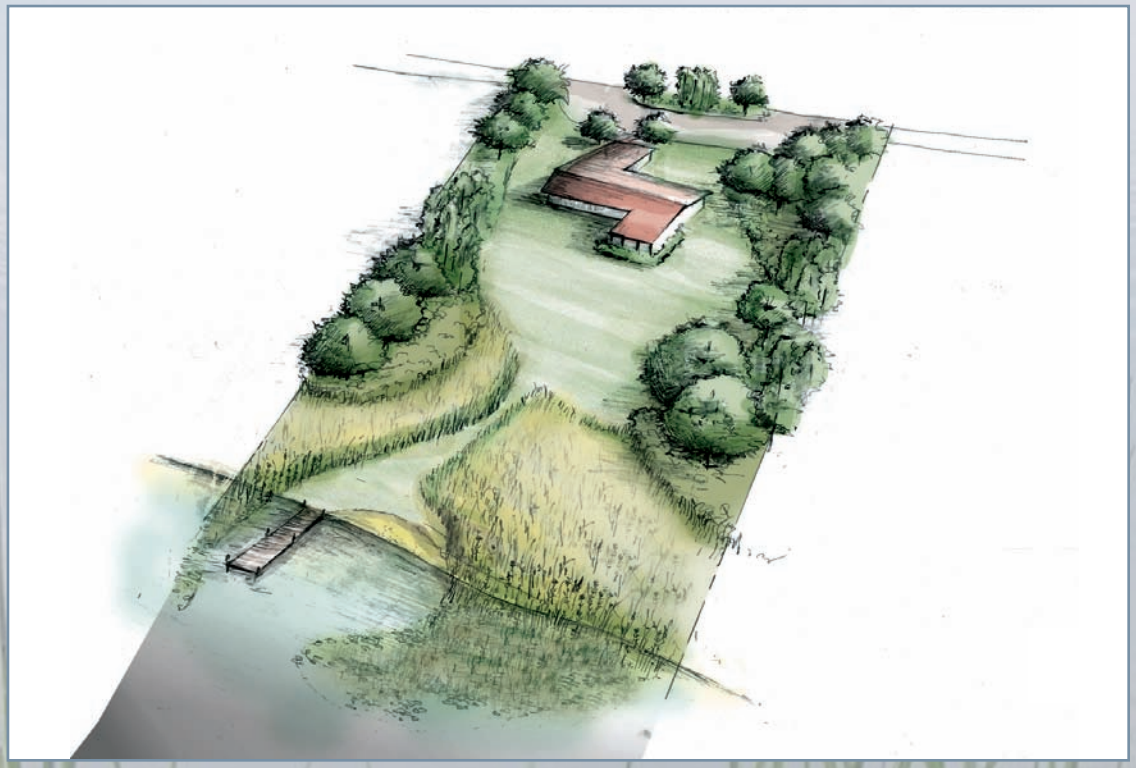
Lakescaping for Wildlife and Water Quality

INDIANA ADDENDUM



Indiana Lakes Management Society

Lake and River Enhancement Program
Division of Fish and Wildlife
Indiana Department of Natural Resources

Lakescaping for Wildlife and Water Quality

Indiana Addendum

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Addendum: Introduction

INTRODUCTION

This document is an Indiana-specific addendum to *Lakescaping for Wildlife and Water Quality*, by the Minnesota Department of Natural Resources. The parent document is a full-color, 176-page handbook that covers all aspects of shoreline lakescaping, from design and planning, through site preparation and installation, to long-term maintenance and stewardship. (It is available from the Minnesota Bookstore: 800-657-3757). Most of this information is directly applicable to lakescaping in Indiana; however, there are a few aspects that are different biologically or physiographically, and these are captured in the *Indiana Addendum*. In addition, this *Addendum* contains a host of resources that are specific to Indiana and will greatly assist anyone seeking to conduct lakescaping efforts in the Hoosier State.

- **Case Studies** | real-world examples of successful lakescaping projects that have been accomplished in Indiana.
- **Plant List** | listing of common Indiana plants suitable for lakescaping applications.
- **Native Plant Nurseries** | reference guide and contact information for sources of common Indiana lakescaping plant materials.
- **Sources of Erosion Control and Bioengineering Products** |reference guide and contact information for sources of lakescaping materials.
- **Cost Estimates** | general guide for calculating rough cost estimates for various types of lakescaping projects.
- **Rules & Regulations** | quick guide to the regulatory process that may be involved in the implementation of a lakescaping project.
- **Additional Sources of Information** | list of references that can provide more details on many of the concepts addressed in the *Addendum*.
- **Indiana Agency Guide** | contact information for the various agencies and organizations that have regulatory jurisdiction over and/or can provide technical assistance for lakescaping projects.
- **Program Descriptions** | brief descriptions of the Indiana programs related to lakescaping, lake and watershed management, and conservation.
- **Lakescaping Registry** | short "registration form" that indicates you have completed a lakescaping project. The registry will become a pool of projects that others can review as they consider projects of their own.

Addendum: Case Studies

CROOKED LAKE | ANGOLA, IN

Project Location: Angola, Steuben County, Indiana

Owner: Private residences

Scope of Project: Natural buffer left intact. Piers constructed through natural vegetation

Viewable From: Lakeside only, west side of lake

Crooked Lake is a 828-acre lake located five miles northwest of Angola, Indiana. In many cases, shoreline vegetation is established after erosion has occurred. In this example, a natural undeveloped buffer was left intact adjacent to several homes in Black Oak Subdivision on the west side of Crooked Lake. This is the ideal approach when a lakefront lot is developed.

Homeowners have installed piers through the native vegetation to gain access to the lake for recreational purposes. The piers have provided residents with a place to dock their boats while maintaining the natural buffer and associated water quality benefits.

The natural buffer provides excellent habitat for fish and wildlife, while reducing the presence of nuisance geese. This buffer also maintains water quality by providing runoff and erosion control. This natural area provides wildlife viewing opportunities to the local residents throughout the year.

INTECH BUSINESS PARK

INTECH is a 210-acre business park near Interstate I-465 on the west side of Indianapolis. The site was planned to minimize impacts on natural areas, and the developer chose to incorporate predominately native plants into the landscaping plan. The combination of modern buildings, native landscaping, and walking trails within the site has made this location one of the most desirable in the area.

The site includes numerous ponds and wetlands with native upland and wetland buffers. All stormwater runoff from the business park is treated utilizing this series of ponds and wetlands. During the development, portions of natural areas on the property were also preserved where it was feasible. The diverse native prairie and aquatic plants provide excellent habitat to numerous species of fish and wildlife.

Maintenance of the natural areas is a high priority due to the high aesthetic demand of the business park clientele. Maintenance activities included weeding, mowing, and herbicide applications during the establishment period. The City of Indianapolis was awarded the 2003 America in Bloom (AIB) national beautification award beating out Boston, Massachusetts and Rochester, New York in the over 500,000 population category.

Project Location: Indianapolis, Marion County, Indiana

Completion Date: May 2005

Owner: Lauth Property Group

Funding and Technical Assistance Provided by: Lauth Property Group and JFNew

Scope of Project: Wetland Mitigation, Native Landscaping, Native Planting and Seeding, Wetland Restoration, Stormwater Management

Viewable From: Southwest Corner of 71st Street and I-465, walking trails through site

LAKE OF THE WOODS | BREMEN, IN

Project Location: Bremen, Marshall County, Indiana

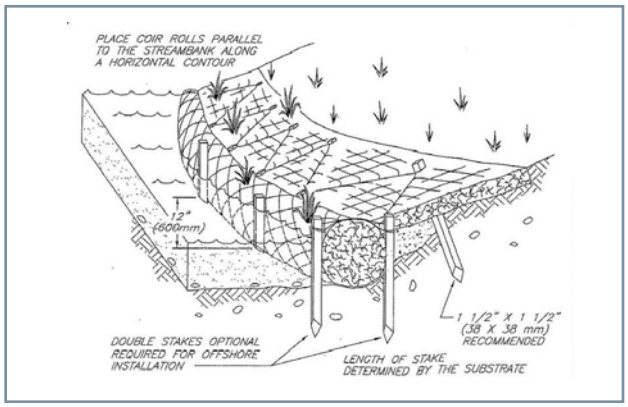
Completion Date: May 2008

Owner: Bremen Conservation Club

Funding and Technical Assistance Provided by: Marshall County Foundation, FFA, and JFNew

Scope of Project: Soil Encapsulated Lift, Glacial Stone Toe, Biolog Installation, Native Plant Plugs, Native Plant Buffer

Viewable From: 875 N Shore Drive on northeast side of Lake of the Woods/ Lakeside



Lake of the Woods is a 416-acre lake located five miles southwest of Bremen, Indiana. The Bremen Conservation Club secured funding to perform lakeshore restoration on approximately 500 feet of shoreline on the Club's property. The goal of the project was to stop erosion, stabilize and restore approximately 500 feet of shoreline with a combination of shoreline restoration practices.

Of this 500 feet of shoreline, 150 feet of encapsulated soil lift structures were constructed and 350 feet of vegetated biologs were installed in spring, 2008. In addition to this, a filter strip approximately 10 feet wide was planted and seeded with native wetland and prairie plants. The filter strip was installed by volunteer labor from local schools and other student organizations, such as the FFA. Throughout the growing season, volunteer labor maintained and monitored the new plantings by hand-weeding invasive plants that occupied the newly constructed shoreline.

Due to heavy foot traffic by anglers, a small section of the encapsulated lift had to be repaired in the spring. Emergent vegetation was also decimated by the local population of carp within this lake. Future plantings should include a carp barrier until the native vegetation is established. The completed project provides a stabilized shoreline that is both environmentally sound and aesthetically pleasing.

SKINNER LAKE | ALBION, IN

Skinner Lake is a 125-acre lake located three miles east of Albion, Indiana in Noble County. A shoreline stabilization project was completed on the north side of the lake on a parcel owned by Mr. and Mrs. Jerry and Shirley Weimer. The purpose of this project was to reduce active shoreline erosion and provide a demonstration project area to educate other lakefront owners on the benefits of bioengineered shoreline protection.

A portion of the property has historically been used by lake residents as a swimming beach and picnic and fishing area. The majority of the property was vegetated by a mix of turf grass and large deciduous trees. The site is located off of a point in the lake where the lake narrows. Wave action from wind energy and boat wakes beat against the shoreline, causing portions of shoreline to become eroded. The turbulence caused by wave action against the shoreline caused the toe of the slope to be eroded away. This turbulence re-suspended bottom sediments, thereby increasing the transfer of nutrients from the lake bottom to the water column.

A total of 235 feet of shoreline was stabilized. Native shrubs and emergent vegetation were preserved during the installation process and restoration techniques were fitted to the existing bank conditions. This included 110 feet of soil-encapsulated lifts and 125 feet of coir logs. The soil-encapsulated lifts that were constructed on the east end of the project site included a rock toe three feet out into the lake to a height of one foot above the current lake level. Native vegetation was used to stabilize the lift. On the west end, coir logs were staked in place at the water's edge and planted with native vegetation. Coir logs were back-filled with soil and the surrounding shoreline was graded to match the existing shoreline. Seeding and erosion control blanket were utilized to restore areas above the shoreline that were disturbed during construction.

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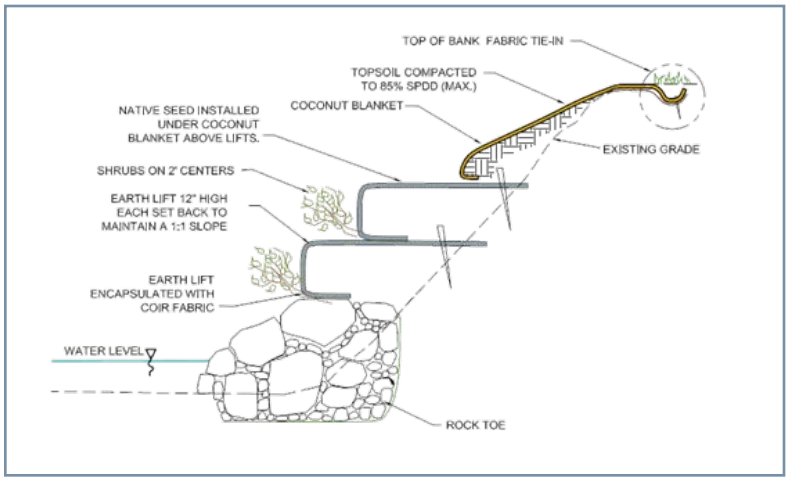

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Construction activities began in December 2007 with the soil encapsulated lifts and coir log installation. The soil encapsulated lifts were installed with a slope, which prevented ice damage during the winter months prior to the establishment vegetation. Winter installation made cleanup more difficult due to frozen soils. A spring cleanup and final installation of native plant plugs took place in the spring of 2008. Plants were installed into predrilled holes in the coir logs, which were nearly closed up due to swelling within the coir logs over the winter months. Future coir log installation projects should include place holders for plugs if not installed immediately.

The project has held up well during the first boating season and several heavy rain events. With each growing season, the vegetation will become more established and should provide years of shoreline protection with very little maintenance.

Project Location: Albion, Noble County, Indiana

Completion Date: Spring, 2008

Owner: Mr. and Mrs. Jerry and Shirley Weimer

Funding and Technical Assistance Provided by: Skinner Lake Homeowners Association, Indiana Department of Natural Resources and JFNew.

Scope of Project: Soil Encapsulated Lift, Glacial Stone Toe, Biolog Installation, Native Plant Plugs, Native Plant Buffer

Viewable From: from the north side of Skinner Lake just south of Skinner Lake Road

WINONA LAKE | WINONA LAKE/WARSAW, IN

Winona Lake is a 562-acre lake located one mile southeast of Warsaw, Indiana in Kosciusko County. Shoreline property owned by the Kosciusko County Community Fair and the Village of Winona have recently been restored to prevent erosion and nutrients entering the Lake.

KOSCIUSKO COUNTY COMMUNITY FAIR PROPERTY

Years of bank erosion had left its mark on the shoreline of the Kosciusko County Community Fair property. After securing a grant through the IDNR, a shoreline stabilization project was pursued by the Kosciusko County Community Fair to reduce active shoreline erosion and provide a demonstration project area to educate other lakefront owners of the benefits of bioengineered shoreline protection. Thirteen hundred feet of shoreline was restored utilizing soil encapsulated lifts, native plants and glacial stone in May of 2009. The glacial stone toe was installed during the winter drawdown to facilitate equipment access and reduce aquatic impacts. Multiple access points were created using glacial stone to accommodate fishermen and other lake users. Existing stumps were incorporated into the design to help maintain the integrity of the shoreline and provide fish and wildlife habitat. A native vegetation buffer zone was also installed to deter geese and filter stormwater runoff. Temporary netting was installed to prevent the geese from grazing on the native seedlings.

VILLAGE OF WINONA

The Village of Winona shoreline was a focal point for recreational activities dating back to the late 1800's with uses including a beach, park, boat livery, excursion dock and restaurant. In 1968, the Town of Winona opened a beach and the existing beach was converted to turf grass. In 1998, the Village of Winona purchased the property and in 2004 converted 2,000 feet of shoreline to native vegetation to promote clean water and deter nuisance geese. The established native vegetation is protecting the shoreline and the geese no longer use this area. A pier has been installed to provide access to the lake for the residents of the Hotel Condominium Association.

Project Location: Warsaw, Kosciusko County, Indiana

Landowners: Kosciusko County Community Fair and Village of Winona

Funding and technical assistance provided by: Kosciusko County Community Fair, Village of Winona and JFNew.

Viewable From: The Village of Winona project can be easily viewed from the road along Park Avenue in Winona Lake. Although the Kosciusko County Community Fair property is privately owned, the site is open to the public which is accessible from Smith Street in Warsaw.

KOSCIUSKO COUNTY COMMUNITY FAIR PROPERTY

VILLAGE OF WINONA

Addendum: Plant List

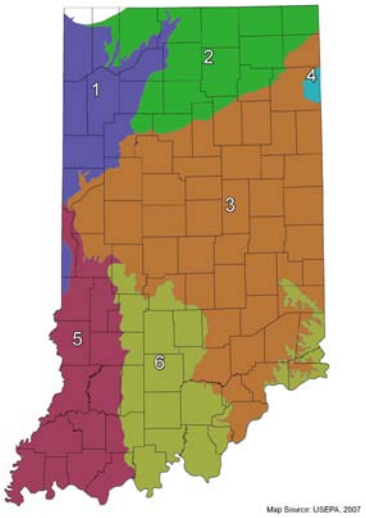
This section lists native plant species suitable for lakescaping in Indiana. If you live outside of Indiana, contact your local Department of Natural Resources office for a list of species appropriate for your state.
This list is grouped into three categories: (1) herbaceous wildflowers (forbs) and ferns; (2) grasses, sedges, and rushes; and (3) trees and shrubs. Use this plant list to assist in selecting species appropriate to the part of the state in which you will be planting (refer to the Native Region column). Then determine if the species of choice will grow in the growing conditions of your property by referring to the Habitat and Exposure (light) columns of the lists.

BOTANICAL NAME

Plants are listed alphabetically by scientific (or botanical) name. When purchasing plants, be sure to request them by scientific name to be certain that you are getting the correct plant species. The reference used for scientific names is H. A. Gleason and A. Cronquist, **Manual of Vascular Plants of Northeastern United States and Adjacent Canada, Second Edition** (1991).

COMMON NAME

Common names are given as an aid for readers unfamiliar with scientific names. However, common names can be misleading. Some plants have more than one common name, and some common names may be applied to more than one species.



NATIVE ECOLOGICAL REGIONS

1. Central Corn Belt Plains
2. Southern Michigan/ Northern Indiana Drift Plains
3. Eastern Corn Belt Plains
4. Heron/Erie Lake Plains
5. Interior River Valleys and Hills
6. Interior Plateau

NATIVE REGION

The state of Indiana has been divided into six native ecological regions based on plant communities, climate, and geologic land formations (see map). For each plant listed in the table, the native regions are indicated. For successful establishment and growth of any plant within each native region, a species must be planted in the appropriate habitat.

HABITAT

Lakeshore habitats are divided into six broad growing environments as follows:

A: Aquatic plant communities are characterized by the ability to tolerate water depths of 18 inches to 3 feet. Plants in the Aquatic zone are usually found in areas of permanent standing water.

ED: Emergent Deep plant communities are characterized by water levels 4 inches to 18 inches deep. Plants in the Emergent Deep zone usually have their shoots emerging from the water.

ES: Emergent Shallow plant communities are characterized by water levels 0 inches to 4 inches deep. Plants in the Emergent Shallow zone are usually found at the water's edge or in permanently marshy areas. These species usually prefer rich, hydric soils.

S: Saturated Plant communities grow in soils that are less than 4 inches above the water level and are typically moist year-round because of proximity to or connection with the water table or the lake. Besides growing along lakes, these plants grow in wet meadow wetlands (sedge meadows), floodplain forests, stream banks, ditches, and other springy soils.

UM: Upland Moist plant communities are characterized by upland soils 4 inches to 18 inches above water level and that are rich, fertile, and moist (but not saturated). Familiar habitats found above lakeshores include rich woods and mesic prairie.

UD: Upland Dry plant communities are characterized by upland soils more than 18 inches above water level and that are dry and well drained. Familiar habitats found growing above lakeshores include dry prairie, dry woodland, and sandy, rocky, or gravelly slopes.

EXPOSURE

The amount of light in which a plant grows best is indicated by the following:

- ❍ full sun (at least 8 hours of sun per day)
- ◗ part sun (at least 4 hours of sun per day)
- ● full shade (no direct sun)

SPACING

Suggested spacings for planting are given in feet. These recommendations are based upon growth habit, rate of growth, and mature plant size.

HEIGHT

The mature height in feet is given for each plant. These heights can be achieved under optimal conditions. Actual mature height will vary depending on growing conditions.

BLOOM COLOR

Color is given for the wildflowers.

BLOOM TIME

An approximate range of bloom time is given for the wildflowers. This information can be used to plan for continual bloom display in plantings throughout the growing season.

SEASONAL INTEREST

Noted in this column are plant characteristics of particular interest, such as inflorescence, fruit, bark, fall color, and even sound.

WILDLIFE BENEFIT

Plants are used by wildlife for food, cover, nesting habitat, nesting material, perching, and roosting. Animals for which a plant is of significant value are indicated. The designation "birds" means that more than one group of either songbirds, game birds, shorebirds, or waterfowl benefits from a particular species. "Small mammals" may include such species as field mice, shrews, voles, squirrels, and so on.

SPECIAL CHARACTERISTICS

Included here are special functional attributes, required soil conditions, life cycle, and plant forms.

*Nomenclature based on *Floristic Quality Assessment in Indiana: The Concept, Use, and Development of Coefficients of Conservatism*. Rothrock, Paul E. June 2004.

