Appendices

Great blue heron

Appendix A Technical Advisory Team

John Bacone
Director, Divison of Nature Preserves
IDNR
Indiana Government Center South
402 W. Washington, Room W267
Indianapolis, IN 46204-2748
Phone: (317) 232-4052
Fax: (317) 233-0133

Mark Burch
Planning Supervisor
IDNR, Division of Fish & Wildlife
Indiana Government Center South
402 W. Washington, Room W273
Indianapolis, IN 46204-2748
Phone: (317) 232-8166
Fax: (317) 232-8150

Steve Cecil
Chief
Preliminary Engineering & Environment
Indiana Department of Transportation
100 N. Senate Avenue, Room N808
Indianapolis, IN 46204
Phone: (317) 232-5468
Fax: (317) 232-5478

Dennis Clark (John Winters)
Special Projects/Standards Section
IN Dept. of Environmental Management
100 N. Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 233-2482
Fax: (317) 232-8637

Ron Culler
General Counsel
Agricultural and Rural Development
Office of the Commissioner
150 W Market Street/ISTA Suite 414
Indianapolis, IN 46204
Phone: (317) 232-8775
Fax: (317) 232-1362

Mary Davidsen
Environmental Attorney
IDNR, Legal Division
Indiana Government Center South
402 W. Washington, Room W256
Indianapolis, IN 46204-2748
Phone: (317) 233-4363
Fax: (317) 233-6811

Dawn Deady
Lake Michigan Coastal Coordination Program
IDNR, Division of Water
Indiana Government Center South
402 W. Washington, Room W264
Indianapolis, IN 46204-2748
Phone: (317) 232-4160
Fax: (317) 233-4579

Jodi Dickey
Outdoor Recreation Planner
IDNR, Division of Outdoor Recreation
Indiana Government Center South
402 W. Washington, Room W271
Indianapolis, IN 46204-2748
Phone: (317) 232-4070
Fax: (317) 232-8036

Bob Eddleman (Dave Stratman)
State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
6013 Lakeside Boulevard
Indianapolis, IN 46278
Phone: (317) 290-3200
Fax: (317) 290-3225

Dan Ernst
Forestry Specialist
IDNR, Division of Forestry
Indiana Government Center South
402 W. Washington, Room W296
Indianapolis, IN 46204-2748
Phone: (317) 232-4117
Fax: (317) 233-3863

Catherine G. Garra
Project Officer, Wetlands& Watersheds
Section/U.S. Environmental Protection
Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590
Phone: (312) 886-0241
Fax: (312) 886-7804

Dave Hudak (Mike Litwin)
Supervisor
Bloomington Field Office
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261
Fax: (812) 334-4273

Steve Jose
Environmental Coordinator
IDNR, Division of Fish & Wildlife
Indiana Government Center South
402 W. Washington, Room W273
Indianapolis, IN 46204-2748
Phone: (317) 232-4080
Fax: (317) 232-8150

John Konik
Chief, Processing Section
U.S. Army Corps of Engineers
Detroit District
P.O. Box 1027
Detroit, MI 48231
Phone: (313) 226-6828
Fax: (313) 226-6763

Timothy S. Kroeker
(Jon LaTurner, Tamara Baker)
Water Planner
IDNR, Division of Water
Indiana Government Center South
402 W. Washington, Room W264
Indianapolis, IN 46204
Phone: (317) 232-1106
Fax: (317) 233-4579

Bill Maudlin
Environmental Supervisor
IDNR, Division of Fish & Wildlife
Indiana Government Center South
402 W. Washington, Room W273
Indianapolis, IN 46204-2748
Phone: (317) 233-4666
Fax: (317) 232-8150

Jack McGriffin (Rod Richardson)
Executive Assistant
IDNR, Division of Reclamation
Indiana Government Center South
402 W. Washington, Rm W295
Indianapolis, IN 46204
Phone: (317) 232-1547
Fax: (317) 232-1550

Chris McNamara
Environmental Sergeant
IDNR, Division of Law Enforcement
702 Domke Dr.
Valparaiso, IN 46383-7816
Phone: (219) 462-6549
Fax: same

Doug Shelton
Chief, North Section Regulatory Branch
U.S. Army Corps of Engineers
Louisville District
P.O. Box 59
Louisville, KY 40201-0059
Phone: (502) 582-5607
Fax: (502) 582-5072

Todd Thompson
Geologist
Indiana University Geological Survey
611 N. Walnut Grove
Bloomington, IN 47405
Phone: (812) 855-5067
Fax: (812) 855-2862

Robert D. Waltz
Director/IDNR, Division of Entomology &
Plant Pathology
Indiana Government Center South
402 W. Washington, Room W290
Indianapolis, IN 46204-2748
Phone: (317) 232-4120
Fax: (317) 232-2649

Gwen White (Jim Ray, Barb Curry)
Lake and River Enhancement Biologist
IDNR, Division of Soil Conservation
Indiana Government Center South
402 W. Washington, Room W265
Indianapolis, IN 46204-2748
Phone: (317) 233-5468
Fax: (317) 233-3882

Appendix B Wetlands Advisory Group

Everett Ballentine (Warren Baird)
IN Forestry and Woodland Owners Assoc.
706 W. Mill
Danville, IN 46122-1551
Phone: (317) 745-2240

Jim Barnett
Dir., Natural Resources Dept.
Indiana Farm Bureau
225 S. East Street
Indianapolis, IN 46206
Phone: (317) 692-7846
Fax: (317) 692-7854

Pam Benjamin
Resource Management Botanist
Indiana Dunes National Lakeshore
1100 North Mineral Springs Road
Porter, IN 46304
Phone: (219) 926-7561 Ext. 336

Chris Newell Bourn (Greg Quartucci)
Natural Resource Analyst
Environmental Affairs, NIPSCO
5265 Hohman Ave.
Hammond, IN 46320-1775
Phone: (219) 647-5249
Fax: (219) 647-5271

Phil Brechbill
Board of Directors
IN Soybean Growers Assoc.
0881 Co. Rd. 40
Auburn, IN 46706
Phone: (219) 357-3990
Fax: (317) 482-0992

Jerrold Bridges
Madison County Council of Government
16 East Ninth Street
Anderson, IN 46016
Phone: (317) 641-9482

Vicki Carson (Jim Mulligan, Phil Carew)
Executive Director
IN Hardwood Lumbermen's Assoc.
3600 Woodview Trace, Ste 305
Indianapolis, IN 46268
Phone: (317) 875-3660
Fax: (317) 875-3661

Ursell Cox
IN Builders Assoc./Brenwick
12722 Hamilton Crossing Blvd.
Indianapolis, IN 46032
Phone: (317) 574-3400

Brian Cruser (John Friedrich)
IN Society of American Foresters
1668 West County Road 400 S
Greensburg, IN 47240
Phone: (812) 662-6315
Fax: same (call first)

