

Aquatic Invasive Species Monitoring Procedures

Citizen Lake Monitoring Network Training Manual

April 2007

Laura Herman

University of Wisconsin Extension



Manual prepared by:

Laura Herman
Citizen Lake Monitoring Network Lake Monitoring
UWEX
University of Wisconsin-Stevens Point
800 Reserve Street
Stevens Point, WI 54481
715-346-3989 (Stevens Point)
715-365-8998 (Rhineland)

This manual is a work in progress. This is the second year of the AIS monitoring project and we (UWEX and DNR) want to learn from the training sessions and from the volunteers. We will incorporate comments / changes that we receive at the training sessions. We will update the protocols as we learn more about the aquatic invasives being monitored and will add in new sections as new invasives move into Wisconsin.

Contributors: Sandy Wickman, Sandy Engel, Dr. Terry Peard, Jeff Maxted, Pieter Johnson, Chris Solomon, Brock Woods, Susan Knight, Scott Provost, Deb Konkel, Dick Sachs, Kris Stepenuck, Steve Galarneau, Frank Koshere, Laura Felda-Marquardt, Cathy Cleland, Meg Marshall, Jen Hauxwell, and Kelly Wagner.

Acknowledgements

Aquatic Invasive Species Monitoring Procedures is a guide for Citizens who are interested in monitoring for aquatic invasive species in the lakes they live on and on the lakes they recreate on. The Citizen Monitoring Network is sponsored and promoted by the Wisconsin Department of Natural Resources, the UW Extension and the Wisconsin Association of Lakes.



Table of Contents

Statewide Citizen Lake Monitoring Network & AIS Contacts.....	vi
Regional Citizen Lake Monitoring Network Coordinators Map.....	vii
Lake Coordinators Map	viii
Section 1: Aquatic Invasive Species Monitoring – Getting Started.....	1
Welcome to the AIS portion of CLMN.....	2
Why do Aquatic Invasive Species Monitoring.....	3
CLMN and Aquatic Invasive Species Monitoring.....	5
AIS Monitoring Flow Chart.....	7
How to set up a Monitoring Team.....	8
When to monitor	9
Section 2: Eurasian Water-milfoil Monitoring Protocol.....	11
Eurasian Water-milfoil Overview	12
Eurasian Water-milfoil Background.....	12
Eurasian Water-milfoil Identification.....	13
Eurasian Water-milfoil Life Cycle.....	15
Eurasian water-milfoil Surveys.....	16
Equipment.....	16
When to Conduct Surveys.....	17
Where Do I Look?	18
Eurasian Water-milfoil Habitat Background.....	18
Where to Start Monitoring.....	18
Whole Lake Monitoring.....	18
Mapping.....	19
GPS.....	19
What to do with Suspect Plants.....	19
Plant Density.....	21
Section 3: Curly-leaf pondweed Monitoring Protocol.....	23
Curly-leaf Pondweed Overview.....	24
Curly-leaf Pondweed Background.....	24
Curly-leaf Pondweed Identification.....	25
Curly-leaf Pondweed Life Cycle.....	26
Curly-leaf Pondweed Surveys	27
Equipment.....	27
When to Conduct Surveys.....	28
Where Do I Look?	28
Curly-leaf Pondweed Habitat Background.....	28
Where to Start Monitoring.....	29
Whole Lake Monitoring.....	29
Mapping.....	29
GPS.....	29

What to do with Suspect Plants.....	30
Plant Density.....	31
Section 4: Purple Loosestrife Monitoring Protocol.....	33
Purple Loosestrife Overview	34
Purple Loosestrife Identification.....	35
Surveys and Mapping.....	35
Control.....	35
Traditional control Methods	36
Prevention.....	36
Mechanical Control.....	36
Pulling and Digging.....	36
Chemical Control.....	37
Biocontrol.....	37
Materials for Rearing 100 Galerucella Beetles.....	40
Section 5: Rusty Crayfish Monitoring Protocol	42
Crayfish Introduction	43
Legal Information about Crayfish Harvesting.....	44
Site Selection	44
Equipment.....	45
Collection.....	46
Minnow Traps.....	46
Dip Nets, Hand Collection, Seine Net.....	47
Water Characteristics.....	48
Preservation.....	48
Recording the Results	50
Transportation.....	51
Contact Information.....	51
Section 6: Zebra Mussel Monitoring.....	52
Zebra Mussel Background.....	53
Zebra Mussel Monitoring	54
Veliger Zebra Mussel Monitoring.....	54
Adult Zebra Mussel Monitoring.....	54
Method A: Shoreline Surveys.....	54
Sampling Equipment.....	54
Shoreline Survey.....	55
Reporting Zebra Mussel Monitoring Results.....	55
Method B: Substrate Sampler Monitoring.....	56
Sampling Equipment.....	56
Placement of Substrate Samplers.....	57
Analysis of Samples for Quantitative Monitoring of Adults.....	57
Reporting Zebra Mussel Monitoring Results.....	58