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
*Acorus americanus**	**Sweet Flag**	All			ES	S			❍	2.5	1-4
Actaea alba	**Doll's Eyes**	All					UM		◗●	2	2
Actaea rubra	**Red Baneberry**	2				S	UM		◗●	2	2
Adiantum pedatum	**Maidenhair Fern**	2,3,4,5,6					UM		◗●	1.5	1-2.5
Agalinis tenuifolia	**Slender False Foxglove**	All				S	UM	UD	❍◗	1	1-2
Agastache nepetoides	**Yellow Giant Hyssop**	All					UM		◗	2	3-7
Agastache scrophulariifolia	**Purple Giant Hyssop**	All						UD	◗●	2	3-7
Agrimonia parviflora	**Swamp Agrimony**	All				S	UM		❍◗	2	3-4
Alisma subcordatum	**Common Water Plantain**	All			ES	S			❍	3	2-4
Allium canadense	**Wild Onion**	All					UM		❍◗●	1	1-2
Allium cernuum	**Nodding Onion**	All					UM	UD	❍◗	1	1-2
Allium tricoccum	**Wild Leek**	1,2,3,4,6					UM		◗●	1	0.5-1
Amsonia tabernaemontana	**Common Bluestar**	5				S	UM		❍◗●	1	1-1.5
Anemone canadensis	**Meadow Anemone**	1,2,3,4,5				S			❍◗	2	1-2
Anemone cylindrica	**Thimbleweed**	1,2						UD	❍◗	2	2-3
Anemone virginiana	**Tall Anemone**	All						UD	❍◗●	2	1-3
Anemonella thalictroides	**Rue Anemone**	All					UM		◗●	0.5-1	6-1
Angelica atropurpurea	**Great Angelica**	1,2,3,4				S			❍◗	3-5	4-12
Antennaria neglecta	**Cat's Foot**	All					UM	UD	❍◗	1	0.5-1
Antennaria plantaginifolia	**Pussytoes**	All					UM	UD	❍◗●	1-2	0.5-1
Apocynum androsaemifolium	**Spreading Dogbane**	1,2,3N						UD	❍◗	3	1-4
Apocynum cannabinum	**Indian Hemp**	All				S	UM		❍◗	3	3-4
Aquilegia canadensis	**Wild Columbine**	All					UM	UD	❍◗●	1.5	1-3
Aralia racemosa	**American Spikenard**	2,3,4,5,6					UM		◗●	3-5	3-5
Arisaema dracontium	**Green Dragon**	All				S	UM		◗●	1	2'
Arisaema triphyllum	**Jack-In-The-Pulpit**	All					UM		◗●	1–2	1-3
Artemisia caudata	**Beach Wormwood**	1,2						UD	❍◗●	1-2	1-3
Aruncus dioicus	**Goatsbeard**	5,6					UM		◗●	2-4	4-6
Asarum canadense	**Wild Ginger**	All					UM		◗●	1-2	6
Asclepias amplexicaulis	**Sand Milkweed**	1,2,5,6						UD	❍◗	1-2	1.5-2.5
Asclepias exaltata	**Poke Milkweed**	1,2,3,4,6					UM		◗●	2	2.5-4.5
Asclepias hirtella	**Tall Green Milkweed**	1,5,6					UM	UD	❍	1.5	2-3
Asclepias incarnata	**Swamp Milkweed**	All			ES	S			❍◗	2-3	3-5
Asclepias purpurascens	**Purple Milkweed**	1,2,4,5,6				S	UM	UD	❍◗	2	2-4
Asclepias sullivantii	**Prairie Milkweed**	1,3W,5					UM		❍	2	2-3
Asclepias syriaca	**Common Milkweed**	All					UM	UD	❍◗	2-3	2-4
Asclepias tuberosa	**Butterfly Weed**	All						UD	❍◗	2.5	1-3
Asclepias verticillata	**Whorled Milkweed**	1,2,3,5,6					UM	UD	❍◗	1.5	1-2
Asclepias viridiflora	**Green Milkweed**	1,2					UM	UD	❍◗	1-2	1-1.5
Asplenium rhizophyllum	**Walking Fern**	3,5,6					UM		◗●	1	4-8
Asplenium trichomanes	**Maidenhair Spleenwort**	3W,6						UD	◗●	1	4-7
Asplenium x ebenoides	**Scott's Spleenwort**	6					UM	UD	◗●	1	6-10
Aster cordifolius	**Heart-Leaved Aster**	All					UM	UD	◗●	1.5	2-4
Aster drummondii	**Drummond's Aster**	All					UM		❍◗●	2	2-4

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
Green	May-Jun	Waterfowl, muskrat, birds	Erosion control; establishes quickly; calm, shallow water
White	May-Jun	Bees, game birds, songbirds, rodents	Interesting white fruit that are poisonous if eaten
White	Apr-May	Bees, game birds, songbirds, rodents	Red, poisonous fruit; rare in Indiana
			Very attractive fern of heavily shaded areas
Lavender	Aug-Oct	Butterflies, bees	Partially parasitic on other plants
Yellow	Jul-Oct	Bees, flies, butterflies, wasps, spiders	Deer do not eat the leaves because of their bitter taste
Purple	Jul-Oct	Bees, butterflies	Self sows
Yellow	Jul-Sep	Bees	Spike of small yellow flowers
White	Jul-Sep		One plant is made up of many small white flowers in a large inflorescence
Pink	Apr-Jul		Edible; possesses strong onion scent
White/Lavender	Jun-Oct		Edible; possesses strong onion scent
White	Apr-Aug	Bees, flies, deer	Edible; possesses strong onion scent
Blue	Apr-May	Bees, butterflies, hummingbirds	Many small, pale blue flowers in terminal cluster
White	May-Sep	Waterfowl, muskrat	Spreading ground cover in moist soil
White	May-Aug	Bees, flies	Seedheads look like tufts of cotton late in year; foliage is toxic to mammals
White	Jun-Aug	Bees, flies	Seedheads look like tufts of cotton late in year; foliage is toxic to mammals
White	Mar-Jun		Long showy spring bloom; may go dormant in summer
White	May-Jun	Butterflies, bees	Calcareous fens; annual; bold, showy green foliage
White	Apr-May	Bees, flies, butterflies, game birds, deer	Heavily white pubescent foliage and interesting clusters of white flowers
White	Apr-Jun	Bees, flies, butterflies, game birds, deer	Heavily white pubescent foliage and interesting clusters of white flowers
Pink	May-Oct	Butterflies	Colonial; good erosion control plant for slopes
White	May-Sep	Bees, flies, butterflies	Fibers from plant can be twisted to make hemp
Red/Yellow	Apr-Jul	Hummingbirds	Short-lived perennial, self-sows; nice woodland wildflower
White	Jun-Aug		Shrubby habit; large clusters of small white flowers
Green	May-Jun	Flies, game birds, songbirds, deer	Unique flower structure matures to a showy cluster of red/orange berries
Green	Apr-Jul	Raccoon, chipmunk, turkey, wood duck	Forms a showy cluster of red berries
Green	Aug-Oct		Grows in sandy soil, often in areas with little competition
Cream	Apr-May	Butterflies	Shrubby habit; large clusters of small cream flowers
Maroon	Apr-Jun	Flies, ants	Ants distribute seeds; flowers very close to ground, often hidden under leaves
Pink	Jun-Jul	Bees, wasps, flies, butterflies	Requires sandy soil and little competition
White	Jun-Jul	Butterflies	Shade-loving milkweed
Purple/Cream	Jun-Aug	Butterflies	Globular flower clusters in axils of leaves
Pink	Jun-Sep	Birds, butterflies, muskrat, insects	Fragrant, showy lakeshore plant
Purple/Pink	Jun-Jul	Butterflies	Sap can be irritating to some people and is toxic if ingested or rubbed in eyes
Pink	Jun-Aug	Bees, wasps, ants, flies, butterflies, hummingbirds	Mammal herbivores avoid the plant because of toxic sap
Pink	May-Aug	Bees, wasps, flies, butterflies	Requires cross-pollination
Orange	Jun-Sep	Butterflies, birds, insects	Emerges late in spring; tuberous taproot
White	Jun-Sep	Butterflies	Good erosion control plant in full sun
Green	Jun-Aug	Bees, ants, beetles, butterflies	Not as showy as other milkweeds
			New plants arise where frond tip touches the substrate; grows on exposed rock
			Grows in rock crevices among mosses and on exposed rock
			Grows on exposed rock
Blue/White/Yellow	Aug-Nov	Butterflies, insects	Self sows; nice fall color for woodland planting
Blue/Yellow	Sep-Oct	Bees, flies, butterflies	Heart-shaped basal leaves; similar to A. cordifolius and A. sagittifolius

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Aster ericoides	**Heath Aster**	1,2					UM	UD	❍◗	2-3	1-3
Aster firmus	**Shining Aster**	All				S			❍	3	3-6
Aster laevis	**Smooth Blue Aster**	1,2,3N					UM	UD	❍◗	2-3	3-5
Aster lanceolatus	**Panicled Aster**	All				S			❍◗●	2-3	3-5
Aster lateriflorus	**Side-Flowering Aster**	All				S	UM	UD	❍◗●	2	1-3
Aster linariifolius	**Flax-leaved Aster**	1,6						UD	❍◗	1	0.5-1.5
Aster macrophyllus	**Big-Leaved Aster**	1,2					UM	UD	◗●	2-3	6-2
Aster novae-angliae	**New England Aster**	1,2,3,4,5				S	UM		❍◗	2-3	3-6
Aster oolentangiensis	**Sky-Blue Aster**	1,2						UD	❍◗	2	1-4
Aster pilosus	**Hairy Aster**	All					UM	UD	❍◗	1-2	1-3
Aster praealtus	**Willow Aster**	1,2,3N				S	UM		❍◗	3	2-4
Aster puniceus	**Bristly Aster**	All				S			❍	2-3	3-6
Aster sagittifolius	**Arrow-Leaved Aster**	All					UM		◗●	2-3	2-5
Aster sericeus	**Silky Aster**	1						UD	❍◗	1	1-2
Aster shortii	**Short's Aster**	All					UM	UD	◗●	2	1-4
Aster umbellatus	**Flat-Top Aster**	1,2,3N				S			❍◗	3	1-4
Astragalus canadensis	**Canadian Milk Vetch**	1,2 + along Wabash & Ohio Rivers					UM	UD	❍◗	3	1-4
Athyrium filix-femina	**Lady Fern**	All					UM		◗●	1-2	3
Athyrium thelypterioides	**Silvery Glade-fern**	2,3,5,6					UM		◗●	2-3	1.5-3
Aureolaria flava	**Smooth False Foxglove**	1,2,5,6					UM	UD	◗●	1.5	3-5
Aureolaria pedicularia	**Fernleaf False Foxglove**	1,2						UD	◗●	1.5	1-4
Baptisia australis	**Blue Wild Indigo**	6 along Ohio River					UM	UD	❍◗	3	1-4
Baptisia bracteata	**Cream Wild Indigo**	1						UD	❍◗	2	3-4
Baptisia lactea	**White Wild Indigo**	1,2					UM	UD	❍◗	3	3-4
Baptisia tinctoria	**Yellow Wild Indigo**	1,2						UD	❍◗	2-3	2-3
Bidens cernua	**Nodding Bur Marigold**	1,2,3,4,5				S			❍	2-3	1-4
Bidens coronata	**Tall Swamp Marigold**	1,2,3,5,6				S			❍	2	2-5
Bidens frondosa	**Common Beggars-Tick**	All				S			❍◗●	2-3	1-4
Blephilia ciliata	**Downy Wood Mint**	All					UM		❍◗●	1-2	1
Blephilia hirsuta	**Wood Mint**	All					UM		◗●	2	1-3
Boehmeria cylindrica	**False Nettle**	All			ES	S			❍◗●	2	2-3
Boltonia asteroides	**False Aster**	1,5				S			❍◗	3	3-5
Brasenia schreberi	**Water Shield**	1,2	A	ED					❍	3	6-1
Cacalia atriplicifolia	**Pale Indian Plantain**	All					UM	UD	❍◗●	2-3	3-8
Cacalia plantaginea	**Prairie Indian Plantain**	1,2,3E				S	UM		❍	2-3	3-5
Cacalia suaveolens	**Sweet Indian Plantain**	2,3,5,6				S	UM		❍	2	2-5
Caltha palustris	**Marsh Marigold**	1,2,3,4,5				S			❍◗●	1.5	1-2
Camassia scilloides	**Wild Hyacinth**	1,3,5,6					UM		❍◗●	1-2	1-2
Campanula americana	**Tall Bellflower**	All					UM		◗●	2	2-6
Campanula rotundifolia	**Harebell**	1,2						UD	❍◗	1	1-2
Castilleja coccinea	**Indian Paintbrush**	1,2,5				S	UM		❍◗	1	2
Caulophyllum thalictroides	**Blue Cohosh**	1,2,3,4,6					UM		◗●	2-3	1-3
Chamaecrista fasciculata	**Partridge Pea**	1,3,4,5,6					UM	UD	❍◗	1	1-3

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
White/Yellow	Aug-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Good erosion control plant in full sun
Lavender/White/Yellow	Aug-Oct	Bees	Grows best in calcareous situations
Blue/Yellow	Aug-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Beautiful late-season bloom
White/Yellow	Jul-Nov	Birds, butterflies, mice, chipmunk, rabbit, deer	Flowers through frost; spreads by rhizomes
White/Yellow	Jul-Oct	Bees, wasps, flies, butterflies	Disc florets become reddish-purple as they mature
Violet/Yellow	Aug-Oct	Bees, flies, butterflies	Attractive stiff, linear leaves
Lavender/White/Yellow	Jul-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Great ground cover for shaded slopes
Violet/Yellow	Jul-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Can be aggressive; spreads by seed
Blue/Yellow	Jul-Nov	Bees, flies, butterflies, wasps	Leaves have a rough, sandpapery texture
White/Yellow	Aug-Nov	Bees, flies, butterflies, wasps	Can become weedy
Blue/White/Yellow	Sep-Oct	Bees, flies, butterflies, wasps	Leaves are narrow and resemble those of a willow
Lavender/White/Yellow	Aug-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Calcareous; aggressive
Lavender/White/Yellow	Aug-Nov	Bees, flies, butterflies	Powdery mildew sometimes attacks leaves
Purple/Yellow	Aug-Oct	Bees, flies, butterflies	Attractive silvery leaves
Blue/Yellow	Aug-Oct	Bees, flies, butterflies	Grows best where limestone is near the surface
White/Yellow	Jul-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Showy white flowers
Cream	Jun-Oct	Birds, butterflies, mice, chipmunk, rabbit, deer	Forms 1-meter-wide patches
			Attractive shade-loving fern
			Attractive shade-loving fern
Yellow	Jul-Oct	Bees	Showy, tubular, yellow flowers
Yellow	Jul-Sep	Bees	Prefers sandy soil
Blue	May-Jun	Butterflies	Seeds inside fruit rattle when ripe fruit is dry
Cream	May-Jun	Butterflies	Drooping flower heads
White	May-Aug	Hummingbirds	Erect flower heads
Yellow	Jun-Aug	Butterflies	Smaller flowers than other species of the genus
Yellow	Jun-Oct	Bees, flies, butterflies, wasps, waterfowl, songbirds	Seeds cling to clothing
Yellow	Jun-Oct	Bees, flies, butterflies, wasps, waterfowl, songbirds	Seeds cling to clothing
Orange	Jun-Oct	Bees, flies, butterflies, moths, waterfowl, game birds, songbirds	Seeds cling to clothing
Lavender	Jun-Jul	Bees, flies, butterflies	Stong mint odor to the leaves
White	Jun-Oct	Bees, flies, butterflies, wasps	Strong mint odor to the leaves
Green	Jun-Oct		Non-stinging member of the nettle family
White/Yellow	Aug-Oct	Bees	Establishes readily from seed; elegant white flowers
Purple	Jun-Jul	Muskrat, ducks	Quiet water; beautiful floating leaf
White	Jun-Oct	Bees, flies, wasps	Leaves are thick and leathery
White	Jun-Aug	Bees, flies, wasps	Leaves are thick and leathery
White	Jul-Sep	Bees, flies, wasps	Grows in fens and sedge meadows
Yellow	Mar-Jun	Deer, game birds, frogs, insects	Wonderful spring show; poisonous
Blue/White	Apr-Jun	Bees, wasps, flies, butterflies	Terminal raceme of many small bluish flowers
Blue	Jun-Nov	Butterflies	Winter annual or biennial
Blue	Jun-Oct	Bees	Beautiful flower for dry sites
Yellow	Apr-Sep	Butterflies, hummingbirds	Showy yellow, orange, or red petal-like bracts
Yellow	Apr-May		Attractive plant; poisonous, lovely blue berries in September
Yellow	Jun-Oct	Bees, flies, butterflies, wasps, game birds, songbirds	Pulls atmospheric nitrogen into the soil for use by other plants

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Cheilanthes lanosa	**Hairy Lip Fern**	6					UM		◗●	1	0.5-1
Chelone glabra	**White Turtlehead**	All				S			❍◗●	2	2-4
Chelone obliqua	**Purple Turtlehead**	3,5,6				S	UM		❍◗●	2	2-3
Cimicifuga racemosa	**Black Snakeroot**	3,6					UM	UD	◗●	2-4	4-6
Circaea lutetiana	**Enchanter's Nightshade**	All					UM		◗●	1	1-2
Cirsium discolor	**Pasture Thistle**	All					UM	UD	❍◗	2-3	3-7
Cirsium muticum	**Swamp Thistle**	1,2,3,4				S			❍◗	2-3	3-6
Clematis pitcheri	**Leather Flower**	5					UM		❍◗	3	4
Clematis virginiana	**Virgin's Bower**	All					UM		❍◗	1.5-2	9 long
Coreopsis lanceolata	**Sand Coreopsis**	1						UD	❍◗	1	1-2
Coreopsis palmata	**Prairie Coreopsis**	1,2						UD	❍◗	0.5-1	1-2
Coreopsis tripteris	**Tall Coreopsis**	All					UM	UD	❍◗	1-3	4-8
Cryptotaenia canadensis	**Honewort**	All					UM		◗●	1	1.5-2.5
Cystopteris bulbifera	**Bulblet Fern**	2,3,5,6					UM		◗●	1	1-3
Dalea candida	**White Prairie Clover**	1					UM	UD	❍◗	1-2	1-3
Dalea purpurea	**Purple Prairie Clover**	1,3W,5						UD	❍◗	1	1-3
Delphinium tricorne	**Dwarf Larkspur**	3,5,6					UM		◗●	1.5	1-2
Desmanthus illinoensis	**Illinois Sensitive Plant**	3S,5,6					UM	UD	❍	3	3-5
Desmodium canadense	**Showy Tick Trefoil**	1,2,3N,4					UM	UD	❍◗	3	2-5
Desmodium canescens	**Hoary Tick Trefoil**	All						UD	❍◗	2-3	3-5
Desmodium glutinosum	**Pointed-leaf Tick Trefoil**	All					UM		◗●	2	1-3
Desmodium illinoense	**Illinois Tick Trefoil**	1,2					UM	UD	❍◗	2-3	3-6
Desmodium sessilifolium	**Sessile-Leaved Tick Trefoil**	1,2						UD	❍◗	2-3	2-4
Dicentra canadensis	**Squirrel Corn**	1,2,3,5,6					UM		◗●	1-2	1-2
Dicentra cucullaria	**Dutchman's Breeches**	All					UM		◗●	1-2	1-2
Dioscorea villosa	**Wild Yam**	All					UM		◗●	2-3	3-18
Dodecatheon meadia	**Shooting Star**	All					UM		❍◗	0.5-1	1-3
Dryopteris carthusiana	**Spinulose Wood Fern**	1,2,3,4,6				S	UM		◗●	2-3	1-3
Echinacea pallida	**Purple Coneflower**	1						UD	❍	1	2-5
Echinacea purpurea	**Broad-Leaved Purple Coneflower**	1,3W,5					UM		❍◗	1	3-5
Epilobium angustifolium	**Fireweed**	1,2,3				S			❍◗	1-2	2-5
Epilobium coloratum	**Cinnamon Willow Herb**	All				S			❍◗●	1-2	1-3
Equisetum hyemale	**Tall Scouring Rush**	All				S	UM	UD	❍◗●	1.5	1-3
Erigenia bulbosa	**Harbinger of Spring**	All					UM		◗●	0.5	1-6
Erigeron philadelphicus	**Philadelphia Fleabane**	All				S	UM		❍◗	1	1-2
Erigeron pulchellus	**Robin's Plantain**	1,2,3,6					UM	UD	❍◗●	1	1-2
Eryngium yuccifolium	**Rattlesnake Master**	1,2,5					UM	UD	❍	1	3-5
Erythronium albidum	**White Trout Lily**	All					UM		◗●	1	4-6
Erythronium americanum	**Yellow Trout Lily**	All					UM		◗●	1	4-6
Eupatorium coelestinum	**Blue Mistflower**	3S,5,6				S	UM		❍◗●	1-2	1-3
Eupatorium fistulosum	**Hollow Joe-Pye Weed**	3S,5,6				S			❍	3	5-9
Eupatorium maculatum	**Spotted Joe-Pye Weed**	1,2,3N			ES	S			❍◗	3	4-7
Eupatorium perfoliatum	**Common Boneset**	All			ES	S			❍◗	2-3	3-5
Eupatorium purpureum	**Purple Joe-Pye Weed**	All					UM		◗●	2	3-6

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
			Grows in shallow, somewhat acidic soil and on exposed rock
Cream	Aug-Sep	Butterfly larvae, insects, hummingbirds	Turtle head-shaped flower; showy on lakeshores
Purple/Pink	Aug-Oct	Bumblebees, hummingbirds	Foliage is bitter and is avoided by deer
White	Jun-Jul	Butterlies, insects	Long spikes of small white flowers
White	Jun-Aug	Bees, flies	Small white flowers; not showy
Pink	Aug-Oct	Bees, flies, butterflies, moths, hummingbirds, songbirds	Densely white hairy undersides to leaves
Pink	Aug-Oct	Bees, flies, butterflies, moths, hummingbirds, songbirds	Often grows in fens; not as spiny as other thistles
Purple	May-Jun	Bees, moths	Attractive bell-shaped flowers; herbaceous vine
White	Jul-Oct	Bees, flies, moths, wasps	Interseting feathery fruit in fall and winter; herbaceous vine
Yellow	May-Aug	Bees, flies, butterflies, moths	Sometimes spreads aggressively
Yellow	Jun-Aug	Bees, flies, butterflies, moths, wasps	Thick turkey foot-shaped leaves
Yellow/Brown	Jul-Oct	Bees, flies, butterflies, moths, wasps	Can become aggressive in moist, disturbed locations
White	May-Sep	Bees, wasps, flies, beetles	Commonly grows in alluvial soil; small white carrot-like flowers
			Prefers thin soil over limestone substrate
White	Jun-Oct	Bees, flies, butterflies, wasps	Often eaten by herbivores, making it difficult to establish
Purple	Jun-Sep	Butterflies, rabbits	Pulls atmospheric nitrogen into the soil for use by other plants
Violet	Apr-Jun	Bees, butterflies, moths, hummingbirds	Foliage is toxic to most mammals
White	Jul-Aug	Bees	Native American children used clusters of dried fruits as rattles
Purple	Jun-Sep	Deer, game birds, mice	Aggressive; self sows; showy flowers; seedpods cling to clothing
Purple	Jul-Sep		Seedpods cling to clothing
Pink	Jun-Sep		Shade-loving tick trefoil; seedpods cling to clothing
Purple	Jul-Sep	Bees, butterflies, game birds, rodents	Seedpods cling to clothing
Purple	Jul-Sep		Seedpods cling to clothing
White	Mar-May	Ants	White to pinkish heart-shaped flowers; interesting foliage
White	Apr-May	Ants	White V-shaped flowers; interesting foliage
Cream	May-Aug		Herbaceous vine with heart-shaped leaves and large papery-textured fruit
White/Pink	Apr-Jun	Bees	Unique shooting star flowers
			Attractive shade-loving fern
Lavender	May-Aug	Butterflies, hummingbirds, small songbirds	Deep taproot allows it to withstand drought
Purple	Jul-Aug	Small songbirds	Has been used medicinally for a variety of ailments
Pink	Jun-Aug	Bees, flies	Endangered in Indiana
Pink	Jun-Sep	Bees, flies, moths	Produces an abundance of tiny flowers
Brown	Apr-Aug		Spread by rhizomes; good to use in low spots where nothing else will grow
White	Mar-May	Bees, flies	One of the earliest blooming spring wildflowers; tiny flowers
White/Pink/Yellow	May-Jul	Bees, wasps, flies, butterflies, moths, beetles	Ray flowers are sometimes white but often tinged pink; clasping leaves
White/Yellow	May-Jun	Bees, wasps, flies, butterflies, moths, beetles	Larger flower-heads than other members of the genus, therefore more showy
White	Jul-Sep	Butterflies, bees	Unique blue-green foliage that looks similar to yucca
White	Mar-May	Butterflies, bees	Often mottled blue-green leaves wither away by summer
Yellow	Mar-May	Butterflies, bees	Mottled blue-green leaves wither away by summer
Blue	Jun-Oct	Bees, flies, butterflies, moths	Can sometimes be aggressive; deer avoid it due to bitter-tasting leaves
Pink	Jul-Sep	Bees, flies, butterflies, moths, wasps	Purplish stems are showy
Pink	Jun-Oct	Butterflies, moths, bees	Soil stabilizer; great all-around lakeshore plant
White	Jul-Oct	Birds, butterflies, moths	Tolerates seasonal flooding
Pink	Jul-Sep	Butterflies	Has been used medicinally for a variety of ailments