Ken Day (Ellen Jacquart, Barb Tormoehlen)
Forest Supervisor
USDA Forest Service
811 Constitution Avenue
Bedford, IN 47421-9599
Phone (812) 275-5987
Fax: (812) 279-3423

Tonya Galbraith
Legislative Director
IN Assoc. of Cities and Towns
150 W. Market St., Ste 728
Indianapolis, IN 46204
Phone: (317) 237-6200
Fax: (317) 237-6206

Bob Gerdenich II (Dick Mercier)
Indiana Sportsman's Roundtable
500 Tamarack Lane
Noblesville, IN 46060
Phone: (317) 575-4555

William Haan
IN Assoc. of Co. Commissioners
Co. Office Bldg., 20 N. 3rd St.
Lafayette, IN 47901-1214
Phone: (317) 423-9215
Fax: (317) 423-9196

Tim Hayes
Cinergy/PSI Energy
1000 East Main Street
Plainfield, IN 46168
Phone: (317) 838-2490
Fax: (317) 838-2490

Gerry Hays
Environmental Affairs Director
IN Chamber of Commerce
One North Capitol, Suite 200
Indianapolis, IN 46204-2248
Phone: (317) 264-6881
Fax: (317) 264-6855

Larry Hilgeman
Sr. Corp. Env. Specialist
Aristokraft, Inc.
One Aristokraft Sq., POB 420
Jasper, IN 47547-0427
Phone: (812) 634-0543
Fax: (812) 482-9872

Bob Hittle (James A. Kovacs)
American Consulting Engineers, Inc.
4165 Millersville Road
Indianapolis, IN 46205
Phone: (317) 547-5580

John Humes
Corporate Ombudsman
Department of Commerce
One North Capitol Ave.
Indianapolis, IN 46204
Phone: (317) 232-8926
Fax: (317) 232-4146

Blake Jeffrey
Director of Env. Affairs
Indiana Manufacturers Assoc.
2400 One American Sq., POB 82012
Indianapolis, IN 46282
Phone: (317) 632-2474
Fax: (317) 264-3281

Tom Kirschenmann
Regional Wildlife Biologist
Pheasants Forever
P.O. Box 57
Mansfield, IL 61854
Phone: (217) 489-9248
Fax: same

Randy Lang
IN Chapter, Amer. Fisheries Soc.
IN Government Center South
402 W. Washington St., Rm. W273
Indianapolis, IN 46204
Phone: (317) 232-4080

Douglas Lechner (Kent Ward)
Indiana Association of County Surveyors
86 West Court Street
Franklin, IN 46131
Phone: (317) 736-3716

Tim Maloney
Natural Heritage Director
Hoosier Environmental Council
1002 East Washington St., Suite 300
Indianapolis, IN 46202
Phone: (317) 685-8800
Fax: (317) 686-4794

Bruce Marheine
Ducks Unlimited
Route 4 Box 196
Sullivan, IN 47882
Phone: (812) 397-2740

Bruce Mason
Executive Director
IN Mineral Aggregates Assoc.
9595 N. Whitley Dr., Ste 205
Indianapolis, IN 46240
Phone: (317) 580-9100
Fax: (317) 580-9183

Paul McAfee
Hoosier Audubon Council
6530 W. Wallen Road
Ft. Wayne, IN 46818
Phone: (219) 489-5032

Ray McCormick
Quail Unlimited
Route 4, Box 152
Vincennes, IN 47592
Phone: (812) 886-6436
Fax: (812) 885-2008

Dan McInerny
Bose, McKinney & Evans
2700 First Indiana Plaza
135 N. Pennsylvania
Indianapolis, IN 46204
Phone: (317) 684-5102

John McNamara (Karen Mackowiak)
St. Joseph County Surveyor
County City Building, Rm. 1100
South Bend, IN 46601
Phone: (219) 235-9543

Jody Melton
Executive Director
Kankakee River Basin Commission
6100 Southport Rd.
Portage, IN 46368-6409
Phone: (219) 763-0696
Fax: (219) 762-1653

Brian Miller
Extension Wildlife Specialist
Purdue University
Forestry and Natural Resources
West Lafayette, IN 47907-1159
Phone: (317) 494-3586
Fax: (317) 694-0409

Lowell Miller
IN Forest Industry Council
Hope Hardwoods
PO Box 37
Hope, IN 47246
Phone: (812) 546-4427

Jim New (Will Ditzler)
J.F. New and Associates
708 Roosevelt Road
Walkerton, IN 46574
Phone: (219) 586-3400
Fax: (219) 586-3446

Nat Noland
President
Indiana Coal Council, Inc.
143 West Market St., Ste 701
Indianapolis, IN 46204
Phone: (317) 638-6997
Fax: (317) 638-7031

Nick Pasyanos (Teri Tarr)
Assoc. of Indiana Counties
101 West Ohio Street, Suite 1792
Indianapolis, IN 46204-1906
Phone: (317) 684-3710
Fax: (317) 684-3713

Walt Reeder
Planning Commission Director
IN Assoc. of Hwy. Engineers and Supvrs.
PO Box 313
Danville, IN 46122
Phone: (317) 745-9254
Fax: (317) 745-9347

Don Roberts
Chairman
Waterfowl USA, NW IN Chapter
1707 S. Cline Ave.
Griffith, IN 46319
Phone: (219) 322-1545

John Seibert
President
IN Parks and Rec. Assoc.
1158 Harrison Boulevard
Valparaiso, IN 46383
Phone: (219) 462-5144
Fax: (219) 465-0098

Dr. Edwin R. Squiers
Chairman, Environmental Science Dept.
Randall Env. Science Ctr.
Taylor University
Upland, IN 46989
Phone: (317) 998-5386
Fax: (317) 998-4979

Bill Theis
Stop Taking Our Property
Pine Township Trustee
P.O. Box 599
Chesterton, IN 46304
Phone: (219) 926-6315
Fax: (219) 926-4651

Susan Thomas (Bill Hayden/Patty Werner)
Director
Sierra Club Wetlands Project
212 West 10th St., Suite A-335
Indianapolis, IN 46202
Phone: (317) 231-1908
Fax: same

Jon Voelz
Executive Director
Indiana Wildlife Federation
950 Rangeline Rd., Suite A
Carmel, IN 46032
Phone: (317) 571-1220
Fax: (317) 571-1223

Julia Wickard
Indiana Assoc. of SWCDs
225 South East St., Suite 740
Indianapolis, IN 46202
Phone: (317) 692-7519
Fax: (317) 692-7363

Ed Yanos (Brian Kirkpatrick)
Chairman of Public Policy Committee
Indiana Corn Growers Assoc.
151 N. Delaware St. #770
Indianapolis, IN 46204-2526
Phone: (317) 630-1995

Ryan Zickler (H.F. Tim Hines, Jan Hope)
Executive Director
Builders Assoc. of Greater Indianapolis
PO Box 44670
Indianapolis, IN 46244-0670
Phone: (317) 236-6330
Fax: (317) 236-6340

The following people provided meeting facilitation services during small group sessions of the Wetlands Advisory Group meetings.

