

Appendix A: Summary Descriptions for Species and Natural Communities Documented on the LCRP

The following paragraphs give brief summary descriptions for each of the species and natural communities documented on the LCRSPG and mapped within the NHI Database. More information can be found on the Endangered Resources Web site (dnr.wi.gov/org/land/er/) for several of these species and natural communities.

Rare Animals

A Cleft-footed Minnow Mayfly

A Flat-headed Mayfly

A Flat-headed Mayfly (*Macdunnoa persimplex*), an aquatic insect, has been located from only a few locations in Wisconsin, the St. Croix, Chippewa, and Lower Wisconsin Rivers (Lillie 1995).

A Flat-headed Mayfly

A Flat-headed Mayfly (*Pseudiron centralis*), a large predaceous mayfly, is found in sand or silt substrates in numerous rivers in Wisconsin (Lillie 1995).

A Leafhopper

A Leafhopper (*Attenuipyga vanduzeei*) is a rare prairie-dependent species known from only a few locations in Wisconsin. Little is known about host plants, life history, and behavior. Possible host plants include prairie dropseed and side-oats grama (Sauer and Maurer 2001).

Acadian Flycatcher

Acadian Flycatcher (*Empidonax vireescens*) prefers lowland deciduous forests and heavily wooded hillsides in large blocks of southern forests. The breeding season extends from mid-May through late July.

American Eel

American eel (*Anguilla rostrata*), a fish, prefers large streams and lakes with muddy bottoms and still waters. To reach these waters the eel has to traverse swift-flowing, medium-sized streams over a wide variety of bottoms. Spawning occurs in the Sargasso Sea.

Arctic Shrew

Arctic Shrew (*Sorex arcticus*) is found in tamarack and spruce swamps. Sometimes in alder or willow marshes, rarely in leatherleaf-sphagnum bogs.

Bald Eagle

Bald Eagle (*Haliaeetus leucocephalus*) prefers large trees in isolated areas in proximity to large areas of surface water, large complexes of deciduous forest, coniferous forest, wetland, and shrub communities. Large lakes and rivers with nearby tall pine trees are preferred for nesting. The breeding season extends from February through August. Favored wintering and roosting habitat includes wooded valleys near open water and major rivers from December through March.

Bell's Vireo

Bell's Vireo (*Vireo bellii*) prefers dense shrubby areas within an open prairie landscape. The breeding season extends from late May to mid-July.

Black Buffalo

Black Buffalo (*Ictiobus niger*), a fish, prefers strong currents of large rivers, sloughs, backwaters, and impoundments. Spawning occurs from mid-May through mid-June.

Black-crowned Night Heron

Black-crowned Night-heron (*Nycticorax nycticorax*) prefer freshwater wetlands dominated by bulrush and cattail with small groves of alder, willow, or other brush. Their breeding season occurs from mid-April through mid-September.

Black Tern

Black Tern (*Chlidonias niger*) prefers large shallow marshes with abundant vegetation adjacent to open water. Nesting occurs from May through the end of July.

Blue Sucker

Blue Sucker (*Cycleptus elongatus*), a fish, prefers large, deep rivers with moderate to strong currents over substrates of gravel or cobble. Spawning occurs from mid May through mid June.

Buckhorn

Buckhorn (*Tritogonia verrucosa*), a mussel, is found in medium to large-sized rivers, with a moderate to swift current, and clean, firm substrates. The known host fish are yellow and brown bullheads and flathead catfish.

Bullhead

Bullhead (*Plethobasus cyphus*), a mussel, is found in large rivers with a rapid current where it lives on mud, sand or gravel bottoms in water 1-2 m. deep. It occurs in the upper and lower reaches of the Wisconsin River as well as the Chippewa and the Flambeau Rivers.

Butterfly

Butterfly (*Ellipsaria lineolata*), a mussel, is found in large rivers in the western and southern parts of the state. It prefers a stable substrate containing rock, gravel and sand in swift current. The known host organisms include three common fish; drum, green sunfish, and sauger.

Canada Warbler

Canada Warblers (*Dendroica cerulean*) are typically most abundant in moist, mixed coniferous-deciduous forests with a well-developed understory. In Wisconsin they occur in spruce, hemlock, and balsam fir forest types in the northern counties. Important components of breeding habitat include conifers and often creeks and streams. The Canada Warbler nests in dense vegetation, often in areas with mosses, ferns, and decaying stumps or logs. The breeding season occurs from early June to early July.