Section 7: Chinese and Banded Mystery Snail Monitoring Protocol	59
Mystery Snail Background	60
Monitoring Background	60
Control Options.....	61
Identification.....	61
Chinese Mystery Snail – non-native.....	61
Banded Mystery Snail – non-native.....	62
Brown Mystery Snail - native.....	62
Monitoring Protocol.....	62
Section 8: Waterflea Monitoring Protocol	64
Monitoring Background.....	65
Waterflea Background.....	65
Volunteer Monitoring.....	66
Agency Monitoring	66
Agency Sampling equipment.....	66
Target Sampling.....	66
Frequency.....	66
Sampling Locations.....	67
Collection.....	67
Shipping samples.....	68
Decontamination procedures.....	68
Section 9: Jellyfish Monitoring Protocol	70
Freshwater Jellyfish in Wisconsin: Biology and Spread.....	71
Freshwater Jellyfish Biology.....	72
Freshwater Jellyfish Spread	73
Monitoring	74

Appendices

- 1- Glossary of Some Common Terms Used Around Lakes
- 2- Labels for Aquatic Plants
- 3- Aqua View Scope Construction Directions
- 4- Monitoring Data Sheets
 - a. Eurasian Water-milfoil
 - b. Curly-leaf Pondweed
 - c. Purple Loosestrife
 - d. Rusty Crayfish
 - e. Zebra Mussel
- 5- Zebra Mussel Substrate Sampler Construction Directions
- 6- Lakes with Eurasian Water-milfoil
- 7- Lakes with Rusties
- 8- Lakes with Zebra Mussels

Citizen Lake Monitoring Network & Aquatic Invasive Species Statewide Contacts

CLMN Educator

Laura Herman
UW-Extension
College of Natural Resources
800 Reserve Street
Stevens Point, WI 54481
715-346-3989 Stevens Point
715-365-8998 Rhinelander
laura.herman@uwsp.edu

Water Resource Management Specialist

Tim Asplund
WI-DNR
PO Box 7921
Madison, WI 53707-7921
608-267-7602
tim.asplund@Wisconsin.gov

Data Services Professional

Jennifer Filbert
WI-DNR
PO Box 7921
Madison, WI 53707-7921
608-264-8533
jennifer.filbert@Wisconsin.gov

Lakes Team Leader

Carroll Schaal
WI-DNR
PO Box 7921
Madison, WI 53707-7921
608-261-6423
carroll.schaal@Wisconsin.gov

Aquatic Invasive Species Coordinator

Ron Martin
WI-DNR
PO Box 7921
Madison, WI 53707-7921
608-266-9270
ronald.martin@Wisconsin.gov

Aquatic Invasive Species Educator

Julia Solomon WI-DNR
PO Box 7921
Madison, WI 53707-7921
608-267-3531
julia.solomon@Wisconsin.gov

Clean Boats, Clean Waters Coordinator

Laura Felda-Marquardt
107 Sutliff Ave.
Rhinelander, WI 54501
715-365-2659
laura.felda@Wisconsin.gov

Phil Moy

Non-indigenous Species Specialist
UW Sea Grant
706 Viebahn St.
Manitowoc, WI 54220
pmoy@uwc.edu
920-683-4697

WI Purple Loosestrife Control Coordinator

Brock Woods WI-DNR
2801 Progress Road
Madison, WI 53716-3339
608-221-6349
brock.woods@Wisconsin.gov

Rusty Crayfish Research Specialist

Jeff Maxted
UW-Madison Center for Limnology
Madison, WI
(608) 262-3088
jtmacted@wisc.edu