Gary Eldridge
IDNR, Division of Fish and Wildlife

Lenny Farlee
IDNR, Division of Forestry

Drew Klasik
IUPUI, Center for Urban
Policy and Environment

Jim Kunde
IUPUI, Center for Urban Policy
and Environment

Mike Massone
IDNR, Division of Soil Conservation

Jamie Palmer
IUPUI, Center for Urban
Policy and Environment

Bob Stum
IDNR, Division of Reclamation

Larry Wilson
IUPUI, Center for Urban
Policy and Environment

Appendix C Project Reviewers

Federal Agencies

Ron Birt, IN Farm Service Agency

Marilyn Gillen, National Park Service

Martha Hayes, U.S. Geological Survey

Larry Heil, USDOT/FHWA

Doug Hovermale, IN Farm Service Agency

William McCoy, U.S. Fish and Wildlife Service

Lindsay Swain, U.S. Geological Survey

Mark Townsend, IN Farm Service Agency

Kent Yeager, IN Farm Service Agency

State Agencies

Kathleen M. Altman, IN Commission for Agriculture and Rural Development

Ron Bielefeld, Division of Fish and Wildlife, IDNR

Steve Brandsasse, Division of Forestry, IDNR

Christopher Brown, Division of Soil Conservation, IDNR

Melvin J. Carraway, State Emergency Management Agency

Gary Doxtater, Division of Fish and Wildlife, IDNR

Tim Eisinger, Division of Forestry, IDNR

Lenny Farlee, Division of Forestry, IDNR

Jan Henley, IN Department of Environmental Management

Craig Hinshaw, IN Department of Health

Bill James, Division of Fish and Wildlife, IDNR

Gary Jordan, Division of Fish and Wildlife, IDNR

Tom Kidd, Division of Outdoor Recreation, IDNR

Heidi Kuehne, IN Dept. of Environmental Management

Glenn Lange, Division of Fish and Wildlife, IDNR

John Law, Division of Soil Conservation, IDNR

Larry Lichstinn, Division of Forestry, IDNR

Tom Lyons, Division of Forestry, IDNR

Steve Marling, Division of Forestry, IDNR

Marty Maupin, IN Dept. of Environmental Management

Mike Neyer, Division of Water, IDNR

Keith Poole, Division of Fish and Wildlife, IDNR

George Seketa, Division of Fish and Wildlife, IDNR

Steve Sellers, Division of PI & E, IDNR

Jim Smith, IN Dept. of Environmental Management

Dave Turner, Division of Fish and Wildlife, IDNR

Don Villwock, Farmer, Knox County ASCS

Steve Winicker, Division of Forestry, IDNR

John Winters, IN Dept. of Environmental Management

Joe Wright, IN Dept.of Public Instruction

Conservation/ Environmental Organizations

Thomas R. Anderson, Save the Dunes Council

William Bocklage/Norma Flannery, Oxbow, Inc.

Barbara C. Cooper, Purdue Research Park

Stephen W. Creech, IN Society of American Foresters

Mary Anna Entwisle, DeKalb Co. Izaak Walton League

Sam Flenner, Hoosier Environmental Council

Karen Griggs, Izaak Walton League of America

Anthony T. Grossman, IN Society of American Foresters

Fred Hadley, IN Association of Consulting Foresters

Theodore Heemstra/Carolyn McNagny, ACRES, Inc.

Ralph Jersild, Central IN Land Trust, Inc.

Joe Kamor, Michiana Steelheaders

Bob Klawitter, Protect Our Woods

Betty Knapp, Wawasee Area Conservancy Fdtn.

Andy Mahler, Heartwood

Dennis McGrath, The Nature Conservancy

William F. Minter, IN Society of American Foresters

Ron Rathfon, IN Society of American Foresters

Ed Schools, Hoosier Audubon Council

Jack Seifert, IN Society of American Foresters

Denise Shoemaker, Save Our Lakes

John Shuey, The Nature Conservancy

Chuck Siar, IN Division - IWLA

Jim Sweeney, Wetland Watch

Al Tinsley, Hoosier Environmental Council

Brian Wolka, Bass Federation

Agricultural Organizations

Lawrence Dorrell, IN Farmers Union, Inc.

Terry Fleck, IN Pork Producters Association

Robert Jones, IN State Dairy Association

Anita Stuever, IN Soybean Growers Association

River and Lake Associations

Chuck Bauer, PRIDE

Carl Bauer, Little River Wetlands Project

William C. Bugher, Lower Patoka River Conservancy District

Dorreen Carey, Grand Calumet Task Force

Larry Champion, Friends of White Lick Creek

Bill Constable, American Canoe Association

Denny Cox, Blue River Commission

Karen Dehne, Lake Maxinkuckee Environmental Council

Janet Fawley, Wabash River Heritage Corridor Commission

Dean Ford, Friends of Sugar Creek, Inc.,

Friends of the Fox River

Friends of the Wabash

Marilyn Gambold, IN Rural Water Association

Dan Gardner, Little Calumet River Basin Development Commission

Karl Glander, Friends of the White River

Dee Gould, North Central IN Canoe Club

David Grandstaff, Wawasee Property Owners Association

Thomas Gray, Patoka River S.W.A.M.P. Watchers

Garry N. Hill, Wildcat Guardians

Ray Irvin, Indy Parks/Indpls. Greenways

Roger Hoten, Cave County Canoes

James Hyde, PLOW/Whitewater River Adv. Board

Brian Ingmire, New Castle

Michael Land, Canoe IN Activists

Bob Mayer, Oliver Lake Improvement. and Conservation Association

Gene Mundy, Lawrence County, Soil/Water Conserv.

Persis Haas Newman, Wildcat Park Foundation

Terry Streib, St. Joe Valley Canoe and Kayak Club

Chuck Sullivan, Friends of Whitewater River

Bruce Wakeland, Yellow River Corridor Commission

Whitewater Valley Canoe Club

Jack Worthman, Maumee River Basin Commission

Rural/Community Development Organizations

Jo Arthur, S. IN Development Commission

Roger Craft, Wayne County Planning and Zone Dept.

Susan Craig, SE IN Reg. Planning Commission

Karen Dearlove, IN 15 Regional Plan Commission

Christopher Larson, Kankakee-Iroquois R.P.C.