Cerulean Warbler

Cerulean Warbler (*Dendroica cerulea*) prefers lowland deciduous forests dominated by mature stands of American elm, cottonwood, and green ash and large upland blocks of mature dry-mesic to mesic forests. The breeding season extends from late April through mid-July.

Crystal Darter

Crystal darter (*Ammocrypta asprella*) prefers clear to slightly turbid waters over sand substrates. The darter is most often found in moderate to strong currents in large rivers. They occupy sandy riffles, bars, and pools. Spawning occurs from mid May through mid-June.

Cyrano Darner

Cyrano darner (*Nasiaeschna pentacantha*), a southern species, breeds in swampy warm streams and lake coves and ponds with roots or branches in the water. The flight period is from early June to early July.

Elktoe

Elktoe (*Alasmidonta marginata*) is found in various-sized streams with flowing water, sand, gravel or rock substrates that are stable. The known host fishes include five widespread species including redhorse and sucker species and rockbass.

Fawnsfoot

Fawnsfoot (*Truncilla donaciformis*) have a small shell that is elongate, somewhat oblong, relatively thin, and compressed to moderately inflated. Habitat preferred is large rivers or the lower reaches of medium-sized streams in sand or gravel.

Goldeye

Goldeye (*Hiodon alosoides*), a fish, prefers the quiet, turbid waters of large rivers and their connecting lakes ponds and marshes. Spawning occurs from May through early July.

Gorgone Checker Spot

Gorgone checker spot (*Chlosyne gorgone*) is found in barrens, dry fields and prairies, sandy ridges, glades in woodlands, and open pine forests. This species has two flight periods, one from late May through June and again in early August to early September.

Greater Redhorse

Greater Redhorse (*Moxostoma valenciennesi*), a fish, prefers clear water of medium to large rivers, over bottoms of sand, gravel, or boulders. Spawning occurs in May or June.

Henslow's Sparrow

Henslow's Sparrow (*Ammodramus henslowii*) prefers old fields, open grasslands, wet meadows, unmowed highway right-of-ways, undisturbed pastures, timothy hay fields, and fallow land grown up to tall weeds. The breeding season extends from mid-May through mid-July.

Hooded Warbler

Hooded Warbler (*Wilsonia citrina*) is found in large upland forest tracts in southern Wisconsin, where they occur in pockets of dense understory near small or partial canopy openings. Breeding occurs from late May through mid July.

Kentucky Warbler

Kentucky Warbler breeds in large tracts of unfragmented hardwood forest in southern Wisconsin, especially along the Mississippi and Wisconsin rivers, as well as in the Baraboo Hills. They nest in moist thickets with heavy undergrowth and lush ground vegetation, building their nests on or near the ground. The breeding season extends from mid-May through July. Based on information from the Wisconsin Wildlife Action Plan (WDNR 2006b) the habitats of highest Ecological Priority for this species in the

Western Coulee and Ridges Ecological Landscape are large stands of Southern Dry-mesic Forest, Southern Mesic Forest and Floodplain Forest.

Lake Sturgeon

Lake Sturgeon (*Acipenser fulvescens*) prefers large rivers and lakes. It also lives in the shoal waters of the Great Lakes. Inland it shows a preference for the deepest mid-river areas and pools. Spawning occurs from late April through early June in cold, shallow fast water.

Lark Sparrow

Lark Sparrow (*Chondestes grammacus*) prefers old field, prairie and upland shrub-carr areas. The breeding season extends from early May through late June.

Monkeyface

Monkeyface (*Quadrula metanevra*) is found in the western part of the state in swift, clean water in larger rivers in gravel or mixed sand and gravel. Three common host fishes have been reported; bluegill, green sunfish, and sauger.

Mud Darter

Mud Darter (*Etheostoma asprigene*) prefers moderate currents in sloughs, overflow areas, riffles, and pools of large, low-gradient rivers over bottoms of mud, sand, gravel, clay, or bedrock. Spawning occurs from mid-May through June.

