

# Section 8. Appendices

## Appendix 1.1 — Acronyms

### Terminology

AWAP – Arkansas Wildlife Action Plan  
BMP – Best Management Practice  
CWCS — Comprehensive Wildlife Conservation Strategy  
EO — Element Occurrence  
GIS — Geographic Information Systems  
SGCN — Species of Greatest Conservation Need  
LIP — Landowner Incentive Program  
MOA — Memorandum of Agreement  
ACWCS — Arkansas Comprehensive Wildlife Conservation Strategy  
SWG — State Wildlife Grant  
LTA — Land Type Association  
WNS — White-nose Syndrome

### Organizations

ADEQ — Arkansas Department of Environmental Quality  
AGFC — Arkansas Game and Fish Commission  
AHTD — Arkansas Highway and Transportation Department  
ANHC — Arkansas Natural Heritage Commission  
ASU — Arkansas State University  
ATU — Arkansas Technical University  
FWS — Fish and Wildlife Service  
HSU — Henderson State University  
NRCS — Natural Resources Conservation Service  
SAU — Southern Arkansas University  
TNC — The Nature Conservancy  
UA — University of Arkansas (Fayetteville)  
UA/Ft. Smith — University of Arkansas at Fort Smith  
UALR — University of Arkansas at Little Rock  
UAM — University of Arkansas at Monticello  
UCA — University of Central Arkansas  
USFS — United States Forest Service

## Appendix 2.1. List of Species of Greatest Conservation Need by Priority Score.

List of species of greatest conservation need ranked by Species Priority Score. A higher score implies a greater need for conservation concern and actions.

Priority Score	Common Name	Scientific Name	Taxa Association
100	Curtis Pearlymussel	<i>Epioblasma florentina curtisii</i>	Mussel
100	Turgid Blossom	<i>Epioblasma turgidula</i>	Mussel
100	Yellowcheek Darter	<i>Etheostoma moorei</i>	Fish
80	Bowed Snowfly	<i>Allocapnia oribata</i>	Insect
80	Winter Stonefly	<i>Allocapnia warreni</i>	Insect
80	Foushee Cavesnail	<i>Amnicola cora</i>	Invertebrate - other
80	Ouachita Rock Pocketbook	<i>Arcidens wheeleri</i>	Mussel
80	Magazine Mountain Mold Beetle	<i>Arianops sandersoni</i>	Insect
80	Benton County Cave Crayfish	<i>Cambarus aculabrum</i>	Crayfish
80	Hell Creek Cave Crayfish	<i>Cambarus zophonastes</i>	Crayfish
80	Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>	Mammal
80	Slenderwrist Burrowing Crayfish	<i>Fallicambarus petilicarpus</i>	Crayfish
80	Sulphur Springs Diving Beetle	<i>Heterosternuta sulphuria</i>	Insect
80	Magazine Mountain Shagreen	<i>Inflectarius magazinensis</i>	Invertebrate - other
80	Magazine Stripetail	<i>Isoperla szczytkoi</i>	Insect
80	Speckled Pocketbook	<i>Lampsilis streckeri</i>	Mussel
80	Isopod	<i>Lirceus bidentatus</i>	Invertebrate - other
80	Ozark Pyrg	<i>Marstonia ozarkensis</i>	Invertebrate - other
80	Caddo Madtom	<i>Noturus taylori</i>	Fish
80	Striate Supercoil	<i>Paravitrea aulacogyra</i>	Invertebrate - other
80	Microcaddisfly	<i>Paucicalcaria ozarkensis</i>	Insect
80	Irons Fork Burrowing Crayfish	<i>Procambarus reimeri</i>	Crayfish
80	Winged Mapleleaf	<i>Quadrula fragosa</i>	Mussel
80	Ground Beetle	<i>Rhadine ozarkensis</i>	Insect
80	Ouachita Pebblesnail	<i>Somatogyrus amnicoloides</i>	Invertebrate - other
80	Thicklipped Pebblesnail	<i>Somatogyrus crassilabris</i>	Invertebrate - other
80	Channelled Pebblesnail	<i>Somatogyrus wheeleri</i>	Invertebrate - other
76	Scaleshell	<i>Leptodea leptodon</i>	Mussel
71	Ozark Hellbender	<i>Cryptobranchus alleganiensis bishopi</i>	Amphibian
65	Caddo Sallfly	<i>Alloperla caddo</i>	Insect
65	Cave Obligate Pseudoscorpion	<i>Apochthonius diabolus</i>	Invertebrate - other
65	Cave Obligate Pseudoscorpion	<i>Apochthonius titanicus</i>	Invertebrate - other
65	Ouachita Spiketail	<i>Cordulegaster talaria</i>	Insect
65	Cave Obligate Harvestman	<i>Crosbyella distincta</i>	Invertebrate - other

65	Cave Obligate Harvestman	<i>Crosbyella roeweri</i>	Invertebrate - other
65	Saline Burrowing Crayfish	<i>Fallicambarus strawni</i>	Crayfish
65	Louisiana Pearlshell	<i>Margaritifera hembeli</i>	Mussel
65	Nearctic Paduniellan Caddisfly	<i>Paduniella nearctica</i>	Insect
65	Rattlesnake-Master Borer Moth	<i>Papaipema eryngii</i>	Insect
65	Mayfly	<i>Paraleptophlebia calcarica</i>	Insect
65	Calico Rock Oval	<i>Patera clenchi</i>	Invertebrate - other
65	Texas Pigtoe	<i>Pleurobema riddellii</i>	Mussel
65	Elevated Spring Amphipod	<i>Stygobromus elatus</i>	Invertebrate - other
65	Mountain Cave Amphipod	<i>Stygobromus montanus</i>	Invertebrate - other
65	Cave Obligate Millipede	<i>Trigenotyia parca</i>	Invertebrate - other
65	Arkansas Wedge	<i>Xolotrema occidentale</i>	Invertebrate - other
63	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Mammal
62	Boston Mountains Crayfish	<i>Cambarus causeyi</i>	Crayfish
62	Neosho Mucket	<i>Lampsilis rafinesqueana</i>	Mussel
62	Indiana Bat	<i>Myotis sodalis</i>	Mammal
62	Leopard Darter	<i>Percina pantherina</i>	Fish
57	Ozark Pocket Gopher	<i>Geomys bursarius ozarkensis</i>	Mammal
57	Arkansas Fatmucket	<i>Lampsilis powellii</i>	Mussel
57	Microcaddisfly	<i>Ochrotrichia robisoni</i>	Insect
52	Alabama Shad	<i>Alosa alabamae</i>	Fish
52	Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Mussel
50	Arkansas Agapetus Caddisfly	<i>Agapetus medicus</i>	Insect
50	Winter Stonefly	<i>Allocaonia jeanae</i>	Insect
50	Winter Stonefly	<i>Allocaonia ozarkana</i>	Insect
50	Arogos Skipper	<i>Atrytone arogos iowa</i>	Insect
50	Bayou Bodcau Crayfish	<i>Bouchardina robisoni</i>	Crayfish
50	Jefferson County Crayfish	<i>Fallicambarus gilpini</i>	Crayfish
50	Stonefly	<i>Leuctra paleo</i>	Insect
50	Arkansas River Shiner	<i>Notropis girardi</i>	Fish
50	Contorted Ochrotrichian Microcaddisfly	<i>Ochrotrichia contorta</i>	Insect
50	Coldwater Crayfish	<i>Orconectes eupunctus</i>	Crayfish
50	Kiamichi Slimy Salamander	<i>Plethodon kiamichi</i>	Amphibian
50	Sequoyah Slimy Salamander	<i>Plethodon sequoyah</i>	Amphibian
50	Springtail	<i>Pseudosinella dubia</i>	Invertebrate - other
50	Cave Obligate Springtail	<i>Schaefferia alabamensis</i>	Invertebrate - other
50	Ouachita Needlefly	<i>Zealeuctra wachita</i>	Invertebrate - other
48	Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Fish
46	Paleback Darter	<i>Etheostoma pallidiorsum</i>	Fish
46	Ouachita Burrowing Crayfish	<i>Fallicambarus harpi</i>	Crayfish
46	Daisy Burrowing Crayfish	<i>Fallicambarus jeanae</i>	Crayfish
46	Blair's Fencing Crayfish	<i>Faxonella blairi</i>	Crayfish

46	Predaceous Diving Beetle	<i>Heterosternuta phoebeae</i>	Insect
46	Pink Mucket	<i>Lampsilis abrupta</i>	Mussel
46	Ouachita Madtom	<i>Noturus lachneri</i>	Fish
46	Mammoth Spring Crayfish	<i>Orconectes marchandi</i>	Crayfish
46	Ouachita Darter	<i>Percina brucethompsoni</i>	Fish
46	Caddo Mountain Salamander	<i>Plethodon caddoensis</i>	Amphibian
46	Fourche Mountain Salamander	<i>Plethodon fourchensis</i>	Amphibian
46	Fat Pocketbook	<i>Potamilus capax</i>	Mussel
46	Rich Mountain Slitmouth	<i>Stenotrema pilsbryi</i>	Invertebrate - other
43	Piping Plover	<i>Charadrius melodus</i>	Bird
43	Western Fanshell	<i>Cyprogenia aberti</i>	Mussel
43	"Ouachita" Fanshell	<i>Cyprogenia sp. cf aberti</i>	Mussel
43	Snuffbox	<i>Epioblasma triquetra</i>	Mussel
43	Sicklefin Chub	<i>Macrhybopsis meeki</i>	Fish
43	Red-cockaded Woodpecker	<i>Picoides borealis</i>	Bird
43	Illinois Chorus Frog	<i>Pseudacris illinoensis</i>	Amphibian
43	Ozark Cavefish	<i>Troglichthys rosae</i>	Fish
42	Hubricht's Long-tailed Amphipod	<i>Allocrangonyx hubrichti</i>	Invertebrate - other
42	Amphipod	<i>Bactrurus pseudomucronatus</i>	Invertebrate - other
42	Isopod	<i>Caecidotea oculata</i>	Invertebrate - other
42	Cave Obligate Isopod	<i>Caecidotea simulator</i>	Invertebrate - other
42	Texas Frosted Elfin	<i>Callophrys irus hadros</i>	Insect
42	Cave Obligate Planarian	<i>Dendrocoelopsis americana</i>	Invertebrate - other
42	American Burying Beetle	<i>Nicrophorus americanus</i>	Insect
38	Linda's Roadside-Skipper	<i>Amblyscirtes linda</i>	Insect
38	Isopod	<i>Caecidotea dimorpha</i>	Invertebrate - other
38	Bat Cave Isopod	<i>Caecidotea macropropoda</i>	Invertebrate - other
38	Crystal Darter	<i>Crystallaria asprella</i>	Fish
38	Spectaclecase	<i>Cumberlandia monodonta</i>	Mussel
38	Arkansas Darter	<i>Etheostoma cragini</i>	Fish
38	Stargazing Darter	<i>Percina uranidea</i>	Fish
38	Rich Mountain Salamander	<i>Plethodon ouachitae</i>	Amphibian
38	Pyramid Pigtoe	<i>Pleurobema rubrum</i>	Mussel
38	Regal Burrowing Crayfish	<i>Procambarus regalis</i>	Crayfish
38	Indiana Phlox Moth	<i>Schinia indiana</i>	Insect
34	Swamp Metalmark	<i>Calephelis muticum</i>	Insect
34	Bristly Cave Crayfish	<i>Cambarus setosus</i>	Crayfish
34	White Liptooth	<i>Daedalochila peregrina</i>	Invertebrate - other
34	Williams' Crayfish	<i>Orconectes williamsi</i>	Crayfish
34	Salamander Mussel	<i>Simpsonaias ambigua</i>	Mussel
34	Ozark Emerald	<i>Somatochlora ozarkensis</i>	Insect
34	Ouachita Slitmouth	<i>Stenotrema unciferum</i>	Invertebrate - other

33	Western Sand Darter	<i>Ammocrypta clara</i>	Fish
33	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Bird
33	Sprague's Pipit	<i>Anthus spragueii</i>	Bird
33	Little Brown Bat	<i>Myotis lucifugus</i>	Mammal
33	Kiamichi Shiner	<i>Notropis ortenburgeri</i>	Fish
33	Ozark Shiner	<i>Notropis ozarcanus</i>	Fish
33	Peppered Shiner	<i>Notropis perpallidus</i>	Fish
33	Bachman's Sparrow	<i>Peucaea aestivalis</i>	Bird
33	Bluehead Shiner	<i>Pteronotropis hubbsi</i>	Fish
33	King Rail	<i>Rallus elegans</i>	Bird
33	Purple Lilliput	<i>Toxolasma lividum</i>	Mussel
32	Dukes' Skipper	<i>Euphyes dukesi</i>	Insect
32	Pine Hills Digger	<i>Fallicambarus dissitus</i>	Crayfish
32	Prairie Mole Cricket	<i>Gryllotalpa major</i>	Insect
32	Ozark Snaketail Dragonfly	<i>Ophiogomphus westfalli</i>	Insect
31	Interior Least Tern	<i>Sternula antillarum athalassos</i>	Bird
31	Slippershell Mussel	<i>Alasmidonta viridis</i>	Mussel
30	Isopod	<i>Caecidotea steevesi</i>	Invertebrate - other
30	Mayfly	<i>Dannella provonshai</i>	Insect
30	Isopod	<i>Lirceus bicuspidatus</i>	Invertebrate - other
30	Giant Prairie Robberfly	<i>Microstylum morosum</i>	Insect
30	Meek's Short Pointed Crayfish	<i>Orconectes meeki brevis</i>	Crayfish
30	Ozark Swallowtail	<i>Papilio joanae</i>	Insect
30	Ouachita Mountain Crayfish	<i>Procambarus tenuis</i>	Crayfish
30	Purple Pimpleback	<i>Quadrula refulgens</i>	Mussel
29	Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	Bird
29	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	Mammal
29	Swallow-tailed Kite	<i>Elanoides forficatus</i>	Bird
29	Mottled Duskywing	<i>Erynnis martialis</i>	Insect
29	Strawberry River Darter	<i>Etheostoma fragi</i>	Fish
29	Least Darter	<i>Etheostoma microperca</i>	Fish
29	Rusty Blackbird	<i>Euphagus carolinus</i>	Bird
29	"Elongate" Pigtoe	<i>Fusconaia sp. cf. flava</i>	Mussel
29	Meske's Skipper	<i>Hesperia meskei</i>	Insect
29	Silver Redhorse	<i>Moxostoma anisurum</i>	Fish
29	Stonecat	<i>Noturus flavus</i>	Fish
29	Queensnake	<i>Regina septemvittata</i>	Reptile
29	Bewick's Wren	<i>Thryomanes bewickii</i>	Bird
27	Lake Sturgeon	<i>Acipenser fulvescens</i>	Fish
27	Lace-winged Roadside-Skipper	<i>Amblyscirtes aesculapius</i>	Insect
27	Carolina Roadside-Skipper	<i>Amblyscirtes carolina</i>	Insect
27	Alligator Gar	<i>Atractosteus spatula</i>	Fish

