Citizen-Based Monitoring Partnership Program Grant Final Report

Developing a Volunteer Wetland Monitoring On-Line Guidance Manual

Organization

Rock River Coalition

Project leaders

Suzanne Wade UW-Extension Rock River Basin Educator/Rock River Coalition Board
Patrice Kohl, contractor

Abstract

The goal of the project is to develop an electronic volunteer monitoring guide for groups interested in monitoring local wetlands based on the protocols and successes of the Rock River Coalition's five year monitoring effort at Lake Mills Wildlife Area, Zeloski Marsh Restoration in Jefferson County and the Water Action Volunteer Marsh Monitoring Program.

The methods used for monitoring the Zeloski marsh has wide relevance to other southern Wisconsin marsh/prairie complexes. Especially where there is a place-based group, i.e. a Friends Group, interested in surveying their area.

Introduction/Goals

The wetland monitoring protocols used by the Rock River Coalition at Zeloski Marsh will be documented. These protocols would then be described in detail and incorporated into a web-based document, allowing other groups could utilize them to monitor their local wetlands.

Study Period:

June 2010 – February 2011

Study Area:

Zeloski Marsh was the initial focus, but the protocols were vetted for state-wide use.

Methods

1. A coordinator for the project, Patrice Kohl, was hired by the Rock River Coalition. Her tasks included:
    a. Review protocols established under a 2004 - 2005 Citizen Based Monitoring Grant for wetland monitoring and to compare these early protocols against current practices.
    b. Interview monitoring participants and past and present wetland monitoring coordinators on specific protocols utilized, issues, and strategies used to overcome problems.
    c. Interview DNR and other professional wetland staff to discuss protocols for using volunteers in monitoring wetlands. Enlist their help in editing documents.
    d. Develop a wetland monitoring guide for use by individuals and groups in state of Wisconsin wetlands which would include:
        i. Overview of specific monitoring protocols for wetlands with either a detailed description or a brief description and a link to a website. For example, the protocol for monitoring dragonflies would be detailed, but the protocol for monitoring streams would be brief and would include a link to the Water Action Volunteer website.
        ii. Review of the difficulty or specific knowledge needed to undertake each protocol.
        iii. Equipment needed, including any specific recommendations or criteria, such as binocular focal distance for dragonfly monitoring or type of nets for butterfly monitoring
        iv. Where to record data ie WAV database or eBird and how to access data.
        v. Contact information
    e. To promote this on-line wetland monitoring guide with other groups and individuals.

2. UWEX/UW Madison Environmental Resources Center graphics department contracted to develop website and individual factsheets
3. Decision made to host the website on a UWEX server rather than RRC server as would convey the message that the program has wider use than just in the Rock River Basin. Also it was felt it would be easier to make changes in the future if the website was hosted as part of the Environmental Resources Center.

Products, results or benefits

The Volunteer Wetland Monitoring Guideline published online at http://wetlandmonitoring.uwex.edu in May 2011.

Nine fact sheets were developed including ones on: frogs and toads, invasive plants, dragonflies and damselflies, butterflies, birds, small mammals, macroinvertebrates and water quality.

Screen shot of home page:
http://wetlandmonitoring.uwex.edu

Below: graphic of all nine factsheets front pages.

Below are the first three pages of the Odonata factsheets. All of the factsheets can be uploaded from the website.

Monitoring your Wetland

a primer to site-level monitoring activities for volunteer coordinators

Dragonflies & Damselflies

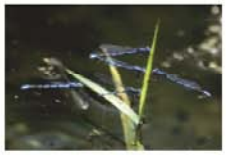
(*Odonata*)

If while walking through a wetland on a warm summer day, you notice only two insects besides the mosquito, there's a good chance one will be a butterfly and the other an odonate.

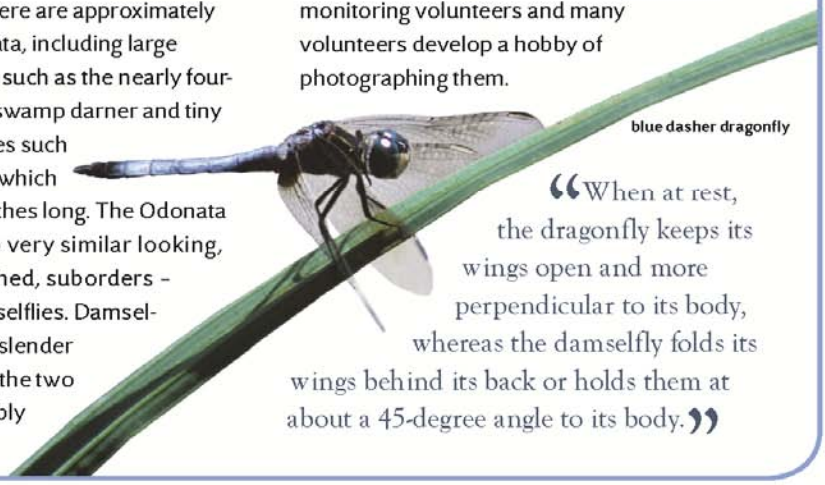
Both are large, easy to recognize and often display eye-catching colors and patterns. While amateur entomologists often fall under the spell of soft-winged, nectar-feeding butterflies, some find the ethereal beauty and nature of the odonate even more enchanting. With their long translucent wings, Odonata can hover, quickly accelerate in any direction and maneuver precisely to capture prey. And an odonate's large compound eyes and grapple of slender legs allow it to deftly snatch moving prey from the air.