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Eupatorium rugosum	White Snakeroot	All					UM		◗●	2-3	2-4
Eupatorium serotinum	Late Boneset	1,3,5,6					UM		❍◗	2	2-5
Eupatorium sessilifolium	Upland Boneset	2,3,5,6					UM	UD	◗●	2	2-5
Euphorbia corollata	Flowering Spurge	All					UM	UD	❍◗	1	2-4
Euthamia graminifolia	Common Grass-Leaved Goldenrod	All				S	UM		❍◗	2	1-4
Filipendula rubra	Queen Of The Prairie	3N,5				S			❍	2-3	3-6
Fragaria virginiana	Wild Strawberry	All					UM	UD	❍◗●	1-2	6
Frasera caroliniensis	American Columbo	2,3,5,6					UM	UD	❍◗●	3	4-10
Gentiana andrewsii	Bottle Gentian	All				S			❍◗	1	1-3
Gentiana crinita	Fringed Gentian	1,2,3				S			❍	1	1-2.5
Gentiana flavida	Cream Gentian	1,2,6					UM		❍◗	1	1-3
Geranium maculatum	Wild Geranium	All					UM		❍◗●	1-2	1-2
Geum canadense	White Avens	All					UM		◗●	1	1.5-2.5
Gnaphalium obtusifolium	Fragrant Cudweed	All					UM	UD	❍◗	1	1-2.5
Helenium autumnale	Sneezeweed	All				S			❍◗	3	3-5
Helianthus divaricatus	Woodland Sunflower	1,2,3N,5,6					UM	UD	◗●	1	2-4
Helianthus giganteus	Tall Sunflower	1,2,3N				S			❍	3	4-12
Helianthus grosseserratus	Sawtooth Sunflower	All				S	UM		❍◗	4	4-12
Helianthus mollis	Downy Sunflower	1,2,3W,5						UD	❍	2	2-5
Helianthus occidentalis	Western Sunflower	1,2						UD	❍◗	1.5	2-4
Helianthus pauciflorus	Prairie Sunflower	1,2,3N,5						UD	❍	1.5	3-5
Helianthus strumosus	Pale-Leaved Sunflower	1,2,3N					UM		◗●	3	2-5
Helianthus tuberosus	Jerusalem Artichoke	All					UM		❍◗	3	5-10
Heliopsis helianthoides	False Sunflower	All					UM		❍◗	1-3	4-6
Hepatica acutiloba	Sharp-lobed Hepatica	All					UM		◗●	1	6
Hepatica americana	Round-lobed Hepatica	2,3					UM		◗●	1	6
Heracleum lanatum	Cow Parsnip	1,2,3N					UM		❍◗●	4	4-10
Heuchera americana	American Alum Root	All					UM	UD	◗●	1	1-2
Heuchera richardsonii	Prairie Alum Root	1,2					UM		❍◗●	1	1-3
Hibiscus laevis	Smooth Rose Mallow	1,5			ES	S			❍◗	2	3-7
Hibiscus moscheutos	Swamp Rose Mallow	1,2,5			ES	S			❍◗	2-3	3-7
Hieracium gronovii	Hairy Hawkweed	1,2,3W,3S,5,6					UM	UD	❍◗	1	1-3
Hieracium longipilum	Long-haired Hawkweed	1,2						UD	❍	1	2-5
Hieracium scabrum	Rough Hawkweed	1,2,3S,6						UD	❍◗	1	1-2
Hydrastris canadensis	Goldenseal	2,3,4,5,6					UM		◗●	1-3	1
Hydrophyllum virginianum	Virginia Waterleaf	1,2,3,4					UM		◗●	1-2	1-2.5
Hypericum pyramidatum	Great St. John's Wort	2,3W				S	UM		❍◗	2	3-6
Hypoxis hirsuta	Yellow Star Grass	All				S	UM	UD	❍◗	1	1
Iris cristata	Dwarf Crested Iris	6					UM		◗●	1	6-9
Iris virginica	Blue Flag	All			ES	S			❍◗●	1-3	2-3
Isopyrum biternatum	False Rue Anemone	2,3,4,5,6					UM		◗●	0.5	6-9
Jeffersonia diphylla	Twinleaf	3,6					UM		◗●	1	1-1.5
Justicia americana	Water Willow	All			ES	S			❍◗	1	1-2
Kuhnia eupatorioides v. corymbulosa	False Boneset	1,2,5						UD	❍◗	2	1-4

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
White	Jun-Oct	Bees, flies, butterflies, moths, wasps	Milk Sickness, from this species, caused the death of Abraham Lincoln's mother
White	Jul-Oct	Bees, flies, butterflies, moths, wasps	Can become aggressive in disturbed locations
White	Aug-Oct	Bees, flies, butterflies, moths, wasps	Shade-loving boneset
White	May-Oct	Game birds, songbirds	Self sows; good soil stabilizer
Yellow	Jul-Oct	Mice, rabbit, deer, grouse, bees, insects	Very nice late-season lake-edge wildflower
Pink	Jun-Aug	Beetles, flies	Will spread by rhizomes once established
White	Apr-Jun	Bees, flies, butterflies, moths, game birds, songbirds, mammals	Small, edible fruit
Cream	Apr-Jul		Large plant with large inflorescence of small cream-colored flowers
Blue	Aug-Oct	Bees	Beautiful late-season wildflower
Blue	Aug-Oct	Bees	Large, showy fringed blue flowers
Cream	Aug-Oct	Bumblebees, beetles	Our only non-blue flowered gentian
Lavender	Apr-Jul	Songbirds, chipmunk	Good ground cover under tree canopy
White	Jun-Sep	Bees, wasps, flies, beetles	Grows commonly in many types of forests/woodlands
White	Jul-Oct	Bees, flies, wasps	Pleasant odor given off by bruised plant
Yellow	Jul-Nov	Songbirds	Tolerates flooding; showy
Yellow	Jul-Oct	Bees, butterflies, songbirds	Performs best in sandy soils
Yellow	Jul-Sep	Songbirds, mice, game birds	Tall background wildflower
Yellow	Jul-Oct	Songbirds, mice, chipmunk	Spreads aggressively; good for slope stabilizer
Yellow	Jul-Sep	Bees, flies, butterflies, moths, songbirds, rodents	Ashy gray leaves are attractive even when not in bloom
Yellow	Jul-Oct	Bees, flies, butterflies, moths, songbirds	Leaves mostly basal, only a single pair of stem leaves sometimes present
Yellow/Brown	Jul-Oct	Bees, flies, butterflies, moths, game birds, songbirds, rodents	Can spread and become aggressive; powdery mildew sometimes forms on leaves
Yellow	Jul-Oct	Songbirds	Somewhat aggressive; great for woodland edge
Yellow/Brown	Jul-Oct	Bees, flies, butterflies, moths, wasps, game birds, songbirds, rodents	Edible tubers taste like water chestnuts
Yellow	Jun-Oct	Butterflies, songbirds	Can be aggressive
White/Pink/Blue	Apr-May	Bees, flies, chipmunks	Leaves are persistent and reddish-brown in winter
White/Pink/Blue	Apr-May	Bees, flies, chipmunks	Leaves are persistent and reddish-brown in winter
White	May-Jul		Biennial or short-lived perennial; self seeds; great show
Green	Apr-Jul	Bees	Grows in shallow soil and on exposed rock
Green	May-Sep	Bees	Flowers are very small; foliage is more attractive
White/Pink	Jun-Oct	Bees, butterflies	Large, showy flowers
White/Pink/Red	Jul-Oct	Bees, butterflies	Large, showy flowers
Yellow	Jul-Oct	Bees, flies, beetles, game birds	Bristly-hairy leaves and stems; small yellow flower heads
Yellow	Jul-Aug	Bees, flies, beetles, game birds	Long-hairy leaves and stems; small yellow flower heads
Yellow	Aug-Sep	Bees, flies, beetles, game birds	Bristly-hairy leaves and stems; small yellow flower heads
Green	Apr-May	Bees, flies	Often dug from the wild for medicinal use; produces bright red, showy fruit
Lavender	Apr-Jun	Bees, flies	Attractive gray-green foliage with white spots
Yellow	Jul-Aug	Bees, flies, beetles, butterflies, moths	Interesting seed heads persist in winter
Yellow	Apr-Jul	Bees, flies, beetles	Grass-like leaves and small yellow flowers
Blue	Apr-May	Bees, butterflies	Attractive sword-like leaves and large blue flowers
Purple	May-Jul	Bees, butterflies	Leaves provide vertical interest in the fall
White	Mar-Jun	Bees, flies	Provides early white flowers to forest understory
White	Apr		Attractive foliage and early, large, white flowers
Lavender	Jun-Aug	Bees, flies	Form large colonies in still or slow moving water
White	Aug-Oct	Bees, flies, butterflies, wasps	Does not spread aggresively

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Krigia biflora	**Orange Dwarf Dandelion**	1,2,3,4,6					UM	UD	◑◗●	1	1-1.5
Krigia virginica	**Virginia Dwarf Dandelion**	1,2						UD	◑◗	0.5	2-6
Lathyrus palustris	**Marsh Vetchling**	1,2,3N				S			◑◗	3	1
Lespedeza capitata	**Round-Headed Bush Clover**	1,2,3N,5						UD	◑◗	2	2-4
Lespedeza hirta	**Hairy Bush Clover**	1,2,5,6					UM	UD	◑◗	1.5	2-4
Lespedeza virginica	**Slender Bush Clover**	1,2,3W,5,6					UM	UD	◗●	1.5	2-3
Liatris aspera	**Rough Blazing Star**	1,2,3N						UD	◑◗	1.5	2-3
Liatris cylindracea	**Cylindrical Blazing Star**	1,2						UD	◑◗	1	1-2
Liatris pycnostachya	**Prairie Blazing Star**	1					UM		◑	1.5	2-4
Liatris scariosa v. nieuwlandii	**Savanna Blazing Star**	1,2,6						UD	◑◗	1.5	3-5
Liatris spicata	**Marsh Blazing Star**	1,2				S	UM		◑	1.5	3-5
Lilium michiganense	**Michigan Lily**	1,2,3,6				S	UM		◑◗●	2	3-7
Lilium philadelphicum	**Prairie Lily**	1,2					UM		◑◗	2	1.5-4
Lithospermum canescens	**Hoary Puccoon**	1,2,5,6					UM	UD	◑◗	1	0.5-1.5
Lithospermum caroliniense	**Hairy Puccoon**	1,2,5						UD	◑◗	1	1-2.5
Lobelia cardinalis	**Cardinal Flower**	All			ES	S			◑◗●	1.5	2-5
Lobelia inflata	**Indian Tobacco**	All					UM		◑◗●	1	1-3
Lobelia siphilitica	**Great Blue Lobelia**	All				S			◑◗	1.5	1-4
Lobelia spicata	**Pale Spiked Lobelia**	1,2,3N					UM		◑◗	1.5	1-3
Ludwigia alternifolia	**Seedbox**	1,2,3S,5,6				S			◑	1.5	2-3
Lupinus perennis	**Wild Lupine**	1,2						UD	◑◗	1-1.5	1-2
Lycopus americanus	**Common Water Horehound**	All				S			◑◗	1.5	1-2
Lycopus uniflorus	**Northern Bugle Weed**	1,2,3,4,5				S			◑◗	1.5	2-3
Lysimachia ciliata	**Fringed Loosestrife**	All				S			◑◗●	1-2	1-3
Lythrum alatum	**Winged Loosestrife**	1,2,3N,5				S			◑	1.5-2	2-3
Matteuccia struthiopteris	**Ostrich Fern**	2,3,5					UM		◗●	1-3	3-5
Medeola virginiana	**Indian Cucumber Root**	1,2,3,6					UM		◗●	1-1.5	1-2
Mentha arvensis	**Wild Mint**	All				S			◑	1.5	1-3
Mertensia virginica	**Virginia Bluebells**	3,5,6				S	UM		◗●	1.5	1-2
Mimulus ringens	**Monkey Flower**	All			ES	S			◑◗	1	2-4
Mitchella repens	**Partridge Berry**	1,2,3W,3S,6					UM	UD	◗●	1	2
Mitella diphylla	**Bishop's Cap**	2,3,4,5,6					UM		◗●	1	1-1.5
Monarda fistulosa	**Wild Bergamot**	All					UM	UD	◑◗	3	2-5
Monarda punctata	**Horse Mint**	1,2W						UD	◑◗	1.5-2	1-2
Napaea dioica	**Glade Mallow**	3NW				S			◑◗	1.5-2	3-7
Nelumbo lutea	**Lotus**	1,2,5,6	A	ED					◑	8	Floating
Nuphar advena	**Yellow Pond Lily**	All	A	ED	ES				◑◗	5	Floating
Nymphaea odorata	**White Water Lily**	1,2	A	ED					◑◗	5	Floating
Oenothera biennis	**Common Evening Primrose**	All					UM	UD	◑◗	3	2-6
Oenothera fruticosa	**Southern Sundrops**	1,2,6					UM		◑◗	1-2	1.5-2.5
Onoclea sensibilis	**Sensitive Fern**					S	UM		◑◗●	2	2-3
Opuntia humifusa	**Eastern Prickly Pear**	1,6						UD	◑◗	1.5-2	6
Osmorhiza claytonii	**Hairy Sweet Cicely**	All					UM		●	1	1-3
Osmunda cinnamomea	**Cinnamon Fern**	All				S			◗●	2-3	2-3

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
Yellow	Apr-Sep	Bees, wasps, flies, butterflies, beetles	Attractive blue-green foliage; flower heads yellow-orange
Yellow	May-Aug	Bees, butterflies	Tiny flower heads open in sun; attractive seedheads
Pink/Purple	May-Sep	Bees, butterflies	Climbs by tendrils
White	Jul-Oct	Game birds	Soil builder; seed heads persist in winter
Cream	Jul-Oct	Bees, butterflies, moths, game birds	Clusters of small cream flowers, each with a purplish spot
Pink	Jul-Oct	Bees, flies, butterflies, game birds, mammals	Small clusters of pink flowers along the stem
Pink	Jul-Nov	Birds, butterflies	Nice show on dry sites
Pink	Jul-Oct	Bees, flies, butterflies, moths	Can grow in rocky soil
Pink	Jul-Sep	Bees, flies, butterflies, moths, hummingbirds	Desirable, showy wildflowers
Pink	Aug-Oct	Bees, flies, butterflies, moths, hummingbirds, songbirds	Prefers sandy soil
Pink	Jul-Sep	Bees, flies, butterflies, moths	Prefers organic soils
Orange	Jun-Aug	Bees, butterflies, moths, hummingbirds, rodents	Large nodding flowers; plants need to cross-pollinate to produce fertile seeds
Orange	Jun-Jul	Bees, butterflies, moths, hummingbirds, rodents	Large, erect flowers
Yellow/Orange	Apr-Jul	Bees, flies, butterflies	Soft hairy foliage
Yellow/Orange	Apr-Oct	Bees, flies, butterflies	Rough hairy foliage
Red	Jul-Oct	Hummingbirds, butterflies, moths	Short-lived; tolerates seasonal flooding
Cream	Jun-Oct	Bees	Avoided by deer due to toxic and bitter foliage
Blue	Jul-Oct	Deer, hummingbirds	Desirable lakeshore wildflower; nice late-season color
Lavender	May-Sep	Bees, butterflies	While it requires moisture, it will become limp with too much water or fertilizer
Yellow	Jun-Sep	Bees, flies	Performs best in sandy soils
Blue/Violet	Apr-Jul	Butterflies, bees	Host plant of the Federally Endangered Karner Blue Butterfly
White	Jul-Sep	Voles, mice, grouse, insects	Common plant; subtle flowers
White	Jul-Oct	Insects	Small white flower clusters in leaf axils
Yellow	Jun-Aug	Bees, moths	Nodding yellow flowers
Purple	Jun-Sep	Bees, flies, butterflies	Mature plants will flop over if not well supported
			Attractive shade-loving fern; rare in Indiana
Yellow	May-Jul		Showy dark purple fruit; attractive foliage
White	Jul-Oct	Muskrat, grouse, ducks, insects	Aromatic; spreading habit
Blue	Mar-May	Hummingbirds, bumblebees	Beautiful spring ephemeral; summer dormant
Lavender	Jun-Sep	Bees, butterflies, moths	Showy lakeshore plant; establishes readily from seed
White	May-Jul	Birds, mammals	Requires acidic soils
White	Apr-Jun	Bees, flies	Flowers look like tiny white snowflakes
Lavender	Jun-Oct	Butterflies, bees, hummingbirds	Aromatic; spreading; great on dry, sunny slopes
Cream	Jul-Oct	Bees, butterflies, moths, beetles	Prefers sandy soil
White	Jun-Aug	Bees	Very large lobed leaves
Cream	Jul-Aug	Fish, birds, beaver	Requires quiet water
Yellow	May-Sep	Ducks, beaver, muskrat, fish, turtles, frogs	Requires quiet water
White	May-Sep	Fish, muskrat, frogs, insects, turtles, ducks	Requires quiet water; ornamental
Yellow	Jun-Nov	Bees, moths, beetles, hummingbirds, songbirds	Appears rather weedy late in season
Yellow	Jun-Jul	Hummingbirds, songbirds	Showy flowers
			Prefers moist to wet, shaded areas but will persist in full sun
Yellow	Jun-Jul	Bees, game birds, rodents, deer	Beautiful flowers, but very spiny leaves and fruit
White	May-Jun	Butterflies, moths	Fruit attach to clothing
			Large, showy fern; prefers acidic soil

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Osmunda regalis	**Royal Fern**	All				S	UM		❍◗	2-3	2-3
Oxypolis rigidior	**Cowbane**	All				S			❍◗	2-3	2-5
Panax quinquefolius	**Ginseng**	2,3,4,5,6					UM		◗●	1	1-1.5
Parthenium integrifolium	**Wild Quinine**	1,2W					UM	UD	❍	2	2-3
Pedicularis canadensis	**Wood Betony**	All					UM	UD	❍◗●	1-2	0.5-1
Pedicularis lanceolata	**Fen Betony**	1,2,3				S			❍◗	1.5	1-3
Peltandra virginica	**Arrow Arum**	1,2,5			ES	S			❍◗●	2-3	2-5
Penstemon digitalis	**Foxglove Beard Tongue**	All					UM		❍◗	1.5	2-4
Penstemon hirsutus	**Hairy Beard Tongue**	1,2,3N + along Ohio River						UD	❍◗	1	1-2
Penstemon laevigatus	**Eastern Beard Tongue**	1,3,5,6					UM	UD	❍◗	1.5	1-3
Penstemon pallidus	**Pale Beard Tongue**	6					UM	UD	❍◗●	1	1-2
Penthorum sedoides	**Ditch Stonecrop**	All			ES	S			❍◗	1.5	1-3
Phlox divaricata	**Woodland Phlox**	All					UM		◗●	1.5	1-2
Phlox glaberrima	**Smooth Phlox**	1,2,5,6				S	UM		❍◗	1	1.5-2.5
Phlox pilosa	**Sand Prairie Phlox**	1,2,3N + along Ohio River				S	UM	UD	❍◗	1-1.5	1-2
Physostegia virginiana	**Obedient Plant**	All				S	UM		❍	2	2-5
Physostegia virginiana v. arenaria	**Prairie Obedient Plant**	All					UM	UD	❍	2	2-4
Podophyllum peltatum	**Mayapple**	All					UM		◗●	1-3	0.5-1.5
Polemonium reptans	**Jacob's Ladder**	All				S	UM		❍◗●	1-2	1-2
Polygonatum biflorum	**Smooth Solomon's Seal**	All					UM		❍◗●	2-3	1-4
Polygonum amphibium v. emersum	**Water Knotweed**	1,2,3N,4,5			ES	S			❍◗	3	1-4
Polygonum amphibium v. stipulaceum	**Water Knotweed**	1,2			ES	S			❍◗	3	1-2
Polygonum pensylvanicum	**Pinkweed**	All				S	UM		❍◗	3	1-5
Polygonum virginianum	**Jumpseed**	All					UM		◗●	1-2	2-4
Polystichum acrostichoides	**Christmas Fern**	2,3,4,5,6					UM	UD	◗●	2-3	1-2
Pontederia cordata	**Pickerel Weed**	1,2,5			ES	S			❍◗	3-4	1-3
Potamogeton natans	**Common Pondweed**	1,2	A	ED					❍◗	2-3	
Potamogeton nodosus	**Long-Leaved Pondweed**	1,2,3	A	ED	ES				❍◗	2-3	
Potamogeton pectinatus	**Sago Pondweed**	1,2	A	ED					❍◗	2-3	
Potentilla arguta	**Prairie Cinquefoil**	1,2,6						UD	❍	2	1-3
Potentilla palustris	**Marsh Cinquefoil**	1,2			ES	S			❍◗	2	2
Potentilla simplex	**Common Cinquefoil**	All					UM	UD	❍◗●	1-3	0.5-1
Prenanthes alba	**Lion's Foot**	1,2,3W,3SE					UM		◗●	1	2-5
Prenanthes altissima	**Tall White Lettuce**	All					UM	UD	●	1.5	2-7
Pycnanthemum tenuifolium	**Mountain Mint**	1,3,5,6					UM	UD	❍◗	2	1-3
Pycnanthemum virginianum	**Common Mountain Mint**	All				S	UM		❍◗	2	1-3
Ranunculus fascicularis	**Early Buttercup**	1,2						UD	❍◗	1	1-2
Ranunculus hispidus	**Swamp Buttercup**	All				S	UM		❍◗●	2	0.5-1
Ratibida pinnata	**Yellow Coneflower**	All					UM	UD	❍	2	3-6
Rudbeckia fulgida	**Showy Black-Eyed Susan**	2,3,5,6				S	UM	UD	❍	1.5	2-3
Rudbeckia hirta	**Black-Eyed Susan**	All					UM	UD	❍◗	1.5	1-3
Rudbeckia laciniata	**Wild Golden Glow**	All				S			❍◗●	3	3-10
Rudbeckia subtomentosa	**Sweet Black-Eyed Susan**	1,3W,5				S	UM		❍◗	2	3-5

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
			Forms large colonies; shrub-like habit
White	Jul-Sep		
White	May-Jul		Small white flowers mature into red berries
White	Jun-Oct	Bees, flies, wasps, beetles	Large, rough-textured leaves
Yellow	Apr-May	Bees	Attractive fern-like foliage and interesting flowers
Yellow	Aug-Oct	Bees	Often somewhat parasitic on other plants
Green	Jun-Jul	Flies	Interesting spathe/spadix inflorescence and unique foliage
White/Pink	May-Jul	Hummingbirds	Attractive leaves and stems tinged with red; hardy species
Lavender	May-Jul	Bees, flies, butterflies, moths	
Lavender/Violet	May-July	Bees, moths, hummingbirds	Prefers rich, loamy soil
Cream	May-July	Bees, flies, butterflies, moths	Pubescent stems and leaves
Green	Jun-Oct		Flowers are not showy, but fruit become reddish in the fall
Blue	Apr-Jun	Hummingbirds, butterflies	Showy spring blooming woodland wildflower
Pink	Jun-Aug	Butterflies, moths	Smooth, dark green, glossy leaves; showy flowers
Pink	May-Sep	Hummingbirds, butterflies	Long bloom period
Pink	Aug-Oct	Hummingbirds, butterflies	Spreads by rhizomes; nice late-summer show
Pink	Jul-Sep	Hummingbirds, butterflies	
White	May	Bees	Edible fruit when ripe, but remainder of plant is poisonous; large umbrella-like leaves
Blue	Apr-Jun	Bees, flies, butterflies, moths	Attractive bell-shaped flowers and compound leaves
Green/White	Apr-Jul	Songbirds, insects	Spreads slowly by rhizome; graceful arching stems
Rose	Jun-Oct	Waterfowl, chipmunk, mice, songbirds	Very adaptable; terrestrial or aquatic
Rose	Jun-Oct	Waterfowl, chipmunk, mice, songbirds	Very adaptable; terrestrial or aquatic
Pink	Jun-Oct	Waterfowl, marsh birds, songbirds	Annual
White	Jul-Oct	Songbirds	Spike of very small white flowers
			Attractive evergreen foliage
Violet	Jun-Sep	Waterfowl, deer, fish, muskrat, frogs	Spreads by rhizomes; showy emergent
Green/White	Jun-Sep	Fish, aquatic macroinvertebrates	
Green/White	Jun-Sep	Fish, aquatic macroinvertebrates	
Green/White	May-Oct		
White	Jun-Sep	Bees, flies, butterflies, wasps	Petals have ultraviolet-reflecting patterns that can be seen by pollinators
Purple	Jun-Jul		Most often found in bogs and acidic soils
Yellow	Apr-Jul	Bees, wasps, flies, butterflies	Forms ground cover
Lavender	Jul-Sep	Bees	
Cream	Aug-Oct	Bees, beetles	Leaf shape is very variable
White	Jun-Sep	Bees, flies, butterflies, wasps, beetles	Easy to grow
White	Jun-Oct	Bees, flies, butterflies, wasps, beetles	Spreads by rhizomes; good slope stabilizer; pleasantly aromatic
Yellow	Apr-May	Bees, flies, butterflies, game birds, songbirds, rodents	Prefers rocky or sandy soil
Yellow	Mar-Jun	Bees, flies, butterflies, beetles, game birds, songbirds, rodents	Creeping stems; prefers wet soils in shade
Yellow/Brown	Jul-Oct	Butterflies	Self sows; seedhead is pleasantly fragrant
Yellow/Brown	Jul-Sep	Bees, flies, butterflies, moths, beetles	Requires loamy soil with organic material
Yellow/Brown	May-Oct	Birds, butterflies	Establishes readily from seed; short-lived perennial; self sows
Yellow	Jul-Nov	Birds, butterflies	Self sows; establishes readily from seed
Yellow/Brown	Aug-Sep	Birds, butterflies	