27	Isopod	<i>Caecidotea ancyla</i>	Invertebrate - other
27	Isopod	<i>Caecidotea salemensis</i>	Invertebrate - other
27	Hubbs' Crayfish	<i>Cambarus hubbsi</i>	Crayfish
27	Appalachian Azure	<i>Celastrina neglectamajor</i>	Insect
27	Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>	Insect
27	Land Snail	<i>Gastrocopta rogersensis</i>	Invertebrate - other
27	Ozark Clubtail Dragonfly	<i>Gomphus ozarkensis</i>	Insect
27	Plains Minnow	<i>Hybognathus placitus</i>	Fish
27	Ouachita Shiner	<i>Lythrurus snelsoni</i>	Fish
27	Eastern Small-Footed Bat	<i>Myotis leibii</i>	Mammal
27	Georgia Satyr	<i>Neonympha areolatus</i>	Insect
27	Red River Shiner	<i>Notropis bairdi</i>	Fish
27	Rocky Shiner	<i>Notropis suttkusi</i>	Fish
27	Brown Madtom	<i>Noturus phaeus</i>	Fish
27	Mena Crayfish	<i>Orconectes menae</i>	Crayfish
27	Midget Crayfish	<i>Orconectes nana</i>	Crayfish
27	Longnose Darter	<i>Percina nasuta</i>	Fish
27	Louisiana Slimy Salamander	<i>Plethodon kisatchie</i>	Amphibian
27	Shelled Cave Springtail	<i>Pseudosinella testa</i>	Invertebrate - other
27	King's Hairstreak	<i>Satyrium kingi</i>	Insect
27	Southern Cavefish	<i>Typhlichthys subterraneus</i>	Fish
25	Tiger Beetle	<i>Cicindela lepida</i>	Insect
25	Giant Stag Beetle	<i>Lucanus elaphus</i>	Insect
25	Springtail	<i>Pygmarhpalites clarus</i>	Invertebrate - other
25	Diana	<i>Speyeria diana</i>	Insect
24	American Eel	<i>Anguilla rostrata</i>	Fish
24	Ruddy Turnstone	<i>Arenaria interpres</i>	Bird
24	Smith's Longspur	<i>Calcarius pictus</i>	Bird
24	Common Nighthawk	<i>Chordeiles minor</i>	Bird
24	Eastern Collared Lizard	<i>Crotaphytus collaris</i>	Reptile
24	Migrant Loggerhead Shrike	<i>Lanius ludovicianus</i>	Bird
24	Southeastern Bat	<i>Myotis austroriparius</i>	Mammal
24	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	Bird
24	Black-bellied Plover	<i>Pluvialis squatarola</i>	Bird
24	Paddlefish	<i>Polyodon spathula</i>	Fish
24	American Woodcock	<i>Scolopax minor</i>	Bird
24	Cerulean Warbler	<i>Setophaga cerulea</i>	Bird
23	Millipede	<i>Abacion wilhelminae</i>	Invertebrate - other
23	Lace Bug	<i>Acalypta susanae</i>	Insect
23	Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>	Bird
23	Copeland's Mold Beetle	<i>Arianops copelandi</i>	Insect
23	American Bittern	<i>Botaurus lentiginosus</i>	Bird

23	Isopod	<i>Caecidotea fonticulus</i>	Invertebrate - other
23	Isopod	<i>Caecidotea stiladactyla</i>	Invertebrate - other
23	Northern Metalmark	<i>Calephelis borealis</i>	Insect
23	Lincoln Underwing	<i>Catocala lincolnana</i>	Insect
23	Dusky Azure	<i>Celastrina nigra</i>	Insect
23	Outis Skipper	<i>Cogia outis</i>	Insect
23	Blue Sucker	<i>Cycleptus elongatus</i>	Fish
23	Bluntnose Shiner	<i>Cyprinella camura</i>	Fish
23	Spotfin Shiner	<i>Cyprinella spiloptera</i>	Fish
23	Beetle	<i>Derops divalis</i>	Insect
23	Spotted Dusky Salamander	<i>Desmognathus conanti</i>	Amphibian
23	Willow Flycatcher	<i>Empidonax traillii</i>	Bird
23	Ouachita Streambed Salamander	<i>Eurycea subfluvicola</i>	Amphibian
23	Oklahoma Salamander	<i>Eurycea tynerensis</i>	Amphibian
23	Lowland Topminnow	<i>Fundulus blairae</i>	Fish
23	Ozark Pigtoe	<i>Fusconaia ozarkensis</i>	Mussel
23	Pseudoscorpion	<i>Hesperochnes occidentalis</i>	Invertebrate - other
23	Squirrel Treefrog	<i>Hyla squirella</i>	Amphibian
23	Crawfish Frog	<i>Lithobates areolatus</i>	Amphibian
23	Chub Shiner	<i>Notropis potteri</i>	Fish
23	Sabine Shiner	<i>Notropis sabiniae</i>	Fish
23	Neosho Midget Crayfish	<i>Orconectes macrus</i>	Crayfish
23	Ouachita Shore Bug	<i>Pentacora ouachita</i>	Insect
23	Suckermouth Minnow	<i>Phenacobius mirabilis</i>	Fish
23	Flathead Chub	<i>Platygobio gracilis</i>	Fish
23	Great Plains Skink	<i>Plestiodon obsoletus</i>	Reptile
23	Yehl Skipper	<i>Poanes yehl</i>	Insect
23	Purple Gallinule	<i>Porphyrio martinicus</i>	Bird
23	Pink Heelsplitter	<i>Potamilus alatus</i>	Mussel
23	Byssus Skipper	<i>Problema byssus</i>	Insect
23	Ouachita Pseudactium	<i>Pseudactium magazinensis</i>	Insect
23	Ozark Pseudactium	<i>Pseudactium ursum</i>	Insect
23	Ouachita Kidneyshell	<i>Ptychobranthus occidentalis</i>	Mussel
23	Plains Harvest Mouse	<i>Reithrodontomys montanus</i>	Mammal
23	Ground Beetle	<i>Scaphinotus inflectus</i>	Insect
23	Ground Beetle	<i>Scaphinotus parisiana</i>	Insect
23	Western Groundsnake	<i>Sonora semiannulata</i>	Reptile
23	Plains Spadefoot	<i>Spea bombifrons</i>	Amphibian
23	Ozark Cave Amphipod	<i>Stygobromus ozarkensis</i>	Invertebrate - other
23	Pseudoscorpion	<i>Tartarocreagris ozarkensis</i>	Invertebrate - other
23	Anthophorid Bee	<i>Tetraloniella albata</i>	Insect
23	Lined Snake	<i>Tropidoconion lineatum</i>	Reptile

23	Central Mudminnow	<i>Umbra limi</i>	Fish
23	Ellipse	<i>Venustaconcha ellipsiformis</i>	Mussel
23	Bleedingtooth Mussel	<i>Venustaconcha pleasii</i>	Mussel
21	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Bird
21	Bell's Roadside-Skipper	<i>Amblyscirtes belli</i>	Insect
21	Golden-banded Skipper	<i>Autochton cellus</i>	Insect
21	Ant-like Tiger Beetle	<i>Cicindela cursitans</i>	Insect
21	Scrubland Tiger Beetle	<i>Cicindela obsoleta</i>	Insect
21	Woodland Tiger Beetle	<i>Cicindela unipunctata</i>	Insect
21	Sedge Wren	<i>Cistothorus platensis</i>	Bird
21	Black-tailed Jackrabbit	<i>Lepus californicus</i>	Mammal
21	Eastern Spotted Skunk	<i>Spilogale putorius</i>	Mammal
21	Red Milkweed Beetle	<i>Tetraopes quinque maculatus</i>	Insect
21	Texas Milkweed Beetle	<i>Tetraopes texanus</i>	Insect
20	Gapped Ringed Crayfish	<i>Orconectes neglectus chaenodactylus</i>	Crayfish
19	Lace Bug	<i>Acalypta lillianus</i>	Insect
19	Sharp-shinned Hawk	<i>Accipiter striatus</i>	Bird
19	Elktoe	<i>Alasmidonta marginata</i>	Mussel
19	Ringed Salamander	<i>Ambystoma annulatum</i>	Amphibian
19	Brown Bullhead	<i>Ameiurus nebulosus</i>	Fish
19	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Bird
19	American Black Duck	<i>Anas rubripes</i>	Bird
19	Anhinga	<i>Anhinga anhinga</i>	Bird
19	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	Bird
19	Sanderling	<i>Calidris alba</i>	Bird
19	Dunlin	<i>Calidris alpina</i>	Bird
19	Stilt Sandpiper	<i>Calidris himantopus</i>	Bird
19	Common Wormsnake	<i>Carphophis amoenus</i>	Reptile
19	Chimney Swift	<i>Chaetura pelagica</i>	Bird
19	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Bird
19	Northern Bobwhite	<i>Colinus virginianus</i>	Bird
19	Chicken Turtle	<i>Deirochelys reticularia</i>	Reptile
19	Six-banded Longhorn Beetle	<i>Dryobius sexnotatus</i>	Insect
19	Tricolored Heron	<i>Egretta tricolor</i>	Bird
19	Autumn Darter	<i>Etheostoma autumnale</i>	Fish
19	Beaded Darter	<i>Etheostoma clinton</i>	Fish
19	Sunburst Darter	<i>Etheostoma mihileze</i>	Fish
19	Current Darter	<i>Etheostoma uniporum</i>	Fish
19	Dion Skipper	<i>Euphyes dion</i>	Insect
19	Grotto Salamander "northern clade"	<i>Eurycea spelaea northern</i>	Amphibian
19	Grotto Salamander "western clade"	<i>Eurycea spelaea western</i>	Amphibian



19	American Kestrel	<i>Falco sparverius</i>	Bird
19	Common Gallinule	<i>Gallinula galeata</i>	Bird
19	Great Plains Narrowmouth Toad	<i>Gastrophryne olivacea</i>	Amphibian
19	Purple Finch	<i>Haemorhous purpureus</i>	Bird
19	Four-toed Salamander	<i>Hemidactylium scutatum</i>	Amphibian
19	Leonard's Skipper	<i>Hesperia leonardus</i>	Insect
19	Cobweb Skipper	<i>Hesperia metea</i>	Insect
19	Ouachita Diving Beetle	<i>Heterosternuta ouachita</i>	Insect
19	Goldeye	<i>Hiodon alosoides</i>	Fish
19	Mooneye	<i>Hiodon tergisus</i>	Fish
19	Wood Thrush	<i>Hylocichla mustelina</i>	Bird
19	Least Bittern	<i>Ixobrychus exilis</i>	Bird
19	Southern Pocketbook	<i>Lampsilis ornata</i>	Mussel
19	"Red River" Mucket	<i>Lampsilis sp. B cf hydiana</i>	Mussel
19	American Brook Lamprey	<i>Lethenteron appendix</i>	Fish
19	Short-billed Dowitcher	<i>Limnodromus griseus</i>	Bird
19	Swainson's Warbler	<i>Limnothlypis swainsonii</i>	Bird
19	Texas Coralsnake	<i>Micrurus tener</i>	Reptile
19	Pealip Redhorse	<i>Moxostoma pisolabrum</i>	Fish
19	Striped Mullet	<i>Mugil cephalus</i>	Fish
19	Redspot Chub	<i>Nocomis asper</i>	Fish
19	Crawford's Gray Shrew	<i>Notiosorex crawfordi</i>	Mammal
19	Blackspot Shiner	<i>Notropis atrocaudalis</i>	Fish
19	Channel Shiner	<i>Notropis wickliffi</i>	Fish
19	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	Bird
19	Hickorynut	<i>Obovaria olivaria</i>	Mussel
19	"White" Hickorynut	<i>Obovaria sp. cf arkansasensis</i>	Mussel
19	Redspotted Stream Crayfish	<i>Orconectes acares</i>	Crayfish
19	Little River Creek Crayfish	<i>Orconectes leptogonopodus</i>	Crayfish
19	Small-eyed Mold Beetle	<i>Ouachitychus parvovulus</i>	Insect
19	Gilt Darter	<i>Percina evides</i>	Fish
19	Slenderhead Darter	<i>Percina phoxocephala</i>	Fish
19	Prairie Skink	<i>Plestiodon septentrionalis</i>	Reptile
19	Ohio Pigtoe	<i>Pleurobema cordatum</i>	Mussel
19	Gray Comma	<i>Polygonia progne</i>	Insect
19	Bismark Burrowing Crayfish	<i>Procambarus parasimulans</i>	Crayfish
19	Boreal Chorus Frog	<i>Pseudacris maculata</i>	Amphibian
19	Strecker's Chorus Frog	<i>Pseudacris streckeri</i>	Amphibian
19	Gulf Mapleleaf	<i>Quadrula nobilis</i>	Mussel
19	Graham's Crayfish Snake	<i>Regina grahamii</i>	Reptile
19	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>	Mammal
19	Oak Hairstreak	<i>Satyrium favonius ontario</i>	Insect