Rebecca Moffett-Carey, Michiana Area Council of Governments

Ethan Moore, Madison Co. Council of Government

Bob Murphy, Region 3-A Development

Mervin Nolot, W. Central IN Econ. Development District

Kate Northrup,Manufacturing Technology Services

Elias Samaan, Northeast IN Coord. Council

Mark Smith, River Hills Econ. District and Plan Commission

Barbara Waxman, NW IN Regional Planning Commission

Colleges and Universities

A. James Barnes, School of Public and Environmental Affairs, Indiana Univ.

John G. Baugh, Office of the Dean, School of Ag., Purdue Univ.

William Brett, Dept. of Life Sciences, IN State Univ.

Hugh J. Brown, Soil Scientist, Dept. of NREM, Ball State Univ.

Otto Doering, Purdue Ag. Economist, Purdue Univ.

Ken Foster, Dept.of Ag. Economics, Purdue Univ.

James Gammon, DePauw Univ.

Bill Jones, School of Public and Environmental Affairs, Indiana Univ.

Dennis LeMaster, Dept. of Forestry and Natural Resources, Purdue Univ.

Stephen Lovejoy, Dept. of Ag. Economics, Purdue Univ.

Josep M. Mallarach, School of Public and Environmental Affairs, Indiana Univ.

Rich Nicholson, S.P.U.R., Earlham College

Robert Start, DePauw Univ.

Daniel E. Willard, School of Public and Environmental Affairs, Indiana Univ.

Sporting Groups

Steve Cox, IN Bass Federation

Hoosier Fly Fishers Club

Tim Mather, Hoosier Flyfishers

Linda Personette, Hoosier Bass'N Gals

Mike and Janet Ryan, NW IN Steelheaders, Inc.

Industry

Jeff Antonetti, IPALCO

Doug Daniel, Fidler, Inc.

Mark Evans, NIPSCO

John Fekete, Inland Steel

Carol Findling, Trash Force, Inc.

Don Foley, Foley Hardwoods

Ray Judy, Phoenix Natural Resources

Larry Kane, Bingham, Summers, Welsh, and Spillman

Sandy O'Brien, Consulting Biologist

Larry Pile, AMAX Coal Company

Jim Plew, Engineering Aggregates Corp.

Dave Robinson, Weston Paper and Manufacturing Co.

Bernard Rottman, Black Beauty Coal Company

Lisa Sampson, SIGECO

Christine Schuster, US Steel - Gary Works

Jeff Stoll, American Aggregates

Max Williams, Martin Marietta Aggregates

Christopher J. Zirkelbach, Sub Tech, Inc.

Eric Zuschlag, Vulcan Materials Co.

Development Interests

Nola Albrecht, IN Chapter, American Society of Landscape Architects/Schneider Engineering

John Anderson, Sieco, Inc.

Patrick Bennett, IN Builders Association

David L. Dahl, Midwestern Engineers, Inc.

Bill Eviston/Mr. Ellingson, Earth Source, Inc.

Mike Gensic, Gensic and Associates

Ed Knust, Donan Engineering Company, Inc.

Donald Larson, Commonwealth Engineers, Inc.

Stephanie Morse, Consulting Engineers of IN

James Segedy, IN Chapter, American Planning Association

Jon Stolz, Christopher Burke Engineering, LTD

Rex Stover, Snell Environmental Group

Douglas Stradtner, Stradtner and Associates

Others

Laura Arnold, The Arnold Group

Jessica Bennett, Environmental Law Institute

Anita Bowser, IN State Senator

Ken Brunswick, Friends of the Limberlost

Jeff Burbrink, Elkhart County Extension Service

Art Burke, Indianapolis Dept. of Parks and Rec.

Charles C. Burner, Bloomington

Elizabeth P. Carlson, Minnesota DNR Ecological Services

Val Carr, H.O.M.E.

Lynn Cooley, Lynn Cooley and Sons

Larry Corps, Bedford Park and Recreation Dept.

Marlowe R. Davis, Newton County Surveyor

Yo Deckard, St. Charles Elementary School

Greg Deeds, Miami County Surveyor

William R. DeMott, Crooked Lake Biological Station, Indiana-Purdue Univ.

John G. Donner, Attorney, Valparaiso

Blake Doriot, Elkhart County Surveyor

Ben Dye, Gibson Co. Dept. of Health

Jaime Edwards, Middleton, WI

H.T. Erickson, West Lafayette

Joanne and Phil Etienne, St. Croix

Susan Fernandes, Bloomington

Al German, Lions Club

Robert B. Gillespie, Crooked Lake Biological Station, Indiana-Purdue Univ.

Randy Haddock, Warren County Surveyor

Kevin Hardie, Central States Glass Recycling Prog.

Bill Horan, Wells County Extension

Marvin Hubbell, Illinois DNR

Cathy Huss, Union City Community High School

Tim Janatik, Michigan City

Amy Knight, Barthlomew County Health Dept.

Ray Kletz, IN League of RC and D Council

Kevin Komisarcik, Bloomington Environmental Commission

Chet Kylander, Kylander Grant Resource Services

L. Edward Lawrence, IN Black Powder Association

Charles Lehman, Lehman and Lehman, Inc.

Robert Lewis, Shelby County Health Dept.

Pat McGuffey, Bose, McKinney and Evans

Dorman Miller, Clay County Surveyor

George Milligan, White County Surveyor

Sheryl Myers, Anderson Community Schools

Lois Nicholson, Chesterton

Karen Perry, Bloomington Environmental Commission

Jay Poe, Huntington County Surveyor

Amy Rayl, Indianapolis

Leslie Reeser, Greenfield

George Smolka, Griffith

David Smoll, Hancock County Surveyor

Michael Spencer, Tippecanoe County Surveyor

Lowell Stoten, Rush County Surveyor

Kevin Strunk, Indianapolis

Susan Ulrich, Otterbein

Brian Wagner, Lafayette

Kenton C. Ward, Hamilton County Surveyor

Joanna Waugh, Porter

Ray Weaver, Backwater Retriever Club

Jennifer Wehner, Greenwood

Patty Werner, Libertyville, IL

Mark White, Worldwide Solar King

Bruce Wilhelm, Arrow Head Country RC&D Area

Ed Wisinski, Izaak Walton League of America

Greg Woods, Clements Canoe, Inc.

Appendix D

DNR MEMORANDUM

State of Indiana • Department of Natural Resources • Indianapolis

IDNR WETLAND CONSERVATION GUIDELINES

The following statement shall serve to guide the Indiana Department of Natural Resources in proactively protecting and managing Indiana's wetland resources.

IDNR recognizes that over 85% of Indiana's natural wetlands have been drained or filled and as more wetlands are lost, the value of remaining wetland resources has increased.