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Rudbeckia triloba	**Brown-Eyed Susan**	1,3,4,5,6					UM		❍◗	2	2-5
Ruellia humilis	**Wild Petunia**	1,2,3,5,6					UM	UD	❍◗●	1	1-2
Ruellia strepens	**Smooth Petunia**	3,5,6					UM		❍◗●	1	1-3
Rumex altissimus	**Pale Dock**	1,3N,5,6				S	UM		❍◗	3	2-4
Rumex orbiculatus	**Great Water Dock**	1,2,3N				S			❍◗	4	2-5
Rumex verticillatus	**Swamp Dock**	All			ES	S			❍◗●	3	2-5
Sabatia angularis	**Rose Gentian**	All				S	UM	UD	❍◗	1	1-3
Sagittaria latifolia	**Common Arrowhead**	All		ED	ES	S			❍◗	3	1-4
Sanguinaria canadensis	**Bloodroot**	All					UM		◗●	1	2-6
Saururus cernuus	**Lizard's Tail**	All			ES	S			❍◗●	1.5-2	2-4
Scrophularia lanceolata	**Early Figwort**	1,2,6					UM	UD	❍◗	3	2-6
Scrophularia marilandica	**Late Figwort**	All					UM		❍◗	3	3-7
Scutellaria lateriflora	**Mad-dog Skullcap**	All				S	UM		❍◗●	2	2-3
Scutellaria ovata	**Heart-leaved Scullcap**	3,5,6					UM	UD	◗●	1-1.5	1.5
Sedum ternatum	**Wild Stonecrop**	1,3,5,6					UM	UD	◗●	1	0-1
Senecio aureus	**Golden Ragwort**	All				S			❍◗●	1.5	1-3
Senecio obovatus	**Round-leaved Golden Ragwort**	2,3,4,5,6					UM	UD	◗●	1	1-2
Senecio plattensis	**Prairie Ragwort**	1,2					UM		❍◗	1	1-2
Senna hebecarpa	**Wild Senna**	All				S	UM		❍◗	2	3-5
Silene nivea	**White Campion**	3,6					UM		◗●	1	1-3
Silene regia	**Royal Catchfly**	5					UM		❍	1.5	2-4
Silene stellata	**Starry Campion**	All					UM	UD	❍◗●	1.5	1-2
Silene virginica	**Fire Pink**	2,3,4,5,6					UM		◗●	1.5	1
Silphium integrifolium	**Rosin Weed**	1,2,3N,5					UM	UD	❍	2-3	2-6
Silphium laciniatum	**Compass Plant**	1,2,3N					UM	UD	❍	2-3	3-8
Silphium perfoliatum	**Cup Plant**	All				S	UM		❍◗	3	3-10
Silphium terebinthinaceum	**Prairie Dock**	1,2,3N,5,6				S	UM	UD	❍	2	3-8
Silphium trifoliatum	**Whorled Rosinweed**	2,6					UM		❍◗	2-3	3-5
Sisyrinchium albidum	**White Blue-Eyed Grass**	All					UM		❍◗	1-2	0.5-1
Sisyrinchium angustifolium	**Stout Blue-Eyed Grass**	All					UM		❍◗	1	1
Sisyrinchium atlanticum	**Eastern Blue-Eyed Grass**	1,2W					UM		❍◗	1	1
Sium suave	**Tall Water Parsnip**	All			ES	S			❍◗●	1.5	2-6
Smilacina racemosa	**Feathery False Solomon's Seal**	All					UM		◗●	1.5	1-3
Smilacina stellata	**Starry False Solomon's Seal**	1,2,3,4				S	UM	UD	❍◗●	1.5	1-2
Solidago caesia	**Blue-Stemmed Goldenrod**	All					UM	UD	◗●	1	1-2
Solidago canadensis	**Canadian Goldenrod**	All					UM		❍◗	1.5	1-5
Solidago canadensis v. scabra	**Tall Goldenrod**	All					UM		❍◗	1.5	2-7
Solidago flexicaulis	**Broad-Leaved Goldenrod**	All					UM		◗●	2	1-3
Solidago gigantea	**Late Goldenrod**	All				S	UM		❍◗	1.5	2-7
Solidago hispida	**Hairy Goldenrod**	3						UD	◗●	1.5	2-2.5
Solidago juncea	**Early Goldenrod**	All					UM	UD	❍◗	1.5	2-4
Solidago nemoralis	**Old-Field Goldenrod**	All					UM	UD	❍◗	1-2	1-3
Solidago ohioensis	**Ohio Goldenrod**	1,2,3N				S			❍◗	2	2-4
Solidago patula	**Swamp Goldenrod**	All				S			❍◗●	2	3-6

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
Yellow/Brown	Jul-Oct	Bees, flies, butterflies, wasps, beetles, birds	Smaller flower heads than other members of the genus
Lavender	Jun-Sep	Bees, flies, butterflies	Large, showy flowers
Lavender	May-Sep	Bees, flies, butterflies	Large, showy flowers
Green	May-Jul	Birds, beetles	Grows best in fertile soil
Green	May-Sep	Mice, rabbit, birds, butterflies, moths	Excellent red fall color
Green	May-Sep	Butterflies, game birds, songbirds, deer	Prefers mucky soil
Pink	Jul-Nov	Bees, flies	Beautiful pink flowers with yellow star in the center
White	Jun-Oct	Waterfowl, beaver, muskrat, turtles	Tolerates fluctuating water levels; showy
White	Apr-May	Bees, flies, beetles, ants	Seeds distributed by ants; interesting foliage and large, white flowers
White	Jun-Sep	Moths	Can spread in the property growing conditions
Brown	May-Sep	Bees, moths, wasps, hummingbirds	Unique flowers are very small
Brown	Jun-Oct	Bees, moths, wasps, hummingbirds	Unique flowers are very small
Blue	Jun-Sep	Bees, moths, game birds	Unique bicycle-seat fruit on side branches
Blue	Jun-Jul	Butterflies	Unique bicycle-seat fruit
White	Apr-Jun	Bees, flies, wasps	Succulent leaves; can withstand rocky soil
Yellow	Apr-Jun	Bees, flies, moths	Flowers in spring, but leaves persist most of the year; forms large colonies
Yellow	Apr-Jun	Bees, flies	
Yellow	May-Jul	Bees, flies, butterflies, moths	
Yellow	Jul-Aug	Bees, ants, beetles, butterflies, game birds	Prefers fertile soil, but may flop over in garden settings
White	Jun-Aug	Bees, moths	Grows along streambanks and in moist ravines, as well as in seeps and fens
Red	Jul-Aug	Hummingbirds	Self sows
White	Jul-Oct	Bees, moths	Fringed petals
Red	Apr-Aug	Hummingbirds	Self sows if in the right conditions
Yellow	Jul-Oct	Bees, butterflies, moths, wasps, beetles, songbirds, rodents	Stiff, rough leaves
Yellow	Jun-Sep	Bees, flies, butterflies, wasps, beetles	Large, divided leaves orient north-south
Yellow	Jun-Oct	Birds, butterflies, hummingbirds	Long bloom period; robust
Yellow	Jun-Sep	Bees, flies, wasps, beetles, hummingbirds	Deltoid leaves are over 1 foot long and 6 inches wide, upright
Yellow	Jul-Sep	Bees, butterflies, moths, wasps, beetles, songbirds, rodents	Leaves in whorls of three; showy flower heads
White/Blue	May-Jun	Bees, flies, game birds	Grass-like leaves with small blue or white flower
Blue	May-Aug	Bees, flies, game birds	Not a grass; has 1/2 inch wide flowers
Blue	May-Jul	Bees, flies, game birds	Not a grass; has 1/2 inch wide flowers
White	Jul-Oct	Insects	Tall and stately with lacy foliage
White	Apr-Jun	Game birds, songbirds, mice	Red fruit in fall; forms beautiful arching clumps
White	Apr-Jun	Bees, flies, songbirds, rodents	Attractive white flowers and red berries; grows in a variety of habitats
Yellow	Sep-Oct	Bees, flies, moths, wasps, songbirds	Attractive glaucous-bluish stems
Yellow	Jul-Sep	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Can become aggressive
Yellow	Aug-Oct	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Can become aggressive
Yellow	Aug-Oct	Mice, rabbit	Establishes readily from seed; great for shady slopes
Yellow	Aug-Oct	Songbirds, butterflies	Spreads by rhizomes; wrongly accused of causing hay fever
Yellow	Sep-Oct	Bees, flies, butterflies, moths, wasps, songbirds	Narrow habit; gray-hairy leaves and stem
Yellow	Jun-Sep	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Mildew may form on leaves after flowering period
Yellow	Aug-Nov	Butterflies, insects	Prefers sandy soil
Yellow	Jun-Oct	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Performs best in calcareous soil
Yellow	Aug-Oct	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Very rough sandpapery leaves

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Soligago ptarmicoides	**Prairie Goldenrod**	1,2 (adjacent to lake only)				S	UM	UD	❍	1	0.5-2
Solidago riddellii	**Riddell's Goldenrod**	1,2,3N				S	UM		❍	1.5	2-5
Solidago rigida	**Stiff Goldenrod**	1,2,3N					UM	UD	❍◗	1.5	1-5
Solidago rugosa	**Rough Goldenrod**	1,2,3,5,6				S	UM		❍◗●	1.5	2-5
Solidago speciosa	**Showy Goldenrod**	1,2						UD	❍◗	1.5	1-3
Solidago ulmifolia	**Elm-Leaved Goldenrod**	All					UM		◗●	1.5	3
Sparganium americanum	**American Bur Reed**	1,2,6		ED	ES				❍◗	2	2-5
Sparganium androcladum	**Branched Burreed**	1,2,5,6			ES	S			❍◗	2	1-3
Sparganium eurycarpum	**Common Bur Reed**	1,2,3N			ES	S			❍	3	2-6
Stachys hyssopifolia	**Hyssop Hedge Nettle**	1,2				S			❍◗	1	0.5-2
Stachys tenuifolia	**Smooth Hedge Nettle**	All				S			❍◗●	1.5	3-4
Stylophorum diphyllum	**Celandine Poppy**	All					UM		◗●	1.5	2-3
Taenidia integerrima	**Yellow Pimpernel**	1,2,3,4,6					UM	UD	❍◗●	2	2-3
Tephrosia virginiana	**Goat's Rue**	1,2,3S,5,6						UD	❍	1	1-3
Teucrium canadense	**Germander**	All				S	UM		❍	1.5	1-3
Thalictrum dasycarpum	**Purple Meadow Rue**	All				S	UM		❍	3	3-6
Thalictrum dioicum	**Early Meadow Rue**	All					UM		◗●	1.5	1-3
Thaspium trifoliatum	**Meadow Parsnip**	2,3,4,5,6					UM		❍◗●	2	1-3
Tradescantia ohiensis	**Common Spiderwort**	1,2,5					UM	UD	❍◗	1.5	2-4
Triadenum virginicum	**Marsh St. John's Wort**	1,2				S			❍◗	1	1-2
Triglochin maritimum	**Common Bog Arrow Grass**	1,2				S			❍◗	0.5	1-2
Trillium erectum	**Stinking Benjamin**	6					UM		◗●	1	0.5-1.5
Trillium grandiflorum	**Large-flowered Trillium**	2,3,4,6					UM		◗●	1-2	1-1.5
Trillium recurvatum	**Recurved Trillium**	All					UM		◗●	1	0.5-1
Triosteum aurantiacum	**Early Horse Gentian**	All					UM		◗●	2	2-4
Typha latifolia	**Broad-Leaved Cattail**	All		ED	ES	S			❍◗	2-4	3-6
Uvularia grandiflora	**Large-flowered Bellwort**	All					UM		◗●	1	1-2
Uvularia sessilifolia	**Little Merrybells**	5,6					UM		◗●	1	0.5-1
Verbena hastata	**Blue Vervain**	All				S			❍	1.5-2	3-6
Verbena stricta	**Hoary Vervain**	All							❍	1.5	2-4
Verbesina alternifolia	**Wingstem**	All				S			◗●	2	3-7
Vernonia fasciculata	**Common Ironweed**	1,2,5				S			❍◗	1.5	3-7
Vernonia gigantea	**Smooth Tall Ironweed**	All				S	UM		❍	1.5	4-9
Vernonia missurica	**Missouri Ironweed**	1,2,3N,5					UM		❍	1.5	3-5
Veronicastrum virginicum	**Culver's Root**	All					UM	UD	❍◗	1.5	3-6
Viola lanceolata	**Lance-Leaved Violet**	1,2,5				S			❍◗	0.5	6
Viola pedata	**Bird's Foot Violet**	1,2,6						UD	❍◗	1	1-2
Viola pedatifida	**Prairie Violet**	1					UM		❍◗	1	6
Viola sagittata	**Arrow-leaved Violet**	1,2,5					UM	UD	❍◗	1	4-6
Woodsia obtusa	**Blunt-lobed Woodsia**	3,5,6					UM		◗●	1	0.5-1
Zizia aurea	**Golden Alexanders**	All				S	UM		❍◗●	1	1-3

See key on pages 8–9 for details.

Bloom Color	Bloom Time	Wildlife Benefit	Special Characteristics
White	Jun-Sep	Bees, flies, butterflies, moths, wasps, beetles, songbirds	Looks like aster, and was once treated as Aster ptarmicoides; rare in Indiana
Yellow	Aug-Nov	Birds, butterflies	Excellent lakeshore wildflower; use for cut flowers
Yellow	Jul-Oct	Birds, butterflies	Grows well on dry soils; forms showy clump
Yellow	Aug-Oct	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Spreads by rhizomes
Yellow	Jul-Oct	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Leaves can become covered with mildew after flowering season
Yellow	Jul-Nov	Bees, flies, butterflies, moths, wasps, beetles, songbirds, game birds	Prefers loamy or somewhat rocky soils
Green	Jun-Aug	Waterfowl, muskrat, birds	
Green	Jun-Aug	Waterfowl, muskrat, birds	Found in sloughs in only a few widely distributed counties
Green	May-Aug	Waterfowl, muskrat, birds	Spreads readily; erosion control; shoreline stabilization
Pink	Jul-Sep	Bees	Prefers sandy soil; S. hyssopifolia v. ambigua is introduced
Pink	Jun-Sep	Bees, flies, butterflies	
Yellow	Apr-Jun	Bees, ants	Deeply lobed, oak-like leaves contain a vibrant yellow sap used as dye
Yellow	Apr-Jul	Bees, flies, wasps, butterflies, beetles	Prefers clay, rocky, or sandy soil; does well on slopes
Pink/Cream	May-Jul	Bees	Flowers bicolores; leaves sometimes silvery pubescent
Purple	Jun-Sep	Bees, flies, butterflies, moths, hummingbirds	Spreads by rhizomes
Cream	May-Aug	Butterflies, bees	Colorful in fall
Green	Mar-Jun	Moths	Male plants showier
Yellow	May-Jun		Open umbels of small yellow flowers
Blue	May-Oct	Bees, flies	Readily self sows
Pink	Jul-Sep		Prefer acidic soils
White	May-Sep		Not showy; tiny flowers
Red	Apr	Bees, flies, ants	Occasionally has white, pink, or green flowers on erect stalks
White	Apr-May	Bees, flies, ants	Large, white, stalked flowers
Red	Apr-Jun	Bees, flies, ants	Sessile flowers
Maroon	Apr-Jun	Bees moths	Orange fruit; self sows
Brown	Jun-Jul	Muskrats, frogs, waterfowl, birds	Erosion control
Yellow	Apr-May	Bees	Yellow bell-shaped flowers droop beneath the leaves
Yellow	Apr-May	Bees	Yellow bell-shaped flowers droop beneath the leaves
Violet	Jun-Sep	Bees, flies, butterflies, moths, wasps, beetles, songbirds	Prefers loamy or mucky soils
Purple	Jun-Sep	Bees, flies, butterflies, moths, wasps, beetles, songbirds	Does well in sandy or gravelly soil
Yellow	Jul-Oct	Bees, butterflies	Stems are conspicuously winged with tissue
Purple	Jul-Oct	Bees, flies, butterflies, moths	Glaucous smooth stem give the plant a unique appearance
Purple	Jul-Oct	Bees, flies, butterflies, moths	Prefers loamy soils
Purple	Jul-Sep	Bees, flies, butterflies, moths	
White	Jun-Aug	Bees, flies, butterflies, moths, wasps	
White	Apr-Jun	Bees	Performs best in sandy or acidic soils
Lavender	Apr-Aug	Bees, butterflies	Sometimes have bicolored flowers
Violet	Apr-Jun	Bees, flies, butterflies	Treatened in Indiana
Violet	Apr-Jul	Bees, butterflies	Arrowhead-shaped leaves
			Grows in shallow or rocky soils
Yellow			

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Andropogon gerardii	Big Bluestem	All					UM	UD	◯◗	3	4-8
Andropogon virginicus	Broom Sedge	3S,5,6					UM	UD	◯	2	2-4
Aristida purpurascens	Arrowfeather	1,2						UD	◯◗	1-2	1-2
Bouteloua curtipendula	Side-Oats Grama	1,2,5						UD	◯◗	1	2-4
Bromus ciliatus	Fringed Brome	1,2				S			◯◗	1	2-4
Bromus kalmii	Prairie Brome	All					UM		◯◗	1	2-3
Bromus latiglumis	Ear-leaved Brome	All					UM		◗●	1.5	2-4
Bromus pubescens	Woodland Brome	All					UM		◗●	1.5	2-4
Calamagrostis canadensis	Bluejoint Grass	1,2,3N				S			◯◗●	1.5	2-4
Calamovilfa longifolia	Sand Reed	1						UD	◯◗	2	3-6
Carex aquatilis	Long-Bracted Tussock Sedge	1,2			ES	S			◯◗	2	2-3
Carex atherodes	Hairy-Leaved Lake Sedge	2				S			◯◗	2-3	2-4
Carex bebbii	Bebb's Oval Sedge	1,2				S			◯◗	1	2-3
Carex bicknellii	Copper-Shouldered Oval Sedge	1,2						UD	◯	1	1-2
Carex brevior	Plains Oval Sedge	All						UD	◯	1	1-2
Carex bromoides	Brome Hummock Sedge	2,3N,5,6			ES	S			◗●	1	1-2
Carex cephalophora	Short-headed Bracted Sedge	All					UM	UD	◗●	1	0-2
Carex comosa	Bristly Sedge	1,2,3N			ES	S			◯◗	2-3	2-3
Carex crinita	Fringed Sedge	2,3,4,5,6			ES	S			◯◗●	2-3	2-5
Carex cristatella	Crested Oval Sedge	All			ES	S			◯◗	1.5	2-3
Carex crus-corvi	Crowfoot Fox Sedge	3N,5,6				S			◯◗●	1.5	2-3
Carex davisii	Awned Graceful Sedge	3,5,6					UM		◯◗●	1	2-3
Carex diandra	Bog Panicled Sedge	1,2				S			◯◗	1-2	1-3
Carex emoryi	Riverbank Sedge	3W			ES	S			◯◗	2-3	2-3
Carex frankii	Bristly Cattail Sedge	All				S			◯◗●	2	1-2
Carex gracillima	Purple-sheathed Graceful Sedge	1,2,3,4,6					UM		◗●	1	1-3
Carex granularis	Pale Sedge	All				S	UM		◯◗●	1.5	1-2
Carex gravida	Long-awned Bracted Sedge	1					UM	UD	◯◗	1.5	1.5-3
Carex grayi	Common Bur Sedge	All				S			◯◗●	1.5	1-2
Carex haydenii	Long-Scaled Tussock Sedge	1				S			◯◗	2	1-3
Carex hirtifolia	Hairy Wood Sedge	All					UM	UD	◗●	1	1-2
Carex hystericina	Porcupine Sedge	1,2,3				S			◯◗●	2-3	2-3
Carex interior	Prairie Star Sedge	1,2,3N				S			◯◗	1	1-3
Carex jamesii	Grass Sedge	2,3,4,5,6					UM		◗●	1	0-1
Carex lacustris	Common Lake Sedge	1,2,3,5			ES	S			◯◗●	1.5-3	2-4
Carex laxiflora	Beech Wood Sedge	2,3,5,6					UM	UD	◗●	1-1.5	1-2
Carex lupulina	Common Hop Sedge	All			ES	S			◯◗●	1.5	2-3
Carex lurida	Bottlebrush Sedge	2,3,5,6			ES	S			◯◗●	2-3	2-3
Carex molesta	Field Oval Sedge	All				S	UM		◯◗	1-2	1-3
Carex muhlenbergii	Sand Bracted Sedge	1,2,5,6						UD	◯◗●	1	1-3
Carex muskingumensis	Swamp Oval Sedge	1,3,4,5			ES	S			●	1-2	1-2
Carex normalis	Spreading Oval Sedge	All				S	UM		◗●	1-2	1-3
Carex pellita	Wooly Sedge	1,2,3,4				S			◯◗	2-3	1-3
Carex pensylvanica	Common Oak Sedge	1,2,3						UD	◯◗●	1.5	6-1
Carex prairea	Fen Panicled Sedge	2,3E				S			◯◗	1-2	1-4
Carex projecta	Loose-Headed Oval Sedge	1,2			ES	S			◯◗●	1-2	1-3

See key on pages 8–9 for details.