19	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	Amphibian
19	Hurter's Spadefoot	<i>Scaphiopus hurterii</i>	Amphibian
19	Southeastern Shrew	<i>Sorex longirostris</i>	Mammal
19	Southern Bog Lemming	<i>Synaptomys cooperi</i>	Mammal
19	Ornate Box Turtle	<i>Terrapene ornata</i>	Reptile
19	Lilliput	<i>Toxolasma parvum</i>	Mussel
19	Texas Lilliput	<i>Toxolasma texasiense</i>	Mussel
19	Tapered Pondhorn	<i>Unio merus declivis</i>	Mussel
19	Pondhorn	<i>Unio merus tetralasmus</i>	Mussel
19	Bell's Vireo	<i>Vireo bellii</i>	Bird
17	Highfin Carpsucker	<i>Carpionodes velifer</i>	Fish
17	Big Sand Tiger Beetle	<i>Cicindela formosa pigmentosignata</i>	Insect
17	Beach-dune Tiger Beetle	<i>Cicindela hirticollis</i>	Insect
17	Sandy Stream Tiger Beetle	<i>Cicindela macra</i>	Insect
17	Western Diamond-backed Rattlesnake	<i>Crotalus atrox</i>	Reptile
17	Trumpeter Swan	<i>Cygnus buccinator</i>	Bird
17	Earthworm	<i>Diplocardia meansi</i>	Invertebrate - other
17	Goldstripe Darter	<i>Etheostoma parvipinne</i>	Fish
17	Round Pigtoe	<i>Pleurobema sintoxia</i>	Mussel
17	Little Spectaclecase group	<i>Villosa sp. cf. lienosa</i>	Mussel
16	Gray Bat	<i>Myotis grisescens</i>	Mammal
16	American Badger	<i>Taxidea taxus</i>	Mammal
15	Mole Salamander	<i>Ambystoma talpoideum</i>	Amphibian
15	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	Amphibian
15	Gorgone Checkerspot	<i>Chlosyne gorgone</i>	Insect
15	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>	Insect
15	Monarch	<i>Danaus plexippus</i>	Insect
15	Lake Chubsucker	<i>Erimyzon sucetta</i>	Fish
15	Swamp Darter	<i>Etheostoma fusiforme</i>	Fish
15	Highland Darter	<i>Etheostoma teddyroosevelt</i>	Fish
15	Dwarf Salamander	<i>Eurycea quadridigitata</i>	Amphibian
15	Grotto Salamander "eastern clade"	<i>Eurycea spelaea eastern</i>	Amphibian
15	Bird-voiced Treefrog	<i>Hyla avivoca</i>	Amphibian
15	Least Brook Lamprey	<i>Lampetra aepyptera</i>	Fish
15	"Arkoma" Fatmucket	<i>Lampsilis sp. A cf. hydiana</i>	Mussel
15	Glossy Swampsnake	<i>Liodytes rigida</i>	Reptile
15	Wood Frog	<i>Lithobates sylvaticus</i>	Amphibian
15	Shoal Chub	<i>Macrhybopsis hyostoma</i>	Fish
15	Long-tailed Weasel	<i>Mustela frenata</i>	Mammal
15	Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	Reptile
15	Saddleback Darter	<i>Percina vigil</i>	Fish
15	American Golden-Plover	<i>Pluvialis dominica</i>	Bird

15	Broad-winged Skipper	<i>Poanes viator</i>	Insect
15	Southern Mapleleaf	<i>Quadrula apiculata</i>	Mussel
15	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Mammal
15	Fawnsfoot	<i>Truncilla donaciformis</i>	Mussel
15	Rainbow	<i>Villosa iris</i>	Mussel
13	Twelve-spotted Tiger Beetle	<i>Cicindela duodecimguttata</i>	Insect
11	Winter Stonefly	<i>Allocaenia malverna</i>	Insect
11	Bronze Copper	<i>Lycaena hyllus</i>	Insect

## Appendix 2.2. List of SGCN by Taxonomic Group.

**Table 2.2.1. Calculated Species Priority Scores for Amphibian Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

Priority Score	Common Name	Scientific Name
71	Ozark Hellbender	<i>Cryptobranchus alleganiensis bishopi</i>
50	Kiamichi Slimy Salamander	<i>Plethodon kiamichi</i>
50	Sequoyah Slimy Salamander	<i>Plethodon sequoyah</i>
46	Caddo Mountain Salamander	<i>Plethodon caddoensis</i>
46	Fourche Mountain Salamander	<i>Plethodon fourchensis</i>
43	Illinois Chorus Frog	<i>Pseudacris illinoensis</i>
38	Rich Mountain Salamander	<i>Plethodon ouachitae</i>
27	Louisiana Slimy Salamander	<i>Plethodon kisatchie</i>
23	Spotted Dusky Salamander	<i>Desmognathus conanti</i>
23	Ouachita Streambed Salamander	<i>Eurycea subfluvicola</i>
23	Oklahoma Salamander	<i>Eurycea tynerensis</i>
23	Squirrel Treefrog	<i>Hyla squirella</i>
23	Crawfish Frog	<i>Lithobates areolatus</i>
23	Plains Spadefoot	<i>Spea bombifrons</i>
19	Ringed Salamander	<i>Ambystoma annulatum</i>
19	Grotto Salamander "northern clade"	<i>Eurycea spelaea northern</i>
19	Grotto Salamander "western clade"	<i>Eurycea spelaea western</i>
19	Great Plains Narrowmouth Toad	<i>Gastrophryne olivacea</i>
19	Four-toed Salamander	<i>Hemidactylium scutatum</i>
19	Boreal Chorus Frog	<i>Pseudacris maculata</i>
19	Strecker's Chorus Frog	<i>Pseudacris streckeri</i>
19	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>
19	Hurter's Spadefoot	<i>Scaphiopus hurterii</i>
15	Mole Salamander	<i>Ambystoma talpoideum</i>
15	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>
15	Dwarf Salamander	<i>Eurycea quadridigitata</i>
15	Grotto Salamander "eastern clade"	<i>Eurycea spelaea eastern</i>
15	Bird-voiced Treefrog	<i>Hyla avivoca</i>
15	Wood Frog	<i>Lithobates sylvaticus</i>

**Table 2.2.2. Calculated Priority Scores for Bird Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
43	Piping Plover	<i>Charadrius melodus</i>
43	Red-cockaded Woodpecker	<i>Picoides borealis</i>
33	Henslow's Sparrow	<i>Ammodramus henslowii</i>
33	Sprague's Pipit	<i>Anthus spragueii</i>
33	Bachman's Sparrow	<i>Peucaea aestivalis</i>
33	King Rail	<i>Rallus elegans</i>
31	Interior Least Tern	<i>Sternula antillarum athalassos</i>
29	Buff-breasted Sandpiper	<i>Calidris subruficollis</i>
29	Swallow-tailed Kite	<i>Elanoides forficatus</i>
29	Rusty Blackbird	<i>Euphagus carolinus</i>
29	Bewick's Wren	<i>Thryomanes bewickii</i>
24	Ruddy Turnstone	<i>Arenaria interpres</i>
24	Smith's Longspur	<i>Calcarius pictus</i>
24	Common Nighthawk	<i>Chordeiles minor</i>
24	Migrant Loggerhead Shrike	<i>Lanius ludovicianus</i>
24	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>
24	Black-bellied Plover	<i>Pluvialis squatarola</i>
24	American Woodcock	<i>Scolopax minor</i>
24	Cerulean Warbler	<i>Setophaga cerulea</i>
23	Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>
23	American Bittern	<i>Botaurus lentiginosus</i>
23	Willow Flycatcher	<i>Empidonax traillii</i>
23	Purple Gallinule	<i>Porphyrio martinicus</i>
21	Le Conte's Sparrow	<i>Ammodramus leconteii</i>
21	Sedge Wren	<i>Cistothorus platensis</i>
19	Sharp-shinned Hawk	<i>Accipiter striatus</i>
19	Grasshopper Sparrow	<i>Ammodramus savannarum</i>
19	American Black Duck	<i>Anas rubripes</i>
19	Anhinga	<i>Anhinga anhinga</i>
19	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>
19	Sanderling	<i>Calidris alba</i>
19	Dunlin	<i>Calidris alpina</i>
19	Stilt Sandpiper	<i>Calidris himantopus</i>
19	Chimney Swift	<i>Chaetura pelagica</i>
19	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
19	Northern Bobwhite	<i>Colinus virginianus</i>
19	Tricolored Heron	<i>Egretta tricolor</i>
19	American Kestrel	<i>Falco sparverius</i>
19	Common Gallinule	<i>Gallinula galeata</i>
19	Purple Finch	<i>Haemorhous purpureus</i>

Table 2.2.2. Birds, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
19	Wood Thrush	<i>Hylocichla mustelina</i>
19	Least Bittern	<i>Ixobrychus exilis</i>
19	Short-billed Dowitcher	<i>Limnodromus griseus</i>
19	Swainson's Warbler	<i>Limnothlypis swainsonii</i>
19	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>
19	Bell's Vireo	<i>Vireo bellii</i>
17	Trumpeter Swan	<i>Cygnus buccinator</i>
15	American Golden-Plover	<i>Pluvialis dominica</i>

**Table 2.2.3. Calculated Priority Scores for Crayfish Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
80	Benton County Cave Crayfish	<i>Cambarus aculabrum</i>
80	Hell Creek Cave Crayfish	<i>Cambarus zophonastes</i>
80	Slenderwrist Burrowing Crayfish	<i>Fallicambarus petilicarpus</i>
80	Irons Fork Burrowing Crayfish	<i>Procambarus reimeri</i>
65	Saline Burrowing Crayfish	<i>Fallicambarus strawni</i>
62	Boston Mountains Crayfish	<i>Cambarus causeyi</i>
50	Bayou Bodcau Crayfish	<i>Bouchardina robisoni</i>
50	Jefferson County Crayfish	<i>Fallicambarus gilpini</i>
50	Coldwater Crayfish	<i>Orconectes eupunctus</i>
46	Ouachita Burrowing Crayfish	<i>Fallicambarus harpi</i>
46	Daisy Burrowing Crayfish	<i>Fallicambarus jeanae</i>
46	Blair's Fencing Crayfish	<i>Faxonella blairi</i>
46	Mammoth Spring Crayfish	<i>Orconectes marchandi</i>
38	Regal Burrowing Crayfish	<i>Procambarus regalis</i>
34	Bristly Cave Crayfish	<i>Cambarus setosus</i>
34	Williams' Crayfish	<i>Orconectes williamsi</i>
32	Pine Hills Digger	<i>Fallicambarus dissitus</i>
30	Meek's Short Pointed Crayfish	<i>Orconectes meeki brevis</i>
30	Ouachita Mountain Crayfish	<i>Procambarus tenuis</i>
27	Hubbs' Crayfish	<i>Cambarus hubbsi</i>
27	Mena Crayfish	<i>Orconectes menae</i>
27	Midget Crayfish	<i>Orconectes nana</i>
23	Neosho Midget Crayfish	<i>Orconectes macrus</i>
20	Gapped Ringed Crayfish	<i>Orconectes neglectus chaenodactylus</i>
19	Redspotted Stream Crayfish	<i>Orconectes acares</i>
19	Little River Creek Crayfish	<i>Orconectes leptogonopodus</i>
19	Bismark Burrowing Crayfish	<i>Procambarus parasimulans</i>

**Table 2.2.4. Calculated Priority Scores for Fish Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
100	Yellowcheek Darter	<i>Etheostoma moorei</i>
80	Caddo Madtom	<i>Noturus taylori</i>
62	Leopard Darter	<i>Percina pantherina</i>
52	Alabama Shad	<i>Alosa alabamae</i>
50	Arkansas River Shiner	<i>Notropis girardi</i>
48	Pallid Sturgeon	<i>Scaphirhynchus albus</i>
46	Paleback Darter	<i>Etheostoma pallididorsum</i>
46	Ouachita Madtom	<i>Noturus lachneri</i>
46	Ouachita Darter	<i>Percina brucethompsoni</i>
43	Sicklefin Chub	<i>Machyobopsis meeki</i>
43	Ozark Cavefish	<i>Troglichthys rosae</i>
38	Crystal Darter	<i>Crystallaria asprella</i>
38	Arkansas Darter	<i>Etheostoma cragini</i>
38	Stargazing Darter	<i>Percina uranidea</i>
33	Western Sand Darter	<i>Ammocrypta clara</i>
33	Kiamichi Shiner	<i>Notropis ortenburgeri</i>
33	Ozark Shiner	<i>Notropis ozarcanus</i>
33	Peppered Shiner	<i>Notropis perpallidus</i>
33	Bluehead Shiner	<i>Pteronotropis hubbsi</i>
29	Strawberry River Darter	<i>Etheostoma fragi</i>
29	Least Darter	<i>Etheostoma microperca</i>
29	Silver Redhorse	<i>Moxostoma anisurum</i>
29	Stonecat	<i>Noturus flavus</i>
27	Lake Sturgeon	<i>Acipenser fulvescens</i>
27	Alligator Gar	<i>Atractosteus spatula</i>
27	Plains Minnow	<i>Hybognathus placitus</i>
27	Ouachita Shiner	<i>Lythrurus snelsoni</i>
27	Red River Shiner	<i>Notropis bairdi</i>
27	Rocky Shiner	<i>Notropis suttkusi</i>
27	Brown Madtom	<i>Noturus phaeus</i>
27	Longnose Darter	<i>Percina nasuta</i>
27	Southern Cavefish	<i>Typhlichthys subterraneus</i>
24	American Eel	<i>Anguilla rostrata</i>
24	Paddlefish	<i>Polyodon spathula</i>
23	Blue Sucker	<i>Cycleptus elongatus</i>
23	Bluntnose Shiner	<i>Cyprinella camura</i>
23	Spotfin Shiner	<i>Cyprinella spiloptera</i>
23	Lowland Topminnow	<i>Fundulus blairae</i>