In Wisconsin, there are approximately 160 species of Odonata, including large conspicuous species such as the nearly four-inch-long blue-eyed swamp darner and tiny inconspicuous species such as the elfin skimmer, which measures just 0.8 inches long. The Odonata are divided into two very similar looking, but easily distinguished, suborders – dragonflies and damselflies. Damselflies tend to be more slender than dragonflies, but the two suborders are probably most easily distinguished from each other by their wings. When at rest, the dragonfly keeps its wings open and more perpendicular to its body, whereas the damselfly folds its wings behind its back or holds them at about a 45-degree angle to its body.

A great deal remains unknown about the distribution of and critical habitats for Odonata species in Wisconsin and there are few Odonata experts available to survey the state's 72 counties. Volunteer monitors can help experts fill informational gaps and engage in a rewarding monitoring activity. Odonata readily capture the imagination of monitoring volunteers and many volunteers develop a hobby of photographing them.



familiar bluet damselflies



blue dasher dragonfly

> "When at rest, the dragonfly keeps its wings open and more perpendicular to its body, whereas the damselfly folds its wings behind its back or holds them at about a 45-degree angle to its body."

This publication is part of a *Monitoring Your Wetland* series available online in pdf format at:
wetlandmonitoring.uwex.edu

About Dragonfly & Damselfly Surveys

Odonata have a three-stage life cycle – an egg stage, larval stage and adult stage. The presence of Odonata species in a wetland can be determined by identifying specimens in the larval or adult stages. Presence can also be detected by collecting and identifying exuviae – the larval exoskeletons Odonata leave behind when they become adults. Identifying adult Odonata is the easiest and most common method used for surveying. Even in the adult stage, identifying Odonata is difficult and volunteers who want to contribute to a thorough wetland inventory of Odonata species or to state Odonata distribution data will need to make an ambitious effort to become familiar with species.

> "Every two years or so, a volunteer or naturalist will discover a species not yet documented in Wisconsin."

The most accessible volunteer wetland Odonata monitoring activity is the creation of an inventory of Odonata species. An Odonata species inventory can help monitoring volunteers better characterize your wetland. Also, when inventory data collection is done well, the data can be submitted to state Odonata experts to help them understand the distribution of species and their habitats throughout the state. Finally, you never know when a volunteer may discover something entirely new. Every two years or so, a volunteer or naturalist will discover a species not yet documented in Wisconsin.

The information in the supplies and equipment, participant and methods sections of this publication is designed to help volunteers maximize detection and accurate identification. This will ensure volunteer-collected data results in as complete an inventory as possible. It will also increase the likelihood that collected data will help Odonata experts better understand Wisconsin Odonata species distribution.

Survey Participants

Capturing, photographing and preparing samples is relatively easy, but identifying Odonata down to species or even genus is difficult. In order to gather useful data, monitoring group members should be able to identify at least the most common species of Odonata likely to be present in your wetland. At the very least, the team leader should have at least one year's experience in identifying Odonata and using the Wisconsin Odonata Survey database.

With more than 160 species of Odonata to identify, becoming competent in Odonata identification will take time and effort. But volunteers can have a lot of fun observing and photographing Odonata, without knowing many species. When volunteers begin to get familiar with common Odonata species, they are reaching the point where they can contribute useful information. A really inspired Odonata monitoring volunteer might expand their contribution to Odonata research by cultivating a relationship with Wisconsin Odonata Survey experts, who sometimes recruit ambitious volunteers to participate in their research projects.

There is no minimum or maximum number of volunteers needed to conduct Odonata surveys in a wetland. The more eyes there are looking for Odonata in your wetland, the more likely you are to detect the full spectrum of Odonata species using it. But even just one dedicated volunteer can gather valuable and useful data.

DRAGONFLIES


Common Whitetail

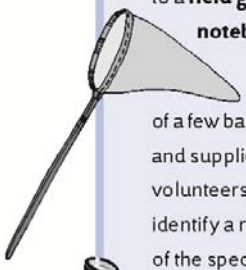

Four-spotted skimmer


Dot-tailed whiteface (juvenile)


Yellow-legged meadowhawk

Supplies and Equipment

Volunteers can get by with minimal supplies when monitoring Odonata. Absolutely necessary Odonata monitoring supplies could probably be pared down to a **field guide**, **pencil** and **notebook**.



