

DATE: February 15, 2010

FILE REF: McDill EWM

TO: Tim Asplund - Madison
Scott Watson - Wausau
Buzz Sorge - Eau Claire
File - Wisconsin Rapids

FROM: Scott Provost

SUBJECT: 2,4-D residue results for McDill Pond

Following the winter (2008-09) drawdown on McDill Pond, Portage County, and the aquatic plant survey did not detect Eurasian Watermilfoil (EWM). However EWM was found after the survey in August by our partners who were training citizen volunteers. The EWM that was found were young plants and infrequent in distribution, suggesting new growth later in the year.

DNR, McDill Lake District and Golden Sands R,C & D, anticipated that some EWM would survive the winter drawdown and would need to be removed via manual removal or with herbicides depending on distribution and depth. After locating EWM stands, manually removal was conducted by McDill Lake District. Other areas too large or too deep to be removed via manual means, 2,4-D was applied by Northern Environmental in August 29, 2009 (see attached map).



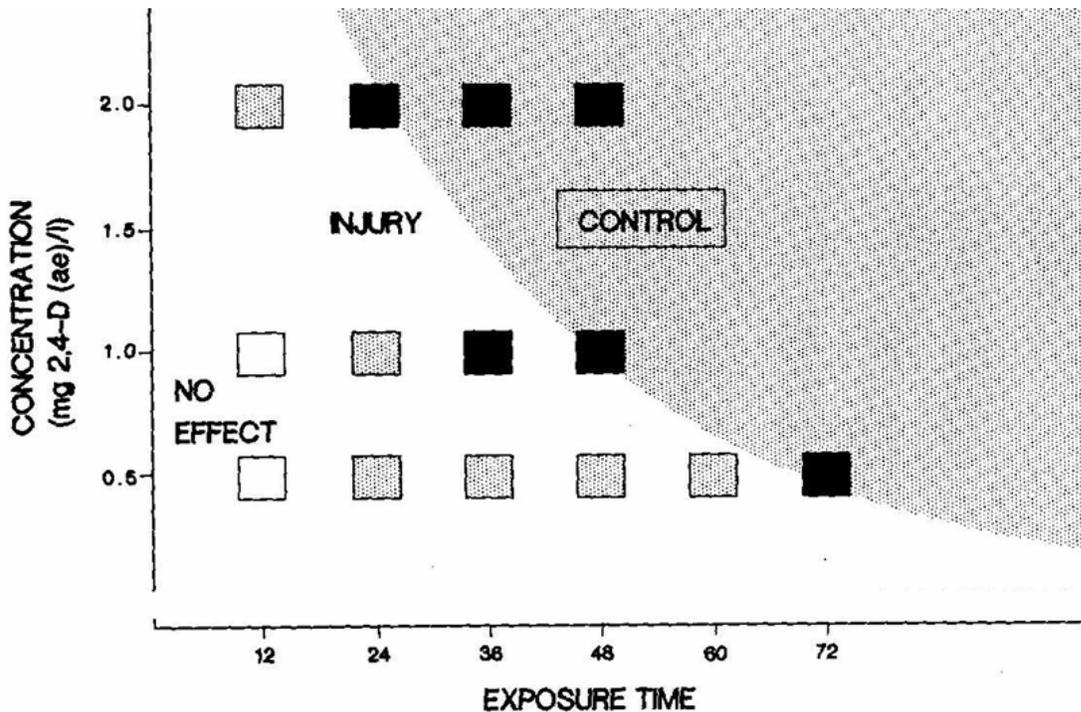
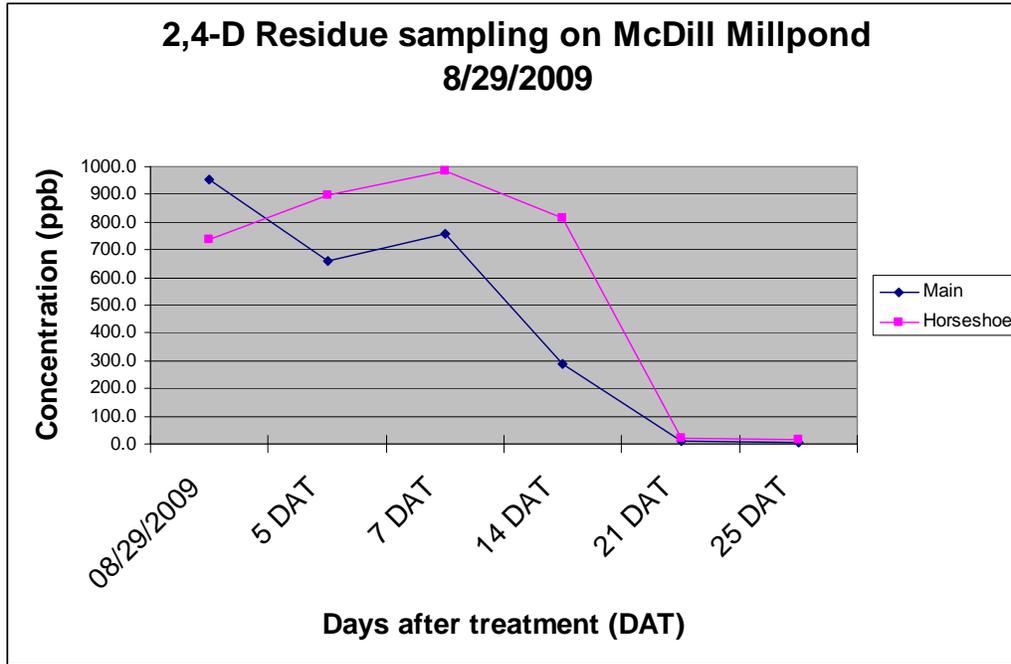
Due to the sporadic occurrence in the channel (Horseshoe) and high potential of fragmentation by boat traffic, it was determined that the entire area should be treated to increase efficacy. Liquid 2,4-D was injected throughout the entire area at a rate of 0.75 mg/l. Although below the label recommendations, current research from Army Corps of Engineers (ACOE) shows the rate would be sufficient.