Table 2.2.4. Fish, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
23	Chub Shiner	<i>Notropis potteri</i>
23	Sabine Shiner	<i>Notropis sabiniae</i>
23	Suckermouth Minnow	<i>Phenacobius mirabilis</i>
23	Flathead Chub	<i>Platygobio gracilis</i>
23	Central Mudminnow	<i>Umbra limi</i>
19	Brown Bullhead	<i>Ameiurus nebulosus</i>
19	Autumn Darter	<i>Etheostoma autumnale</i>
19	Beaded Darter	<i>Etheostoma clinton</i>
19	Sunburst Darter	<i>Etheostoma mihileze</i>
19	Current Darter	<i>Etheostoma uniporum</i>
19	Goldeye	<i>Hiodon alosoides</i>
19	Mooneye	<i>Hiodon tergisus</i>
19	American Brook Lamprey	<i>Lethenteron appendix</i>
19	Pealip Redhorse	<i>Moxostoma pisolabrum</i>
19	Striped Mullet	<i>Mugil cephalus</i>
19	Redspot Chub	<i>Nocomis asper</i>
19	Blackspot Shiner	<i>Notropis atrocaudalis</i>
19	Channel Shiner	<i>Notropis wickliffi</i>
19	Gilt Darter	<i>Percina evides</i>
19	Slenderhead Darter	<i>Percina phoxocephala</i>
17	Highfin Carpsucker	<i>Carpionodes velifer</i>
17	Goldstripe Darter	<i>Etheostoma parvipinne</i>
15	Lake Chubsucker	<i>Erimyzon sucetta</i>
15	Swamp Darter	<i>Etheostoma fusiforme</i>
15	Highland Darter	<i>Etheostoma teddyroosevelt</i>
15	Least Brook Lamprey	<i>Lampetra aepyptera</i>
15	Shoal Chub	<i>Macrhybopsis hyostoma</i>
15	Saddleback Darter	<i>Percina vigil</i>

**Table 2.2.5. Calculated Priority Scores for Insect Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
80	Bowed Snowfly	<i>Allocapnia oribata</i>
80	Winter Stonefly	<i>Allocapnia warreni</i>
80	Magazine Mountain Mold Beetle	<i>Arianops sandersoni</i>
80	Sulphur Springs Diving Beetle	<i>Heterosternuta sulphuria</i>
80	Magazine Stripetail	<i>Isoperla szczytkoi</i>
80	Microcaddisfly	<i>Paucicalcaria ozarkensis</i>
80	Ground Beetle	<i>Rhadine ozarkensis</i>
65	Caddo Sallfly	<i>Alloperla caddo</i>
65	Ouachita Spiketail	<i>Cordulegaster talaria</i>
65	Nearctic Paduniellan Caddisfly	<i>Paduniella nearctica</i>
65	Rattlesnake-Master Borer Moth	<i>Papaipema eryngii</i>
65	Mayfly	<i>Paraleptophlebia calcarica</i>
57	Microcaddisfly	<i>Ochrotrichia robisoni</i>
50	Arkansas Agapetus Caddisfly	<i>Agapetus medicus</i>
50	Winter Stonefly	<i>Allocapnia jeanae</i>
50	Winter Stonefly	<i>Allocapnia ozarkana</i>
50	Arogos Skipper	<i>Atrytone arogos iowa</i>
50	Stonefly	<i>Leuctra paleo</i>
50	Contorted Ochrotrichian Microcaddisfly	<i>Ochrotrichia contorta</i>
46	Predaceous Diving Beetle	<i>Heterosternuta phoebeae</i>
42	Texas Frosted Elfin	<i>Callophrys irus hadros</i>
42	American Burying Beetle	<i>Nicrophorus americanus</i>
38	Linda's Roadside-Skipper	<i>Amblyscirtes linda</i>
38	Indiana Phlox Moth	<i>Schinia indiana</i>
34	Swamp Metalmark	<i>Calephelis muticum</i>
34	Ozark Emerald	<i>Somatochlora ozarkensis</i>
32	Dukes' Skipper	<i>Euphyes dukesi</i>
32	Prairie Mole Cricket	<i>Gryllotalpa major</i>
32	Ozark Snaketail Dragonfly	<i>Ophiogomphus westfalli</i>
30	Mayfly	<i>Dannella provonshai</i>
30	Giant Prairie Robberfly	<i>Microstylum morosum</i>
30	Ozark Swallowtail	<i>Papilio joanae</i>
29	Mottled Duskywing	<i>Erynnis martialis</i>
29	Meske's Skipper	<i>Hesperia meskei</i>
27	Lace-winged Roadside-Skipper	<i>Amblyscirtes aesculapius</i>
27	Carolina Roadside-Skipper	<i>Amblyscirtes carolina</i>
27	Appalachian Azure	<i>Celastrina neglectamajor</i>
27	Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>

Table 2.2.5. Insects, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
27	Ozark Clubtail Dragonfly	<i>Gomphus ozarkensis</i>
27	Georgia Satyr	<i>Neonympha areolatus</i>
27	King's Hairstreak	<i>Satyrium kingi</i>
25	Tiger Beetle	<i>Cicindela lepida</i>
25	Giant Stag Beetle	<i>Lucanus elaphus</i>
25	Diana	<i>Speyeria diana</i>
23	Lace Bug	<i>Acalypta susanae</i>
23	Copeland's Mold Beetle	<i>Arianops copelandi</i>
23	Northern Metalmark	<i>Calephelis borealis</i>
23	Lincoln Underwing	<i>Catocala lincolnana</i>
23	Dusky Azure	<i>Celastrina nigra</i>
23	Outis Skipper	<i>Cogia outis</i>
23	Beetle	<i>Derops divalis</i>
23	Ouachita Shore Bug	<i>Pentacora ouachita</i>
23	Yehl Skipper	<i>Poanes yehl</i>
23	Byssus Skipper	<i>Problema byssus</i>
23	Ouachita Pseudactium	<i>Pseudactium magazinensis</i>
23	Ozark Pseudactium	<i>Pseudactium ursum</i>
23	Ground Beetle	<i>Scaphinotus inflectus</i>
23	Ground Beetle	<i>Scaphinotus parisiana</i>
23	Anthophorid Bee	<i>Tetraloniella albata</i>
21	Bell's Roadside-Skipper	<i>Amblyscirtes belli</i>
21	Golden-banded Skipper	<i>Autochton cellus</i>
21	Ant-like Tiger Beetle	<i>Cicindela cursitans</i>
21	Scrubland Tiger Beetle	<i>Cicindela obsoleta</i>
21	Woodland Tiger Beetle	<i>Cicindela unipunctata</i>
21	Red Milkweed Beetle	<i>Tetraopes quinque maculatus</i>
21	Texas Milkweed Beetle	<i>Tetraopes texanus</i>
19	Lace Bug	<i>Acalypta lillianus</i>
19	Six-banded Longhorn Beetle	<i>Dryobius sexnotatus</i>
19	Dion Skipper	<i>Euphyes dion</i>
19	Leonard's Skipper	<i>Hesperia leonardus</i>
19	Cobweb Skipper	<i>Hesperia metea</i>
19	Ouachita Diving Beetle	<i>Heterosternuta ouachita</i>
19	Small-eyed Mold Beetle	<i>Ouachitychus parvovculus</i>
19	Gray Comma	<i>Polygonia progne</i>
19	Oak Hairstreak	<i>Satyrium favonius ontario</i>
17	Big Sand Tiger Beetle	<i>Cicindela formosa pigmentosignata</i>

Table 2.2.5. Insects, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
17	Beach-dune Tiger Beetle	<i>Cicindela hirticollis</i>
17	Sandy Stream Tiger Beetle	<i>Cicindela macra</i>
15	Gorgone Checkerspot	<i>Chlosyne gorgone</i>
15	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>
15	Monarch	<i>Danaus plexippus</i>
15	Broad-winged Skipper	<i>Poanes viator</i>
13	Twelve-spotted Tiger Beetle	<i>Cicindela duodecimguttata</i>
11	Winter Stonefly	<i>Allocaonia malverna</i>
11	Bronze Copper	<i>Lycaena hyllus</i>

**Table 2.2.6. Calculated Priority Scores for Invertebrate Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
80	Foushee Cavesnail	<i>Amnicola cora</i>
80	Magazine Mountain Shagreen	<i>Inflectarius magazinensis</i>
80	Isopod	<i>Lirceus bidentatus</i>
80	Ozark Pyrg	<i>Marstonia ozarkensis</i>
80	Striate Supercoil	<i>Paravitrea aulacogyra</i>
80	Ouachita Pebblesnail	<i>Somatogyrus amnicoloides</i>
80	Thicklipped Pebblesnail	<i>Somatogyrus crassilabris</i>
80	Channelled Pebblesnail	<i>Somatogyrus wheeleri</i>
65	Cave Obligate Pseudoscorpion	<i>Apochthonius diabolus</i>
65	Cave Obligate Pseudoscorpion	<i>Apochthonius titanicus</i>
65	Cave Obligate Harvestman	<i>Crosbyella distincta</i>
65	Cave Obligate Harvestman	<i>Crosbyella roeweri</i>
65	Calico Rock Oval	<i>Patera clenchi</i>
65	Elevated Spring Amphipod	<i>Stygobromus elatus</i>
65	Mountain Cave Amphipod	<i>Stygobromus montanus</i>
65	Cave Obligate Millipede	<i>Trigenotyia parca</i>
65	Arkansas Wedge	<i>Xolotrema occidentale</i>
50	Springtail	<i>Pseudosinella dubia</i>
50	Cave Obligate Springtail	<i>Schaefferia alabamensis</i>
50	Ouachita Needlefly	<i>Zealeuctra wachita</i>
46	Rich Mountain Slitmouth	<i>Stenotrema pilsbryi</i>
42	Hubricht's Long-tailed Amphipod	<i>Allocrangonyx hubrichti</i>
42	Amphipod	<i>Bactrurus pseudomucronatus</i>
42	Isopod	<i>Caecidotea oculata</i>
42	Cave Obligate Isopod	<i>Caecidotea simulator</i>
42	Cave Obligate Planarian	<i>Dendrocoelopsis americana</i>
38	Isopod	<i>Caecidotea dimorpha</i>
38	Bat Cave Isopod	<i>Caecidotea macropropoda</i>
34	White Liptooth	<i>Daedalochila peregrina</i>
34	Ouachita Slitmouth	<i>Stenotrema unciferum</i>
30	Isopod	<i>Caecidotea steevesi</i>
30	Isopod	<i>Lirceus bicuspidatus</i>
27	Isopod	<i>Caecidotea ancyla</i>
27	Isopod	<i>Caecidotea salemensis</i>
27	Land Snail	<i>Gastrocopta rogersensis</i>
27	Shelled Cave Springtail	<i>Pseudosinella testa</i>
25	Springtail	<i>Pygmarrhopalites clarus</i>
23	Millipede	<i>Abacion wilhelminae</i>

Table 2.2.6. Invertebrates - other, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
23	Isopod	<i>Caecidotea fonticulus</i>
23	Isopod	<i>Caecidotea stiladactyla</i>
23	Pseudoscorpion	<i>Hesperochernes occidentalis</i>
23	Ozark Cave Amphipod	<i>Stygobromus ozarkensis</i>
23	Pseudoscorpion	<i>Tartarocreagris ozarkensis</i>
17	Earthworm	<i>Diplocardia meansi</i>

**Table 2.2.7. Calculated Priority Scores of Mammal Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
80	Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>
63	Northern Long-eared Bat	<i>Myotis septentrionalis</i>
62	Indiana Bat	<i>Myotis sodalis</i>
57	Ozark Pocket Gopher	<i>Geomys bursarius ozarkensis</i>
33	Little Brown Bat	<i>Myotis lucifugus</i>
29	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>
27	Eastern Small-Footed Bat	<i>Myotis leibii</i>
24	Southeastern Bat	<i>Myotis austroriparius</i>
23	Plains Harvest Mouse	<i>Reithrodontomys montanus</i>
21	Black-tailed Jackrabbit	<i>Lepus californicus</i>
21	Eastern Spotted Skunk	<i>Spilogale putorius</i>
19	Crawford's Gray Shrew	<i>Notiosorex crawfordi</i>
19	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>
19	Southeastern Shrew	<i>Sorex longirostris</i>
19	Southern Bog Lemming	<i>Synaptomys cooperi</i>
16	Gray Bat	<i>Myotis grisescens</i>
16	American Badger	<i>Taxidea taxus</i>
15	Long-tailed Weasel	<i>Mustela frenata</i>
15	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>

**Table 2.2.8. Calculated Priority Scores for Mussel Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
100	Curtis Pearlymussel	<i>Epioblasma florentina curtisii</i>
100	Turgid Blossom	<i>Epioblasma turgidula</i>
80	Ouachita Rock Pocketbook	<i>Arcidens wheeleri</i>
80	Speckled Pocketbook	<i>Lampsilis streckeri</i>
80	Winged Mapleleaf	<i>Quadrula fragosa</i>
76	Scaleshell	<i>Leptodea leptodon</i>
65	Louisiana Pearlshell	<i>Margaritifera hembeli</i>
65	Texas Pigtoe	<i>Pleurobema riddellii</i>
62	Neosho Mucket	<i>Lampsilis rafinesqueana</i>
57	Arkansas Fatmucket	<i>Lampsilis powellii</i>
52	Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>
46	Pink Mucket	<i>Lampsilis abrupta</i>
46	Fat Pocketbook	<i>Potamilus capax</i>
43	Western Fanshell	<i>Cyprogenia aberti</i>
43	"Ouachita" Fanshell	<i>Cyprogenia sp. cf aberti</i>
43	Snuffbox	<i>Epioblasma triquetra</i>
38	Spectaclecase	<i>Cumberlandia monodonta</i>
38	Pyramid Pigtoe	<i>Pleurobema rubrum</i>
34	Salamander Mussel	<i>Simpsonaias ambigua</i>
33	Purple Lilliput	<i>Toxolasma lividum</i>
31	Slippershell Mussel	<i>Alasmidonta viridis</i>
30	Purple Pimpleback	<i>Quadrula refulgens</i>
29	"Elongate" Pigtoe	<i>Fusconaia sp. cf. flava</i>
23	Ozark Pigtoe	<i>Fusconaia ozarkensis</i>
23	Pink Heelsplitter	<i>Potamilus alatus</i>
23	Ouachita Kidneyshell	<i>Ptychobranhus occidentalis</i>
23	Ellipse	<i>Venustaconcha ellipsiformis</i>
23	Bleedingtooth Mussel	<i>Venustaconcha pleasii</i>
19	Elktoe	<i>Alasmidonta marginata</i>
19	Southern Pocketbook	<i>Lampsilis ornata</i>
19	"Red River" Mucket	<i>Lampsilis sp. B cf hydiana</i>
19	Hickorynut	<i>Obovaria olivaria</i>
19	"White" Hickorynut	<i>Obovaria sp. cf arkansasensis</i>
19	Ohio Pigtoe	<i>Pleurobema cordatum</i>
19	Gulf Mapleleaf	<i>Quadrula nobilis</i>



Table 2.2.8. Mussels, continued.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
19	Lilliput	<i>Toxolasma parvum</i>
19	Texas Lilliput	<i>Toxolasma texasiense</i>
19	Tapered Pondhorn	<i>Uniomerus declivis</i>
19	Pondhorn	<i>Uniomerus tetralasmus</i>
17	Round Pigtoe	<i>Pleurobema sintoxia</i>
17	Little Spectaclecase group	<i>Villosa sp. cf lienosa</i>
15	"Arkoma" Fatmucket	<i>Lampsilis sp. A cf hydiana</i>
15	Southern Mapleleaf	<i>Quadrula apiculata</i>
15	Fawnsfoot	<i>Truncilla donaciformis</i>
15	Rainbow	<i>Villosa iris</i>

**Table 2.2.9. Calculated Species Priority Scores for Reptile Species of Greatest Conservation Need.** A higher score implies a greater need for conservation concern and actions.