Northern Bobwhite

Northern Bobwhite (*Colinus virginianus*) nest on the ground, preferring grassy cover near agricultural or weedy old-fields, brushy forest edges, hedgerows, and open woods. Breeding has been observed in Wisconsin from late May through early August.

Paddlefish

Paddlefish (*Polyodon spathula*) prefers large rivers and their lakes over gravel or cobble bottoms. Spawning occurs late April to early June during high flows.

Pecatonica River Mayfly

Pecatonica River Mayfly (*Acanthametropus Pecatonica*) are known only from nymphal specimens. The mature nymph is about 0.8 inches (20 mm) long, creamy white with three short tail filaments densely fringed on the margins, a small head with lateral eyes, and abdominal segments one through seven each bearing a distinctive pair of plumelike gills. Paired spines of the head, thorax, and a row of dorsal abdominal spines distinguish this nymph. There is no information known about the adult mayfly and repeated attempts to rear Wisconsin nymphs to adulthood have been unsuccessful. The species habitat requirements include sand-bottom rivers with little water pollution. The specimens found in Wisconsin have been collected from large, sand-bottomed rivers with wide channels, in water a meter or less deep. Records from Illinois are from moderately sized, fast, shallow streams with sand and rock bottoms.

Pugnose Minnow

Pugnose Minnow (*Opsopoeodus (Notropis) emiliae*) prefers quiet, weedy lakes, sloughs, and low-gradient rivers over bottoms of mud, sand, rubble, silt, or clay. Spawning occurs from mid-June through mid-July.

Pygmy Shrew

Pygmy Shrew (*Sorex hoyi*) is found in among debris and heavy vegetation in woods, clearings, and meadows, particularly those grown to high grass. Avoiding swampy or excessively wet areas, though can be found in cold sphagnum or tamarack bogs.

Red-shouldered Hawk

Red-shouldered Hawk (*Buteo lineatus*) prefers larger stands of medium-aged to mature lowland deciduous forests, dry-mesic and mesic forest with small wetland pockets. Breeding occurs from mid-March through early August.

River Redhorse

River Redhorse (*Moxostoma carinatum*) prefers moderate to swift currents in large rivers systems, including impoundments and pools. River bottoms of clean gravel are preferred. Spawning occurs from mid May through June when water temperatures reach 68 to 74 degrees Fahrenheit.

Round Pigtoe

Round pigtoe (*Pleurobema sintoxia*) prefers various habitat types. It occurs only in clean water of small streams to large rivers on stable substrate. The known host fish include a number of cyprinid species.

Salamander Mussel

Salamander mussel (*Simpsonaias ambigua*), a mussel presently listed as a Federal Species of Concern, prefers mud, silt or sand substrates beneath medium to large-sized rocks and undercut ledges, where its host, the mudpuppy frequents. It occurs in both the Mississippi River drainage and Lake Michigan drainage. It is often very abundant locally, but very rare otherwise.

Silver Chub

Silver Chub (*Macrhybopsis (Hybopsis) storeriana*) prefers large, low gradient rivers. This species is found in moderate to strong currents, riffles, pools and sloughs with or without vegetation over substrates of sand, mud, silt or gravel. Spawning occurs in June and July.

Smoky Shadowfly

Smoky shadowfly (*Neurocordulia molesta*) has been found in rocky segments of medium to large rivers. The flight period is from late May to early July.

Smooth Coil

Smooth Coil (*Helicodiscus singleyanus*) is a terrestrial snail that has been documented in Wisconsin among grasses and forbs on south or southwest-facing slopes, often with dolomite outcrops.

Western Meadowlark

Western Meadowlark (*Sturnella neglecta*) are found in dry, open grasslands, including pastures and hayfields. Breeding has been recorded from early May to early August.

Western Sand Darter

Western Sand Darter (*Etheostoma clarum*) prefer clear to slightly turbid waters with moderate to strong currents. They are often found in medium to large rivers over extensive sand flats. Spawning occurs from late June through July.

Wild Indigo Dusky Wing

Wild indigo dusky wing (*Erynnis baptisiae*) has been recorded in dry open woods, prairie including wet prairie, pine/oak barrens and more recently, along highways and railroad right-of-ways with crown vetch (*Coronilla varia*). This is a bivoltine species, with flight periods the first three weeks of July and in late August to early September. Eggs are laid singly on the hostplant, which include wild indigos, lupine, and crown vetch. Larvae feed from a shelter of leaves and fully-grown larvae from the second brood hibernate in a leaf shelter.