Three areas in the main channel were applied with granular 2,4-D at a rate of 150#/acre (to reach target of 1 mg/l). Granular was used because of expected spot treatment scenarios and possible product migration due to current.

Concerns over potential product migration impacts on the efficacy of 2,4-D triggered monitoring requirements from DNR. A sampling scheme was designed to monitor the fate of 2,4-D residue in the treatment areas and approved by the ACOE. Two points were sampled the day of treatment then 5, 7, 14,

21 and 25 days after treatment (DAT). Samples were obtained by volunteers from the McDill Lake District. All samples were preserved with HCl and refrigerated after acquisition. Samples were then shipped to the ACOE lab by WDNR.

Results of the residue analysis show that migration in the Horseshoe Channel and Main Channel did occur, however rates of 2,4-D were at sufficient levels over appropriate exposure time to be lethal to EWM. McDill residue samples are graphed below as well as an exposure graph for 2,4-D.



For both treatment areas concentrations were above 0.5 mg/l for 14 DAT, which is well above the required exposure time for effective EWM control. The increase in concentration in the Horseshoe Channel shows is most likely due migration of product through the small channel by current. Between 14 and 21DAT a sharp decrease in residue occurred. A series of storm events caused an increase of flow, which had a flushing effect of the Millpond. By 21 DAT concentrations were at 21.05 ug/l and 9.5 ug/l for the Horseshoe Channel and Main Channel respectively, which are well below the drinking water standard of 70 ug/l.

Several conclusions unique to McDill Millpond can be drawn from this project.

- 1) The applicator delivered product at the correct locations and very close to target concentrations.
- 2) The herbicide in both areas, were of sufficient concentrations and exposure time to be effective.
- 3) Regardless of the storm events, the herbicide had sufficient concentration and time to be effective.