<b>Priority Score</b>	<b>Common Name</b>	<b>Scientific Name</b>
29	Queensnake	<i>Regina septemvittata</i>
24	Eastern Collared Lizard	<i>Crotaphytus collaris</i>
23	Great Plains Skink	<i>Plestiodon obsoletus</i>
23	Western Groundsnake	<i>Sonora semiannulata</i>
23	Lined Snake	<i>Tropidoclonion lineatum</i>
19	Common Wormsnake	<i>Carphophis amoenus</i>
19	Chicken Turtle	<i>Deirochelys reticularia</i>
19	Texas Coralsnake	<i>Micrurus tener</i>
19	Prairie Skink	<i>Plestiodon septentrionalis</i>
19	Graham's Crayfish Snake	<i>Regina grahamii</i>
19	Ornate Box Turtle	<i>Terrapene ornata</i>
17	Western Diamond-backed Rattlesnake	<i>Crotalus atrox</i>
15	Glossy Swampsnake	<i>Liodytes rigida</i>
15	Slender Glass Lizard	<i>Ophisaurus attenuatus</i>

## Appendix 2.3. List of Added and Removed SGCN List for 2015 Revision.

**Table 2.3.1.** Species added to the Arkansas Wildlife Action Plan under the 2015 revision as SGCN.

Common Name	Scientific Name	Taxa Association
Grotto Salamander "western clade"	<i>Eurycea spelaea</i>	amphibian
Grotto Salamander "eastern clade"	<i>Eurycea spelaea</i>	amphibian
Ouachita Streambed Salamander	<i>Eurycea subfluvicola</i>	amphibian
Squirrel Tree Frog	<i>Hyla squirella</i>	amphibian
Boreal Chorus Frog	<i>Pseudacris maculata</i>	amphibian
Sharp-shinned Hawk	<i>Accipiter striatus</i>	bird
Sprague's Pipit	<i>Anthus spragueii</i>	bird
Ruddy Turnstone	<i>Arenaria interpres</i>	bird
Common Nighthawk	<i>Chordeiles minor</i>	bird
Tricolored Heron	<i>Egretta tricolor</i>	bird
American Kestrel	<i>Falco sparverius</i>	bird
Purple Finch	<i>Haemorhous purpureus</i>	bird
American Golden-Plover	<i>Pluvialis dominica</i>	bird
Hubbs' Crayfish	<i>Cambarus hubbsi</i>	crayfish
Pine Hills Digger	<i>Fallicambarus dissitus</i>	crayfish
Redspotted Stream Crayfish	<i>Orconectes acares</i>	crayfish
Little River Creek Crayfish	<i>Orconectes leptogonopodus</i>	crayfish
Brown Bullhead	<i>Ameiurus nebulosus</i>	fish
American Eel	<i>Anguilla rostrata</i>	fish
Highfin Carpsucker	<i>Carpiodes velifer</i>	fish
Autumn Darter	<i>Etheostoma autumnale</i>	fish
Beaded Darter	<i>Etheostoma clinton</i>	fish
Sunburst Darter	<i>Etheostoma mihileze</i>	fish
Highland Darter	<i>Etheostoma teddyroosevelt</i>	fish
Lowland Topminnow	<i>Fundulus blairae</i>	fish
Mooneye	<i>Hiodon tergisus</i>	fish
Plains Minnow	<i>Hybognathus placitus</i>	fish
Shoal Chub	<i>Macrhybopsis hyostoma</i>	fish
Striped Mullet	<i>Mugil cephalus</i>	fish
Chub Shiner	<i>Notropis potteri</i>	fish
Rocky Shiner	<i>Notropis suttkusi</i>	fish
Channel Shiner	<i>Notropis wickliffi</i>	fish
Stonecat	<i>Noturus flavus</i>	fish
Gilt Darter	<i>Percina evides</i>	fish
Saddleback Darter	<i>Percina vigil</i>	fish
Bell's Roadside-Skipper	<i>Ambylscirtes bellii</i>	insect

Arogos Skipper	<i>Atrytone arogos</i>	insect
Golden-banded Skipper	<i>Autochton cellus</i>	insect
Northern Metalmark	<i>Calephelis borealis</i>	insect
Appalachian Azure	<i>Celastrina neglecta major</i>	insect
Dusky Azure	<i>Celastrina nigra</i>	insect
Gorgonne Checkerspot	<i>Chlosyne gorgone</i>	insect
Outis Skipper	<i>Cogia outis</i>	insect
Ouachita Spiketail	<i>Cordulegaster talaria</i>	insect
Monarch	<i>Danaus plexippus</i>	insect
Mottled Duskywing	<i>Erynnis martialis</i>	insect
Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>	insect
Dion Skipper	<i>Euphyes dion</i>	insect
Leonard's Skipper	<i>Hesperia leonardus</i>	insect
Cobweb Skipper	<i>Hesperia metea</i>	insect
Bronze Copper	<i>Lycaena hyllus</i>	insect
Rattlesnake-master Borer Moth	<i>Papaipema eryngii</i>	insect
Ozark Swallowtail	<i>Papilio joanae</i>	insect
Broad-winged Skipper	<i>Poanes viator</i>	insect
Gray Comma	<i>Polygonia progne</i>	insect
Oak Hairstreak	<i>Satyrium favonius ontario</i>	insect
Ozark Emerald	<i>Somatochlora ozarkensis</i>	insect
Little Brown Bat	<i>Myotis lucifugus</i>	mammal
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	mammal
Western Fanshell	<i>Cyprogenia aberti</i>	mussel
Ouachita Fanshell	<i>Cyprogenia sp. Cf aberti</i>	mussel
Elongate Elktoe	<i>Fusconaia sp. Cf. sampsoniana</i>	mussel
Texas Pigtoe	<i>Pleurobema riddellii</i>	mussel
Purple Pimpleback	<i>Quadrula refulgens</i>	mussel
Lilliput	<i>Toxolasma parvum</i>	mussel
Lined Snake	<i>Tropidoclonion lineatum</i>	reptile

**Table 2.3.2.** Species removed from the Arkansas Wildlife Action Plan under the 2015 Revision.

Common Name	Scientific Name	Taxa Association
Northern Pintail	<i>Anas acuta</i>	bird
Short-eared Owl	<i>Asio flammeus</i>	bird
Upland Sandpiper	<i>Bartramia longicauda</i>	bird
Ruffed Grouse	<i>Bonasa umbellus</i>	bird
Western Sandpiper	<i>Calidris mauri</i>	bird
Least Sandpiper	<i>Calidris minutilla</i>	bird
Semi-palmated Sandpiper	<i>Calidris pusilla</i>	bird
Ivory-billed Woodpecker	<i>Campephilus principalis</i>	bird
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	bird
Lark Sparrow	<i>Chondestes grammacus</i>	bird
Northern Harrier	<i>Circus cyaneus</i>	bird
Prairie Warbler	<i>Dendroica discolor</i>	bird
Yellow Warbler	<i>Dendroica petechia</i>	bird
Little Blue Heron	<i>Egretta caerulea</i>	bird
Snowy Egret	<i>Egretta thula</i>	bird
Bald Eagle	<i>Haliaeetus leucocephalus</i>	bird
Worm-eating Warbler	<i>Helmitheros vermivorus</i>	bird
Mississippi Kite	<i>Ictinia mississippiensis</i>	bird
Hudsonian Godwit	<i>Limosa haemastica</i>	bird
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	bird
Wood Stork	<i>Mycteria americana</i>	bird
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	bird
Kentucky Warbler	<i>Oporornis formosus</i>	bird
Osprey	<i>Pandion haliaetus</i>	bird
American White Pelican	<i>Pelecanus erythrorhynchos</i>	bird
Wilson's Phalarope	<i>Phalaropus tricolor</i>	bird
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	bird
Pied-billed Grebe	<i>Podilymbus podiceps</i>	bird
Prothonotary Warbler	<i>Protonotaria citrea</i>	bird
American Avocet	<i>Recurvirostra americana</i>	bird
Brown-headed Nuthatch	<i>Sitta pusilla</i>	bird
Lesser Yellowlegs	<i>Tringa flavipes</i>	bird
Greater Yellowlegs	<i>Tringa melanoleuca</i>	bird
Solitary Sandpiper	<i>Tringa solitaria</i>	bird
Greater Prairie Chicken	<i>Tympanuchus cupido</i>	bird
Barn Owl	<i>Tyto alba</i>	bird
Blue-winged Warbler	<i>Vermivora pinus</i>	bird
Hooded Warbler	<i>Wilsonia citrina</i>	bird
Crayfish	<i>Procambarus ferrugineus</i>	crayfish

Ozark Chub	<i>Erimystax harrisi</i>	fish
Sturgeon Chub	<i>Macrhybopsis gelida</i>	fish
Tailight Shiner	<i>Notropis maculatus</i>	fish
Seminole Bat	<i>Lasiurus seminolus</i>	mammal
Black Bear	<i>Ursus americanus americanus</i>	mammal
Flat Floater	<i>Anodonta suborbiculata</i>	mussel
Rock Pocketbook	<i>Arcidens confragosus</i>	mussel
Purple Wartyback	<i>Cyclonaias tuberculata</i>	mussel
Butterfly	<i>Ellipsaria lineolata</i>	mussel
Round Pearlshell	<i>Glebula rotundata</i>	mussel
Louisiana Fatmucket	<i>Lampsilis hydiana</i>	mussel
Arkansas Brokenray	<i>Lampsilis reeveiana</i>	mussel
Fatmucket	<i>Lampsilis siliquodea</i>	mussel
Flutedshell	<i>Lasmigona costata</i>	mussel
Black Sandshell	<i>Ligumia recta</i>	mussel
Round Hickorynut	<i>Obovaria subrotunda</i>	mussel
Creeper	<i>Strophitus undulatus</i>	mussel
Ouachita Creekshell	<i>Villosa arkansasensis</i>	mussel

## Appendix 3.1 Potential Habitat: GIS Methodology

Approach: Use GAP Vegetation Map in combination with ancillary layers (polygons from Level III Omernik Ecoregions, STATSGO soils, 1:500,000 Arkansas Geology, Saucier Geomorphology. These were used to clip the GAP Vegetation Raster map to define areas of existing vegetation associated with particular ecological systems). Future phases will add to and improve this map. In the Ozark-Ouachita (Interior Highlands) region, systems are not generally defined in such a way that the data layers available for Phase 1 added any ability to map ecological systems. Therefore in these areas GAP vegetation units were selected without using any other layers.

The 2ha aggregate GAP Vegetation Map was the base vegetation layer – Initial efforts used the finer 30-m pixel size that was the base GAP map resulting from image classification. After doing some clipping of this map it was apparent that the selected areas of vegetation included many single-pixel or few-pixel “speckles” that would have to be aggregated with larger areas before a useful polygon map could be created. The GAP project had already produced aggregated raster maps of 2ha, 10ha and 100ha. It would simplify the current project to use one of these. After inspecting the alternatives the 2ha was chosen as the base vegetation map since it would be easy to “polygonize” but would retain considerable detail. This was a smaller area than would be tracked by the CWCS planning effort for large patch or matrix communities but might be useful for some small patch communities.

Factors involved in selecting clipping layer – GAP used STATSGO map to constrain spectral classification, that is, spectral classification was often done within certain STATSGO polygons within a certain satellite scene. Therefore the vegetation map overlays better on the STATSGO map than on the other maps and is the preferred clipping file unless another is preferred for a specific reason. The STATSGO map was most useful in the Coastal Plain because systems there are closely associated with soils. The Saucier map was preferred in the Mississippi Alluvial Plain because it better represents the definitions of those alluvial systems. The Ecoregion map did not exactly overlay the other maps

but CWCS has already made the decision to use that map to define ecoregions so it was used for that purpose. The Geology map was used as a backup to these.

Map Accuracy: The ecological systems map can be no more accurate than the maps used in creating it. The GAP project did an accuracy assessment and found wide variations in accuracy depending on the vegetation type. The highest accuracy was forest vs. non-forest at 75%. In creating the ecological systems map, unless it was essential to do otherwise, all natural vegetation types within a clipping polygon were selected as representing the system, even if, for example, wetland types along streams were known to be a different system from the dominant upland system. The wetland pixels were usually scattered and occurred both along defined stream courses and in inappropriate sites as well, indicating that there would have been as much error in placing them into a different system as including them in the prevalent system. Thus overall accuracy was improved by selecting all forested types as belonging to the system. Although this resulted in a decrease in detail within any given system polygon, the number of systems so defined, at about 20, is not greatly different from the total number of vegetation types defined in the original GAP map, 31.