IDNR also recognizes that wetlands provide many benefits to the citizens of Indiana by:

1) supporting the state's forest, fish, and wildlife resources with critical habitat for species that have commercial and recreational value;

2) retaining and gradually releasing floodwater;

3) recharging groundwater resources;

4) reducing the effects of erosion and chemical pollution in our state's waterways and freshwater lakes by trapping and utilizing nutrient and sediment runoff;

5) providing areas for many types of recreation; and

6) sustaining a number of rare and endangered plant and animal species;

AND:

IDNR realizes that to protect these benefits, it must embark on wetland management activities that include protection, acquisition, enhancement, and creation of wetland resources.

Therefore:

The Indiana Department of Natural Resources will implement strategies that:

1) increase the quality, availability, and use of information concerning the historical, economic, and ecological values of wetland resources for present and future generations;

2) use scientific criteria to assess key functions and values of existing wetlands prior to disturbance and to monitor results of projects following creation or alteration of wetlands;

3) identify the remaining highest quality wetlands in order to prioritize them for protection or acquisition in a natural or semi-natural state and to employ human intervention when necessary to maintain ecological structures and processes;

4) restore and manage intermediate or poor quality wetlands to accomplish specific purposes, including ecological productivity, flood control, water quality improvements, recreational opportunities, and aesthetic values, through biologically and scientifically sound manipulation;

5) create and maintain new wetlands to provide one or more benefits of natural wetlands, alleviate some of the lost wetland acreage in the state, and strengthen the use and development of bio-engineered systems for purposes such as wastewater treatment, floodwater retention, agricultural productivity, and landscape management; and

6) support the development of comprehensive wetland conservation plans that facilitate cooperative efforts between natural resource agencies and organizations involved in these issues.

It is by following these guidelines that all citizens of the State of Indiana will continue to enjoy wetland resources which are necessary for maintaining a higher quality of life in Indiana.

Appendix E

Prioritization Criteria for Physical/Chemical Functions of Wetlands

The following is a preliminary list of components or functions that could be used to rank and prioritize Indiana wetlands in order to serve the purposes of water quality, flood control, and groundwater recharge.

Functional categories

Categories of *water quality* and *groundwater recharge* were combined into one category which addresses quality and quantity of surface and groundwater. Flood control remains as a separate function.

Classification units

Rankings assigned to the functions will differ mostly depending on watershed, rather than natural region or ecoregion, because the functions of water quality and flood control are related to the physical boundaries and geologic history of a watershed.

Prioritization factors

I. Water Quality of Surface and Groundwater

- **A.** Location
  - **1.** Ecosystem connections
    - a. Proximity to stream, lake or other wetlands
    - b. Current quality of adjacent aquatic ecosystems
  - **2.** Surrounding land use
    - a. Pollution sources
    - b. Water supplies
      1) Human consumption
      2) Contact recreation
      3) Livestock consumption
      4) Use by critical species
  - **3.** Geology
    - a. Karst
    - b. Aquifers
- **B.** Size and shape
  - **1.** Ratio of wetland to watershed area
  - **2.** Depth and filtration area
  - **3.** Storage capacity
    - a. Rate of sediment filling
    - b. Retention time
  - **4.** Flow rate and pathway
    - a. Number of inlets
    - b. Location of inlets relative to outlets
    - c. Sheetflow or channel flow
    - d. Discharge differential
      (outflow exceeds inflow and evaporation)

C. Soils
1. Chemical composition
2. Particle size
3. Soil horizons
    a. Depth of soil
    b. Depth to water table
4. Infiltration and percolation time
5. Microbial activity

D. Vegetation
1. Nitrogen uptake
2. Phosphorus uptake
3. Heavy metal ion uptake
4. Organic uptake (e.g., pesticides, herbicides)

II. Flood Control

A. Location
1. Ecosystem connections
    a. Proximity to stream, lake, or other wetlands
    b. Current function of adjacent aquatic ecosystems
    c. Relationship to existing flood control structures
2. Surrounding land use
    a. Area of protected watershed
    b. Economic importance of floodplain activities
    c. Timing of flooding and human activities
    d. Extent and duration of flooding
    e. Use of flood flows by critical species

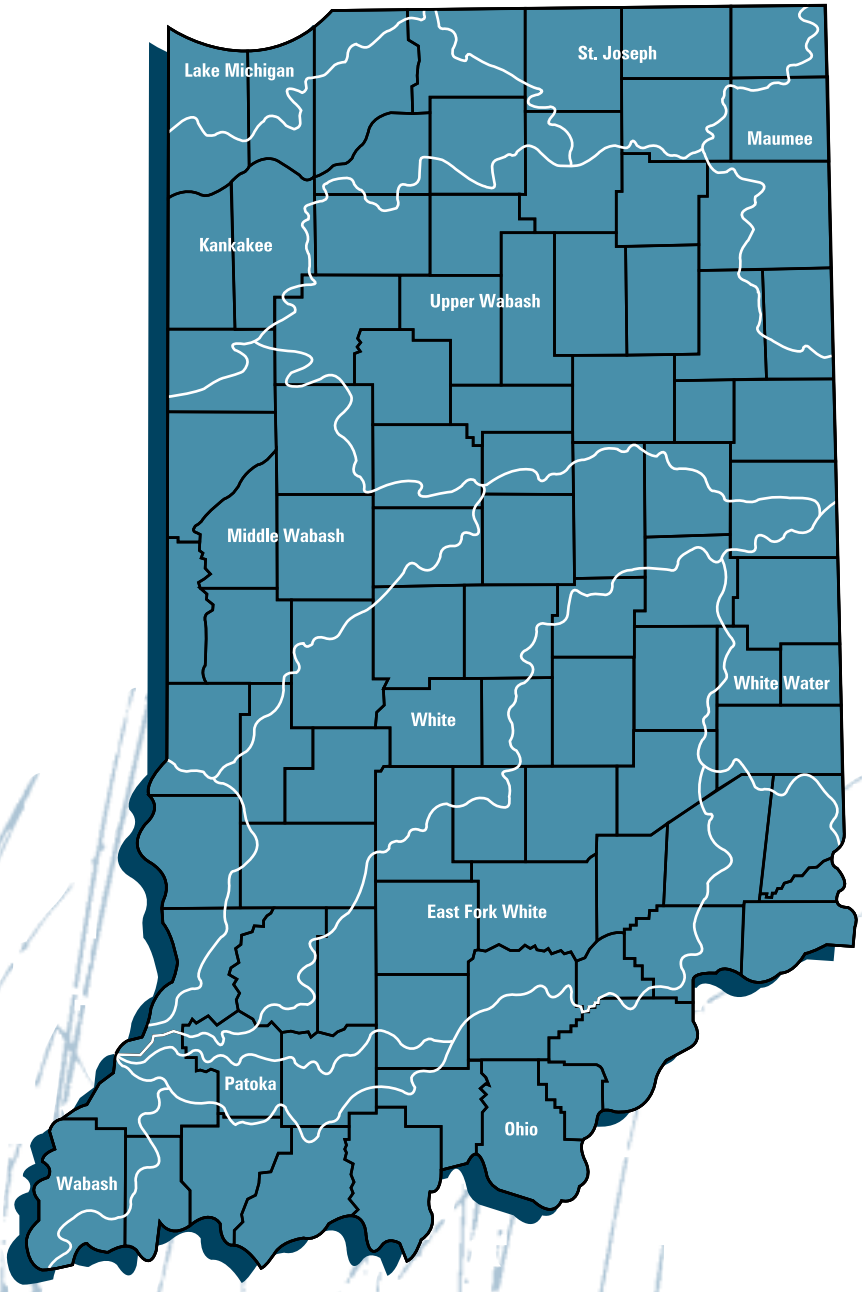
B. Size and shape
1. Ratio of wetland to watershed area
2. Storage capacity
    a. Rate of sediment filling
    b. Retention time
3. Flow rate and pathway
    a. Number of inlets
    b. Location of inlets relative to outlets
    c. Sheetflow or channel flow
    d. Outflow
        1) Constriction
        2) Single point of discharge (control of outflow)