Seasonal Interest	Special Characteristics
Purple flowers; bronze fall color	Soil stabilizer; clump-forming; grows under a variety of conditions
Rusty winter color	Good cover for wildlife and ground-nesting birds
Three-awned flowers	Prefers sandy soil
Purple and orange hanging flowers	Not competitive with taller grasses; quick to establish
Interesting dangling inflorescence	Not competitive with taller grasses; drought-tolerant
Interesting dangling inflorescence	Prefers full sun
Interesting dangling inflorescence	
Interesting dangling inflorescence	
Tawny plumed flowers, fall	Forms solid stands; quick spreading; good bank stabilizer
	Spreads quickly by rhizomes and seed, especially in open sand
Handsome dense tussocks	Forms tussocks; tolerates flooding
Hairy stems	Coarse textured; spreads by rhizomes
Fine-textured	Prefers neutral to alkaline soils; tuft-forming
	Responds well to fire
	Often grows in a ring around depressions in upland forests
	Withstands disturbance
Nodding bottlebrush-shaped seed head	Forms large clumps; easily grown from seed
Attractive nodding spikes	Clump-forming
	Clump-forming
Beautiful spikes with long-awned perigynia scales	
	Most commonly found in fens
	Forms large tussocks along streams and in seeps
Graceful spikes	
Blue-green herbage	Does well in a variety of habitats
	Endangered in Indiana
Seed heads resemble maces used by medieval knights	
	Forms large tussocks in wet prairies
	Often found in fens and seeps
	Often found in fens and seeps
Leaves are green most of the year	
Movement of foliage in wind	Spreads strongly by rhizomes; good soil stabilizer
	Variable species
	Can withstand disturbance
	Performs best in sandy soil
	Forms large colonies in wet spots
	Clump-forming
	Often in sedge meadows
Tufted, fine-textured foliage	Excellent ground cover for dry shade
3-ranked sterile stems	Clump-forming

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Carex radiata	Straight-Styled Wood Sedge	All					UM		◗●	1	1-2
Carex rosea	Curly-Styled Wood Sedge	All					UM		◗●	1	1
Carex sartwellii	Running Marsh Sedge	1,2,3N				S			❍	1-2	2-4
Carex scoparia	Lance-Fruited Oval Sedge	1,2,3N,4			ES	S			❍◗	1-2	2-3
Carex shortiana	Short's Sedge	3,4,5,6				S	UM		❍◗●	1	1-3
Carex sprengelii	Long-beaked Sedge	1,2					UM	UD	◗●	1-2	1-2
Carex squarrosa	Narrow-Leaved Cattail Sedge	2,3,4,5,6			ES	S			❍◗●	1-2	1-2
Carex stipata	Common Fox Sedge	All			ES	S			❍◗●	1.5	1-3
Carex straminea	Awned Oval Sedge	1,6				S			❍◗	1.5	1-3
Carex stricta	Common Tussock Sedge	1,2,3N				S			❍◗	1.5-2	2-3
Carex tribuloides	Awl-Fruited Oval Sedge	All			ES	S			❍◗●	1-2	2-3
Carex typhina	Common Cattail Sedge	1,2,3N,5,6			ES	S			❍◗●	1-2	1-2
Carex utriculata	Common Yellow Lake Sedge	1,2			ES	S			❍	2-3	2-4
Carex vesicaria	Tufted Lake Sedge	1,2			ES	S			❍	2-3	2-3
Carex viridula	Green Yellow Sedge	1,2				S			❍◗	1	1-2
Carex vulpinoidea	Brown Fox Sedge	All			ES	S			❍◗●	2-3	2-3
Carex vulpinoidea v. ambigua	Large Yellow Fox Sedge	1,5,6				S			❍	2	1-3
Chasmanthium latifolium	Indian Wood Oats	3S,5,6				S	UM		◗●	2	2-3
Cinna arundinacea	Common Wood Reed	All				S			◗●	1	3-4
Cyperus esculentus	Field Nut Sedge	1,3,5,6				S	UM		❍	1-1.5	1-2
Cyperus schweinitzii	Rough Sand Sedge	1,2						UD	❍◗	1	1-2
Danthonia spicata	Poverty Oat Grass	All					UM	UD	❍◗●	1	1
Deschampsia caespitosa	Tufted Hair Grass	2				S			❍◗	1-1.5	1-3
Diarrhena americana	Beak Grass	3,5,6					UM		◗●	1-1.5	1-3
Dulichium arundinaceum	Three-Way Sedge	1,2,5			ES	S			❍◗	1	1-3
Eleocharis acicularis	Needle Spike Rush	1,2,5,6			ES	S			❍	1–2	6
Eleocharis ovata	Blunt Spike Rush	All			ES	S			❍◗	1-1.5	1
Eleocharis palustris	Great Spike Rush	All			ES	S			❍	1-1.5	1-2
Elymus canadensis	Canada Wild Rye	1,2,3,5,6					UM	UD	❍◗	1	3-6
Elymus hystrix	Bottlebrush Grass	All					UM	UD	◗●	1	3-5
Elymus riparius	Riverbank Wild Rye	1,2,3,5,6				S	UM		◗●	1.5	2-4
Elymus villosus	Silky Wild Rye	All					UM	UD	◗●	1	1-3
Elymus virginicus	Virginia Wild Rye	All				S	UM		❍◗●	1	2-4
Eragrostis spectabilis	Purple Love Grass	1,2,3,5,6						UD	❍◗	1	1-2
Glyceria canadensis	Rattlesnake Grass	1,2			ES	S			❍◗	1-2	2-5
Glyceria grandis	Reed Manna Grass	2			ES	S			❍◗	2	3-5
Glyceria striata	Fowl Manna Grass	All			ES	S			❍◗●	1	1-5
Hierochloe odorata	Sweet Grass	1,2				S	UM		❍	1	1-3
Juncus arcticus	Wire Rush	1,2				S			❍◗	1.5	1-2
Juncus canadensis	Canadian Rush	1,2,3				S			❍	1-1.5	1-3
Juncus effusus	Common Rush	All			ES	S			❍◗	1-2	1-4
Juncus greenei	Greene's Rush	1,2					UM	UD	❍	1	1-2
Juncus tenuis	Path Rush	All					UM		❍◗●	1-2	6-2
Juncus tenuis v. dudleyi	Dudley's Rush	All				S	UM		❍	1-2	1-2
Juncus torreyi	Torrey's Rush	All			ES	S			❍	1-3	1-2
Koeleria pyramidata	June Grass	1,2						UD	❍◗	1	1-2

See key on pages 8–9 for details.

Seasonal Interest	Special Characteristics
	Not clump-forming
	Clump-forming
Beautiful spikes of long-beaked perigynia	
Unique elliptic spikelets	
Showy spikes	Clump-forming
Elegant fine-textured tussock	Forms tussocks
3-ranked sterile stems	
Unique elliptic spikelets	
Long, erect yellow-green leaves	Clumps form extensive colonies
	Performs well in calcareous sandy soil
	Clump forming; tolerates flooding; easily grown from seed
	Clump-forming
Graceful oat-like seed heads	Forms large colonies, particularly in floodplains
Graceful nodding seed heads	
	Requires sandy soil
Curly dry leaves at base of plant persist through winter	
Intriguing 3-ranked leaf arrangement	Often found in acidic soils
Attractive deep-green foliage	Erosion control; spread by rhizomes; establishes voluntarily
	Clump-forming
	Spreads by rhizomes, sometimes forming extensive colonies
Showy nodding spikes	Short-lived native nurse crop
Showy awned spikes	Tolerates shade; use in woodland edge
	Found along streams
Showy nodding spikes	Short-lived perennial; reseeds itself; bunchgrass
Reddish-purple cast to inflorescence	
Arching inflorescence	Does not compete well
Purplish seed head	May fade out with heavy competition; spreads by rhizomes
Purple flowers	Grows in clumps
	Crushed or burned leaves possess vanilla odor
	Grows in lines, spreading by rhizomes; rare in Indiana
Dark green stems with reddish-brown round inflorescenses	
Dark green, wiry stems	Soil stabilizer; forms attractive clumps
Dark green grass-like leaves	Tolerates drought; found on compacted soil
Interesting inflorescence	Tolerates drought
Attractive creamy-white inflorescence	Prefers sandy soil

Botanical Name	Common Name	Native Region	Habitat						Exposure	Spacing (feet)	Height (feet)
			A	ED	ES	S	UM	UD			
Leersia oryzoides	**Rice Cut Grass**	All			ES	S			◔◑●	1.5	2-5
Panicum rigidulum	**Munro Grass**	1,2,3S,5,6				S			◔◑	1	1-3
Panicum virgatum	**Switch Grass**	All				S	UM	UD	◔◑	2-3	3-5
Piptochaetium avenaceum	**Black Oat Grass**	2						UD	◔◑	1	1.5-2.5
Puccinellia pallida	**Pale Manna Grass**	1,2			ES				◑●	1	2-4
Rhynchospora macrostachya	**Horned Beak Rush**	1,2				S			◔	1	1-2
Schizachyrium scoparium	**Little Bluestem**	All					UM	UD	◔◑	1.5-2	2-4
Scirpus acutus	**Hard-Stemmed Bulrush**	1,2,3N		ED	ES	S			◔	1-3	4-6
Scirpus atrovirens	**Dark Green Rush**	All			ES	S			◔	2-3	3-5
Scirpus cyperinus	**Wool Grass**	All			ES	S			◔	2-3	3-5
Scirpus fluviatilis	**River Bulrush**	1,2,3N,5		ED	ES				◔	1-3	3-7
Scirpus pendulus	**Red Bulrush**	All			ES	S			◔	2-3	2-4
Scirpus pungens	**Chairmaker's Rush**	1,2,3,4,6			ES	S			◔	2-4	2-5
Scirpus validus	**Great Bulrush**	All		ED	ES	S			◔	1-3	4-8
Sorghastrum nutans	**Indian Grass**	1,2,3N,5,6					UM	UD	◔	2-3	4-9
Spartina pectinata	**Prairie Cord Grass**	1,2,3N,5,6				S			◔	2-3	3-7
Sporobolus asper	**Rough Dropseed**	1,2,3,5,6					UM	UD	◔	2-3	2.5-5
Sporobolus cryptandrus	**Sand Dropseed**	1,2						UD	◔	2	1-4
Sporobolus heterolepis	**Prairie Dropseed**	1					UM	UD	◔	1.5-2	2-3
Stipa spartea	**Porcupine Grass**	1,2						UD	◔◑	1-2	2-4
Zizania aquatica	**Wild Rice**	1,2	A	ED	ES	S			◔◑	3	3-7

See key on pages 8–9 for details.

Seasonal Interest	Special Characteristics
Leaves are armed with sharp saw teeth	Can form dense colonies
	Performs well in sandy soil
Purple-gold flowers; gold fall color	Clump-forming; erosion control; establishes readily from seed
Elegant heads of long-awned spikelets	Rare in Indiana
Unique beak-like brown inflorescences	Performs well in sandy soil
Seed head silver-white; copper-red fall color	Clump-forming; great for dry slopes
Grows in striking dark green masses	Wave buffer; can form clonal stands
Chocolate brown seed head; bright green foliage	Soil stabilizer; tolerate floods or drought for short periods
Cinnamon-brown seed head	Spread by rhizomes; establishes readily from seed
Glossy green foliage on strongly triangular stems	Spreads by rhizomes; erosion control at water's edge
Cinnamon-brown seed head	Spreads by rhizomes
Striking vertical stems	Erosion control; spreads by rhizomes
Tight dark green masses of foilage	Prefers calm water; colonial; establishes readily from seed
Copper seed heads; gold-brown fall color	Rhizomatous; a very showy grass
Gold fall color; elegant arching foliage	Soil and shoreline stabilization; rhizomatous
	May not be native in northern Indiana
	Requires sandy soil
Bronze fall color; graceful fountainlike clumps	Forms fine-textured low clumps
Interesting, long-awned flowers	Loosely rhizomatous; noncompetitive when combined with other species
Red-yellow flowers	Self-sowing annual; edible

Botanical Name	Common Name	Native Region	Habitat						Exposure	Height (feet)
			A	ED	ES	S	UM	UD		
Acer negundo	**Box Elder**	All				S	UM		◔◑	up to 60
Acer nigrum	**Black Maple**	2,3,4,6					UM		◑●	up to 65
Acer rubrum	**Red Maple**	All			ES	S	UM		◔◑●	up to 90
Acer saccharinum	**Silver Maple**	All			ES	S			◔◑●	up to 80
Acer saccharum	**Sugar Maple**	All					UM		◔◑●	up to 100
Aesculus flava	**Yellow Buckeye**	6 near Ohio River					UM		◔◑	up to 80
Aesculus glabra	**Ohio Buckeye**	All					UM		◔◑●	up to 90
Alnus incana	**Speckled Alder**	1,2			ES	S	UM		◔◑	up to 20
Amelanchier arborea	**Serviceberry**	1,2,3,5,6					UM	UD	◔◑●	up to 15
Amelanchier laevis	**Allegheny Shadblow**	1,2,3,6					UM		◔◑	up to 25
Amorpha canescens	**Lead Plant**	1,2						UD	◔◑	2-3
Amorpha fruticosa	**Indigo Bush**	1,5,6				S	UM		◔◑	up to 18
Aronia melanocarpa	**Black Chokeberry**	1,2,3,6				S	UM	UD	◔◑●	up to 6
Asimina triloba	**Paw Paw**	All				S	UM		◑●	up to 20
Betula alleghaniensis	**Yellow Birch**	1,2,4				S	UM		◔◑	up to 40
Betula nigra	**River Birch**	1,5,6				S			◔◑	up to 80
Betula papyrifera	**Paper Birch**	1,2 (near lake)					UM		◔◑	up to 50
Betula pumila	**Bog Birch**	1,2				S			◔◑	up to 12
Bignonia capreolata	**Cross Vine**	5,6					UM		◔◑●	up to 20
Carpinus caroliniana	**Blue Beech**	All				S	UM		◔◑	up to 20
Carya cordiformis	**Bitternut Hickory**	All					UM		◔◑	up to 65
Carya glabra	**Pignut Hickory**	All						UD	◔◑●	up to 80
Carya illinoinensis	**Pecan**	5,6				S			◔◑	up to 150
Carya laciniosa	**Kingnut Hickory**	All				S			◔◑●	up to 100
Carya ovata	**Shagbark Hickory**	All					UM	UD	◔◑●	up to 100
Carya tomentosa	**Mockernut Hickory**	2,3,5,6					UM		◔◑●	up to 60
Catalpa speciosa	**Catalpa**	5					UM		◔◑	up to 65
Ceanothus americanus	**New Jersey Tea**	1,2,3N,5,6						UD	◔◑	1-3
Celastrus scandens	**Bittersweet**	All					UM		◔◑	up to 45
Celtis occidentalis	**Hackberry**	All				S	UM		◑●	up to 90
Celtis tenuifolia	**Dwarf Hackberry**	1,5,6					UM	UD	◔◑	up to 18
Cephalanthus occidentalis	**Buttonbush**	All		ED	ES	S			◔◑●	up to 15
Cercis canadensis	**Redbud**	All					UM		◔◑●	up to 40
Cladrastis lutea	**Yellowwood**	6					UM		◔◑●	up to 50
Cornus alternifolia	**Pagoda Dogwood**	2,3,4,6					UM		◑●	up to 15
Cornus amomum v. schuetzeana	**Silky Dogwood**	All				S			◔◑●	up to 10
Cornus drummondii	**Rough-leaved Dogwood**	1,3,4,5,6				S	UM		◔◑	up to 20
Cornus florida	**Flowering Dogwood**	All					UM		◔◑●	up to 40
Cornus racemosa	**Gray Dogwood**	All				S	UM		◔◑	up to 12
Cornus rugosa	**Round-leaved Dogwood**	2				S	UM		◔◑	6-8
Cornus sericea	**Red-Osier Dogwood**	1,2,3				S		UD	◔◑	up to 10
Corylus americana	**American Hazelnut**	All					UM		◔◑●	up to 15
Crataegus mollis	**Downy Hawthorn**	1,2,3,4,5				S	UM	UD	◔◑●	up to 25

See key on pages 8–9 for details.

Seasonal Interest	Wildlife Benefit	Special Characteristics
Orange/yellow fall color	Squirrels	
Yellow fall color		Tapped for maple syrup; tolerates more moisture than sugar maple
Red-yellow fall color	Game birds, squirrel, chipmunk, beaver, deer	Fast-growing; shade tree
Yellow fall color	Songbirds, deer, raccoon, waterfowl, squirrel, mice	Fast-growing; weak wood; shallow roots
Yellow/orange/red fall color	Songbirds, squirrels	Tapped for maple syrup
Showy yellow flowers; yellow fall color	Butterflies, hummingbirds, songbirds, squirrels	
Cream-colored flowers; leaf out early in spring	Variety of butterflies and birds; favorite of hummingbirds	Nuts are poisonous to livestock
		Multi-stemmed
White flowers, April–May	Game birds, grouse, skunk, fox, raccoon	An understory tree; an excellent landscape plant
White flowers in spring, smooth gray bark	Songbirds	
Silvery foliage; showy violet flowers with orange anthers	Bees, wasps, butterflies, moths, rabbits, deer	Low-growing; more like an herbaceous plant than a shrub
Showy spikes of violet flowers	Birds, small mammals	Best grown in a thicket with other species
White flowers, May; red fall color	Game birds, grouse, deer, songbirds, rabbit	Colonial; persistent black fruit; beautiful lake-edge shrub
Maroon bell-like flowers in spring; yellow fall color; silvery bark	Deer, squirrels, raccoons	Need to cross-pollinate for healthy fruit production
Golden fall color		Broken twigs smell like wintergreen
Golden-yellow fall color	Songbirds	Bronze exfoliating bark
Extraordinary white, peeling bark		Uncommon in Indiana
		Small shrub found in bogs and fens
Orange/Yellow trumpet-shaped flowers		Woody vine
Smooth, blue-gray, sinuated, muscle-like stems		
Grows straight; conspicuous yellow buds	Squirrels	Grows more quickly than most hickories
Yellow fall color, produces edible nuts	Squirrels	Provides coarse texture to landscape, compliments smaller leaved trees
Yellow fall color, produces edible nuts	Squirrels	
Yellow to golden bronze fall color; shaggy bark	Squirrels	Difficult to transplant
Yellow fall color	Squirrels	Shaggy bark makes it messy as a yard tree
Yellow fall color	Squirrels	
Beautiful white flowers with yellow streaks and purple spots		Grows very quickly; only native in SW Indiana, introduced elsewhere
White flowers, July	Butterflies, hummingbirds, turkey, rabbit, deer	Taprooted, do not try to transplant; fragrant
Orange fruits and yellow fall color	Bees, wasps, ants, beetles, moths, game birds, songbirds	Vine; need male and female plants to produce fruit
Yellow fall color; corky bark	Game birds, squirrel, raccoon, songbirds, deer	Edible fruits; a medium to fast-growing, long-lived tree
Gnarled form	Songbirds	
White flowers, August	Hummingbirds, butterflies, deer, duck, birds, beaver	Withstands seasonal inundation
Lavender-rose flowers early in spring; golden-yellow fall color		Flowers are edible and taste like peas
Showy white flowers in panicles in spring; fruit persist into winter	Bees, wasps, flies, butterflies, moths, beetles, songbirds	Only known from Brown County on steep slopes and in ravines
White flowers in spring; maroon-red fall color; unique form	Bees, wasps, flies, butterflies, moths, beetles, songbirds	Grows quickly
Blue fruits; marroon fall color; white flowers in flattish clusters	Bees, wasps, flies, butterflies, moths, beetles, songbirds	
White flowers in summer; white fruit	Bees, wasps, flies, butterflies, moths, beetles, songbirds	
Large white petal-like bracts; red fall color	Bees, flies, songbirds, mammals	
White flowers, May–June; maroon fall color	Game birds, birds, rabbit, deer	Can form dense thickets; good slope stabilizer
White flowers; yellowish twigs with purple spots	Bees, wasps, flies, butterflies, moths, beetles, songbirds	Rare in Indiana
White flowers, May–June; red twigs, winter	Songbirds, game birds, deer, beaver, rabbit	Plant in masses for winter interest
Yellow fall color; edible nuts	Chipmunk, squirrel, jays, grouse, raccoon	Can form dense thickets; slope stabilizer
White flowers in mid-April; red fall color; gnarled form	Bees, flies, songbirds, mammals	

Botanical Name	Common Name	Native Region	Habitat						Exposure	Height (feet)
			A	ED	ES	S	UM	UD		
Decodon verticillatus	**Swamp Loosestrife**	1,2,3,5		ED	ES	S			❍◗	2-4
Diervilla lonicera	**Dwarf Bush Honeysuckle**	1,2,3W					UM	UD	❍◗●	1-3
Diospyros virginiana	**Persimmon**	3S,5,6					UM		❍◗	up to 40
Epigaea repens	**Trailing Arbutus**	2,6					UM	UD	◗●	1"-6"
Euonymus atropurpureus	**Wahoo**	All					UM		❍◗	up to 15
Euonymus obovatus	**Creeping Strawberry Bush**	All					UM		◗●	up to 1
Fagus grandifolia	**American Beech**	2,3,4,5,6					UM		◗●	up to 75
Fraxinus americana	**White Ash**	All					UM		❍◗	up to 110
Fraxinus pennsylvanica	**Green Ash**	All				S	UM		❍	up to 80
Fraxinus quadrangulata	**Blue Ash**	2,3,5,6					UM	UD	❍◗	up to 50
Gleditsia triacanthos	**Honey Locust**	All				S	UM		❍◗	up to 80
Gymnocladus dioica	**Kentucky Coffee Tree**	All				S	UM		❍◗●	up to 80
Hamamelis virginiana	**Witch Hazel**	1,2,3,6					UM		◗●	up to 20
Hydrangea arborescens	**Wild Hydrangea**	3,5,6					UM	UD	◗●	3-6
Hypericum kalmianum	**Kalm's St. John's Wort**	1,2				S	UM		❍◗	2-4
Hypericum prolificum	**Shrubby St. John's Wort**	2,3,5,6					UM	UD	❍◗	3-5
Ilex verticillata	**Winterberry**	All			ES	S			❍◗●	up to 10
Juglans cinerea	**Butternut**	All				S	UM		❍◗	up to 50
Juglans nigra	**Black Walnut**	All					UM		❍◗●	up to 75
Juniperus communis	**Common Juniper**	1,2 (near lake)					UM	UD	❍◗	1-5
Juniperus virginiana	**Eastern Red Cedar**	1,2,3,5,6					UM	UD	❍◗	up to 50
Larix laricina	**Tamarack**	1,2				S			❍◗	up to 15
Lindera benzoin	**Spicebush**	All				S	UM		◗●	up to 15
Liquidambar styraciflua	**Sweet Gum**	3S,5,6				S	UM		❍◗●	up to 100
Liriodendron tulipifera	**Tulip Tree**	All					UM		❍◗●	up to 120
Lonicera prolifera	**Grape Honeysuckle**	1,2,3,6				S	UM		❍◗	5
Magnolia acuminata	**Cucumber Tree**	3S,6					UM		❍◗	up to 80
Malus coronaria	**Sweet Crab Apple**	2,3,4,5,6					UM		❍◗	up to 25
Malus ioensis	**Prairie Crab**	1,2,5					UM		❍◗	up to 20
Menispermum canadense	**Moonseed**	All					UM		❍◗●	
Morus rubra	**Red Mulberry**	All					UM		❍◗●	up to 30
Nyssa sylvatica	**Black Gum**	All				S	UM		❍◗●	up to 100
Ostrya virginiana	**Ironwood**	All					UM		◗●	up to 30
Pachysandra procumbens	**Allegheny Spurge**	6S					UM		◗●	4-9
Parthenocissus quinquefolia	**Virginia Creeper**	All					UM		❍◗●	Vine
Physocarpus opulifolius	**Ninebark**	All				S			❍◗	up to 10
Pinus banksiana	**Jack Pine**	1,2 (near lake)					UM	UD	❍	up to 45
Pinus strobus	**White Pine**	1,2,3W,6					UM		❍◗	up to 75
Pinus virginiana	**Virginia Pine**	6						UD	❍	up to 50
Platanus occidentalis	**Sycamore**	All				S			❍◗●	up to 100
Populus deltoides	**Eastern Cottonwood**	All				S			❍◗	up to 90
Populus grandidentata	**Big-toothed Aspen**	All					UM		❍	up to 60
Populus tremuloides	**Quaking Aspen**	1,2,3N,4				S	UM		❍◗	up to 40

See key on pages 8–9 for details.