### Map Units Organized by Ecoregion

OZARK-OUACHITA (INTERIOR HIGHLANDS) REGION (comprised of Omernik Level 3 ecoregions Ozark Highlands, Boston Mountains, Arkansas Valley, Ouachita Mountains)

Method: Select vegetation types from the 2 ha. Gap vegetation map (no clip polygons are used).

Ozark-Ouachita Dry-mesic Oak Forest habitat (and same ecological system)

GAP types:

8 T.1.B.3.a.II, *Quercus alba*, white oak - mixed hardwoods

9 T.1.B.3.a.III, *Quercus rubra* - *Quercus* spp., northern red oak - oak

10 T.1.B.3.a.IV, *Quercus falcata* - *Quercus* spp., south-

ern red oak - oak 15 T.2.B.4.a.I, *Quercus* spp. - *Carya texana*, oak - black hickory

“Interior Highlands Glade-Barrens” type includes three habitats: Central Interior Highlands Dry Acidic Glade and Barrens (and same ecological system)

Central Interior Highlands Calcareous Glade and Barrens (and same ecological system)

Ozark-Ouachita Dry Oak Woodland (and same ecological system)

GAP types:

3 T.1.A.9.c.I, *Juniperus virginiana*, eastern red cedar

6 T.1.B.2.b.IV, *Juniperus virginiana*, eastern red cedar

11 T.1.B.3.a.V, *Quercus stellata*, post oak

12 T.2.A.2.b.I, *Juniperus virginiana* - *Quercus* spp., eastern red cedar - oak

14 T.2.B.3.a.II, *Juniperus ashei* - *Quercus* spp., white cedar - oak

“Ozark-Ouachita Pine-Oak Forest and Woodland” type includes pine-hardwood co-dominated sites in three habitats:

Ozark-Ouachita Pine-Oak Forest habitat Ozark-

Ouachita Pine-Oak Woodland habitat Ozark-

Ouachita Pine/Bluestem Woodland habitat

All of which make up Ozark-Ouachita Shortleaf Pine-Oak Forest and Woodland ecological system. (This map unit is probably more comparable to the first two habitats, depending on structure, either forest or woodland, not distinguished by GAP).

GAP types:

4 T.1.B.2.b.II, *Quercus* spp. - *Pinus echinata* - *Carya* spp., oak - shortleaf pine - hickory 13 T.2.B.3.a.I, *Pinus echinata* - *Quercus* spp., shortleaf pine - oak

“Ozark-Ouachita Pine” type includes pine-dominated sites in three habitats:

Ozark-Ouachita Pine-Oak Forest habitat Ozark-

Ouachita Pine-Oak Woodland habitat Ozark-

Ouachita Pine/Bluestem Woodland habitat

All of which make up Ozark-Ouachita Shortleaf Pine-Oak Forest and Woodland ecological system. (This may be comparable to the third habitat if structure is very open, and may also be a distinct habitat from the first two, even if fairly dense.)

GAP types:

1 T.1.A.9.b.I, *Pinus echinata*, shortleaf pine

Ozark-Ouachita Mesic Hardwood Forest habitat (and same ecological system)

GAP types:

7 T.1.B.3.a.I, *Fagus grandifolia*, american beech (The GAP map shows very few areas of this type in only part of the highlands – the type is under-represented in that map.)

“Ozark-Ouachita Riparian” type includes two habitats:

Ozark-Ouachita Riparian habitat (and same ecological system)

South-Central Interior Large Floodplain habitat (and same ecological system)

GAP types:

23 P.1.B.3.c.VII, *Quercus phellos*, willow oak

24 P.1.B.3.c.VIII, *Liquidambar styraciflua*, sweetgum

30 R.1.B.3.c.I, *Salix* - *Populus*, willow - cottonwood

31 R.1.B.3.c.II, *Betula* - *Platanus* - *Acer*, birch - sycamore - maple

CROWLEY’S RIDGE ECOREGION (defined by Omernik Level 3 map)

“Crowley’s Ridge Dry-Mesic Forest” type is a part of Mississippi River Alluvial Plain Loess Slope Forest habitat (and same ecological system)

GAP types:

8 T.1.B.3.a.II, *Quercus alba*, white oak - mixed hardwoods

9 T.1.B.3.a.III, *Quercus rubra* - *Quercus* spp., northern red oak - oak

10 T.1.B.3.a.IV, *Quercus falcata* - *Quercus* spp., southern red oak - oak

15 T.2.B.4.a.I, *Quercus* spp. - *Carya texana*, oak - black hickory

“Crowley’s Ridge Pine” type is a part of Mississippi River Alluvial Plain Loess Slope Forest habitat (and same ecological system)

GAP types:

1 T.1.A.9.b.I, *Pinus echinata*, shortleaf pine



MISSISSIPPI ALLUVIAL PLAIN ECOREGION defined by Omernik Level 3 map.

Method: Clip 2 ha. GAP vegetation map with appropriate geomorphology polygons defined by Saucier's map.

Lower Mississippi River Dune Woodland and Forest habitat (equivalent to Lower Mississippi River Dune Woodland and Forest and Lower Mississippi River Dune Pond ecological systems).

Saucier types:

Ps sand dune fields and eolian deposits on valley trains

GAP types - All except:

32 R.6.A.1.a.I, Bare, bare

33 W, Water, water

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

"Mississippi River Low Bottomland and Depression" map unit includes Lower Mississippi River Low Bottomland Forest and Lower Mississippi River Bottomland Depression habitats (equivalent to Mississippi River Low Floodplain (Bottomland) Forest and Lower Mississippi River Bottomland Depression ecological systems).

Saucier types:

Hb Backswamp (floodbasin) deposits

Hal Alluvial fans and aprons along valley margins

Hchm Abandoned channels (neck and chute cutoffs) of the Mississippi River

Hcom Abandoned courses of the Mississippi River

Pdch Abandoned channels (cutoffs) of the Deweyville Complex

Pdp Point bar (meander scroll) deposits of the Deweyville Complex

Pdu Undifferentiated fluvial deposits of the Deweyville Complex

Ptc Undifferentiated fluvial deposits of the Cache River Terrace

Pvcl Relict channels of late Wisconsin Stage Valley Train

GAP types – All except:

32 R.6.A.1.a.I, Bare, bare

33 W, Water, water

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

"Mississippi River Riparian and High Bottomland" map unit includes Lower Mississippi River Riparian Forest and Lower Mississippi River High Bottomland Forest habitats (equivalent to Lower Mississippi River Riparian Forest and Lower Mississippi River High Floodplain (Bottomland) Forest).

Saucier types:

Hpa 1-7 Point bar (meander scroll) deposits of Arkansas meander belts

Hps Point bar (meander scroll) deposits of small streams

GAP types – All except:

32 R.6.A.1.a.I, Bare, bare

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

Lower Mississippi Alluvial Plain Grand Prairie habitat (equivalent to Lower Mississippi Alluvial Plain Grand Prairie ecological system).

Saucier types:

Ppu Undifferentiated fluvial deposits of the Prairie Complex. Mostly natural levee and backswamp deposits of the Mississippi, Arkansas and Red rivers.

Pdp Point bar (meander scroll) deposits of the Deweyville Complex. Note-some prairie occurred on Pdp but it is primarily in flatwoods, below.

Pi The part adjacent to Ppu

GAP types – all except:

25 Baldcypress – mixed hardwoods (moved to Mississippi River Low Bottomland and Depression.

32 R.6.A.1.a.I, Bare, bare

33 W, Water, water  
 34 AGW, Agriculture, Agriculture (wet crops)  
 35 AGD, Agriculture, Agriculture (dry crops)  
 36 AGP, Agriculture, Agriculture (pasture)  
 37 URC, Urban, Urban Commercial-Industrial  
 38 URR, Urban, Urban Residential  
 Lower Mississippi River Flatwoods Woodland and Forest habitat (equivalent to Lower Mississippi River Flatwoods ecological system).  
 Saucier types:  
 Had Principal abandoned deltaic distributaries.  
 Pdp Point bar (meander scrolls) of the Deweyville Complex.  
 Pve 1-4 Early Wisconsin Stage valley trains.  
 Pvl Late Wisconsin Stage valley trains where levels are not separately delineated.  
 Pvl 1-2 Late Wisconsin Stage valley trains Levels 1 and 2.  
 GAP types – all except:  
 25 Baldcypress – mixed hardwoods (moved to Mississippi River Low Bottomland and Depression.  
 32 R.6.A.1.a.I, Bare, bare  
 33 W, Water, water  
 34 AGW, Agriculture, Agriculture (wet crops)  
 35 AGD, Agriculture, Agriculture (dry crops)  
 36 AGP, Agriculture, Agriculture (pasture)  
 37 URC, Urban, Urban Commercial-Industrial  
 38 URR, Urban, Urban Residential

**WEST GULF COASTAL PLAIN ECOREGION**  
 defined by Omernik Level 3 map.

Method: Clip 2 ha. GAP vegetation map with appropriate polygons defined by NRCS STATSGO soil map.  
 “West Gulf Coastal Plain Flatwoods” includes two habitats:  
 West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods (and same ecological system)  
 West Gulf Coastal Plain Wet Hardwood Flatwoods (and same ecological system)  
 STATSGO types:  
 Adaton-Felker-Gore AR035

Amy-Pheba-Guyton AR040  
 Calloway-Henry-Grenada AR038  
 Bussy-Tullou-Guyton  
 Sacul-Savannah-Sawyer  
 Smithdale-Savannah-Sacul (only that area of Sacul lying within the 1:500,000 geology Qt-Quaternary Terrace)  
 Wrightsville-Acadia-Louin  
 GAP types – all except:  
 32 R.6.A.1.a.I, Bare, bare  
 33 W, Water, water  
 34 AGW, Agriculture, Agriculture (wet crops)  
 35 AGD, Agriculture, Agriculture (dry crops)  
 36 AGP, Agriculture, Agriculture (pasture)  
 37 URC, Urban, Urban Commercial-Industrial  
 38 URR, Urban, Urban Residential  
 “West Gulf Coastal Plain Sandhill” equivalent to West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland habitat (and same ecological system)  
 STATSGO types:  
 Briley-Alaga  
 GAP types – all except:  
 32 R.6.A.1.a.I, Bare, bare  
 33 W, Water, water  
 34 AGW, Agriculture, Agriculture (wet crops)  
 35 AGD, Agriculture, Agriculture (dry crops)  
 36 AGP, Agriculture, Agriculture (pasture)  
 37 URC, Urban, Urban Commercial-Industrial  
 38 URR, Urban, Urban Residential  
 “Red River” equivalent to West Gulf Coastal Plain Red River Floodplain Forest habitat and Red River Large Floodplain Forest ecological system.  
 STATSGO types:  
 Severn-Billyhaw  
 Billyhaw-Perry  
 Rilla-Hebert  
 GAP types – all except:  
 32 R.6.A.1.a.I, Bare, bare  
 33 W, Water, water

34 AGW, Agriculture, Agriculture (wet crops)  
35 AGD, Agriculture, Agriculture (dry crops)  
36 AGP, Agriculture, Agriculture (pasture)  
37 URC, Urban, Urban Commercial-Industrial  
38 URR, Urban, Urban Residential  
“Blackland” equivalent to West Gulf Coastal Plain Calcareous Prairie habitat (and same ecological system)

STATSGO types:

Oktibbeha-Sumter (But eliminated areas south of I-40 and north of the main belt of these soils.

GAP types – all except:

32 R.6.A.1.a.I, Bare, bare

33 W, Water, water

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

ALSO within a TNC conservation site boundary, included

36 AGP, Agriculture, Agriculture (pasture): This was done because there is a substantial amount of native prairie pasture within this area. However, it is properly beyond Phase 1.

West Gulf Coastal Plain Large River Floodplain Forest habitat (and same ecological system)

STATSGO Types:

Guyton-Amy-Ouachita (but only those areas along the Ouachita, Saline, Little Missouri, Little and Cossatot Rivers.)

GAP types – all except:

32 R.6.A.1.a.I, Bare, bare

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

West Gulf Coastal Plain Small Stream/River Forest habitat (and same ecological system)

STATSGO Types:

Guyton-Amy-Ouachita (but only those areas other than the Ouachita, Saline, Little Missouri, Little and Cossatot Rivers.)

GAP types – all except:

32 R.6.A.1.a.I, Bare, bare

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

West Gulf Coastal Plain Pine-Hardwood Forest habitat (and same ecological system)

STATSGO types:

All, except those listed above

GAP types – all except:

32 R.6.A.1.a.I, Bare, bare

34 AGW, Agriculture, Agriculture (wet crops)

35 AGD, Agriculture, Agriculture (dry crops)

36 AGP, Agriculture, Agriculture (pasture)

37 URC, Urban, Urban Commercial-Industrial

38 URR, Urban, Urban Residential

## MOSAICKING IMAGES

The purpose of mosaicking was to stitch all the different images that were produced during different spatial operations into one continuous reclassified image.

Each one of those map units discussed earlier in the draft were output as a raster image and each raster image ended up with pixels representing two classes. One class would be the appropriate gap type or types aggregated into one and other class would be the classes that weren't taken into consideration from the original GAP 2Ha data due to their inappropriacy; hence were classified under single class as unclassified. The unclassified classes from all the images were given a consistent number “0” and each class was given a unique number depending on its order in the mosaic operation. At end there were 21 images (21 classes) to be mosaicked.