However, the addition of a few basic pieces of equipment and supplies can greatly enhance volunteers' ability to detect and identify a representative sample of the species present within your wetland. These might include equipment and supplies that enable volunteers to get a closer look at specimens, such as an **insect net** and **waders** for capturing and a **10X loupe magnifying glass** for inspecting captured Odonata. Volunteers can capture Odonata using an insect net with a hoop measuring anywhere from 10 to 15 inches wide. Smaller hooped nets are lighter, but require more skill.

Then there are supplies for identifying and documenting specimens. In addition to a field guide, pencil and notebook, volunteers might want supplies and equipment that allow them to recruit the help of Odonata experts in identifying specimens. For novices just beginning to learn to identify species the best tool for this is a **digital camera**. With a digital camera, volunteers can send pictures to experts for identification assistance. Most popular point-and-shoot digital cameras have macro features sufficient for taking the close-up pictures needed for identification.

Volunteers with more advanced identification skills might also want supplies for preserving specimens they recognize as unusual, but cannot identify. For specimen preservation, volunteers will need, at a minimum, **acetone** for preservation and envelopes in which to keep preserved specimens. **Glassine envelopes**, like the kind used for stamps, are generally preferred. You may also want a **laboratory pen** designed to resist solvents including acetone. Writing identification notes to include with your specimen using solvent-resistant ink will ensure that your notes remain readable.

Results: Publicity

Publicity included a state-wide media release and article in Rock River Reflections newsletter. Both are included below, plus email notices and request to share were sent to Wisconsin Association of Lakes, Wisconsin Wetland Association and River Alliance of Wisconsin.

May 2011 – Statewide media release

Watching over wetlands

New online resource guides local volunteer wetlands monitoring groups

Contact Suzanne Wade, 920-674-8972, suzanne.wade@ces.uwex.edu

Jefferson, Wis.—Wisconsin's wetlands play many important roles, from providing a home to beneficial insects and wildlife to buffering the impacts of flood waters. Yet we often know little about the health of these areas and the creatures that inhabit them, according to Suzanne Wade of the UW-Extension Basin Education Initiative.

Wade and the Rock River Coalition have developed an online volunteer wetland monitoring guide at http://wetlandmonitoring.uwex.edu to aid people who want to learn more about their local wetlands.

"Monitoring Your Wetland: A Primer to Site-level Monitoring Activities for Volunteer Coordinators," was created for groups who want to establish wetland monitoring projects at local sites. It contains information and ideas for monitoring activities related to birds, small mammals, frogs and toads, butterflies, invasive plants, water quality, macro-invertebrates and dragonflies and damselflies.

"Wetlands can be tricky places to study, but by using this new website, your group can consider what the best, most relevant subjects to research are, and whether you have the necessary expertise. The site also provides guidance on how to scientifically collect data," says Wade.

The main goals of the new resource are to enable citizens to become engaged with local wetlands; to help them become familiar with the wetland's characteristics; and to contribute to statewide data about wetland species, Wade says.

The project was funded by a Dept. of Natural Resources' Citizen-Based Monitoring Partnership Program grant with support from the University of Wisconsin-Extension. The UW-Extension Environmental Resources Center will host the site.

To learn more, visit the Rock River Coalition's website at http://www.rockrivercoalition.org.

For information on Wisconsin's Basin Education Initiative, go to http://basineducation.uwex.edu/

###

Publicity: Article in Rock River Reflections newsletter – note also included screen shot of website

Rock River Coalition and UWEX Launch New Wetland Monitoring Website: http://wetlandmonitoring.uwex.edu

The call of frogs in the spring puts an exclamation mark on the importance of wetlands in Wisconsin. Yet, we often know little about who lives in an individual wetland or how healthy it is.

The Rock River Coalition has just completed an online volunteer wetland monitoring guide to help you consider what you might want to know about a wetland, and to provide guidance on how you can scientifically collect data on the flora and fauna in your wetland.

This series of nine downloadable pdf files is written for volunteer coordinators who want to establish wetland monitoring projects at the site level. These fact sheets can help groups establish monitoring activities that will accomplish one or more of the following three things – 1) allow citizens to learn about and become engaged with local wetlands, 2) characterize the wetland being monitored or 3) contribute to statewide data about wetland species. For the best results, choose monitoring activities that match your goals, resources, volunteer team skill level and wetland type.

This publication introduces monitoring activities in the eight following areas – frogs and toads, invasive plants, dragonflies and damselflies, butterflies, birds, small mammals, macroinvertebrates and water quality. With careful planning, wetland monitoring can provide a gratifying experience and foster a greater appreciation for wetlands.

The project was coordinated by the Rock River Coalition and Suzanne Wade, UW-Extension Basin Education Initiative.

It was researched and written by Patrice Kohl with technical assistance from many DNR staff and other professionals.

The project was funded by a DNR Citizen-Based Monitoring Partnership Program Grant with support from University of Wisconsin-Extension.

The website will be hosted by UWEX and the UW Environmental Resources Center: http://wetlandmonitoring.uwex.edu with links from the RRC website http://www.rockrivercoalition.org.