

## DuPage River Salt Creek Workgroup Members and Executive Board

### Agency Members

Village of Addison  
Village of Arlington Heights  
Village of Bartlett  
Village of Bensenville  
Village of Bloomingdale  
Village of Bolingbrook  
Village of Carol Stream  
Village of Downers Grove  
Downers Grove Sanitary District  
DuPage County  
Elk Grove Village  
City of Elmhurst  
Glenbard Wastewater Authority  
Village of Glen Ellyn  
Village of Glendale Heights  
Village of Hanover Park  
Village of Hinsdale  
Village of Hoffman Estates  
Village of Itasca  
Village of Lisle  
Village of Lombard  
Metropolitan Water Reclamation District of Greater Chicago  
City of Naperville  
City of Northlake  
City of Oakbrook Terrace  
Village of Roselle

### Agency Members

Salt Creek Sanitary District  
Village of Schaumburg  
Village of Villa Park  
City of West Chicago  
Village of Westmont  
City of Wheaton  
Wheaton Sanitary District  
City of Wood Dale  
Village of Woodridge

### Associate Members

Baxter Woodman, Inc.  
CDM, Inc.  
The Conservation Foundation  
ENSR  
Forest Preserve District of DuPage County  
Hey and Associates, Inc.  
Huff & Huff, Inc.  
Illinois Department of Transportation  
Kabbes Engineering, Inc.  
Prairie Rivers Network  
RJN Group  
Salt Creek Watershed Network  
Sierra Club, River Prairie Group  
Strand Associates, Inc.  
Wight & Company  
York Township Highway Department

### Executive Board

President  
Kevin Buoy, *DuPage County Public Works*  
Vice President  
Dave Gorman, *Village of Lombard*  
Secretary/Treasurer  
Antonio Quintanilla, *Metropolitan Water Reclamation District of Greater Chicago*  
East Branch DuPage River Committee Chair  
Larry Cox, *Downers Grove Sanitary District*  
West Branch DuPage River Committee Chair  
Ross Hill, *Forest Preserve District of DuPage County*  
Salt Creek Committee Chair  
Tom Richardson, *Sierra Club*  
Monitoring Committee Chair  
Jennifer Hammer, *The Conservation Foundation*  
Members At Large  
Susan Baert, *Wheaton Sanitary District*  
Dennis Streicher, *Sierra Club*  
Steven Zehner, *Baxter & Woodman, Inc.*  
Staff  
Watershed Coordinator  
Stephen McCracken, *The Conservation Foundation*  
Water Resource Assistant  
Tara Neff, *The Conservation Foundation*

## DRSCW Awarded a Section 319 and Community Grant

In September 2010 the DRSCW received a \$227,814 section 319 grant from Illinois EPA. The funds will be used to assist with the removal of the Churchill Woods Dam on the East Branch of the DuPage River, the running of chloride reduction workshops, implementation of a data management system and the finalization of the project identification and prioritization tool.

The DRSCW has also received a \$2,000.00 Community Grant from the **Alliance of Hazardous Materials Professionals – Chicago Chapter**. The grant will be used to purchase a single-input digital multi-parameter meter equipped with a luminescent dissolved oxygen probe and conductivity sensor. The equipment will be used to improve DRSCW data management and field investigation capabilities. Many thanks to the AHMP.