Mosaic rule: Since there was lot of clipping operations done on the STASGO soil layer there were likely overlaps amongst the raster layers (most expectedly at the borders) while mosaicking all of them together. As a general rule, the classes having smaller spatial extents were given higher priority in the overlap areas over the classes having bigger spatial extents. For instance, if there is a classification conflict due to pixel overlap between the red river and the uplands image then the overlapping pixels will be classified as red river and not the uplands since the red river has much smaller geographical extent than the uplands which are widespread in the UWGCP. To implement this general rule, the “Maximum” overlap function was set while mosaicking all these images together into one contiguous raster. What the maximum overlap function does is in any instance of overlapping pixels for the classification purpose the priority will be given to the pixel or class having higher order. Again as an example; in an overlap between Sandhills- class 3 and Blackland-class 4; according to our rule the overlapping pixel will be classified as blacklands since it has higher order than Sandhills and hence will get the preference. Setting the same rule, all the images were mosaicked together and were output as a single image representing all the classes including unclassified pixels.

ERDAS Imagine 8.7 remote sensing software was used to do all the raster operations including mosaicking and the other spatial data were produced, edited and displayed in ESRI software suite.

## MOSAICKING ORDER

### Upper West Gulf Coastal Plain

- 0- Unclassified
- 1- Uplands
- 2- Flatwoods
- 3- Sandhills
- 4- Blacklands
- 5- Red River
- 6- Large River
- 7- Small River

### Interior Highlands

- 8- Dry Mesic Uplands Oak
- 9- Pine
- 10- Pine Hardwoods
- 11- Glade Barrens
- 12- Riparian
- 13- Mesic Forest

### Crowley’s Ridge

- 14- Mesic Uplands Oak
- 15- Pine Hardwoods

### Mississippi River Alluvial Plain

- 16- Riparian
- 17- Grand Prairie
- 18- Low bottomland
- 19- Flatwoods
- 20- Sand Dunes

## Appendix 3.2. Crosswalk of Terrestrial Habitat Changes.

The following table summarizes the terrestrial habitat team revisions to terrestrial habitat types from the original plan to the 2015 revised plan. The final updated list includes 37 terrestrial habitats.

Original Habitat Name	Change	New Habitat Name
Arkansas Valley Prairie and Woodland	name change; combine with Southeast tallgrass prairie	Ozark-Ouachita Prairie and Woodland
Caves, Mines & Karst Habitat	name change	Caves, Mines, Sinkholes and other Karst Features
Central Interior Acidic Cliff and Talus	combined acidic and calcareous	Ozark-Ouachita Cliff and Talus
Central Interior Calcareous Cliff and Talus	combined acidic and calcareous	Ozark-Ouachita Cliff and Talus
Central Interior Highlands and Appalachian Sinkhole and Depression Pond	combined into caves, mines, karst	Caves, Mines, Sinkholes and other Karst Features
Central Interior Highlands Calcareous Glade and Barrens	name change, delete 'central'	Interior Highlands Calcareous Glade and Barrens
Central Interior Highlands Dry Acidic Glade and Barrens	name change, delete 'central'	Interior Highlands Dry Acidic Glade and Barrens
Crop Land	no change	Crop Land
Cultivated Forest	no change	Cultivated Forest
Lower Mississippi Alluvial Plain Grand Prairie	no change	Lower Mississippi Alluvial Plain Grand Prairie
Lower Mississippi Flatwoods Woodland and Forest	no change	Lower Mississippi Flatwoods Woodland and Forest
Lower Mississippi River Bottomland Depression	no change	Lower Mississippi River Bottomland Depression
Lower Mississippi River Dune Pond Woodland and Forest	no change	Lower Mississippi River Dune, Pond, Woodland and Forest
Lower Mississippi River High Bottomland Forest	no change	Lower Mississippi River High Bottomland Forest
Lower Mississippi River Low Bottomland Forest	no change	Lower Mississippi River Low Bottomland Forest
Lower Mississippi River Riparian Forest	no change	Lower Mississippi River Riparian Forest
Mississippi River Alluvial Plain Loess Slope Forest	name change	Crowley's Ridge Loess Slope Forest

Mud Flats	no change	Mud Flats
Ouachita Montane Oak Forest	no change	Ouachita Montane Oak Forest
Ouachita Mountain Forested Seep	name change, include Ozarks	Ozark-Ouachita Forested Seep
Ouachita Novaculite Glade and Woodland	combined with Interior Highlands dry acidic glade and barrens	Interior Highlands Dry Acidic Glade and Barrens
Ozark-Ouachita Dry Oak Woodland	name change, include pine	Ozark-Ouachita Dry Oak and Pine Woodland
Ozark-Ouachita Dry-Mesic Oak Forest	no change	Ozark-Ouachita Dry-Mesic Oak Forest
Ozark-Ouachita Mesic Hardwood Forest	no change	Ozark-Ouachita Mesic Hardwood Forest
Ozark-Ouachita Pine/Bluestem Woodland	no change	Ozark-Ouachita Pine/Bluestem Woodland
Ozark-Ouachita Pine-Oak Forest	combine with Ozark-Ouachita Pine-oak Woodland	Ozark-Ouachita Pine-Oak Forest/Woodland
Ozark-Ouachita Pine-Oak Woodland	combine with Ozark-Ouachita Pine-oak Forest	Ozark-Ouachita Pine-Oak Forest/Woodland
Ozark-Ouachita Riparian	no change	Ozark-Ouachita Riparian
Pasture Land	no change	Pasture Land
Ponds, Lakes, and Water Holes	no change	Ponds, Lakes, and Water Holes
South-Central Interior Large Floodplain	name change	Ozark-Ouachita Large Floodplain
Southeastern Great Plains Tallgrass Prairie	combine with Arkansas Valley Prairie- rename	Ozark-Ouachita Prairie and Woodland
Urban/Suburban	no change	Urban/Suburban
West Gulf Coastal Plain Calcareous Prairie	Add "and woodland"	West Gulf Coastal Plain Calcareous Prairie and Woodland
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	name change, delete the word dry	West Gulf Coastal Plain Pine-Hardwood Flatwoods
West Gulf Coastal Plain Large River Floodplain Forest	no change	West Gulf Coastal Plain Large River Floodplain Forest
West Gulf Coastal Plain Mesic Hardwood Forest	combined with West Gulf Coastal Plain Pine-Hardwood Forest/Woodland	West Gulf Coastal Plain Pine-Hardwood Forest/Woodland
West Gulf Coastal Plain Nepheline Syenite Glade	combined with Central Interior Highland Calcareous Glades and Barrens	Interior Highlands Calcareous Glades and Barrens
West Gulf Coastal Plain Pine-Hardwood Forest	combined with West Gulf Coastal Plain Pine-Hardwood Forest/Woodland	West Gulf Coastal Plain Pine-Hardwood Forest/Woodland

West Gulf Coastal Plain Red River Floodplain Forest	no change	West Gulf Coastal Plain Red River Floodplain Forest
West Gulf Coastal Plain Saline Glade	combined with West Gulf Coastal Plain Pine-Hardwood Flatwoods	West Gulf Coastal Plain Pine-Hardwood Flatwoods
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland	name change, delete the word "and"	West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest/Woodland
West Gulf Coastal Plain Seepage Swamp and Baygall	no change	West Gulf Coastal Plain Seepage Swamp and Baygall
West Gulf Coastal Plain Small Stream/River Forest	no change	West Gulf Coastal Plain Small Stream/River Forest
West Gulf Coastal Plain Wet Hardwood Flatwoods	no change	West Gulf Coastal Plain Wet Hardwood Flatwoods
	New Habitat	Herbaceous Wetland

# Appendix 4.1 Aquatic health and ecobasin condition: GIS Methodology

## **Data Sources:**

Stream reaches layer- NHD (National Hydrography Dataset) from NRCS (National Resource Conservation Science)

Roads layer- TIGER (Topologically Integrated Geographic Encoding and Referencing system)

Dams Data- EPA Basin CD

Riparian Zones- A polygon layer derived by buffering 100 meters on each side of the stream reach

Land use/Land cover Raster- NLCD (National Land Cover Data) from USGS

## **Measurement Concepts and Units:-**

Dam Density- Number of dams per ecobasin (sq. miles)

*Methodology-* Dams (point layer) were intersected with the Ecobasins layer (polygon) and summed the number of dams for respective ecobasins based upon their spatial locations. Units were expressed as the number of dams per square mile of Ecobasin.

Road Density- Length of roads (miles) per ecobasin (sq. miles)

*Methodology-* Roads (line layer) were intersected with the Ecobasins layer (polygon) and measured the lengths of road segments for respective ecobasins based upon their spatial locations. Units were expressed as the miles of roads per square mile of Ecobasin.

Riparian Road Density- Length of roads (miles) in riparian zone per ecobasin (sq. miles)

*Methodology-* Same methodology as measuring the road density except the measurement was taken inside the riparian zones in each ecobasin. Units were expressed as the total number of miles of roads within the total square miles of riparian area for each Ecobasin.

Crossing Density - Number of stream-roads intersections (points) per ecobasin (sq. miles)

*Methodology-* Stream layer (line features) was intersected to the road layer (line features); at every intersection of a stream and a road line feature, programmatically generated a point. Such intersection points were counted for each ecobasin as number of stream-road intersections. Units were expressed as the total number of crossings per square mile of Ecobasin.

Ecobasin Forested- Percent forest present inside each ecobasin

*Methodology-* Classified NLCD dataset was used; based upon the ecobasins spatial location land cover was mapped in percentage. 'Tabulate Areas' function was used in ESRI ArcView software. As a result the function returned % contribution of each class from the NLCD dataset for each ecobasin.

Percent forest in Riparian zone- Percent forest present inside the riparian zone in each ecobasin

*Methodology-* Same methodology as measuring Forested- % forest present inside each ecobasin except the forest cover was mapped inside the riparian zones (100 meters).



## APPENDIX 5.1 REFERENCES AND LITERATURE CITED

- Abell, R. A. 2000. Freshwater ecoregions of North America: a conservation assessment (Vol. 2). Island Press.
- Adams, R., E. Kluender, and L. Lewis. 2013. Movements, habitat use, and reproduction of alligator gar in the Fourche LaFave River. State Wildlife Grant T31-02 Final Report. 76 pp.
- Adams, S. R., B. S. Williams, M. D. Schroeder, and R. L. Clark 2007. Abundance and distribution of fishes in riparian wetlands of the Arkansas River. Final report submitted to the Arkansas Game and Fish Commission. University of Central Arkansas, Conway.
- Ahlstedt, S.A.; Jenkinson, J.J. 1987. Distribution and abundance of *Potamilus capax* and other freshwater mussels in the St. Francis River system, Arkansas and Missouri. Final report for Memphis District, U.S. Army Corps of Engineers. 67 p. + field notes.
- Ahlstedt, S.A.; Jenkinson, J.J. 1991. Distribution and abundance of *Potamilus capax* and other freshwater mussels in the St. Francis River system, Arkansas and Missouri, U.S.A. *Walkerana* 5(14):225-261.
- Albritton, J.B.L. 1981. A taxonomic survey of the amphibians and reptiles of Bradley County, Arkansas. M.S. Thesis. Northeast Louisiana Univ., Monroe. 103 pp.
- Allen, R. and D. B. Burt. 2014. Vegetative characteristics of Bachman's sparrow habitat in the West Gulf Coastal Plain. *Southeastern Naturalist* 13:41-51.
- Allen, R. T., & Carlton, C. E. 1988. Two new *Scaphinotus* from Arkansas with notes on other Arkansas species (Coleoptera: Carabidae: Cychrini). *Journal of the New York Entomological Society*, 129-139.
- Allen, R. T., Carlton, C. E., & Tedder, S. A. 1988. A New Species of *Acalypta* (Hemiptera, Tingidae) from Arkansas. *Journal of the Kansas Entomological Society*, 126-130.
- Anders, A.D.; Faaborg J.; Thompson, F.R., III. 1998. Postfledging Dispersal, Habitat Use, Home-Range Size of Juvenile Wood Thrushes. *Auk* 115:349-358 pp.
- Anderson, J.D. 1965. *Ambystoma annulatum*. *Cat. Amer. Amphib. Rept.* 19.1-19.2.
- Anderson, P. 1965. *The Reptiles of Missouri*. Univ. Missouri Press, Columbia, 330 pp.
- Anich, Nicholas M., Thomas J. Benson, Jeremy D. Brown, Carolina Roa, James C. Bednarz, R. E. Brown and J. G. Dickson. 2010. Swainson's Warbler (*Limnothlypis swainsonii*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the *Birds of North America Online*: <http://bna.birds.cornell.edu/bna/species/126> doi:10.2173/bna.126
- Ann and, E.M.; Thompson, F.R., III. 1997. Forest bird response to regeneration practices in central hardwood forests. *Journal of Wildlife Management*. 61(1): 159-171.

Anthony, C.D. 1993. Recognition of conspecific odors by *Plethodon caddoensis* and *P. ouachitae*. *Copeia* 1993:1028-1033.

Anthony, C.D., Wicknick, J.A.; Jaeger, R.G. 2002. Site tenacity and homing in the Rich Mountain salamander, *Plethodon ouachitae* (Caudata: Plethodontidae). *Southwestern Naturalist*. 47:401-408.

Anthony, C.D.; Mendelson J.R., III; Simons, R.R. 1994. Differential parasitism by sex on plethodontid salamanders and histological evidence for structural damage to the nasolabial groove. *American Midland Naturalist*. 132:302-307.

Anthony, C.D.; Wicknick, J.A. 1993. Aggressive interactions and chemical communication between adult and juvenile salamanders. *Journal of Herpetology*. 27:261-264.

Arkansas Audubon Society. 2012. Arkansas bird records database. Version 12.1 URL: [http://www.arbirds.org/aas\\_dbase.html](http://www.arbirds.org/aas_dbase.html).

Arkansas Department of Pollution Control and Ecology (ADPCE). 1987. Physical, chemical, and biological characteristics of least-disturbed reference streams in Arkansas' ecoregions. Volume I: data compilation. State of Arkansas, Arkansas Dept. of Pollution

Arkansas Freshwater Mollusk Council. Davidson, C.L., J.L. Harris, A.D. Christian, M.Fuhr, W.R. Posey. 28 September 2004. Mussel Species Status/Habitat Peer Review.

Arkansas Freshwater Mollusk Council. Posey, W. R., J.L. Harris, C.L. Davidson, A.D. Christian M.Fuhr. 19 November 2004. Mussel Species Status/Habitat Peer Review.