Worm-eating Warbler

Worm-eating Warbler (*Helmitheros vermivorus*) is found in southern counties, often on steep west- or south-facing slopes dominated by mature oaks and a dense understory, in large forest tracts such as the Baraboo Hills and Wyalusing State Park. Breeding occurs from June to early July.

Yellow-billed Cuckoo

Yellow-billed Cuckoo (*Coccyzus americanus*) prefer open deciduous woodlands with dense shrubby undergrowth, especially along the backwaters of a major river or slow moving creek. Breeding occurs most often in early June, but can be found as late as mid-August.

Rare Plants**Beak Grass**

Beak Grass (*Diarrhena obovata*) is found in moist woods and floodplain forests. Forest cover can include silver maple, green ash, American elm, hackberry, and swamp white oak. Blooming occurs from early August through mid-September. Optimal identification period is from early August to mid-October.

Brittle Prickly-pear

Brittle prickly-pear (*Opuntia fragilis*) prefers sand prairies and thin dry soil over rock. Flowering occurs from early June through late July. Optimal identification period is year-round.

Dotted Blazingstar

Dotted blazing star (*Liatris punctata* var. *nebraskana*) prefers sandy and gravelly prairies, and is often found on roadsides. Wisconsin is on the eastern edge of this plant's range. Blooming occurs from early July through late August. Optimal identification period is from mid-July to late August.

Prairie Fame-flower

Prairie fame-flower (*Talinum rugospermum*) prefers open sandy prairies in barrens and pockets of thin poor soil between rocks, often where there is little competition from other forbs. Flowers bloom from mid-June to mid-August, with the unusual habit of appearing only on bright days between 4 and 6 p.m. Optimal identification period is from early July to late August.

Slender Bulrush

Slender bulrush (*Scirpus heterochaetus*) is found along the margins of freshwater sloughs, marshes, ponds, and roadside ditches.

Yellow Gentian

Yellow gentian (*Gentiana alba*) has been observed in thin soil in dry, open woodlands, ridges and bluffs (often with dolomite near the surface), moist sand prairies and roadside ditches, and clay soils of wooded

ravines. Blooming occurs from mid-August through mid-October. Optimal identification period is throughout the month of September.

Water-purslane

Water-purslane (*Didiplis diandra*), an aquatic plant, has been located in the shallow water and muddy shores of Mississippi River sloughs, and in the sandy-peaty shores of cranberry reservoir ponds.

Blooming occurs from mid-June through mid-September. Optimal identification period is from early July to mid-September.

Natural Communities

Dry Prairie

This grassland community occurs most frequently on dry, steep, south- or west-facing slopes, or at the summits of river bluffs with sandstone or dolomite near the surface. Most occurrences are in the Driftless Area. Soils are often wind-deposited loess, mixed with bedrock residuum. The community dominants typically include short to medium-height grasses: such as little bluestem (*Schizachyrium scoparium*), side-oats grama (*Bouteloua curtipendula*), hairy grama (*B. hirsuta*), and prairie dropseed (*Sporobolus heterolepis*). Common shrubs and forbs may include lead plant (*Amorpha canescens*), silky aster (*Aster sericeus*), flowering spurge (*Euphorbia corollata*), purple prairie-clover (*Petalostemum purpureum*), cylindrical blazing-star (*Liatris cylindracea*), and gray goldenrod (*Solidago nemoralis*). Stands on gravelly knolls in the glaciated Kettle Moraine region of southeastern Wisconsin, and along the St. Croix River on the Minnesota-Wisconsin border, need additional study. These geographic outliers may warrant recognition by being split out from the type described above, at least at the “subtype” level.