C. Soils
1. Infiltration rate
2. Water storage capacity
    a. Depth to hardpan
    b. Soil type (absorbs water)
    c. Saturation (depth to water table)

D. Vegetation
1. Roughness
2. Evapotranspiration

Appendix F

Indiana's 12 water management basins were designated by the Natural Resources Commission and published by USGS in "Hydrogeologic Atlas of Aquifers in Indiana." These units also match the watersheds used by Indiana Department of Natural Resources, Division of Water in basin studies, and by IDEM for 305(b) reporting purposes.



Lake Michigan

Description

The Lake Michigan basin, located in the far northwestern part of Indiana, encompasses a land area of 604 square miles within the northern halves of Lake and Porter counties and the northern one-third of LaPorte County. In addition, the northern part of the basin includes a 241- square mile area beneath Lake Michigan. Within the basin is a major urban and industrial area that includes the cities of Gary, Hammond, East Chicago, and Merrillville.

Special concerns for water quality and flood control in watershed

- chemical contamination
- flooding (Little Calumet)
- Great Lakes fishery

Wetland communities in watershed

Northwest morainal natural region

- floodplain forest • sand flatwoods • wet prairie
- marsh • northern swamp • shrub swamp
- fen • bog • sedge meadow • panne
- seep • lake • pond • boreal flatwoods

St. Joseph

Description

The St. Joseph River basin, which encompasses an area of 1,699 square miles in northeastern Indiana, is part of the St. Lawrence drainage system. The basin includes all of Lagrange County, most of Elkhart, Steuben, and Noble counties, and parts of St. Joseph, Kosciusko, and Dekalb counties. The St. Joseph River flows into Indiana in Elkhart County and flows out of the State in St. Joseph County. Major cities with the basin are South Bend, Mishawaka, Elkhart, Goshen, Kendallville, and Angola.

Special concerns for water quality and flood control in watershed

- lake water quality
- coldwater fishery

Wetland communities in watershed

Northern lakes natural region

- floodplain forest • sand flatwoods • marsh
- northern swamp • shrub swamp • fen • bog
- sedge meadow • marl beach • seep
- muck and sand flats • lake • pond • wet prairie

Kankakee

Description

The Kankakee River basin, located in northwestern Indiana, is the sixth largest (2,989 square miles) of the 12 water-management basins in the State. The basin includes most of Newton, Jasper and Starke counties and one-half to two-thirds of Lake, Porter, LaPorte, St. Joseph, Marshall and Benton counties. Most of the towns in the basin are farming communities; the largest cities are LaPorte, Plymouth, Knox, and Rensselaer.

Special concerns for water quality and flood control in watershed

- flooding (Newton, Lake counties)
- water quality
- massive historical conversion of wetlands (wetland restoration)
- levee systems in agricultural areas

Wetland communities in watershed

Grand prairie natural region

- floodplain forest • sand flatwoods • wet prairie
- marsh • fen • bog • sedge meadow
- muck and sand flats • lake • pond
- northern swamp • shrub swamp

Northern lakes natural region

- floodplain forest • sand flatwoods • marsh
- northern swamp • shrub swamp • fen • bog
- sedge meadow • marl beach • seep
- muck and sand flats • lake • pond • wet prairie

Maumee

Description

The Maumee River basin in northeastern Indiana is 1,283 square miles and includes parts of Adams, Allen, Dekalb, Noble, and Steuben counties. Principal cities within the Maumee River basin include Auburn, Decatur, Fort Wayne, Garrett and New Haven. The Maumee River begins in Fort Wayne, Indiana, at the confluence of the St. Marys and St. Joseph Rivers. Most of the Maumee River basin in Indiana is drained by these two tributaries. From the confluence, the Maumee River flows 28 miles east-northeast to the Indiana-Ohio state line. The mouth of the Maumee River is in northwestern Ohio, at the southwestern end of Lake Erie. In Ohio, the Maumee River flows 108 miles to Lake Erie; thus, the total length of the Maumee River is 136 miles.

Special concerns for water quality and flood control in watershed

- water quality of Fish Creek (mussel populations)
- flood control (Fort Wayne)

Wetland communities in watershed

Grand prairie natural region

- floodplain forest • sand flatwoods • wet prairie
- marsh • fen • bog • sedge meadow
- muck and sand flats • lake • pond
- northern swamp • shrub swamp

Northern lakes natural region

- floodplain forest • sand flatwoods • marsh
- northern swamp • shrub swamp • fen
- bog • sedge meadow • marl beach • seep
- muck and sand flats • lake • pond • wet prairie

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods • marsh
- shrub swamp • fen • seep • pond • wet prairie
- northern swamp

Upper Wabash

Description

For management purposes, the Indiana Department of Natural Resources has divided the Wabash River basin into three subbasins: an upper basin, a middle basin, and a lower basin. The Upper Wabash River basin extends from the Indiana-Ohio state line downstream to include Wildcat Creek near Lafayette, Tippecanoe County. This area is approximately 110 miles east-west by 70 miles north-south.

The Upper Wabash River basin is 6,918 square miles and includes all or most of Blackford, Carroll, Cass, Clinton, Fulton, Grant, Howard, Huntington, Jay, Miami, Pulaski, Wabash, White, Whitley, and Wells counties, and parts of 13 other counties. Principal cities in the basin include Bluffton, Columbia City, Frankfort, Hartford City, Huntington, Kokomo, Logansport, Marion, Monticello, North Manchester, Peru, Portland, Rochester, Wabash, and Warsaw.