DuPage River Salt Creek Workgroup

Recipient name and address

10S404 Knoch Knolls Road  
Naperville, IL 60565



## DuPage River Salt Creek Workgroup



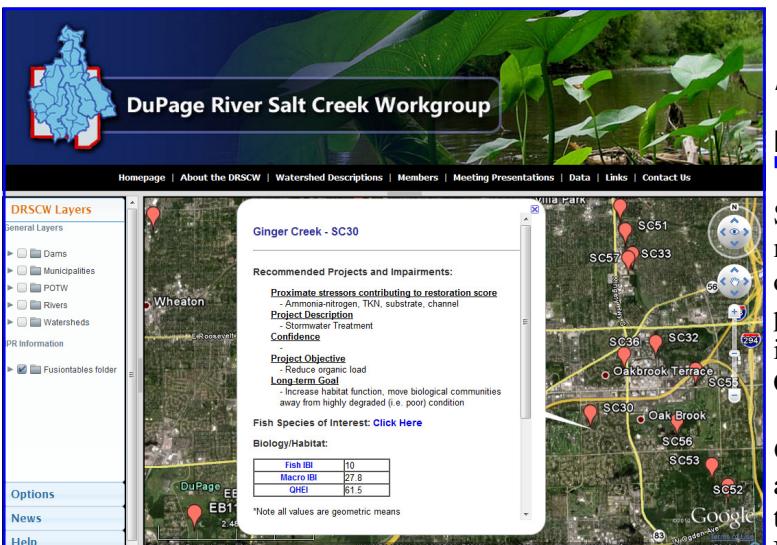
Winter 2010

### Letter from the President

Dear Members,

In addition to using this newsletter to thank you for your membership with the DRSCW, I am taking the opportunity to restate the case for our mission. In Illinois, an extraordinary level of responsibility to meet national clean water objectives is placed on local agencies; and this comes with significant costs. Wastewater infrastructure is often the single largest investment that local government makes and it has paid off (see article on the survey of the West Branch DuPage River). However, it is important that all parties working to improve surface water quality acknowledge that we are seeing decreasing returns on investment in this sector. The next stage of progress will come from improved stormwater management and in-stream improvements. The DRSCW is working to redirect investment to improving waterways and away from a treatment plant only approach, allowing local agencies and groups to engage with partners using a single, informed voice. Such an effort requires accurate, detailed information on waterways and the collaboration of all those concerned. The aim is not only to solve current mandates but also to meet biological goals directly instead of the circuitous and more expensive routes of TMDLs and tighter effluent restrictions. I believe that this approach is demonstrated in the articles presented here in the newsletter.

DRSCW members benefit from the monitoring, modeling, workshops, presentations, and professional development hours for municipal staff to help meet their NPDES permit requirements. These activities improve our knowledge of area waterways and develop expertise in addressing water quality issues. In the long term, we are facilitating a new approach to watershed management based on stakeholder cooperation, scientific analysis and project prioritization.



Thank you for your membership. *Kevin Buoy, DRSCW President*

### DRSCW Launches Web Based Data Viewer

Selected data collected during five years of local watershed monitoring is now available online (DRSCW.org). The online data includes mean values for selected water column parameters and scores for aquatic habitat and fish and macroinvertebrates from over 100 locations throughout the Salt Creek and the Upper DuPage River basins. It includes:

**Chlorides:** Salt concentrations mainly from winter deicing activities; salt does not degrade and can effect drinking water. Levels above 120 mg/l may be injurious to aquatic life.  
**BOD: Biochemical Oxygen Demand** too much can as-

phyxiate fish and macroinvertebrate populations. Controlling leaf litter, grass clippings, and soil erosion can help.

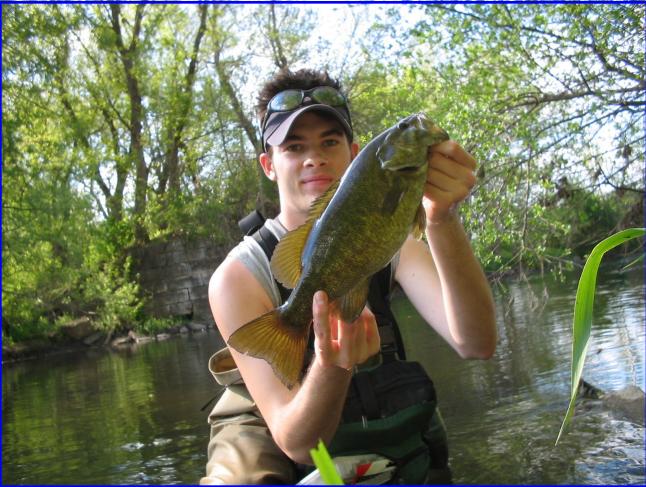
**Total Kjeldahl Nitrogen (TKN) and Ammonia:** nutrients can cause algae blooms which can create dissolved oxygen problems but ammonia can have direct toxicity. Maintaining grassy buffer areas on streams and tributaries and using fertilizer appropriately can help. Ammonia above 0.15 mg/l may be injurious to aquatic life as may TKN above 1.0 mg/l.

**TSS: Total Suspended Solids** is positively correlated to the presence of polycyclic aromatic hydrocarbons concentrations and metals. Totals above 22,000 mg/l may be injurious to aquatic life.

**MIBI: Macroinvertebrate Index Bio integrity** a composite score for size and diversity of a number of macroinvertebrate species. Typical MIBI scores in the area range from 10 – 40 (higher values are better).

**FIBI: Fish Index Bio integrity** a composite score for size and diversity of a number of fish/vertebrate species. Typical FIBI scores in the area range from 10-25 (higher values are better).

**QHEI: Qualitative Habitat Evaluation Index** a composite score of a number of key habitat values (condition of banks and the stream channel). Values in the area typically range from 35-85 (higher values are better).