Seasonal Interest	Wildlife Benefit	Special Characteristics
Purplish flowers, arching stems		Performs best in acidic soils and at edge of ponds/lakes; forms dense colonies
Yellow tubular flowers; yellow/orange/red fall color		Rare in Indiana
Tasty orange fruit (when fully ripe); blocky bark	Bees, game birds, songbirds, mammals	Need male and female trees to produce fruit
Evergreen; small white/pink flowers		Creeping ground cover, requires acidic soils; uncommon in Indiana
Bright red fruit; red fall color	Game birds, songbirds	Prefers clay soils
Small yellow flowers		Small, creeping shrub; fast growing ground cover
Smooth gray bark; golden yellow fall color	Game birds, mammals	Does best when planted in shade
Purple or yellow fall color	Songbirds	Susceptible to Emerald Ash Borer
Yellow fall color	Songbirds	Susceptible to Emerald Ash Borer
Four-angled stems, pale yellow fall color	Songbirds	Does well in high pH and is drought tolerant
Yellow fall color	Songbirds	Thorny; may occur as an introduction in northwestern counties
Yellow fall color; large seedpods persist through winter		Roasted seeds once used as coffee substitute; raw seeds poisonous
Unique yellow flowers are present in fall; yellow fall color	Insects, songbirds, mammals	Do best in at least partial shade and acidic to neutral soils
White balls of flowers	Bees, butterflies	Blooms best when in full sun and acidic soil
Bright yellow flowers in late spring/early summer	Bees	Drought-resistant, salt-tolerant, tolerates compaction and flooding; short-lived
Bright yellow flowers in late spring/early summer	Bees	Drought-resistant, salt-tolerant, tolerates compaction and flooding; short-lived
Red berries fall and winter; yellow fall color	Birds, deer, squirrel, bear, mice, raccoon	Acidic soil; male/female shrub; poisonous, persistent fruit
Yellow fall color; edible nuts	Squirrels	Prefers full sun
Edible nuts	Squirrels	Allelopathic (emits a chemical that prohibits growth of other plants)
Evergreen; blue fruit	Songbirds	Rare in Indiana
Evergreen; blue fruit	Songbirds	Can become weedy as it is spread in bird droppings
Yellow fall color	Grouse, deer, squirrel, grouse	Neutral to acid conditions; deciduous, needle-leaved tree
Early small yellow flowers; yellow fall color with bright red berries	Early insects	Spicy smell/flavor to leaves, bruised stems, and berries
Red, purple, yellow, or orange fall color	Songbirds, squirrels	Straight trunk with pyramidal form to tree
Large yellow flowers in spring; golden yellow color in fall	Songbirds	Grows fast and very straight
Yellow flowers in spring; red fruit		Vine/Shrub
Large greenish flowers in spring; mature fruit is large and orange	Songbirds, squirrels	Endangered in Indiana
Red fall color; showy flowers; edible fruit		
Light pink flowers in spring; edible fruit		
	Moths, songbirds	Vine
Yellow fall color; edible fruit	Songbirds, mammals	
Spectacular scarlet color in fall	Songbirds	Horizontal branches; very hard wood; requires acidic soil
Yellow fall color; leaves persist through winter; shreddy bark		Very hard wood
Evergreen; spike of white flowers in early spring		Creeping ground cover; endangered in Indiana
Red fall color	Hummingbirds, butterflies, bees	Can be used as a climbing vine or a ground cover
White balls of flowers in spring; interesting peeling bark	Hummingbirds, bees; cover for wildlife	Hardy once established; can be used to create a hedge or privacy screen
Asymmetrical form; evergreen		Prefers sand; will not grow well on clay
Evergreen		Susceptible to salt damage
Evergreen	Squirrels	Prefers acidic soils
Patchy white bark	Songbirds	Drought-tolerant; grows well in most soils
Attractive bark; poor fall color	Beaver, songbirds, muskrat	Fruits are messy in early summer; drops twigs
Yellow fall color	Butterflies, songbirds, mammals	Grows quickly
White bark; yellow fall color	Butterflies, songbirds, mammals	Quickly forms thickets

Botanical Name	Common Name	Native Region	Habitat						Exposure	Height (feet)
			A	ED	ES	S	UM	UD		
Potentilla fruticosa	**Shrubby Cinquefoil**	1,2,3E				S	UM		❍◗	2-3
Prunus americana	**American Plum**	All					UM		❍◗	up to 20
Prunus serotina	**Wild Black Cherry**	All					UM		❍◗	up to 75
Prunus virginiana	**Choke Cherry**	1,2,3,6					UM	UD	◗●	up to 30
Ptelea trifoliata	**Wafer Ash**	All					UM		❍◗	up to 15
Quercus alba	**White Oak**	All					UM	UD	❍◗	up to 100
Quercus bicolor	**Swamp White Oak**	All			ES	S			❍◗●	up to 70
Quercus coccinea	**Scarlet Oak**	1,2,3S,5,6						UD	❍	up to 70
Quercus ellipsoidalis	**Hill's Oak**	1,2					UM	UD	❍	up to 50
Quercus imbricaria	**Shingle Oak**	All					UM	UD	❍	up to 50
Quercus lyrata	**Overcup Oak**	5.6				S			❍◗	up to 80
Quercus macrocarpa	**Bur Oak**	All				S	UM		❍◗●	up to 80
Quercus michauxii	**Swamp Chestnut Oak**	3S,5,6				S	UM		❍◗	up to 110
Quercus muehlenbergii	**Chinquapin Oak**	2,3,4,5,6					UM	UD	❍◗	up to 80
Quercus pagoda	**Cherrybark Oak**	5S				S	UM		❍◗	up to 110
Quercus palustris	**Pin Oak**	All				S			❍◗●	up to 90
Quercus prinus	**Chestnut Oak**	5S,6						UD	❍	up to 80
Quercus rubra	**Red Oak**	All					UM		❍◗	up to 90
Quercus shumardii	**Shumard's Oak**	3,4,5,6				S	UM		❍◗	up to 110
Quercus velutina	**Black Oak**	All						UD	❍◗	up to 80
Rhus aromatica	**Fragrant Sumac**	1,2,3,6					UM	UD	❍	2-8
Rhus copallinum	**Shining Sumac**	1,2,3S,5,6						UD	❍	5-8
Rhus glabra	**Smooth Sumac**	All					UM	UD	❍◗	up to 10
Rhus typhina	**Staghorn Sumac**	1,2,3,4,6					UM	UD	❍◗	up to 20
Ribes americanum	**Black Currant**	1,2,3,4				S	UM		◗●	2-5
Ribes cynosbati	**Prickly Gooseberry**	1,2,3,4,5N,6					UM		◗●	2-4
Ribes missouriense	**Wild Gooseberry**	1,3,6					UM		❍◗	3
Rosa blanda	**Early Wild Rose**	1,2,3					UM		❍◗	2-4
Rosa carolina	**Pasture Rose**	All						UD	❍◗	1-3
Rosa palustris	**Swamp Rose**	All			ES	S			❍◗●	2-7
Rosa setigera	**Illinois Rose**	All					UM		❍◗	4-8
Rubus odoratus	**Purple Flowering Raspberry**	6					UM		❍◗	6
Salix discolor	**Pussy Willow**	1,2,3,5,6			ES	S			❍◗●	up to 25
Salix humilis	**Prairie Willow**	All					UM	UD	❍◗	1-5
Salix interior	**Sandbar Willow**	All				S			❍◗	up to 10
Salix nigra	**Black Willow**	All			ES	S			❍◗	up to 50
Sambucus canadensis	**Elderberry**	All				S	UM		❍◗●	up to 15
Sambucus racemosa	**Red Elderberry**	2				S	UM		❍◗●	up to 10
Sassafras albidum	**Sassafras**	All					UM	UD	❍◗	up to 30
Spiraea alba	**Meadowsweet**	1,2,3N,5				S			❍◗	3-6
Spiraea tomentosa	**Steeplebush**	1,2,6				S			❍◗	2-5
Staphylea trifolia	**Bladdernut**	All					UM		◗●	up to 12
Symphoricarpos orbiculatus	**Coralberry**	3,5,6					UM	UD	◗●	1-3

See key on pages 8–9 for details.

Seasonal Interest	Wildlife Benefit	Special Characteristics
Shredding bark; many yellow flowers in summer	Butterflies	Prefers calcareous soil; low shrub
White flowers in spring; edible fruits	Butterflies, songbirds	Forms thickets
White flowers, May; yellow-red fall color; edible fruits	Raccoon, songbirds, game birds, hare, mice	
White flowers in spring; red fall color	Butterflies	
Fragrant leaves, flowers and fruit; wafer-like fruit persist into winter	Butterflies, songbirds, mammals	Multi-stemmed
Purplish-red fall color	Raccoon, game birds	Prized hardwood
Poor fall color	Wood duck, songbirds, squirrel, deer	Easily transplanted
Scarlet fall color	Butterflies, game birds, songbirds, mammals	Grows in sandy or thin soils and on steep slopes
Scarlet fall color	Butterflies, game birds, songbirds, mammals	Fast growing; drought resistant; prefers sandy soil
Holds leaves through winter	Butterflies, game birds, songbirds, mammals	Unlobed leaves
	Squirrels, game birds, deer	
Corky bark; yellow-brown fall color	Chipmunk, moths, mice, beaver	This majestic native tree should be planted more often.
	Butterflies, game birds, songbirds, mammals	Fast growing
Yellow fall color	Butterflies, game birds, songbirds, mammals	Drought-tolerant; withstands high pH soil; grows quickly for an oak
	Butterflies, game birds, songbirds, mammals	Bark resembles that of Prunus serotina
Interesting form, with lower branches pointed downward	Wood duck, songbirds, game birds, squirrel, deer	Requires acidic soil
	Songbirds, squirrel	Grows in poor, dry, sandy or rocky soil
Red-brown fall color	Waterfowl, turkey, muskrat	Leaves hang on into winter; fast-growing
Orange/red fall color	Butterflies, songbirds, mammals	
Red, yellow, or brown fall color	Songbirds, game birds, squirrel, mice, deer	Prefers acidic soils
Yellow flowers in spring; red fruit clusters; red/orange fall color	Songbirds, mammals	Leaves are fragrant when bruised
Red fall color	Songbirds	Prefers sandy soil
Red fall color	Songbirds	Forms thickets; prefers clay soil
Red/Orange fall color	Songbirds	Forms thickets
Interesting yellow flowers; yellow fall color	Songbirds	No thorns
Beautiful white flowers with yellow streaks and purple spots	Bees, flies, ants, butterflies, songbirds, mammals	Thorny
White tubular flowers	Bees, wasps, flies, butterflies, moths, songbirds, mammals	Thorny
Large pink flowers in spring; large red fruit in fall		Creates thickets; usually thornless
Showy pink flowers in summer; red fruit in fall	Songbirds	Not salt tolerant; fruit is high in Vitamin C
Showy pink flowers in summer; red fruit in fall	Bees, butterflies, birds	Very fragrant flowers
Showy pink flowers in summer; red fruit in fall	Butterflies, songbirds	
Purple flowers in summer; shredding bark		Edible fruits; forms thickets
Pussy willow branches in spring	Deer, rabbit, grouse, beaver, birds	Bank soil stabilizer
	Bees, flies, butterflies,moths	Low-growing willow of drier soils
	Wasps, rabbits	Soil stabilizer; spreads by rhizomes and forms large colonies
Yellow fall color	Game birds, squirrel, birds, rabbit	Thrives in wet lakeshore soils
White flowers, June–July; dark berry clusters	Song and game birds, deer, mice, insects, chipmunk	Spreads by rhizomes; easy to transplant; edible fruit
White flowers; red fruit	Songbirds, game birds, deer, mice, chipmunk, insects	
Clusters of yellow flowers in spring; yellow/orange/red fall color	Butterflies, songbirds	Bruised leaves smell like lemon poppyseed muffins; forms colonies
White flowers, July–Sept; orange fall color	Deer, songbirds, butterflies, moth, insects	Fragrant; use to prevent erosion at waters edge
Pink flowers, July	Songbirds, game birds, waterfowl, small mammals	Fragrant; use to prevent erosion at waters edge
Clusters of white bell-shaped flowers in spring; yellow fall color		Colonial
Large purplish-red fruit persists into winter	Songbirds, mammals	Prefers sandy soil

Botanical Name	Common Name	Native Region	Habitat						Exposure	Height (feet)
			A	ED	ES	S	UM	UD		
Taxodium distichum	**Bald Cypress**	5		ED	ES				❍◗●	up to 120
Tilia americana	**American Linden**	All					UM		❍◗	up to 70
Ulmus americana	**American Elm**	All				S	UM		❍◗●	up to 120
Viburnum acerifolium	**Maple-leaved Viburnum**	1,2,3,4,5N,6					UM	UD	◗●	3-6
Viburnum nudum v. cassinoides	**Witherod**	2				S	UM		❍◗	up to 12
Viburnum dentatum	**Arrow-Wood**	3S,5,6					UM		❍◗●	up to 15
Viburnum lentago	**Nannyberry**	1,2,3N				S	UM		❍◗●	up to 20
Viburnum opulus v. americanum	**American Highbush Cranberry**	1,2				S	UM		❍◗●	up to 15
Viburnum prunifolium	**Black Haw**	All				S	UM	UD	❍◗●	up to 20
Viburnum rafinesquianum	**Downy Arrowwood**	1,2,3,4					UM		❍◗●	4-8
Zanthoxylum americanum	**Prickly Ash**	All					UM		❍◗●	up to 15

See key on pages 8–9 for details.

Seasonal Interest	Wildlife Benefit	Special Characteristics
Reddish-brown needles in fall; reddish-gray peeling bark	Songbirds, squirrels	Grows quickly
Multi-stemmed; fragrant flowers	Songbirds	
Yellow fall color	Songbirds	Grows quickly; shallow root system
Clusters of white flowers in summer; red fall color	Bees, butterflies, insects, songbirds	
White spring blossoms; colorful fruit; red/orange fall color	Songbirds, game birds, mammals	Endangered in Indiana
Showy white flowers in clusters; bluish fruit; yellow or red fall color	Songbirds, butterflies	Easy to grow but may spread rapidly
Black fruit; purple-red fall color	Songbirds, game birds, butterflies, small mammals, beaver	Many attributes; nice landscape plant; edible fruit
White spring blossoms; red fall color	Songbirds, butterflies	Berries are a good source of Vitamin C; invasive V. opulus v. opulus is similar
White spring blossoms; plum-red fall color	Songbirds	Berries are edible and sweet; mildew resistant
Clusters of white flowers in spring; brilliant red fall color	Songbirds, game birds, mammals	
Yellow fall color	Butterflies	Forms thickets

Addendum: Photos of Common Plants Found Along Indiana Lakeshores

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Butterfly Weed
Asclepias tuberosa

Cardinal Flower
Lobelia cardinalis

Marsh Marigold
Caltha palustris

Great Blue Lobelia
Lobelia siphilitica

Tall Coreopsis
Coreopsis tripteris

Ostrich Fern
Matteuccia struthiopteris

Broad-Leaved Purple Coneflower
Echinacea purpurea

Yellow Pond Lily
Nuphar advena

Swamp Rose Mallow
Hibiscus moscheutos

Cinnamon Fern
Osmunda cinnamomea

Prairie Blazing Star
Liatris pycnostachya

Obedient Plant
Physostegia virginiana

Cup Plant
Silphium perfoliatum

Red Bulrush
Scirpus pendulus

Blue Vervain
Verbena hastata

Indian Grass
Sorghastrum nutans

Big Bluestem
Andropogon gerardii

Serviceberry
Amelanchier arborea

Fringed Sedge
Carex crinita

Buttonbush
Cephalanthus occidentalis

Common Tussock Sedge
Carex stricta

Redbud
Cercis canadensis

Wool Grass
Scirpus cyperinus

Pagoda Dogwood
Cornus alternifolia

Addendum: Native Plant Nurseries

Supplier	Plant Source*			Type				
	P	H	S	Seed	Upland Perennial	Aquatic Perennial	Shrubs & Trees	
Ag Venture Seeds 402 West Wilson Street. Kentland, IN 47951 1.800.933.0259 219.474.3339 avdm@earthlink.com		x			x			
Agrecol 2918 Agriculture Drive Madison, WI 53718 608.223.3571 608.223.3575 fax www.agrecol.com ecosolutions@agrecol.com	x			x	x	x	x	
American Roots 1958 Hidden Lake Trail Ortonville, MI 48462 248.627.8525 americanroots@aol.com					x			
Blank's Nursery & Garden Center 0448 E. 500 South LaPorte, IN 46350 219.393.5414 blanksnursery-b@excite.com	x			x	x	x	x	
Bluestem Prairie Nursery 13197 E. 13th Road Hillsboro, IL 62049 217.532.6344				x	x			
Country Road Greenhouses, Inc. 19561 Twombly Rochelle, IL 61068 815.384.3311	x				x	x		
Earthly Goods Ltd. New Albany, IN 812.944.3283 info@earthlygoods.com www.earthlygoods.com		x		x				
Earthskin Nursery 9331 NCR 3800E Mason City, IL 62664 217.482.3524 www.earthskinnursery.com		x		x				
Enders Greenhouse 104 Enders Dr. Cherry Valley, IL 61016 815.332.5255					x		x	
Genesis Nursery 23200 Hurd Road Tampico, IL 61283 815.438.2220	x			x	x	x	x	

* P = Propagated, H = Harvested, S = Salvaged

	Products		
	Native/Non-native	Source	Services
	Native	IN	Seed, consultation of seeding, follow up.
	Both	WI and IL	Wholesale supply of native prairie, wetland, savanna, and woodland plants and seed.
	Native	MI	Wildflowers and native plants, many of Oakland County genotype.
	Both	IN, IL, MI, WI	Retail and wholesale field grown trees and shrubs. Some wildflowers, grasses, and seed available or can order. Dealer for Buhler/Allied Attachments. By appointment only.
	Native	IL	Plants, seeds, and consulting. Mail order sales.
	Native	IL	Wholesale for plants only.
	Both	US	Perennial, native and annual wildflower seed, wildflower seed mixtures, and wildflowers to attract birds and butterflies. Online sales only.
	Native	IL	Specializes in seeds.
	Native	IL	Plants, seeds, site evaluations, and consulting.
	Native	IL	Seeds, plants, and consulting.

Supplier	Plant Source*			Type				
	P	H	S	Seed	Upland Perennial	Aquatic Perennial	Shrubs & Trees	
Heartland Restoration Services 14921 Hand Road Fort Wayne, IN 46818 260.489.8511 www.earthsourceinc.net	x			x	x	x	Some shrubs	
Hensler Nursery P.O. Box 58 5715 N. 750 E Hamlet, IN 46532 574.867.4192	x						x	
Hidden Savanna Nursery 18 N Van Kal St. Kalamazoo, MI 49009 269.352.3876 info@hiddensavanna.com www.hiddensavanna.com	x			x	x	Some	Some shrubs	
Indiana Native Plant and Wildflower Society P.O. Box 30317 Indianapolis, IN 46230 317.263.9655 info@inpaws.org www.inpaws.org			x		x	x		
Jasper-Pulaski State Tree Nursery 15508 West 700 North Medaryville, IN 47957 219.843.4827 www.in.gov/dnr/forestry	x						x	
JFNew, Inc. 128 Sunset Drive Walkerton, IN 46574 574.586.2412 www.jfnewnursery.com	x	x	x	x	x	x	x	
Lafayette Home Nursery, Inc. P.O.Box 1A Lafayette, IL 61449 309.995.3311	x	x		x	x	x		
Lundberg Nursery 1069 Carberry Road Niles, MI 49120 269.683.8068 lundbergnursery@acd.net	x				x			
Madeline F. Elder Greenhouse of the Indianapolis Museum of Art 4000 Michigan Road Indianapolis, IN 46208 317.920.2652 www.imamuseum.org	x				x		x	

* P = Propagated, H = Harvested, S = Salvaged

	Products		
	Native/Non-native	Source	Services
	Native	IN	Seed, plant installation, consulting.
	Native	IN	Bare root seedlings, ball & burlap (some), Christmas Trees.
	Native 98%	MI & Northern IN	Michigan native wildflowers, grasses, and shrubs sold in containers and plugs. Specializing in Southwest MI genotypes.
	Native	IN	Members grow & rescue native plants. Annual plant sale only.
	Native	IN	Specializing in tree seedling sales.
	Native	IN	Specializing in ecological consulting, native plant and seed sales, and restoration services.
	Native	IL	Plants, seeds, consulting, and custom planting.
	Native	MI	Retail sales.
	Both	IN	Retail sales of perennials, annuals, houseplants, tropicals, including native Indiana perennials. Limited selection of trees and shrubs.

Supplier	Plant Source*			Type				
	P	H	S	Seed	Upland Perennial	Aquatic Perennial	Shrubs & Trees	
Mark M. Holeman, Inc. 7871 Hague Road Indianapolis, IN 46256 317.849.3120				x			x	
Mary Ann's Michigan Trees and Shrubs 28092 M-40 Hwy. Paw Paw, MI 49079 269.628.2474 mamenck@mel.net www.maryannstrees.com	x						x	
Michigan Wildflower Farm 11770 Cutler Road Portland, MI 48875 517.647.6010 wildflowers@voyager.net www.michiganwildflowerfarm.com	x	x		x	x	x		
Munchkin Nursery & Gardens, LLC 323 Woodside Dr. N. W. Depauw, IN 47115 812.633.4858 www.munchkinnursery.com	x				x			
Native Connections 17080 Hoshel Road Three Rivers, MI 49093 269.580.4765 www.nativeconnections.net	x	x		x				
Native Plants Unlimited 13600 Conner Knoll Pkwy. Fishers, IN 46038 www.nativeplantsunlimited.com					x		x	
Neuhouser Garden & Gifts 4605 W. Jefferson Boulevard Fort Wayne, IN 46804 260.436.8538 Judith@neuhouser.com www.neuhouser.com	x				x	x	x	
Neuhouser Garden & Gifts 8046 Stellhorn Road Fort Wayne, IN 46815 260.486.4161 Krista@neuhouser.com www.neuhouser.com	x				x	x	x	
Oakland Wildflower Farm 520 N. Hurd Road Ortonville, MI 48462 248.969.6904 oaklandwildflowerfarm@gmail.com www.oaklandwildflowerfarm.com	x	x	x		x	x	x	

* P = Propagated, H = Harvested, S = Salvaged

	Products		
	Native/Non-native	Source	Services
	Native	IN	Native plant material, Installation, design and maintenance.
	Native	MI	MI trees and shrubs. Limited installation.
	Native	MI	Native wildflower and grass seed, consulting, installation, and maintenance.
	Both	Eastern US	Focus is Native and Non-Native Rare Unusual Shade Perennials.
	Native	MI, IN, WI	Native forb seed, Michigan genotype grass seed, design, consultation, installation, and management.
	Native	IN	Annual plant sale only.
	Both	IN	Retail nursery and garden center, extensive selection of native plants. Landscape design and installation of rain gardens, hardscapes, and habitat gardens. Open year-round.
	Both	IN	Retail nursery. Landscape design and installation of rain gardens, hardscapes, and habitat gardens. Open April through November.
	Native	MI	Native forbs and grasses. Specializing in Southeast Michigan genotypes. Limited design and consultation.

Supplier	Plant Source*			Type				
	P	H	S	Seed	Upland Perennial	Aquatic Perennial	Shrubs & Trees	
Peter Schramm Prairie Restorations 766 Bateman Street Galesburg, IL 61401 309.343.2608 prarie1@galesburg.net	x	x		x				
Possibility Place Nursery 7548 W. Monee-Manhattan Road Monee, IL 60449 708.534.3988 www.possibilityplace.com	x	x			x	x	x	
Riverside Nursery 2295 River Road Delaware, OH 43015 740.815.3230 www.riversidetreesandmums.com	x						x	
Sandhill Farm 11250 10 Mile Road Rockford, MI 49341 616.691.8214					x			
Sharp Bros. Seed Co. 396 SW Davis-Ladue Clinton, MO 64735 660.885.7551 www.sharpseed.com	x	x		x				
Spence Restoration Nursery 2220 E. Fuson Road P.O. Box 546 Muncie, IN 47302 765.286.7154 www.spencenursery.com	x			x	x	x	x	
Springcreek Landscaping & Nursery, Inc. 1860 N. 525 East Logansport, IN 46947 574.722.1128 springcrk@verizon.net	x				x		x	
The Native Plant Nursery LLC P.O. Box 7841 Ann Arbor, MI 48107 734.677.3260 plants@nativeplant.com www.nativeplant.com	x	x		x	x		x	
The Natural Garden 38 W 443 Hwy 64 St. Charles, IL 60175 630.584.0150 www.thenaturalgardeninc.com	x	x			x	x	x	

* P = Propagated, H = Harvested, S = Salvaged

	Products		
	Native/Non-native	Source	Services
	Native	IL, IA, MO, WI, IN	Prairie restoration from seed includes installation. Prescribed burning.
	Native	IN, IL, WI, IA	Wholesale and retail sales, contract growing, design/build, delivery, consulting, speaking engagements and classes.
	Native	OH	Three gallon trees 5–6 feet tall.
	Native	MI	Michigan native woodland and wetland forbs and grasses, consultation and design.
	Native	MO, PA, OR	Seed and technical assistance.
	Native	IN	Wholesale grasses, forbs, and aquatic; retail mail order catalog; consultation, design and installation services.
	Both	IN, IL, MI, OH	Landscape and hardscape design and installation. Small retail center with limited selection of native grasses, perennials, shrubs and trees.
	Native	MI	Southeast Michigan native plants and seeds, consulting, design, and installation. Will ship seeds but not plants (pick up only).
	Both	IL	Plants, hand collected seed, consulting, and landscape design.