Special concerns for water quality and flood control in watershed

- lake water quality
- mussel diversity in Tippecanoe
- headwater water quality
- agricultural contamination (crops, livestock)

Wetland communities in watershed

Grand prairie natural region

- floodplain forest • sand flatwoods • wet prairie
- marsh • fen • bog • sedge meadow
- muck and sand flats • lake • pond
- northern swamp • shrub swamp

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods
- marsh • shrub swamp • fen • seep
- pond • wet prairie • northern swamp

Middle Wabash

Description

The Middle Wabash basin, as defined in this report, encompasses 3,453 square miles of west-central Indiana. The basin is bounded on the west by Illinois, extends eastward to approximately 12 miles east of Lebanon, and extends north-south from approximately 10 miles south of Terre Haute to approximately 18 miles north of Lafayette. The Middle Wabash River basin includes all of Fountain, Montgomery, Vermillion, and Warren counties, significant parts of Benton, Boone, Parke, Tippecanoe, and Vigo counties, and small parts of six other counties. The largest population centers in the middle Wabash River basin (listed in order of relative size) are Terre Haute, Lafayette, West Lafayette, Crawfordsville, and Lebanon.

Special concerns for water quality and flood control in watershed

- urban areas (Lafayette, Terre Haute)
- agricultural (crops, livestock)

Wetland communities in watershed

Grand prairie natural region

- floodplain forest • sand flatwoods • wet prairie
- marsh • fen • bog • sedge meadow
- much and sand flats • lake • pond
- northern swamp • shrub swamp

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods • marsh
- shrub swamp • fen • seep • pond
- wet prairie • northern swamp

Southwest wetlands and bottom lands natural regions

- floodplain forest • southwest flatwoods
- southern swamp • shrub swamp • seep
- lake • pond • marsh

Lower Wabash

Description

The Lower Wabash River basin incorporates the drainage basin of the Wabash River between Honey Creek in Vigo County and the mouth of the Wabash River at the Ohio River in Posey County. The basin has an area of 1,339 square miles and includes most of Sullivan and Posey counties, plus parts of Vigo, Greene, Knox, Gibson, and Vanderburgh counties in southwestern Indiana. The major cities and towns in the basin are Vincennes, Sullivan, and Princeton.

Special concerns for water quality and flood control in watershed

- flooding (floodplain forest)

Wetland communities in watershed

Southwest wetlands and bottom lands natural regions

- floodplain forest
- southwest flatwoods
- southern swamp
- shrub swamp
- seep
- lake
- pond
- marsh

White River

Description

The White River basin spans nearly the entire width of south-central Indiana. The basin, as defined in this report, includes the areas from the headwaters of the White River in Randolph County to the confluence with the Wabash River in Knox County, but does not include the basin of the East Fork White River. The White River basin encompasses 5,603 square miles in 27 counties and includes all or large parts of the following counties: Boone, Clay, Davies, Delaware, Greene, Hamilton, Hendricks, Knox, Madison, Marion, Monroe, Owen, Putnam, Randolph, and Tipton. Principal cities within the basin are Anderson, Carmel, Greencastle, Indianapolis, Linton, Martinsville, Muncie, Noblesville, Spencer, Washington, and Winchester.

Special concerns for water quality and flood control in watershed

- urban areas (Anderson, Bloomington, Muncie, Indianapolis, Hamilton County)
- agricultural (crops, livestock)
- mining (lower section)
- rural septics

Wetland communities in watershed

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods • marsh
- shrub swamp • fen • seep • pond
- wet prairie • northern swamp

Southwest wetlands and bottom lands natural regions

- floodplain forest • southwest flatwoods
- southern swamp • shrub swamp • seep
- lake • pond • marsh

Shawnee hills and highland rim natural regions

- floodplain forest • sinkhole swamp • sweep
- spring • sinkhole pond • marsh
- southern swamp • shrub swamp

East Fork White River

Description

The East Fork White River basin, located in south-central Indiana, extends from the southwestern to the east-central part of the State. The basin has an area of 5,746 square miles, and its long axis trends northeast-southwest for a distance of approximately 150 miles. The East Fork White River basin includes all, or part of, the following counties: Bartholomew, Brown, Davies, Decatur, Dubois, Hancock, Henry, Jackson, Jefferson, Jennings, Johnson, Lawrence, Marion, Martin, Monroe, Orange, Pike, Ripley, Rush, Scott, Shelby and Washington. Principal cities include Bedford, Bloomington, Columbus, Franklin, Greenfield, Greensburg, Loogootee, New Castle, North Vernon, Rushville, Seymour, and Shelbyville.

Special concerns for water quality and flood control in watershed

- karst (underground rivers)
- groundwater quality
- septic systems

Special concerns for the middle fork of the east fork of the White River

- agricultural runoff
- siltation

Wetland communities in watershed

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods • marsh
- shrub swamp • fen • seep • lake
- wet prairie • northern swamp

Shawnee hills and highland rim natural regions

- floodplain forest • shrub swamp • sweep
- sinkhole swamp • sinkhole pond • spring
- marsh • southern swamp

Bluegrass natural region

- floodplain forest • shrub swamp • pond
- bluegrass flatwoods • marsh • southern swamp

Whitewater

Description

The Whitewater River water-management basin is located in southeastern Indiana. The basin extends approximately 75 miles along the Indiana-Ohio state line. Its maximum width is approximately 30 miles, south of the Brookville Reservoir. The basin encompasses an area of 1,425 square miles and includes all of Wayne and Union counties, most of Fayette and Franklin counties, and parts of Randolph, Henry, Decatur, and Dearborn counties. The largest cities in the basin are Richmond and Connersville.

Special concerns for water quality and flood control in watershed

- urban headwaters (Richmond)
- agricultural (crops)

Wetland communities in watershed

Till plain and black swamp natural regions

- floodplain forest • till plain flatwoods • marsh
- shrub swamp • fen • seep • pond
- northern swamp • wet prairie

Bluegrass natural region

- floodplain forest • bluegrass flatwoods • pond
- marsh • southern swamp • shrub swamp

Patoka

Description

The Patoka River drains 862 square miles within a long, narrow basin in southwestern Indiana. The basin is approximately 12 to 16 miles wide throughout most of its 78-mile length. The Patoka River basin includes parts of northern Gibson County, the southern three-quarters of Pike and Dubois counties, the southern one-third of Orange County, the northeastern corner of Crawford County, and smaller areas in three adjacent counties.

Special concerns for water quality and flood control in watershed

- mining
- flooding (floodplain forest)

Wetland communities in watershed

Southwest wetlands and bottom lands natural regions

- floodplain forest • southwest flatwoods
- southern swamp • shrub swamp • seep
- lake • pond • marsh

Shawnee hills and highland rim natural regions

- floodplain forest • sinkhole swamp • seep
- spring • sinkhole pond • shrub swamp
- marsh • southern swamp

Ohio

Description

The Ohio River basin is the southernmost water-management basin in Indiana. It extends approximately 200 miles across southern Indiana, from Lawrenceburg in eastern Indiana to about 10 miles southwest of Mt. Vernon in western Indiana. The Ohio River basin, the fourth largest basin in the State, encompasses 4,224 square miles. The basin includes all of Ohio, Switzerland, Floyd, Harrison, and Perry counties and large parts of Dearborn, Ripley, Jefferson, Clark, Washington, Crawford, Spencer, Warrick, and Vanderburgh counties. Principal cities within the basin include Evansville, New Albany, Madison, Lawrenceburg, Jeffersonville, Mt. Vernon, Salem, Boonville, Tell City, and Charlestown.