Dry-mesic Prairie

Historically, this grassland community was common in parts of southern Wisconsin, occurring on slightly less droughty sites than dry prairie. Today, this community type is rare because of conversion to agricultural uses or the encroachment of woody vegetation due to the lack of wildfire. Dry-mesic prairie has many of the same grasses as dry prairie, but taller species such as big bluestem and Indian-grass dominate. Needle grass and prairie drop-seed may also be present. The herb component is more diverse than in dry prairies, as it may include many species that occur in both dry and mesic prairies. Composites and legumes are particularly well-represented in relatively undisturbed stands. Soils are often somewhat sandy, either loamy sands or sandy loams. The landscape associations that can support this type include terraces on the margins of large river valleys, sandy outwash deposits, gravelly moraines, and the lower slopes of Driftless Area bluffs. As with the other tallgrass prairie communities (mesic prairie and wet-mesic prairie), well over 99% of this prairie type has been destroyed.

Emergent marsh

These open, marsh, lake, riverine and estuarine communities with permanent standing water are dominated by robust emergent macrophytes, in pure stands of single species or in various mixtures. Dominants include cat-tails (*Typha* spp.), bulrushes (particularly *Scirpus acutus*, *S. fluviatilis*, and *S. validus*), bur-reeds (*Sparganium* spp.), giant reed (*Phragmites australis*), pickerel-weed (*Pontederia cordata*), water-plantains (*Alisma* spp.), arrowheads (*Sagittaria* spp.), and the larger species of spikerush such as (*Eleocharis smallii*).

Floodplain Forest

This is a lowland hardwood forest community that occurs along large rivers, usually stream order 3 or higher, that flood periodically. The best-development occurs along large rivers in southern Wisconsin, but this community is also found in the north. Canopy dominants may include silver maple (*Acer saccharinum*), river birch (*Betula nigra*), green ash (*Fraxinus pennsylvanica*), hackberry (*Celtis occidentalis*), swamp white oak (*Quercus bicolor*), and cottonwood (*Populus deltoides*). Northern stands are often species poor, but balsam-poplar (*Populus balsamifera*), bur oak (*Quercus macrocarpa*), and box elder (*Acer negundo*) may replace some of the missing “southern” trees. Buttonbush (*Cephalanthus occidentalis*) is a locally dominant shrub and may form dense thickets on the margins of oxbow lakes, sloughs and ponds within the forest. Nettles (*Laportea canadensis* and *Urtica dioica*), sedges, ostrich fern (*Matteuccia struthiopteris*) and gray-headed coneflower (*Rudbeckia laciniata*) are important understory herbs, and lianas such as Virginia creepers (*Parthenocissus* spp.), grapes (*Vitis* spp.), Canada moonseed (*Menispermum canadense*), and poison-ivy (*Toxicodendron radicans*) are often common. Among the striking and characteristic herbs of this community are cardinal flower (*Lobelia cardinalis*) and green dragon (*Arisaema dracontium*).

Moist Cliff

Moist Cliff communities are vertical bedrock exposures that exhibit groundwater seepage through pores or fractures in the rock. Moist Cliffs are often associated with cool eastern or northern aspects, and may be shaded by overhanging trees. In the Driftless Area the most common rock types are sandstones and dolomites. Common plant species include columbine (*Aquilegia canadensis*), bulblet fern (*Cystopteris bulbifera*), fragile fern (*C. fragilis*), wood ferns (*Dryopteris* spp.), rattlesnake-root (*Prenanthes alba*), and harebell (*Campanula rotundifolia*). Many rare plants are associated with Moist Cliff habitats.

Northern Dry-mesic Forest

In this forest community, mature stands are dominated by white and red pines (*Pinus strobus* and *P. resinosa*), sometimes mixed with red oak (*Quercus rubra*) and red maple (*Acer rubrum*). Common understory shrubs are hazelnuts (*Corylus* spp.), blueberries (*Vaccinium angustifolium* and *V. myrtilloides*), wintergreen (*Gaultheria procumbens*), partridge-berry (*Mitchella repens*); among the dominant herbs are wild sarsaparilla (*Aralia nudicaulis*), Canada mayflower (*Maianthemum canadense*), and cow-wheat (*Melampyrum lineare*). Stands usually occur on sandy loams, sands or sometimes rocky soils.

Oak Barrens

Black oak (*Quercus velutina*) is the dominant tree in this fire-adapted savanna community of xeric sites, but other oaks may also be present. Common understory species are lead plant (*Amorpha canescens*), black-eyed susan (*Rudbeckia hirta*), round-headed bush clover (*Lespedeza capitata*), goat’s rue (*Tephrosia virginiana*), june grass (*Koeleria cristata*), little bluestem (*Schizachyrium scoparium*), flowering spurge (*Euphorbia corollata*), frostweed (*Helianthemum canadense*), false Solomon’s-seals (*Smilacina racemosa* and *S. stellata*), spiderwort (*Tradescantia ohioensis*), and lupine (*Lupinus perennis*). Distribution of this community is mostly in southwestern, central and west central Wisconsin.