## **2009 Survey West Branch DuPage River**

Macroinvertebrates improved on the West Branch of the DuPage River between 2006 and 2009 according to the data collected by the second DRSCW Bioassessment survey of the basin. The survey, conducted during the summer of 2009, found that macroinvertebrates (for the purpose of this study essentially aquatic insects) improved at select locations on the main stem of the West Branch of the DuPage River, most notably, the section downstream of Kress Creek. The reason for this was almost certainly the comprehensive habitat reconstruction work performed by Tronox in association with the thorium clean-up project. This work was done in close cooperation with the Forest Preserve District of DuPage County and DuPage County during the last few years, and was completed for the Kress Creek area in 2008. The work, restoring the river's bottom, riparian vegetation, meanders and riffles appeared as strong improvements of the river's habitat scores recorded by the study. Why

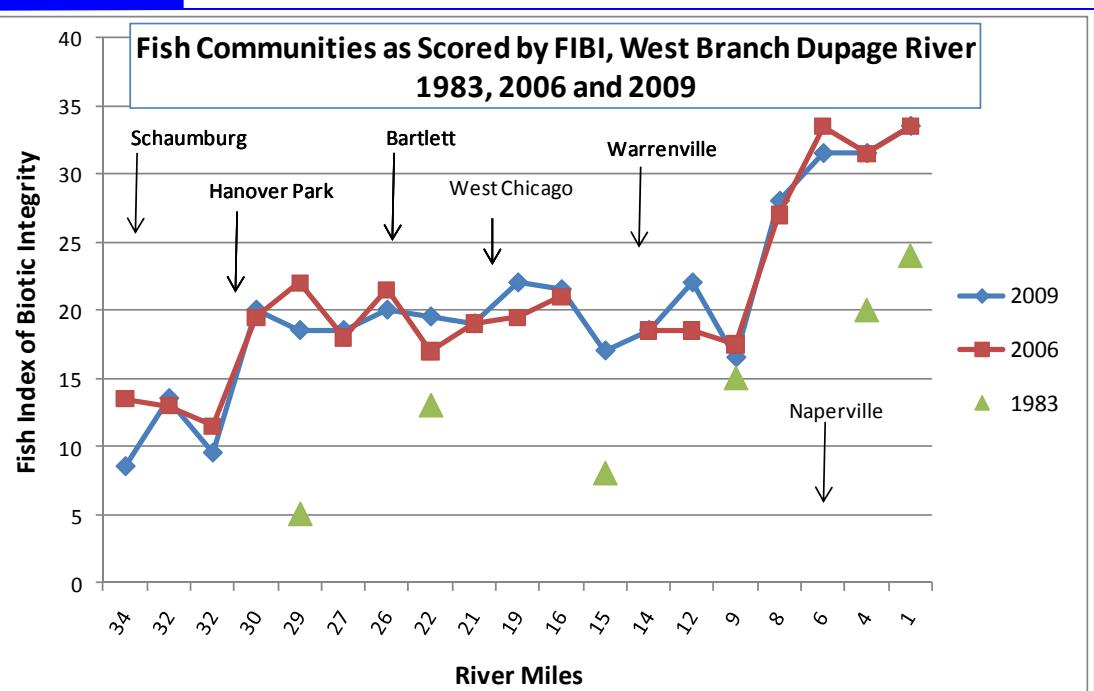
no matching improvement in fish? There are two likely explanations: macroinvertebrate populations react more rapidly to changes than do those of fish and fish movement upstream is impeded by a number of dams in Warrenville and north of Naperville.

Interestingly, macroinvertebrate populations fell in the small streams tributary to the West Branch. The most likely explanation was the increase in chloride (salt) concentrations recorded in 2009. Snowfall total for 2005-2006 in Chicago was 26.0 inches, compared to 52.7 inches for 2008-2009. More snow means more snow fighting operations; that means more salt. Confirming this, summer chloride concentrations were higher in the smaller streams.

For the watershed as a whole, the only section of the West Branch that meets the Illinois Environmental Protection Agency's standard for aquatic life is the eight-mile reach downstream of the Fawell Dam in Naperville. Despite these improvements, a combination of urban stormwater pollution, organic enrichment, poor habitat and the presence of dams means that aquatic communities in the rest of the mainstem and tributaries continue to receive a failing grade. However, with that fact in mind, the medium term trend for aquatic life would appear somewhat positive (see below). The full report is available at

### **Improvements Can Make a Difference**

While the surveys did not find an improvement in West Branch DuPage River fish populations between 2006 and 2009, a positive long term trend can be found by comparing the modern data to those of earlier decades. Graph 1 shows the 2006 and 2009 DRSCW data along with data from 1983\* adapted into the modern Fish Index of Biotic Integrity score (FIBI, a basket of observed values measuring fish diversity and well being). Clearly the information suggests that fish communities, as measured by FIBI have improved dramatically since the early 1980's. The 1983 communities contained a higher percentage of tolerant species (continued)



*Graph 1. Fish Index of Biotic Integrity (FIBI) scores plotted by river mile for the main stem of West Branch DuPage River, 1983, 2006 and 2009. The locations of municipalities are shown for reference. An FIBI score of 41 corresponds to the benchmark goal for excellent quality streams. Scores less than 21 are considered severely degraded.*

(from page 2) than the 2006 and 2009 surveys, and species like stonecat, smallmouth bass and hornyhead chub were either rare or completely absent. By 2009 those species were relatively common and abundant. Why? The most likely explanation is the huge improvement in wastewater infrastructure and practices in the 1980s following adoption of the Clean Water Act. To further increase the diversity and numbers of fish in our waterways will require targeted investments in habitat and stormwater management, variables that best explain why fish populations are limited today.