Supplier	Plant Source*			Type				
	P	H	S	Seed	Upland Perennial	Aquatic Perennial	Shrubs & Trees	
Vallonia State Tree Nursery 2782 W. County R 540 South Vallonia, IN 47281 812.358.3621 vallonianursery@dnr.in.gov www.in.gov/dnr/forestry	x						x	
Wetlands Nursery, Inc. P.O.Box 14553 Saginaw, MI 48601 989.752.3492				x		x		
WILDTYPE Design, Native Plants & Seed LTD 900 N. Every Road Mason, MI 48854 517.244.1140 wildtype@msu.edu www.wildtypeplants.com	x	x			x	x	x	
Winterhaven Wildflowers & Native Plant Preserve 5724 S 900 West West Point, IN 47992 Reni Winter, 765.714.4288 (cell) wildflowers@winterhavenfarm.us www.winterhavenfarm.us	x				x			
Woody Warehouse Box 259 Lizton, IN 46149 1.866.766.8367 www.woodywarehouse.com	x						x	

* P = Propagated, H = Harvested, S = Salvaged

	Products		
	Native/Non-native	Source	Services
	Native	IN	Specializing in tree seeding sales.
	Native	MI	Michigan native aquatic plants and wetland seeds, consultation and installation.
	Native	MI	Native trees, shrubs, wildflowers, and grasses: plugs and small containers. Design, planning, and management of native landscapes.
	Native	IN	Retail and wholesale. Indiana native wildflowers & grasses, specializing in plants that support monarchs and wildlife. Native landscape consultation and installation. Contract growing available.
	Native	IN, IL, KY, OH	Wholesale container grown trees and shrubs.

Addendum: Sources of Erosion Control and Bioengineering Products

Company/Address	Phone/Email/ Website
American Excelsior Company 850 Avenue H East Arlington, TX 76011	1.800.777.7645 E-mail: sales@americanexcelsior.com Web site: www.americanexcelsior.com
Eco-Systems, Ltd. (dba Soilandwater.com) 6640 N. Old State Road 37 Bloomington, IN 47408	1.812.339.6664 E-mail: swc@soilandwater.com Web site: www.soilandwater.com
D2 Land and Water Resource 2600 Bloyd Avenue Indianapolis, IN 46205	1.800.597.2180 E-mail: amcauliffe@d2lwr.com Web site: www.d2lwr.com
Hoene Tiling, Inc. P.O. 367-6223 N State Road 15 Leesburg, IN 46538	1.574.453.4216
Hoham, Smith & Company, Inc. PO Box 710, 104 Walnut Street Auburn, IN 46706	1.888.262.2214 E-mail: hohamsmith@sbcglobal.net Web site: www.hohamsmith.com
Hoosier Aquatic Management 3448 W 16th Street Indianapolis, IN 46222	1.888.564.2329 E-mail: sales@haminc.org Web site: www.haminc.org
JFNew 128 Sunset Drive Walkerton, IN 46574	1.574.586.2412 E-mail: info@jfnew.com Web site: www.jfnew.com
Midwest Construction Products 3901 South Madison Avenue P.O. Box 17038 Indianapolis, IN 46227	1.317.781.2380 E-mail: fortmeyers@midwestconstruct.com Web site: www.midwestconstruct.com
MulchPlus, LLC 9565 West Snyder Road LaPorte, IN 46350	1.800.566.7060 E-mail: RickFruit@mulchplus.com Web site: www.mulchplus.com
North American Green 5401 St. Wendel-Cynthiana Road Poseyville, IN 47633	1.800. 772.2040 E-mail: customerservice@nagreen.com Web site: www.nagreen.com
Rolanka International 155 Andrew Drive Stockbridge, GA 30281	1.800.760.3215 E-mail: rolanka@rolanka.com Web site: www.rolanka.com

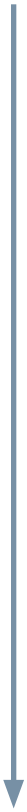
Note: A list of contractors that design and install bioengineering for bank stability can be found on the IDNR LARE website www.in.gov/dnr/fishwild/3302.htm, under Project Contacts. Inclusion of companies is for informational purposes only and does not constitute an endorsement of their products or services by the IDNR.

Addendum: Cost Estimates

COST ESTIMATES FOR SHORELINE STABILIZATION FOR VARIOUS BIOENGINEERING TECHNIQUES.

Type	Comments	Average Cost per Lineal Foot*	Materials
Stone Revetment**	Includes geotextile fabric liner. Cost of field stone higher	$35.00 – $45.00	$20.00 – $30.00
Stone Toe with Native Vegetation	Includes stone, native seed, geotextile fabric, and Erosion Control Blanket	$30.00 – $35.00	$15.00 – $25.00
Soil Encapsulated Lift with Stone Toe	Includes native seed and construction materials	$60.00 – $80.00	$40.00 – $55.00
Coir Log with Stone Toe	Includes stakes to anchor coir log	$55.00 – $64.00	$35.00 – $45.00
Coir Log Toe with Plugs	Includes coir log and plug installation	$38.00 – $47.00	$15.00 – $25.00
Re-slope and Re-vegetate	Includes additional soil, seed and Erosion Control Blanket	$25.00 – $30.00	$15.00 – $25.00
Live Stakes	1" – 1.5" diameter	$5.00 – $10.00	$0.65 – $1.00
Wattles	10" diameter bundle	$10.00 – $15.00	$10.00 – $15.00 (10" diameter)

Structural Engineering



Biological Engineering

*Cost includes installation.
** Stone revetment alone is not considered bioengineering by the IDNR.

Note: These are 2008 figures. Actual costs may vary considerably, depending on local prices, the conditions at your lakeshore, and the level of erosion protection desired.

Addendum: Rules & Regulations

INTRODUCTION

Lakes are one of Indiana's most precious natural resources. They provide water supplies, flood control, educational opportunities, economic benefit, as well as numerous recreational opportunities. These valuable resources can be protected in a number of ways, through both regulations and the responsible actions of individuals. This section summarizes the local, state and federal regulations for lake shoreline construction activities, invasive species, and aquatic plant control. Please note, this is simply a summary. For more detailed information about specific regulations or permit requirements, contact the appropriate agency.

General Lakeshore Protection Guidelines

- Preserve the natural shoreline. The natural shape of the lakeshore and the plants existing at and above the water line usually provide excellent erosion control and habitat value.
- Avoid unnecessary disturbances at or near the lakeshore. Moving heavy equipment and clearing land for construction makes soil extremely vulnerable to erosion. Even small disturbances to plant cover can lead to shoreline instability. Maintain a wide buffer zone of trees and shrubs between any structures and the edge of your lake. Use a silt fence or other erosion control measures during construction, and erosion control blankets or turf reinforcement mats seeded with an appropriate seed mix after construction is complete.
- If shoreline protection becomes necessary, carefully select erosion control methods to be used. Choosing the proper erosion control will save money, time, and maintenance worries. Proper design and construction are equally important for success.
- Use a temporary or floating dock, rather than a permanent dock. Permanent docks disrupt lake bottom habitat during construction and may cause erosion problems by deflecting underwater currents. All permanent dock construction requires a permit from the Indiana Department of Natural Resources (IDNR). Because of the great potential for environmental harm and for unreasonable interference with public enjoyment of the lake, an application for a permanent dock must undergo a rigorous permit review process.
- Maintain a proper watercraft speed when approaching or passing close to shore. Wakes generated by motorboats and personal watercraft can cause extensive shoreline damage when the waves impact the lakeshore and lake bottom. Boats speeding through shallow areas can stir up the bottom, damage plants and shoreline, and add sediments and nutrients to the water column. When passing within 200 feet of shore, a boat must not be operated at a speed greater than 10 miles per hour (IC 14-15-3-17) or greater than a speed which is reasonable and prudent (IC 14-15-3-7).

Indiana Department of Natural Resources

DNR Authority

The Indiana General Assembly recognized the value of the state's lakes when it passed the Lakes Preservation Act (IC 14-26-2) in 1947. The Lakes Preservation Act (LPA) establishes the state's jurisdiction and authority to regulate construction activities on Indiana's public freshwater lakes (PFLs). This includes most lakes in the Northern Moraine and Lake Region (see map). Waters exempted from regulation under the LPA include: Lake Michigan, Lakes Shafer and Freeman (White and Carroll Counties), lakes in the cities of East Chicago, Gary, or Hammond, and privately owned lakes. Questions regarding regulatory status of a specific lake can be directed to DNR Division of Water at (877) 928-3755.

Because PFLs are a public resource, the state holds the lake and its resources in trust for its citizens. Furthermore the state is specifically charged with protecting the public rights established under the LPA. The public rights include the natural resources and natural scenic beauty, as well as vested rights in the enjoyment, protection, and recreational use of PFLs.

Another important component of the LPA establishes permit requirements for projects that might impact lake resources or negatively affect the public trust. This process, which is administered by DNR Division of Water, examines a wide variety of project types including: excavation, beaches, and placement of structures (e.g. piers, seawalls, etc.). Public Freshwater Lake Rules have been developed to provide specific guidance for interpreting the LPA and can be found in 312 IAC Article 11. These rules are in place to ensure not only that the natural resources of the lake are protected, but also that the rights of the general public and all riparian owners are upheld.

DNR Jurisdiction

The department's jurisdiction over construction activities on PFLs begins with the legal shoreline. The legal shoreline of a lake is the line formed where the water's edge meets the land when the lake level is at its legally established elevation (Figure 1a). For lakes that do not have a legally established lake level, the department uses the average normal level, determined by examining water records or the effect of the water's action on the shoreline. A list of legal and average normal water levels for lakes throughout the state can be found at www.in.gov/dnr/water/5068.htm.

Once the legal shoreline has been established, DNR's jurisdiction is very clear. Under Section 23 of the LPA, any construction, excavation, or filling conducted along or lakeward of the legal shoreline requires prior written approval from the department. A 2004 amendment to the LPA gave the DNR additional jurisdiction below the legal lake level and ten feet landward of the legal shoreline (Figure 1b). As a result, a retaining wall placed within ten feet of the shoreline whose foundation extends below the legal lake level requires a permit from the department (Figure 1c).

If a project you plan to complete falls within this area, you may need a permit. Common project types that require permits include: placement of a permanent structure (e.g. seawalls, underwater beaches, boathouses, etc), group piers or marinas, excavation and dredging (see 312 IAC 11-3-3).

Projects Approved Under General License

Certain projects are approved under General License and may be conducted without a written permit from the DNR. These include refacing glacial stone seawalls, installing dry hydrants, and placing temporary structures. Riparian owners are allowed to place a temporary structure in a public freshwater lake without a written license from the DNR as long as the structure meets the definition of a temporary structure and the general license conditions outlined in the Public Freshwater Lake Rules.

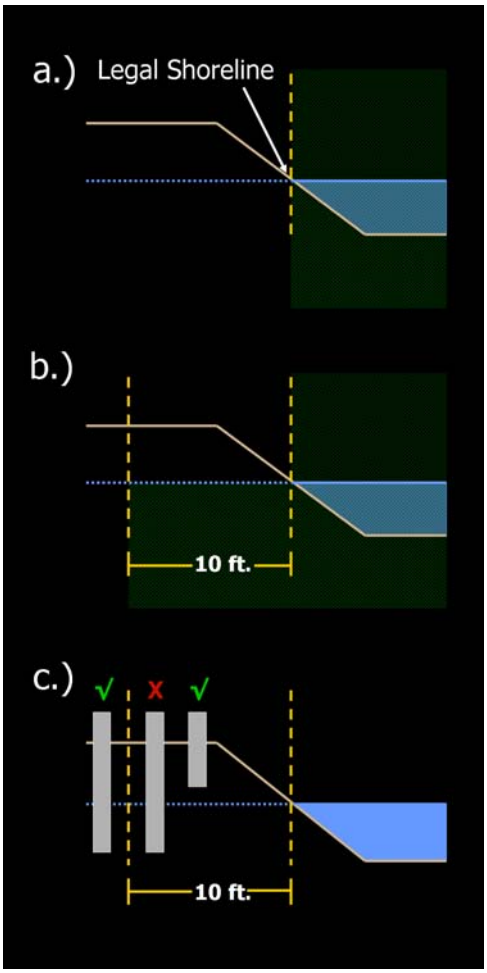


Figure 1. DNR shoreline jurisdiction (a) before and (b) after the 2004 amendment extending jurisdiction ten feet landward of the legal shoreline. (c) Examples of one retaining wall that would require a permit (red X) and two that would not (green check-marks).

The term "temporary structure" (see 312 IAC 11-3-1(b)) means a structure that can be installed and removed from the waters of a public freshwater lake without using a crane, bulldozer, backhoe or similar heavy or large machinery. Additionally, the structure must either float or be supported by poles that rest on the surface of the lake bottom or by auger poles that screw into the bed of the lake. In both cases, the poles are not to exceed 3 1/2 inches in diameter. Also, the use of treated timber or concrete footings for pier support is prohibited.

In addition, temporary structures must meet the following criteria to qualify for a general license (312 IAC 11-3-1):

1. Be easily removable.
2. Not infringe on the access of an adjacent landowner to the public freshwater lake.
3. Not unduly restrict navigation.
4. Not be unusually wide or long relative to similar structures within the vicinity on the same public freshwater lake.
5. Not extend more than 150 feet from the legally established or average normal waterline or shoreline.
6. If a pier, not extend over water that is continuously more than six feet deep to a distance of 150 feet from the legally established or average normal waterline or shoreline.
7. Not be a marina.
8. Not be a group pier.
9. Be placed by or with the acquiescence of a riparian owner.

If any one of these conditions will not be met, a riparian owner must apply for a permit from the DNR Division of Water. Submission of an application does not guarantee approval. Each application is reviewed for biological impacts, navigational hazards and unreasonable interference with public enjoyment of the lake. Structures found to be in violation are subject to removal and substantial daily fines.

Permit Application Review
Due to the scarcity and sensitivity of certain types of habitats, not all projects are allowable in all locations. As a means of consistently reviewing projects at PFLs across the state, a method of classifying shorelines has been adopted into Indiana's administrative code for lake construction (312 IAC 11) and implemented into the review process. Under this system, biologists have specific and measurable criteria regarding wetland vegetation (emergent and rooted, floating-leaf plant species) and prior shoreline disturbance that allow a classification to be assigned to any shoreline. Currently, four classifications are used: significant wetland, natural shoreline, area of special concern, and developed area.

A **significant wetland** (312 IAC 11-2-24) is an area where shoreline zones possess at least one of the following characteristics:

1. at least 2,500 square feet of contiguous emergent vegetation or rooted vegetation with floating leaves;
2. adjacent wetland areas designated by a federal or state agency; or
3. existence of animals or plants that are listed as extirpated, endangered, threatened, or rare.

A **natural shoreline** (312 IAC 11-2-14.5) is an area with:

1. unaltered shoreline for at least 250 feet. Unaltered shoreline means a shoreline that does not include lawful permanent structures.

An **area of special concern** (312 IAC 11-2-2) contains at least one of the following characteristics:

1. more than 625 square feet of contiguous emergent vegetation or rooted vegetation with floating leaves;
2. unaltered shoreline where bulkhead seawalls are at least 250 feet apart; or
3. bogs, fens, muck flats, sand flats, or marl beaches.

A **developed area** (312 IAC 11-2-7) does not contain any of the following characteristics:

1. an area of special concern;
2. a natural shoreline; or
3. a significant wetland.

Seawall Construction Regulations
Allowable materials for new seawall or seawall reface construction depend upon the shoreline classification. The following limitations are in effect under 312 IAC 11-4-2 for new seawalls and 312 IAC 11-4-3 for seawall refaces:

- In a **significant wetland**, or a **natural shoreline,** the new seawall must be constructed of bioengineered materials.
- In an **area of special concern**, the new seawall must be constructed of bioengineered materials and/or glacial stone.
- Seawall refaces in a **significant wetland, natural shoreline, or an area of special concern** must be comprised of like materials. For an existing bioengineered seawall, the seawall reface must be bioengineered materials only. For an existing concrete, steel sheet piling, riprap, or glacial stone seawall, reface materials must be comprised of identical material to the existing seawall or use glacial stone and/or bioengineered materials.
- In a **developed area**, the new seawall or seawall reface must be comprised of one or a combination of bioengineered materials, glacial stone, riprap, concrete or steel sheet piling.

Other construction materials considered innovative may be used if the materials, techniques or standards are not used in a manner otherwise prohibited by IC 14-26-2, 312 IAC 11-4-2 or 312 IAC 11-4-3. Construction materials must not consist of railroad ties, treated timber, broken concrete, tires, scrap metal, appliances, vehicle bodies, or asphalt (312 IAC 11-5-1).

All seawall construction and seawall refaces must meet the following additional criteria:

- the location of the lakeward face of the seawall is along the legally established or average normal waterline or shoreline as determined by the department;
- erosion from disturbed areas landward of the waterline or shoreline must be controlled to prevent its transport into the lake;
- an impermeable material must not be placed behind or beneath the seawall or reface materials;
- any permeable filter cloth placed behind or beneath the new seawall or reface materials must be properly anchored;
- the lakeward extent of bioengineered material must be coordinated with the department before filing the license application; and
- the base of glacial stone or riprap must not extend more than four feet lakeward of the waterline or shoreline for a new seawall.

In addition to the conditions stated above, a permit for refacing existing lawful seawalls may be issued if the following conditions are met:

- the seawall has not been previously refaced;
- if comprised of concrete, the reface must be keyed to the lakeward face of the existing wall and must not extend more than 12 inches lakeward of the existing wall;
- if comprised of steel sheet piling, the reface must not extend more than six inches lakeward of the existing seawall;
- if comprised of glacial stone or riprap, the reface must not extend more than four feet lakeward of the waterline or shoreline at the base of the existing seawall; and
- any walk or structural tie constructed on top of the existing seawall must be located landward of the seawall face.

Underwater Beach Construction Regulations
Placement of underwater beach material requires a permit from the Division of Water under the Lakes Preservation Act and must follow the requirements outlined in 312 IAC 11-4-4. Underwater beaches are not allowed along a shoreline designated as a **significant wetland** or **natural shoreline**.

Underwater beaches in areas of special concern and developed areas must meet the following minimum criteria:

- must consist of clean nontoxic pea gravel;
- must be tapered to the waterline or shoreline;
- must be placed on no more than one-half of the landowners frontage;
- must not exceed six inches in thickness;
- must not use filter cloth or impermeable materials beneath the fill;
- erosion from disturbed areas landward of the waterline or shoreline must be controlled to prevent transport of eroded soil into the lake.

In an **area of special concern**, beaches must meet these additional criteria:

- cannot exceed 625 square feet; and
- cannot extend more than 30 feet lakeward of the waterline or shoreline, or into water deeper than six feet.

In a **developed area**, the underwater beach must not extend more than 50 feet lakeward of the waterline or shoreline or into water deeper than six feet.

Activities on Lakes and Reservoirs Not Covered by the LPA
Activities on waterbodies that are not considered to be public freshwater lakes may still be regulated by the DNR. This includes lakes and reservoirs in central and southern Indiana. Under the Flood Control Act (IC 14-28-1), the DNR regulates activities within the floodway of any waterway so as to best control and minimize the extent, height, and force of potential floods, to prevent impacts to fish, wildlife, and botanical resources, and to prevent unreasonable hazard to life or property. Under the Navigable Waterways Act (IC 14-29-1), the DNR regulates activities within a navigable waterway that may unreasonably impair navigation, cause significant environmental harm, and/or pose an unreasonable hazard to life or property.

When in doubt, contact DNR Division of Water at (877) 928-3755 to determine what, if any, permits may be required for a project on a given lake.

Permit applications and additional information are available from the:

IDNR Division of Water
402 West Washington Street, Room W-264
Indianapolis, IN 46204
(317) 232-4160 or toll free (877) 928-3755
www.in.gov/dnr/water
www.in.gov/serv/dnr_water_permit_query

(This web address has a searchable database of lake shoreline construction permit applications.)

U.S. Army Corps of Engineers

Jurisdiction

The U.S. Army Corps of Engineers (USACE) regulate all waters within Indiana that meet the definition of two broadly defined terms: "Waters of the United States" (Section 404 of the Clean Water Act) and "Navigable Waters of the United States" (Section 10 of the Rivers and Harbors Act).

The definition of "Waters of the United States" includes the following:

a. navigable Waters of the United States;

b. wetlands;

c. tributaries to navigable Waters of the United States, including adjacent wetlands and lakes and ponds;

d. interstate waters and their tributaries, including adjacent wetlands; and,

e. all other Waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce. Section 404 of the Clean Water Act defines the landward limit of jurisdiction as the high tide line in tidal waters and the ordinary high water mark (OHWM) as the limit in non-tidal waters. When adjacent wetlands are present, the limit of jurisdiction extends to the limit of the wetland.

"Navigable Waters of the United States" includes the oceans and navigable coastal and inland waters, lakes, rivers, and streams. U.S. Army Corps of Engineers' jurisdiction extends shoreward to the mean high water line. The USACE general definition of navigable Waters of the United States is:

those waters subject to the ebb and flow of the tide shoreward to the mean high water mark and/or those waters that are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which impede or destroy navigable capacity.

Types of activities that need permits

The USACE regulate the discharge of dredged or fill material into all Waters of the United States (including wetlands). The USACE also regulates the construction of any dam or dike across any navigable Water of the United States as well as the placement of structures or work in or affecting navigable Waters of the United States. U.S. Army Corps of Engineers regulations apply to both permanent and temporary work. Examples of temporary impacts include discharge of return water from hydraulic dredging, or temporary fills associated with access roadways, cofferdams, storage and work areas.

Some examples of activities requiring a Section 404 Permit:

- construction of seawalls, weirs, boat launches, intake structures, and open-trench cable or pipeline crossings within Waters of the U.S.;
- discharging fill or dredged material into Waters of the U.S., including wetlands;
- filling, or other modifications to Waters of the U.S.;
- placement of riprap or other fill into Waters of the U.S.; and,
- site development fill into Waters of the U.S. for residential, commercial, or recreational developments.

Additional information on the USACE permit process can be found in the *Waterways Permitting Handbook* publication produced by the Indiana Department of Environmental Management in September 2008. The Handbook can be accessed online at http://www.in.gov/idem/files/wetlands_waterways_booklet.pdf.

Contact Information
Detroit District Office (Northern Indiana)
1-888-694-8313, www.lre.usace.army.mil/who/regulatoryoffice

Louisville District Office (Southern and Central Indiana)
502-582-5607, www.lrl.usace.army.mil/orf

Indiana Department of Environmental Management

Jurisdiction
The Indiana Department of Environmental Management (IDEM) regulates all waters in Indiana that meet the definition of "Waters of the State":

a. "Waters," for purposes of water pollution control laws and environmental management laws, means:
   1. the accumulations of water, surface and underground, natural and artificial, public and private; or,
   2. part of the accumulations of water; that are wholly or partially within, flow through, or border upon Indiana.

b. The term "waters" does not include:
   1. an exempt isolated wetland;
   2. a private pond; or,
   3. an off-stream pond, reservoir, wetland, or facility built for reduction or control of pollution or cooling of water before discharge.

c. The term includes all Waters of the United States, as defined in Section 502(7) of the federal Clean Water Act (33 U.S.C. 1362(7), that are located in Indiana.

Water bodies regulated by IDEM include, but are not limited to, lakes, rivers, streams, ditches, and wetlands. Any activity that would result in a discharge to any of these waters and requires a federal permit or license is regulated by IDEM under Section 401 of the Clean Water Act as well as under Indiana Code Title 13. Any activity that would result in a discharge to a non-exempt state isolated wetland is regulated by IDEM under Indiana Code 13-18-22.

Types of activities that need permits
The IDEM regulates projects that have a discharge to Waters of the State (including wetlands), including, but not limited to, those that require a federal permit or license to authorize the project. For example, if you plan to dredge, excavate, or fill within lakes, rivers, streams, ditches, wetlands, or other regulated waters, you need

to obtain a federal permit from the U.S. Army Corps of Engineers (USACE) prior to the commencement of work. Because the USACE permit you seek would authorize a discharge to Waters of the State, the USACE will require you to seek state authorization from IDEM as part of the permitting process.

In certain instances, the USACE determines that specific wetlands are not federally jurisdictional and are considered by the USACE to be isolated. Isolated wetlands fall under the regulatory authority of IDEM.

Examples of activities regulated by IDEM's Section 401 Water Quality Certification and Isolated Wetlands Program include:

- depositing fill or dredged material in Waters of the State or adjacent federally jurisdictional wetlands;
- depositing fill or dredged material into isolated wetlands;
- site development fill for residential, commercial, or recreational developments;
- construction of bridges, culverts, revetments, groins, breakwaters, levees, dams, dikes, and weirs;
- placement of riprap and other fill into Waters of the State;
- widening, deepening, or construction of a pond or other related structure for the purpose of modifying a mapped floodway or for storm water detention/retention;
- channelizing, widening, or otherwise altering the flow or path of a stream, ditch, or river; and,
- mining sand, gravel, or peat (or other related mining activity) within any water body.