Special concerns for water quality and flood control in watershed

- slow flow, short segments draining directly into Ohio River

Wetland communities in watershed

Southwest wetlands and bottom lands natural regions

- floodplain forest • southwest flatwoods
- southern swamp • shrub swamp • seep
- lake • pond • marsh

Shawnee hills and highland rim natural regions

- floodplain forest • sinkhole swamp • seep
- spring • sinkhole pond • marsh
- southern swamp • shrub swamp

Bluegrass natural region

- floodplain forest • bluegrass flatwoods • pond
- marsh • southern swamp • shrub swamp

Appendix G

Wetland Communities in Indiana

(based on Natural Community Classifications,
IDNR, Division of Nature Preserves)

Acid bog (shrub/herb bog)—an acidic wetland of kettle holes in glacial terrain. Consists of low shrubs and mosses such as sphagnum. The bog can also be a floating, quaking mat. These systems have non-flowing or very slow flowing water that fluctuates seasonally.

Acid seep—a bog-like wetland that is groundwater-fed and located in upland terrains. It is characterized by flowing water during at least part of the year. It is naturally irrigated by the outflow of groundwater.

Circumneutral seep (seep-spring)—a groundwater-fed wetland on organic soils and is primarily herbaceous with a scattered tree canopy. Typically it is situated on the lower slopes of hills, particularly those bordering larger drainages. It is characterized by slowly flowing water during at least part of the year and is naturally irrigated by the outflow of groundwater.

Circumneutral bog (scrub bog)—a bog-like wetland that receives ground water. These bogs can sometimes be found as a quaking or floating mat. The soils are usually peat or other low nutrient organic substrates, which are saturated and neutral to slightly acid. These systems have non-flowing or very slow flowing water that fluctuates seasonally.

Fen—calcareous, groundwater-fed wetlands. They are often a mosaic of grassy areas, sedgy areas, grass-sedge areas, and tall shrub areas. These systems have very slow flowing water in which the water level fluctuates seasonally.

Flatwoods—a forest on level upland terrain characterized by a mosaic of wet depressions and slightly elevated soils. Different types of flatwoods are differentiated by substrate and/or vegetation and/or geography (e.g., sand flatwoods, post oak flatwood, boreal flatwoods, and central till plain flatwoods). Soils are typically poorly drained. Water levels, an accumulation of direct precipitation (not flooding), are normally ephemeral above the soil surface.

Forested swamp—a permanently inundated wetland of large river bottoms. They normally occur in depressions and sloughs of the bottomlands. The soils are usually very poorly drained and is seasonally to permanently saturated or ponded.

Forested fen—a tree-dominated wetland on organic soil which receives groundwater. They are often a mosaic of tree areas, tall shrub areas, and herbaceous areas.

Gravel wash—a plant community occurring on gravely substrates along streams and rivers. Ground cover consists of mixed herbs, grasses, and vines with shrubs present at times. These communities are subject to brief but severe flooding.

Lake—a natural standing water body larger than four acres. Lakes have temperature stratification, and may have beaches formed from wave action. These communities have plant mosaic patches that correlate with water depth and types of substrates. Water levels may fluctuate seasonally, and there is little or no water flow.

Marl beach prairie—fen-like community located on the marly muck shorelines of lakes; the surface is firm and moist but not saturated, and marl precipitation is evident.

Marsh—herbaceous wetland of more or less permanent, non-flowing water bodies, either in lakes or water-filled depressions; water levels may fluctuate, but rarely recede to expose the soil surface.

Muck flat—a shoreline and lake community possessing a unique flora of sedges and annual plants, many of which are also found on the Atlantic and Gulf Coastal Plains. They are situated at the margins of lakes or are covering shallow basins. This system has a peat substrate and may float on the water surface, but during high water periods are usually inundated. The water level fluctuates seasonally or from year to year in response to the amount of precipitation.

Open water—a wetland of less than 20 acres, the bottom of which has at least 25% cover of particles smaller than stones, and a vegetative cover less than 30%. They lack bottom surfaces large and stable enough for plant and animal attachment. Water regimes are subtidal, permanently and semipermanently flooded, and intermittently exposed.

Panne (calcareous seep)—an herbaceous wetland occupying interdunal swales near Lake Michigan. They are located on the lee side of the first or second line of dunes from the lakeshore. Pannes are naturally irrigated by the outflow of ground water.

Sand flat—a shoreline and lake community possessing a unique flora of sedges and annual plants that resemble those found on the Atlantic and Gulf Coastal Plains. They are found at the margins of lakes or covering shallow basins. This system has a sand substrate and during high water periods are inundated. The water level fluctuates during a season or from year to year in response to the amount of precipitation.

Sedge meadow—sedge-dominated wetland of stream margins and river floodplains, lake margins, or upland depressions. These systems usually occupy the ground between a marsh and upland. The substrate of a sedge meadow is typically highly organic, and is at or just above the water level.

Shrub swamp—a shrub-dominated wetland that is more or less permanently inundated. It commonly occurs in depressions. They are characterized by non-flowing or very slowly flowing water which fluctuates seasonally.

Sinkhole swamp—an unusual and small semi-permanently flooded wetland of limestone landscapes. They are located in depressions that were formed when underground chambers dissolved in a limestone plateau and collapsed. The water levels are more or less permanently elevated above the soil surface, but may dry down in drought conditions.

Sinkhole pond—a water-containing depression, generally smaller than four acres, in limestone topography; normally consists of open water and marshy borders with little or no water flow.

Wet prairie—herbaceous wetland that occurs in deep swales; substrates range from very black mineral soils to muck.

Wet sand prairie—herbaceous wetland that occurs in deep swales; substrate is sand (sometimes mixed with muck).

Wet floodplain forest (bottomland hardwood forest)—a broadleaf deciduous forest of river floodplains. It has traits of long flooding and hydric soils that are intermediate between wetlands and terrestrial systems.

Wet-mesic floodplain forest—a broadleaf deciduous forest of river floodplains. A great diversity of tree species is found in these systems as compared to the wet floodplain forest type. These systems have imperfectly and poorly-drained neutral silt loam soils which are poorly aerated. Despite flooding, the soils and flora suggest a terrestrial rather than palustrine system.

Wet-mesic sand prairie—upland herbaceous community dominated by grasses, and occurring in shallow swales or lower slopes of sand plains; substrate is typically sand or loamy sand.