be similar in appearance to other shallow marshes with less species diversity at the lake edge than in the past and with the rock armor being colonized by sandbar willow.



In summary, the flood of 2008 moved the wetland transition zone away from the lakeshore and has greatly reduced the density and diversity of submergent and emergent species in the lake. High, often times turbid water, have this expected effect on a shallow lake such as Lake Koshkonong. The “potato rolls” and rock armoring appear to be functioning as intended by protecting shoreline wetlands. Siltation behind the armoring will allow more emergent species to invade as the areas become shallower. Sandbar willow and other species invading the top of the armoring will further stabilize and protect it from further floods and wave action. Because of trespass on private property we did not survey changes that may have occurred at the “back end” or the outer reaches of the flood stage water levels that were likely in an upland position.