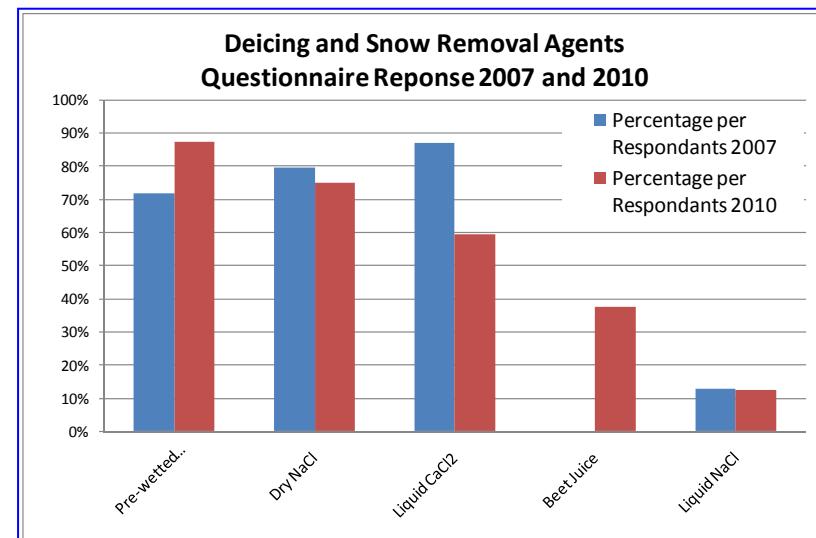
\*Source Ludwig, D. R., S. J. Gilbert, and C. K. Metcalf. 1987. A survey of the fish populations within the Forest Preserve District of DuPage County (1985 and 1986). Forest Preserve of DuPage County.

## **Winter Salt Use**

In September the DRSCW, in association with DuPage County and the American Public Works Association held two annual chloride reduction workshops. The first workshop benefitted private operators responsible for clearing sidewalks and parking lots; the second workshop targeted public agencies responsible for clearing public roadways. The workshops focused on water quality concerns from salt, best management practices, alternative products, and anti-icing methods that could reduce chloride loads in local waterways while potentially reducing operational costs.

The public roadways workshop included a hands-on calibration demonstration. A number of trucks with an array of equipment for both open and closed loop systems were provided by DuPage County DOT and Monroe Trucking. Different snow-fighting methods require different equipment, and participants had the opportunity to check out the latest technology and network with other operators. Attendance by municipal staff can be used to help meet the educational requirements for National Discharge and Elimination System permits (NPDES). All participants were awarded a certificate of attendance.

A number of private snow-fighting operators attended both workshops. They were able to benefit from not only the hands-on calibration demonstration, but also from the program components designed for private operators. Private operators had the opportunity to take a certification test at the conclusion of the workshop. Those who passed the test will be recognized on the DuPage County Stormwater website. Private operators contribute a large percentage of salt use in our region (consider the space covered by parking lots and walkways at shopping malls, colleges and universities, strip malls, etc.). Reductions in salt use by the private sectors is critical to the success of the program.



*Graph 2. Area use of beet juice grew by 38% during the last three years. The practice of pre-wetting also showed significant increases. The use of CaCl<sub>2</sub> (Calcium Chloride) fell during the period*



*The DRSCW Public Road Chloride Reduction Workshop 2010*

The DRSCW has been reviewing the impacts of its chloride reduction efforts over the last few years (graph 2). A 2010 Deicing Program Survey was distributed to approximately eighty agencies throughout the watersheds, a follow up to a 2007 survey. The surveys were designed to track adoption of best management practices (BMPs) by local municipalities. BMPs include pre-wetting of solids, anti-icing practices and improved storage and handling. According to the survey results the following watershed communities made improvements to their program during the last three years: Addison, Aurora, Bartlett, Bensenville, Bloomingdale, Carol Stream, Downers Grove, DuPage DOT, Elmhurst, Glen Ellyn, Glendale Heights, Hanover Park, La Grange Park, Lisle, Lombard, Milton Township, Naperville, Oak Brook, Palatine, Roselle, Streamwood, Villa Park, Warrenville, West Chicago, Wheaton, Winfield Township, Wood Dale, Woodridge and York Township.