Wisconsin Department of Natural Resources

Regional Citizen Lake Monitoring Network Coordinators

Northern

Dave Blumer and Kris Larsen

810 W. Maple ST
 Spooner, WI 54801
 715-635-4078
 david.blumer@wisconsin.gov
 kris.larsen@wisconsin.gov

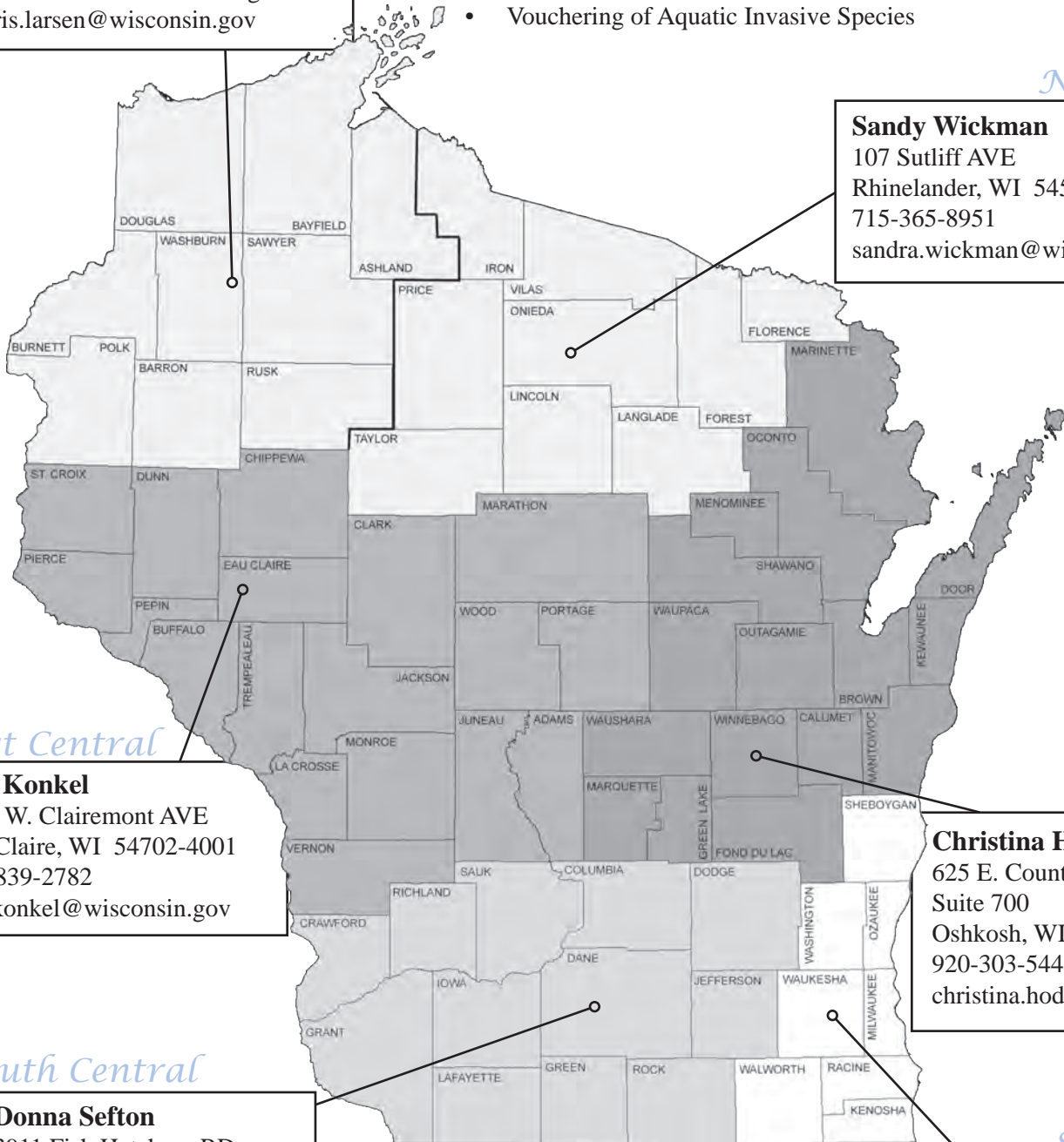
These folks are your primary contacts for the Citizen Lake Monitoring Network. The coordinators provide assistance with:

- Education on lake issues
- Supplies, reporting forms, mailings and awards
- Data entry into the Surface Water Integrated Monitoring System (SWIMS)
- Equipment repairs and replacement
- Trainings
- Vouchering of Aquatic Invasive Species

Northern

Sandy Wickman

107 Sutliff AVE
 Rhinelander, WI 54501
 715-365-8951
 sandra.wickman@wisconsin.gov



West Central

Deb Konkel

1300 W. Clairemont AVE
 Eau Claire, WI 54702-4001
 715-839-2782
 deb.konkel@wisconsin.gov

Northeast

Christina Hodge

625 E. County Road Y
 Suite 700
 Oshkosh, WI 54901
 920-303-5449
 christina.hodge@wisconsin.gov

South Central

Donna Sefton

3911 Fish Hatchery RD
 Fitchburg, WI 53711
 608-275-3330
 donna.sefton@wisconsin.gov

Southeast

Heidi Bunk

141 NW Barstow ST, Rm 108
 Waukesha, WI 53188
 262-574-2130
 heidi.bunk@wisconsin.gov

Wisconsin Department of Natural Resources

Lake Coordinators

These folks have responsibility for administering the DNR's lake programs. While exact duties vary depending on regional staffing arrangements and priorities, the coordinators can help provide assistance with:

- Lake management education, technical and information assistance
- Grants: Lake Planning, Aquatic Invasive Species, Lake Protection & Classification, and other project funding
- Citizen Lake Monitoring Network
- Aquatic Plant Management

In addition, they may be involved in River Protection Grants and Water Action Volunteer stream monitoring.

Northern

Northern

Pamela Toshner

715-635-4073

pamela.toshner@wisconsin.gov



Kevin Gauthier

715-365-8937

kevin.gauthier@wisconsin.gov



Northeast

Greg Sevenser

715-582-5013

greg.sevenser@wisconsin.gov



Northeast

Mary Gansberg

920-662-5489

mary.gansberg@wisconsin.gov



West Central

Buzz Sorge

715-839-3794

patrick.sorge@wisconsin.gov



Northeast

Jim Reyburn

920-662-5465

james.reyburn@wisconsin.gov



South Central

Susan Graham

608-275-3329

susan.graham@wisconsin.gov



Southeast

Heidi Bunk

262-574-2130

heidi.bunk@wisconsin.gov



Northeast

Mark Sesing

920-485-3023

mark.sesing@wisconsin.gov

