Rock-Koshkonong Lake District
2009 Lake Study Report

On June 17, 2009, Stephen Hjort and Stanley Nichols of Eco-Resource Consulting (ERC) conducted the first lake study of 2009. The USGS water level gage data on that day was 777.34 msl.

The lake survey began at approximately 9:00 AM with overcast skies and light northeast winds 5-10 mph. Later in the morning into the early afternoon winds diminished to 2-5 mph and skies became partly cloudy.

ERC staff collected Secchi depth readings at numerous locations and made visual accounts of aquatic plants at various locations around the lake. The following time log describes the observations at these locations.

9:30 AM Lautz Bay (central area) GPS – N 42.85396 W 88.96008
Secchi Depth – 2.0' Total Depth 2.8' Green in color
Approximately 20% coverage of sago pondweed
(*Stuckenia pectinatus*)

9:40 AM Near outlet structure of dike was an expansive white water lily bed (*Nymphea odorata*) that appeared similar in size and shape as previous observations. Water was very clear inside lily pad bed (could see bottom throughout) with other submergent aquatics noted, coontail (*Ceratophyllum demersum*), flatstem pondweed (*Potamogeton zosteriformus*), small duckweed (*Lemna minor*), water-meal (*Wolffia columbinia*), water smartweed (*Polygonum amphibium*), sago pondweed (*Stuckenia pectinatus*), curly leaved pondweed [CLP] (*Potamogeton crispus*) and river bulrush (*Scirpus fluviatilis*).

Photograph 1 below was taken north of the outlet structure looking south. Photographs 2 and 3 were taken from the same locations looking west and east respectively.

Photograph 1

Photograph 2

Photograph 3

10:10 AM Bingham's Bay (central area) GPS – N 42.85671 W 88.95129
Secchi Depth – 1.8' Total Depth 5.1' Green in color
No submergent or emergent aquatic vegetation observed.

10:30 AM Haight's Bay (central area) GPS – N 42.85820 W 88.93265
Secchi Depth – 2.3' Total Depth 3.5' Brown in color
Scattered sago pondweed, < 10% coverage

10:45 AM ERC staff proceeded into open water slough that trends east and south from Haight's Bay. Water very clear and submergent aquatic vegetation (SAV) much denser than in previous observations. SAV similar to Lautz Bay with addition of wild rice (*Zizania aquatica*) in significant density and distribution.

11:00 AM ERC staff proceeded into Otter Creek slough and made similar observations of SAV and clear water.

11:15 AM ERC staff proceeded into Haight's Bay backwater area to observe former Lake Study Plot but density of SAV, mainly sago pondweed,

caused outboard to overheat and necessitated return to deeper water of main lake. $10K Wetland Restoration grant riprap was not observable due to distance from shore and elevated water levels.

11:30 AM Gilbert's Bay (WDNR-owned) GPS N 42.88982 W 88.90900
Photographs below include shoreline photos of the remnant ice shove berm between black willow trees (Photograph 4) and shoreline north of (Photographs 5 & 6), and shoreline south (Photograph 7).

Photograph 4

Photograph 5

Photograph 6

Photograph 7

It appeared that significant erosion of this shoreline has occurred since ERC staff last visited this area in 2005. Shoreline plants observed included river bulrush, water smartweed, sandbar willow (*Salix exigua*) and black willow (*Salix nigra*).

Gilbert's Bay contained a sizable sago pondweed bed similar in size and extent as previously observed.

12:00 PM	Mouth of Rock River Secchi Depth – 1.0'	GPS N 42.88940 W 88.91574 Total Depth 4.2' Green in color
12:15 PM	Stinker's Bay (central) Secchi Depth – 2.0' No SAV observed	GPS N 42.90637 W 88.94322 Total Depth 3.0' Greenish brown color
12:20 PM	HAI (riprap area) The open water area north of the riprap has increased significantly since 2005. Water smartweed and river bulrush were observed on the backside of riprap and sago pondweed in backwater area. Photographs 8 and 9 below were taken south of the riprap looking northwest and northeast respectively.	

Photograph 8

Photograph 9

12:30 PM Carcajou Bay GPS N 42.88725 W 88.97049
Secchi Depth – 1.0' Total Depth 4.0' Green in color
Scattered sago pondweed observed.

Carcajou Shallow Marsh area behind riprap appears to be extending lakeward from former shoreline. Some sandbar willow present along riprap. Photographs 10 and 11 below were taken from south of the riprap looking west and east respectively.

Photograph 10

Photograph 11

12:45 PM Carcajou Floodplain Forest. Photograph 12 below is the location of the former Lake Study Plot. Continued tree tip-overs evident at this location.

Photograph 12

1:00 PM Crescent Bay (central) GPS N 42.88478 W 88.99478
Secchi Depth – 2.0' Total Depth 2.3' Green in color
Scattered sago pondweed observed in depths of ≤ 3.0 feet of water. Photographs 13 and 14 below were taken from south of the Crescent Bay Hunt Club riprap looking north and northwest respectively.

Photograph 13

Photograph 14

Summary

ERC staff observations were made on a day when water levels were well above the summer operating level at 777.34 msl. It appears that the $10K Wetland Grant riprap projects have been successful in reducing erosion and facilitating aggradation of sediment landward of the riprap and the subsequent revegetation of the trapped sediment. The significant erosion observed at the WDNR shallow marsh ice shove berm is a cause for concern. The timing and cause of this erosion is not known but is likely a result of the extended flooding event of 2008 and its location on the typical windward side of the lake or again this year with extended high water levels and prevailing southwest winds.

Water clarity was relatively good for Lake Koshkonong at this time of year and is similar to historical Secchi readings during high water levels. There appeared to be a decrease of carp spawning activity observed during this survey in the lake and bays.

ERC recommends that RKLD secure trespass permission from landowners to gain access for more in-depth study at various locations around the lake.