

Appendix G: Summary of Refuge Ecosystems

Ecosystems	Characteristic plant species	Characteristic wildlife species	Natural processes responsible for these conditions	Limiting factors/threats
Talgrass Prairie	Dry: Yellow Star Grass, Fringed Puccoon, Creamy Indigo, Little Bluestem, Rough Dropseed, Prairie Dropseed, Side Oats Grama, Downy Gentian, Sand Milkweed. Mesic: Lead Plant, Big Bluestem, Indian Grass, Hoary Puccoon, Butterfly Milkweed, Switch Grass, Rough Blazingstar, White Prairie Clover, Downy Gentian, Prairie Lily, Alum Root, Prairie Potentilla, Prairie Violet.	Birds: Northern Harrier, Upland Sandpiper, Short-eared Owl, Sedge Wren, Field Sparrow, Grasshopper Sparrow, Henslow's Sparrow, Dickcissel, Bobolink, Eastern and Western Meadowlarks. Mammals: Short-tailed Shrew, Thirteen-lined Ground Squirrel, Plains Pocket Gopher, Prairie Vole, Meadow Vole, Badger, Bobcat, Elk, Bison. Reptiles: Western Smooth Green Snake, Bull snake. Butterflies: Regal Fritillary, Monarch, Wild Indigo Duskywing, Arogos Skipper, Byssus Skipper. Crustacea: Prairie Crayfish (<i>Procambarus gracilis</i>).	Frequent fire, grazing, pollination, seed dispersal, hydrologic process, migration, nutrient cycling, carbon cycling, reproduction.	Invasive species; invasion by fire intolerant woody vegetation; altered hydrology; erosion; climate change.
Oak Savanna	Bur Oak, Blue-eyed Grass, Leather Flower, Creamy Gentian, Downy Brome, Wood Reed Grass, Yellow False Foxglove, Violet Wood Sorrel, Dutchman's Breeches, Bloodroot, Lead Plant, Culver's Root, Purple Milkweed, Elm-leaved Goldenrod.	Birds: Ruby-throated Hummingbird, Red-headed Woodpecker, Northern Flicker, Loggerhead Shrike, Bell's Vireo, Tufted Titmouse, Blue Jay, Eastern Bluebird, Eastern Towhee, Field Sparrow, Orchard Oriole, Baltimore Oriole. Mammals: Indiana Bat, Evening Bat, Southern Flying Squirrel, Fox Squirrel, Bobcat, Elk. Reptiles: Bull snake, Fox Snake. Butterflies: Hickory Hairstreak, Monarch.	Frequent fire, grazing, pollination, seed dispersal, hydrologic process, migration, nutrient cycling, carbon cycling, reproduction.	Invasive species; invasion by fire intolerant woody vegetation due to lack of fire; lack of fine fuel matrix; lack of sunlight penetrating to understory; climate change.
Sedge Meadow	Blue Flag Iris, Prairie Milkweed, Marsh Milkweed, Bottle Gentian, Prairie Cord Grass, Tussock Sedge, Michigan lily, New England Aster, Great Blue Lobelia, Rattlesnake master, Giant St. John's Wort, Mad Dog Skullcap.	Birds: Northern Harrier, Short-eared Owl, Sedge Wren. Mammals: Masked Shrew, Indiana Bat, Meadow Jumping Mouse. Amphibians: Tiger Salamander, Blanchard's Cricket Frog. Reptiles: Western Smooth Green Snake. Butterflies: Monarch, Dion Skipper, Two-spotted Skipper. Crustacea: Prairie Crayfish (<i>Procambarus gracilis</i>).	Frequent fire, grazing, pollination, seed dispersal, hydrologic process, migration, nutrient cycling, carbon cycling, reproduction.	Invasive species; invasion by fire intolerant woody vegetation; altered hydrology including drain tiles, erosion; climate change.
Aquatic Systems		Birds: Wood Duck, Great Blue Heron, Belted Kingfisher. Mammals: River Otter, Beaver. Reptiles: Common Snapping Turtle. Amphibians: Tiger Salamander, Blanchard's Cricket Frog. Fish: Northern hog sucker, Slenderhead darter. Insects: Odonata: Dragonflies and damselflies.	Hydrologic process, migration, nutrient cycling, carbon cycling, reproduction.	Hydrologic alteration including drain tiles, erosion, siltation; pollution from agricultural runoff; climate change.
Aerial Ecosystem	Aerially dispersing and wind pollinated plants (grasses, oaks).	Aerial feeders (Tree Swallow, Cliff Swallow, Barn Swallow, Purple Martin, Chimney Swift, Common Nighthawk, bats), migratory birds and bats, grassland birds, flying insects	Pollination, migration, nutrient cycling, carbon cycling, reproduction.	Air pollution, wind turbines, power lines, light pollution, communication towers.