This is not a complete list, but it contains some of the more commonly permitted activities. If you intend to conduct any of these types of projects, you should contact IDEM and/or the U.S. Army Corps of Engineers before starting work.

Additional information regarding IDEM rules and regulations can be found in the *Waterways Permitting Handbook* publication produced by the Indiana Department of Environmental Management in September 2008. The Handbook can be accessed online at www.in.gov/idem/files/wetlands_waterways_booklet.pdf.

For assistance with the permit application process the IDEM Permit Wizard can be found online at: www.in.gov/ai/appfiles/permitwizard.

Contact Information
Indiana Department of Environmental Management
Section 401 WQC/Isolated Wetlands Program
100 N. Senate Avenue
MC 65-42 WQS IGCN 1255
Indianapolis, IN 46204
Toll Free: (800) 451-6027
Telephone: (317) 233-8488
www.wetlands.IN.gov

Programmatic General Permits

The IDNR, USACE, and IDEM have partnered to simplify the permit process for some construction projects on the public freshwater lakes. The USACE has issued a Programmatic General Permit (PGP) for specific construction projects on PFLs regulated under the Lake Preservation Act. The PGP allows the agencies to authorize activities of a minor nature through an abbreviated review process. These activities will cause only a minimal adverse environmental impact.

There are two categories of activities under the PGP. Category 1 activities include new glacial stone seawalls, bioengineered bank protection, refacing existing lawful seawalls with like materials, beaches, and boat well fills. Shoreline protection projects must be less than 250 feet in length. Activities located in a significant wetland or natural shoreline are not eligible for Category 1, with the exception of general license activities such as glacial stone refaces. If a proposed project qualifies under the PGP Category 1, the Certificate of Approval issued by IDNR will also qualify the project for authorization under Section 404 of the Clean Waters Act regulated by the USACE and Section 401 Water Quality Certification regulated by IDEM.

Those activities that do not meet Category 1 criteria may qualify for the PGP under Category 2. This includes projects located in a significant wetland or natural shoreline, shoreline protection projects between 250 to 500 feet in length, new bulkhead seawalls, activities which may affect Federally listed endangered or threatened species, and activities which may impact historical, cultural, or archaeological resources. Seawalls greater than 500 feet in length are not eligible for the PGP and must apply for an Individual Permit from the USACE.

PGP Procedures
Applicants must submit an IDNR application to the Division of Water. Do not submit an application to the USACE or the IDEM for projects on a public freshwater lake. The Division of Water reviews applications to determine whether a project meets the criteria for the PGP Category 1. If so, a permit is issued by IDNR and will indicate that the project is also authorized by the USACE and the IDEM. If the IDNR staff determines that the project does not meet the PGP Category 1 criteria, IDNR will forward a copy of the application to the USACE district office for review. IDNR will notify the applicant with a letter to inform them that a copy of the application was mailed to the USACE for review. The USACE will notify the IDEM when a review is required under Section 401 WQC and the applicant will be notified by letter.

Local Government Jurisdiction

The information in the above sections describes work that can be done at or below the legal or average normal lake level, and lakeward of the shoreline or within ten feet landward of the shoreline. Any work done landward (above) the legal lake level is subject to approval from the local unit of government's zoning authority. County-wide ordinances relating to lakes have also been adopted in several counties, including but not limited to Kosciusko, LaGrange, Porter, and Steuben counties. Contact the local zoning authority for the requirements for projects done landward of the legal lake level.

Indiana Aquatic Invasive Species (AIS) Regulations

Exotic species can be very expensive or nearly impossible to control. The resulting damage to sport fisheries and commercial resources can be serious. It was estimated that the U.S. and Canada were spending $8 million per year on control of the exotic sea lamprey and another $12 million per year to restore lake trout populations that were devastated by lamprey invasions (Newman 1991). Lake residents in Indiana spend an estimated $800,000 per year in public waters to chemically control nuisance Eurasian water milfoil, an exotic water plant that can shade out native species and interferes with boating and fishing.

The Indiana Aquatic Nuisance Species (ANS) Management Plan was developed in 2003 to address ecological and economic impacts of aquatic exotic species invasions in the waterways of Indiana and their potential threat to Lake Michigan, Lake Erie, and Ohio River basins. The plan's broad objective is to prevent new invasions and to reduce the negative impacts of species already here. It addressed a broad array of needs, including monitoring and tracking of ANS, early detection, development of rapid response plans, public education and involvement, regulations, national and regional cooperation, and research coordination.

Several rules have been passed to regulate the possession of many species of harmful exotic fish, animals, and aquatic plants. These regulations are intended to reduce the spread of harmful exotics in Indiana and prevent the introduction and establishment of additional exotic species into the state. Zebra mussels, Eurasian water milfoil, and purple loosestrife are among the well-known harmful exotics already infesting Indiana waters.

Exotic Fish (312 IAC 9-6-7)

It is unlawful to import, possess, propagate, buy, sell, barter, trade, transfer, loan, or release into public or private waters any of the following live fish: walking catfish (all fish of the family Clariidae), bighead carp, black carp, silver carp, white perch, snakehead (all fish of the family Channidae), rudd, ruffe, tubenose goby, round goby, or a hybrid or genetically altered fish of any of these species.

Mussels (312 IAC 9-9-3)

It is unlawful to import, possess, or release into public or private waters, a zebra mussel, quagga mussel (*Dreissena* sp.), or Asiatic clam (*Corbicula* sp.). It is likewise unlawful to take mussels and mussel shells from the waters of the state or to possess them.

Exotic Plants

Rosa multiflora (commonly known as multiflora rose) may not be planted in Indiana. A person must not sell, offer for sale, give away, or otherwise distribute seeds or plants of any species of *Lythrum* (commonly known as purple loosestrife) in Indiana, unless a prior permit has been issued for specific purposes (312 IAC 18-3-13).

Brazilian elodea (*Egeria densa*) may only be sold or possessed for use within an indoor aquarium. A person must not possess, sell, offer for sale, gift, barter, exchange, or distribute Brazilian elodea as an outdoor water plant, or allow it to infest an outdoor body of water. A property owner who has Brazilian elodea in an outdoor environment must take lawful efforts to eliminate this species (312 IAC 18-3-20).

A person must not possess, sell, offer for sale, gift, barter, exchange, or distribute Hydrilla (*Hydrilla verticillata*), or allow it to infest an outdoor body of water or transport it. A property owner who owns property that is infested with Hydrilla must take lawful efforts to eliminate this species (312 IAC 18-3-21).

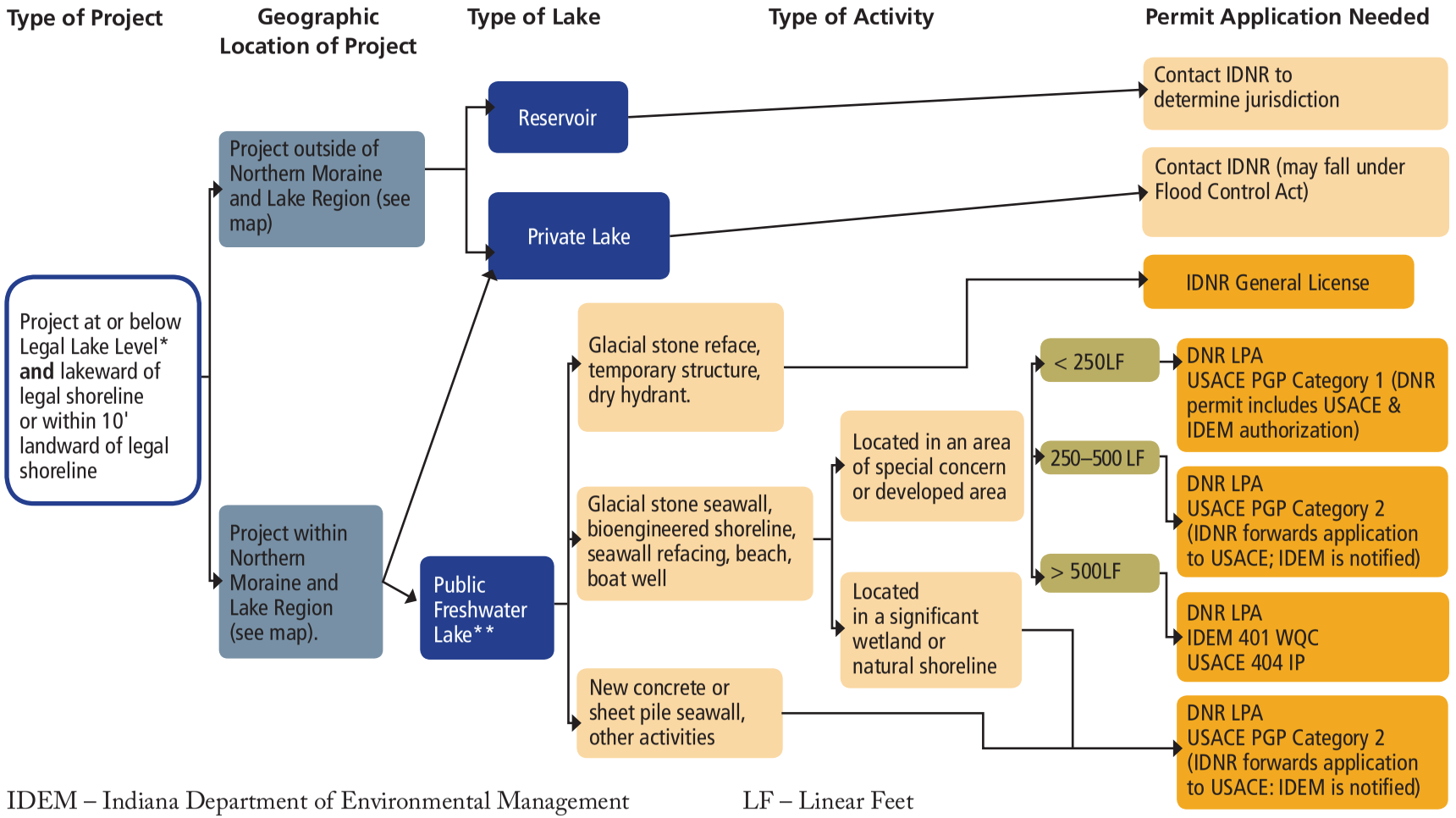
Indiana Aquatic Plant Management Regulations

The Indiana DNR regulates the control of aquatic vegetation in public waters. A permit is required to control aquatic vegetation through chemical, mechanical, physical, or biological means, unless one of the following applies:

1. A privately owned lake, farm pond, or public or private drainage ditch.
2. An individual landowner is controlling vegetation around a boat landing or beach in an area less than 25 feet along the shoreline, in water less than 6 feet deep, and a total surface area less than 625 square feet.

Aquatic Vegetation Control permit applications must be submitted to the IDNR Division of Fish and Wildlife, along with a $5 fee (www.in.gov/dnr/fishwild/2348.htm, 317-232-4102). Detailed permit requirements are listed in 312 IAC 9-10-3. No permit is required to plant aquatic vegetation in public waters, unless the planting involves construction of wave breaks or other plant protection structures.

PERMIT GUIDELINES FOR SHORELINE RESTORATION ACTIVITIES ON PUBLIC FRESHWATER LAKES

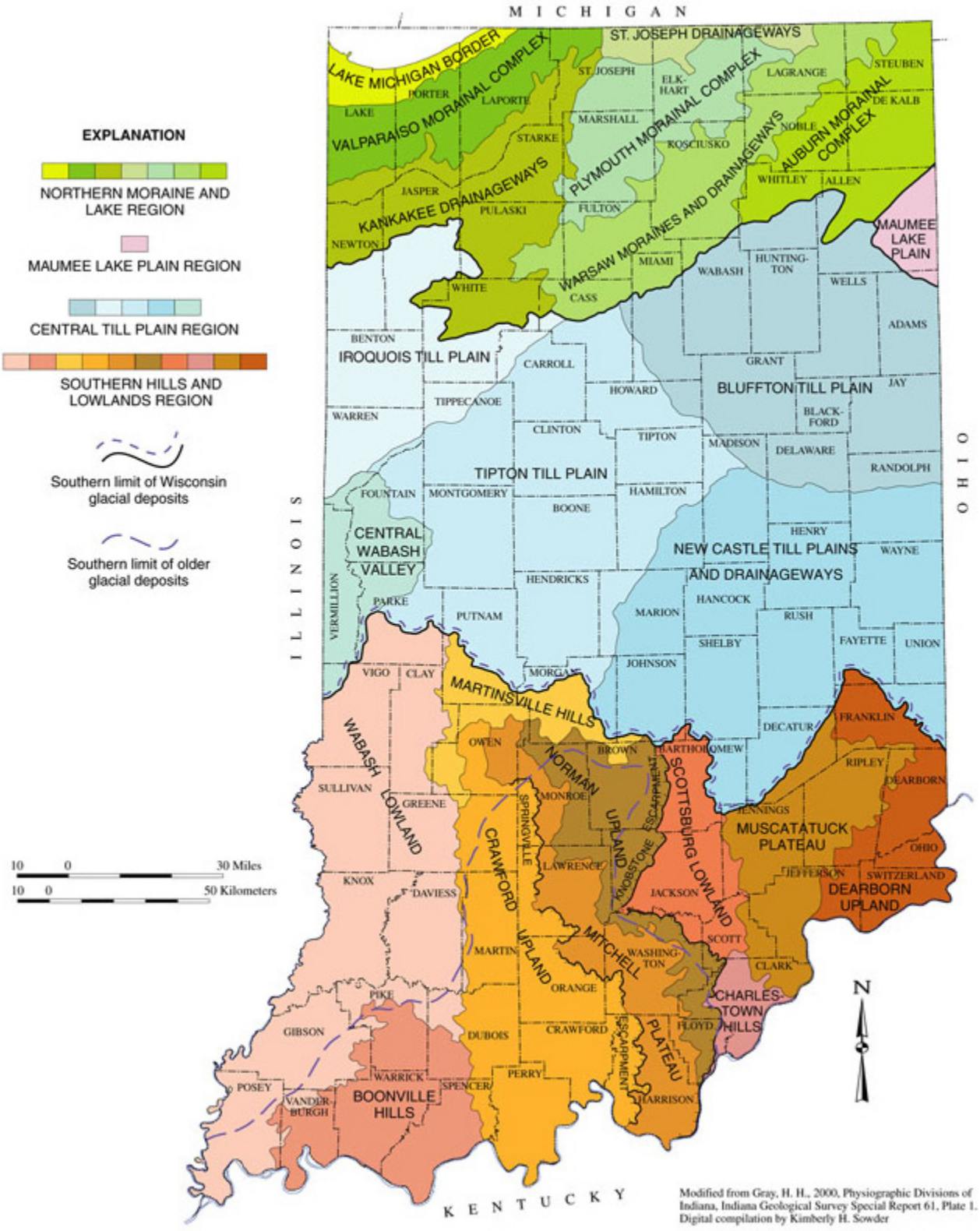


IDEM – Indiana Department of Environmental Management
IDNR – Indiana Department of Natural Resources
USACE – United States Army Corps of Engineers

LF – Linear Feet
IP – Individual Permit
LPA – Lake Preservation Act
WQC – Water Quality Certification

* Or Average Normal Level for those lakes where no legal lake level has been established.
** Waters exempted from regulation under the IDNR Lake Preservation Act include: Lake Michigan, Lakes Shafer and Freeman (White and Carroll Counties), Wolf Lake (Lake County), and Lake George (in Hammond, Lake County). Projects on Lake Michigan require a permit under the Navigable Waterways Act.

PHYSIOGRAPHIC REGIONS OF INDIANA



Addendum: Additional Sources of Information

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WEB RESOURCES

Indiana Lakes Management Society: www.indianalakes.org

Indiana Native Plant and Wildflower Society: www.inpaws.org

Indiana Wildlife Federation (Backyard Wildlife Habitat): www.indianawildlife.org

U.S. Environmental Protection Agency, Landscaping with Native Plants: www.epa.gov/greenacres

Wild Ones – Native Plants, Natural Landscapes: www.for-wild.org

Lady Bird Johnson Wildflower Center: www.wildflower.org

Missouri Plants website (great photos): www.missouriplants.com

Native plant installation specifications, Spence Restoration Nursery: www.spencenursery.com/Index/home.php

Addendum: Indiana Agency Guide

U.S. Army Corps of Engineers
The USACE can answer questions about federal permits and erosion control techniques.

Detroit District Office (Northern Indiana)
P.O. Box 1027, Detroit, MI 48231 1-888-694-8313
www.lre.usace.army.mil/who/regulatoryoffice

Louisville District Office (Southern and Central Indiana)
P.O. Box 59, Louisville, KY 40201 502-582-5607
www.lrl.usace.army.mil/orf

U. S. Fish and Wildlife Service
The USFWS has technical expertise on lakeshore management techniques with minimal impacts on fish and wildlife habitat.
Ecological Services Field Office, Southern Indiana 812-334-4261
Ecological Services Field Office, Northern Indiana 219-269-7640
www.fws.gov
www.fws.gov/midwest/maps/indiana.htm

U. S. Natural Resources Conservation Service
The NRCS and SWCD offices provide assistance and technical advice based on their extensive research and experience with soil erosion and water quality. Listed under U. S. Department of Agriculture in the local telephone directory.
www.in.nrcs.usda.gov/

U.S. Environmental Protection Agency Region 5
Water Division, 77 West Jackson Blvd., Mail Code W-15J, Chicago, IL 60604,
800-621-8431 or 312-353-2000
www.epa.gov/region5

Indiana Department of Environmental Management
The IDEM can answer questions about the requirements of state water quality permits. For permit information on the Internet: www.in.gov/ai/appfiles/permitwizard/ or call 800-451-6027 or 317-232-8603
100 N. Senate Ave., MC 65-42 WQS IGCN 1255, Indianapolis, IN 46204-2251
www.wetlands.in.gov

Indiana Department of Natural Resources
The IDNR has regulatory authority for shoreline construction projects on public freshwater lakes and provides technical assistance on lake management. For a searchable database of lake shoreline construction permit applications go to: www.in.gov/dnr/water/2455.htm

Division of Water
402 West Washington St., Room W264 , Indianapolis, IN 46204, 1-877-928-3755
www.in.gov/dnr/water

Division of Fish and Wildlife, for general questions: 317-232-4080

Division of Fish and Wildlife, Lake and River Enhancement Program
402 W. Washington St., Room W273, Indianapolis, IN 46204, 317-233-3871
lare@dnr.in.gov
www.in.gov/dnr/fishwild/2364.htm

Soil and Water Conservation Districts
The SWCDs provide assistance, technical advice, and local leadership on soil erosion and water quality issues. Listed under county offices or U. S. Department of Agriculture (NRCS) in the local telephone directory. For contact information go to: www.iaswcd.org/pdfs/IndianaSWCDs.pdf

Indiana Lakes Management Society
ILMS represents lake management associations, watershed groups, and lake residents in Indiana. www.indianalakes.org/

Addendum: Program Descriptions

LAKE AND RIVER ENHANCEMENT PROGRAM

IDNR Division of Fish and Wildlife's Lake and River Enhancement Program (LARE) is funded by an annual boat fee paid by boat owners statewide. LARE provides funding to reduce the influx of sediments and nutrients into lakes and streams on a watershed basis. Once sediment and nutrient issues have been addressed in the watershed, funding is available to remediate the lasting effects within lakes through aquatic vegetation management and sediment removal. Additional information can be found at www.in.gov/dnr/fishwild/2364.htm.

LAKE MICHIGAN COASTAL PROGRAM

The purpose of the Indiana Lake Michigan Coastal Program is to enhance the State's role in planning for and managing natural and cultural resources in the coastal region and to support partnerships between federal, state and local agencies and organizations. The Indiana Lake Michigan Coastal Program relies upon existing laws and programs as the basis for achieving its purpose. Additional information can be found at www.in.gov/dnr/lakemich.

INDIANA WILDLIFE DIVERSITY PROGRAM

The Indiana Wildlife Diversity Section plays an active role in conserving Indiana's nongame and endangered wildlife. The program is funded through public donations to Indiana's Nongame Fund. There are two ways to donate: 1) donate on your tax form — look for the eagle logo and the line provided on your Indiana state tax form to donate all or part of your refund, and 2) donate directly to the program (additional information can be found at www.in.gov/dnr/fishwild/3316.htm). The money you donate goes directly to the protection and management of more than 750 wildlife species in Indiana — from songbirds and frogs to state-endangered barn owls and freshwater mollusks.

INDIANA HERITAGE TRUST

The Indiana Heritage Trust buys land to protect Indiana's rich natural heritage for wildlife habitat and recreation. General Assembly appropriations, Environmental License Plate sales and additional donations from the general public are the three ways we've been able to protect more than 50,000 acres since the program's inception in 1992. The purpose of the Indiana Heritage Trust Program (IHT) is to acquire state interests in real property that are examples of outstanding natural resources and habitats, have historical or archaeological significance, or provide areas for conservation, recreation, protection or restoration of native biological diversity within the state. The use of eminent domain is expressly prohibited. Property is acquired only from willing sellers. Additional information can be found at www.in.gov/dnr/heritage.

INDIANA LAKES MANAGEMENT SOCIETY

The Indiana Lakes Management Society promotes the understanding and comprehensive management of Indiana lakes and reservoirs and their watershed ecosystems. ILMS provides a forum and technical assistance network for information sharing; assists with development of lake restoration and protection programs, policies, and legislation; and encourages local and statewide organization cooperation. Additional information can be found at www.indianalakes.org.

INDIANA LAKES MANAGEMENT WORK GROUP

The 26-member Indiana Lakes Management Work Group was established by the General Assembly (Non code Act 1997-239-1) in 1997 to take public comments and develop solutions for problems affecting Indiana lakes. By law, the Work Group was charged with developing final recommendations that offer solutions to the myriad problems affecting Indiana lakes by January 1, 2000. These recommendations are contained in the Indiana Lakes Management Work Group Final Report. In 2006, the Work Group was reestablished under P.L. 35-2006. Similar work groups had existed on an ad hoc basis under the auspices of the Department of Natural Resources in the interim. The Work Group continues to address problems and issues associated with public freshwater lakes by developing recommendations, some of which have resulted in legislation that was enacted. The legislative mandate for the Indiana Lakes Management Work Group is found in the Indiana Code at IC-2-5.5-3 at this location: www.in.gov/legislative/ic/code/title2/ar5.5/ch3.pdf.

Addendum: Lakescaping Registry

The Indiana Department of Natural Resources is interested in keeping a record of properties that have been lakescaped, and hearing about your experiences. If you would like to be included in this registry, please complete this form and mail it to the address on the bottom. Thanks for your participation.

Name: _____

Mailing Address: _____

City: _____ County: _____ State: _____ Zip Code: _____

Telephone|Home: _____ Work: _____ Summer: _____

Email Address: _____

Address of property you lakescaped (if different than above) _____

Address: _____

City: _____ County: _____ State: _____ Zip Code: _____

Shoreline type ✓ Lake ☐ Pond ☐ Stream ☐ River ☐ Wetland ☐

Water body name (if applicable): _____

Lake/Property Association (if applicable): _____

Year Planted: _____

Total water frontage _____ (ft) Frontage planted (length) _____ (ft) Width planted _____ (ft)

Species planted (*please list, add attachments if necessary*): _____

Aquatic Plants	Trees & Shrubs	Grasses & Sedges	Forbs (Wildflowers)

Are you willing to be contacted about your lakescaping experience? _____

Would you be willing to allow people to tour your property? _____

Comments (such as success, problems, benefits, new wildlife, etc.): _____

_____

Please enclose a photograph(s) of your lakescaped shoreline. "Before" and "after" photographs would be greatly appreciated.

Mail completed form to: Indiana Department of Natural Resources
Division of Fish & Wildlife
Lake and River Enhancement Program
402 W Washington Street, Room W 273
Indianapolis, IN 46204
lare@dnr.IN.gov