Sand Prairie

This dry grassland community is composed of little bluestem (*Schizachyrium scoparium*), junegrass (*Koeleria macrantha*), panic grass (*Panicum* spp.), and crab grass (*Digitaria cognata*). Common

herbaceous species are western ragweed (*Ambrosia psilostachya*), the sedges (*Carex muhlenbergii* and *C. pensylvanica*), poverty-oat grass (*Danthonia spicata*), flowering spurge (*Euphorbia corollata*), frostweed (*Helianthemum canadense*), common bush-clover (*Lespedeza capitata*), false-heather (*Hudsonia tomentosa*), long-bearded hawkweed (*Hieracium longipilum*), stiff goldenrod (*Solidago rigida*), horsebalm (*Monarda punctata*), and spiderwort (*Tradescantia ohioensis*). At least some stands are Barrens remnants now lacking appreciable woody cover, though extensive stands may have occurred historically on broad level terraces along the Mississippi, Wisconsin, Black, and Chippewa Rivers.

Shrub-carr

This wetland community is dominated by tall shrubs such as red-osier dogwood (*Cornus stolonifera*), meadow-sweet (*Spiraea alba*), and various willows (*Salix discolor*, *S. bebbiana*, and *S. gracilis*). Canada bluejoint grass (*Calamagrostis canadensis*) is often very common. Associates are similar to those found in Alder Thickets and tussock-type Sedge Meadows. This type is common and widespread in southern Wisconsin but also occurs in the north.

Southern Dry-mesic Forest

Red oak (*Quercus rubra*) is a common dominant tree of this upland forest community type. Common associates may include white oak (*Q. alba*), basswood (*Tilia americana*), red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and white ash (*Fraxinus americana*). Elms (*Ulmus spp.*) were formerly common in this type prior to the era of Dutch elm disease, but their presence has now been reduce to saplings and an occasional small tree. Characteristic understory plants may include jack-in-the-pulpit (*Arisaema triphyllum*), enchanter's-nightshade (*Circaea lutetiana*), large-flowered bellwort (*Uvularia grandiflora*), interrupted fern (*Osmunda claytoniana*), Lady Fern (*Athyrium filix-femina*), tick-trefoils (*Desmodium glutinosum* and *D. nudiflorum*), and hog peanut (*Amphicarpaea bracteata*). At many locations in the Driftless Area, the oaks are being replaced by more mesophytic tree species, the combined result of current management practices and long-term fire suppression.

Southern Sedge Meadow

Widespread in southern Wisconsin, this open wetland community is most typically dominated by tussock sedge (*Carex stricta*) and Canada bluejoint grass (*Calamagrostis canadensis*). Common associates are water-horehound (*Lycopus uniflorus*), paniced aster (*Aster simplex*), blue flag (*Iris virginica*), Canada goldenrod (*Solidago canadensis*), spotted joe-pye-weed (*Eupatorium maculatum*), broad-leaved cat-tail (*Typha latifolia*), and swamp milkweed (*Asclepias incarnata*). Reed canary grass (*Phalaris arundinacea*) may be dominant in grazed and/or ditched stands. Ditched stands can succeed quickly to Shrub-Carr.

Southern Tamarack Swamp (Rich)

This forested wetland community type is a variant of the Tamarack Swamp, but occurs south of the Tension Zone within a matrix of "southern" vegetation types. Poison-sumac (*Toxicodendron vernix*) is often a dominant understory shrub. Successional stages and processes are not well understood but fire, windthrow, water level fluctuations, and periodic infestations of larch sawfly are among the important dynamic forces influencing this community. Groundwater seepage influences the composition of most if not all stands. Where the substrate is especially springy, skunk cabbage (*Symplocarpus foetidus*), marsh marigold *Caltha palustris*), sedges, and a variety of mosses may carpet the forest floor. Drier, more acid stands may support an ericad and sphagnum dominated groundlayer.