Arkansas Freshwater Mollusk Council. Posey, W. R., J.L. Harris, C.L. Davidson, A.D. Christian, M. Fuhr. 15 December 2004. Mussel Species Status/Habitat Peer Review.

Arkansas Freshwater Mollusk Council. Posey, W. R., J.L. Harris, C.L. Davidson, A.D. Christian, M. Fuhr. 25 January 2005. Mussel Species Status/Habitat Peer Review.

Arkansas Game and Fish Commission (AGFC). 1991-1999. Annual mussel harvest reports. Arkansas Game and Fish Commission, Little Rock.

Arkansas Highway and Transportation Department (AHTD). 1984. Relocation of the pink mucket pearly mussel (*Lampsilis orbiculata*) in the Spring River near Ravenden, Lawrence County, Arkansas. Report submitted to U.S. Fish and Wildlife Service

Arkansas Highway and Transportation Department (AHTD). 1987. Survey of mussels (Pelecypoda: Unionidae) in the White River at the proposed Arkansas Highway 59 bridge near Guion, Arkansas. Environmental Division, Little Rock. 8 pp.

Arkansas Highway and Transportation Department (AHTD). 1989. Relocation of the Arkansas fatmucket, *Lampsilis powelli* (Lea, 1852) at the Arkansas Highway 291 bridge, Saline River, Saline-Grant counties, Arkansas. Environmental Division, Little Rock. 9 pp.

Arkansas Highway and Transportation Department (AHTD). 1994. Biological assessment of the Arkansas fatmucket (*Lampsilis powelli*) at the Arkansas Highway 84 bridge, Clark County, Arkansas. Environmental Division, Little Rock. 9 pp. + appendix.

Arkansas Natural Heritage Inventory (ANHI). 2003. Arkansas element of occurrence records.

Artman, V. L., & Downhower, J. F. 2003. Wood Thrush (*Hylocichla mustelina*) nesting ecology in relation to prescribed burning of mixed-oak forest in Ohio. *The Auk*, 120(3), 874-882.

Association of Fish and Wildlife Agencies, Teaming With Wildlife Committee, State Wildlife Action Plan (SWAP) Best Practices Working Group. 2012. Best Practices for State Wildlife Action Plans—Voluntary Guidance to States for Revision and Implementation. Washington (DC): Association of Fish and Wildlife Agencies. 80 pages.

Atwill, R.A.; Trauth, S.E. 1988. Mandibular dentition in six species of salamanders, genus *Plethodon* (Caudata: Plethodontidae), from Arkansas using scanning electron microscopy. *Proceedings of the Arkansas Academy of Science*. 42: 24-25.

Avery, M. L. 2013. Rusty Blackbird (*Euphagus carolinus*). *The Birds of North America Online*. Cornell Lab of Ornithology, Ithaca, NY. Available: <http://bna.birds.cornell.edu/bna/species/200>. [accessed: January 2014].

Bacon, E.J.; Anderson, Z.M. 1976. Distributional records of amphibians and reptiles from the Coastal Plain of Arkansas. *Proceedings of the Arkansas Academy of Science*. 30:14-15.

Bader, Troy J. and James C. Bednarz. 2011 Parental Care and Diet of Mississippi Kites (*Ictinia mississippiensis*) in Eastern Arkansas. *Journal of Raptor Research* 45:2, 109-118.

Baerg, W.J. 1927. Summer birds of Mount Magazine, Arkansas. Research Paper No. 70, Journal Series, University of Arkansas. Fayetteville, AR.

Baker, Robert J. and Claud M. Ward. 1967. Distribution of bats in southeastern Arkansas. *Journal of Mammalogy*. 48(1):130-132.

Ball, S. K. 1980. Ecology and distribution of herpetofauna on the Red River and associated Oxbow lakes from Index, Arkansas to Shreveport, Louisiana. M.S. Thesis. Henderson State Univ., Arkadelphia, Arkansas. 30 pp.

Baltosser, W. 2007. Flitting with disaster: humans and habitat are keys to our state butterfly's future. *Arkansas Wildlife*, 38, 6-11.

Baltosser, W. H. 2008. Distribution and status of the Arogos Skipper (*Atrytone arogos*) in Arkansas. Report for the Arkansas Natural Heritage Commission.

Baltosser, W. H. 2009. Arogos Skipper (*Atrytone arogos*) inventories (select tallgrass prairies within the Arkansas River Valley Ecoregion). Report for the Arkansas Natural Heritage Commission.

Baltosser, W. H. 2010. Arogos Skipper (*Atrytone arogos*) and Frosted Elfin (*Callophrys irus*) surveys: mid-summer and fall 2009 and entire 2010 season. Report for the Arkansas Natural Heritage Commission.

Baltosser, W.H., D.C. Rudolph, C.A. Ely, and S.M. Scheiman. 2015. Arkansas skippers and butterflies (Lepidoptera) of concern: Information for consideration when updating the Wildlife Action Plan. Unpl. Report.

Bannor, B. K., & Kiviat, E. 2002. Common gallinule (*Gallinula galeata*). *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology, 684.

- Barnett, J., E. Brinkman, L. Holt, C. Wicker, and R. Campbell. 2011. Arkansas Alligator Gar Management Plan. Arkansas Game and Fish Commission report. 41 pp.
- Barr, T. C. 1974. The eyeless beetles of the genus *Arianops* Brendel (Coleoptera, Pselaphidae). American Museum of Natural History.
- Bates, J.M.; Dennis S.D. 1983. Mussel (naiad) survey: St. Francis, White, and Cache rivers, Arkansas and Missouri. Final Report (Contract No. DACW66-78-C-0147), U.S. Army Corps of Engineers, Memphis District. 89 pp.
- Bean, P. T., C. S. Williams, P. H. Diaz, and T. H. Bonner. 2010. Habitat associations, life history, and diet of the blackspot shiner, *Notropis atrocaudalis*. *Southeastern Naturalist* 9(4):673-686.
- Bechtoldt, C. L. AND P. C. Stouffer. 2005. Home-range size, response to fire, and habitat preferences of wintering Henslow's Sparrows. *Wilson Bulletin* 117:211-225.
- Bent, A.C. 1989. Life histories of the North American cuckoos, goatsuckers, hummingbirds, and their allies. Dover Publications, Inc. New York. 334p.
- Benz, G.W., Clark, Joseph D., and M.J. Harvey. 1997. Imperiled mammalian fauna of aquatic ecosystems in the southeast: A management perspective. George W. and D.E. Collins. *Aquatic fauna in peril: The Southeastern Perspective*. Decatur, GA: Southeast Aquatic Res. Inst. Special Pub. 1.
- Bildstein, K. L., & Meyer, K. 2000. Sharp-shinned Hawk (*Accipiter striatus*). *The Birds of North America*, (482), 28.
- Bishop, S.C. 1943. Handbook of Salamanders. Comstock Publ. Co., Ithaca, New York. 555 pp.
- Black, J.D. 1934. *Myotis grisescens* and *Myotis sodalis* in Arkansas. *Journal of Mammalogy*. 13:67-68.
- Black, J.D. 1936. Mammals of northwestern Arkansas. *Journal of Mammalogy*. 17(1):29-35.
- Black, J.D. and S.C. Dellinger. 1938. Herpetology of Arkansas. Part Two: The amphibians. *Occ. Pap. Univ. Arkansas Mus.* No. 2, 30 pp.
- Black, J.H. and G. Sievert. 1989. *A Field Guide to Amphibians of Oklahoma*. Oklahoma Department of Wildlife Conservation, Oklahoma City. 80 pp.
- Blair, A.P. 1957. A comparison of living *Plethodon ouachitae* and *P. caddoensis*. *Copeia* 1957:47-48.
- Blair, A.P. and H.L. Lindsay. 1965. Color pattern variation and distribution of two large *Plethodon* salamanders endemic to the Ouachita Mountains of Oklahoma and Arkansas. *Copeia* 1965:331-335.
- Bleakney, S. and F. Cook. 1957. Additional records of the four-toed salamander, *Hemidactylium scutatum*, from Nova Scotia. *Copeia* 1957:142-143.
- Bonati, R.L. 1980. The amphibians and reptiles of northwest Arkansas: a report on their distribution and abundance. M.S. Thesis. Univ. Arkansas, Fayetteville. 165 pp.

- Bonett, R. M. and P. T. Chippindale. 2004. Speciation, phylogeography, and evolution of life history and morphology in plethodontid salamanders of the *Eurycea multiplicata* complex. *Mol. Ecol.* 13:1189–1203.
- Bonett, R. M. and P. T. Chippindale. 2006. Streambed microstructure predicts evolution of development and life history mode in the plethodontid salamander *Eurycea tynnerensis*. *BMC Biol.* 4:6.
- Bouchard, R.W.; Robison, H.W. 1980. An inventory of the decapod crustaceans (crayfishes and shrimps) of Arkansas with a discussion of their habitats. *Proceedings of the Arkansas Academy of Science.* 34:22-30.
- Bouchard, RW. , and Henry W. Robison 1980. An inventory of the Decapod crustaceans (crayfishes and shrimps) of Arkansas, with a discussion of their habitats. *Proceedings of the Arkansas Academy of Science.* 34:22-30.
- Bouldin, J., W.R. Posey II and J.L. Harris. 2013. Status Survey of Ouachita Rock Pocketbook, *Arkansia wheeleri* Ortmann and Walker 1912, Scaleshell, *Leptodea leptodon* (Rafinesque 1820), and Rabbitsfoot, *Quadrula c. cylindrica* (Say 1817), in the Little River Basin, Arkansas. Final Report submitted to AGFC. 30 pp.
- Boves, T.J., D.A. Buehler, J. Sheehan, P.B. Wood, A.D. Rodewald, J.L. Larkin, P.D. Keyser, F.L. Newell, G.A. George, M.H. Bakermans, A. Evans, T.A. Beachy, M.E. McDermott, K.A. Perkins, M. Wood, and T.B. Wigley. 2013a. Emulating natural disturbances for declining late-successional species: A case study of the consequences for cerulean warblers (*Setophaga cerulea*). *PLoS ONE* 8: e52107.
- Boves, T.J., D.A. Buehler, J. Sheehan, P.B. Wood, A.D. Rodewald, J.L. Larkin, P.D. Keyser, F.L. Newell, and A. Evans, G.A. George, and T.B. Wigley. 2013b. Spatial variation in breeding habitat selection by Cerulean Warblers throughout the Appalachian Mountains. *Auk* 130:46-59.
- Boyd, C.E.; Vickers, D.H. 1963. Distribution of some Mississippi amphibians and reptiles. *Herpetologica* 19:202-206.
- Brack, Virgil Jr.; LaVal, Richard K. 1985. Food habits of the Indiana bat in Missouri. *Journal of Mammalogy.* 66(2):308-315.
- Brack, Virgil W. 1983. The nonhibernating ecology of bats in Indiana with emphasis on the endangered Indiana bat, *Myotis sodalis*: Purdue University.
- Brady, John T. 1983. Use of dead trees by the endangered Indiana bat. Snag habitat management: Proceedings of the symposium; Northern Arizona University, Flagstaff. USDA Forest Service, General Technical Report RM-99. Pg 111-114.
- Bragg, A.N. 1942. Observations on the ecology and natural history of Anura. X. The breeding habits of *Pseudacris streckeri* Wright and Wright, in Oklahoma including a description of the eggs and tadpoles. *Wasmann Collector* 5:47-62.
- Brandebura, S.C., E. L. Pannkuk, and T.S. Risch. 2011. Indiana Bat (*Myotis sodalis*) Maternity Colonies in Arkansas. *Southeastern Naturalist* 10: 529-532.
- Brandebura, S.C., R.E. Medlin Jr., and T.S. Risch. 2006. New evidence for a maternity colony of the Indiana bat (*Myotis sodalis*) in the Delta of Arkansas. *Journal of the Arkansas Academy of Science* 60: 169-170.

Brandt, L., H. He, L. Iverson, F.R. Thompson III, P. Butler, S. Handler, M. Janowiak, P.D. Shannon, C. Swanston, M. Albrecht, R. Blume-Weaver, P. Deizman, J. DePuy, W.D. Dijak, G. Dinkel, S. Fei, D.T. Jones-Farrand, M. Leahy, S. Matthews, P. Nelson, B. Oberle, J. Perez, M. Peters, A. Prasad, J.E. Schneiderman, J. Shuey, A.B. Smith, C. Studyvin, J.M. Tirpak, J.W. Walk, W.J. Wang, L. Watts, D. Weigel, S. Westin. 2014. Central Hardwoods ecosystem vulnerability assessment and synthesis: a report from the Central Hardwoods Climate Change Response Framework project. Gen. Tech. Rep. NRS-124. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 254 p.

Branson, B.A. 1973. Significant pelecypod records from Oklahoma. *The Nautilus* 87(1):8-10.

Branson, B.A. 1982. The mussels (Unionacea: Bivalvia) of Oklahoma - Part 1 – Ambleminae. *Proc. Proceedings of the Oklahoma Academy of Science*. 62:38-45.

Branson, B.A. 1983. The mussels (Unionacea: Bivalvia) of Oklahoma - Part 2: The Unioninae, Pleurobemini and Anodontini. *Proceedings of the Oklahoma Academy of Science*. 63:49-59.

Branson, B.A. 1984. The mussels (Unionacea: Bivalvia) of Oklahoma - Part 3: Lampsilini. *Proc. Proceedings of the Oklahoma Academy of Science*. 64:20-36.

Brennan, L.A. 1991. How Can We Reverse the Northern Bobwhite Decline? *Wildlife Society Bulletin*. 19: 544–555.

Brennan, L.A. 1999. Northern Bobwhite (*Colinus virginianus*). *The Birds of North America*, No. 397. [Poole, A.; Gill, F., eds.]. *The Birds of North America, Inc.*, Philadelphia, PA.

Brewster, C. L., R. S. Sikes, and M. E. Gifford. 2013. Quantifying the cost of thermoregulation: thermal and energetic constraints on growth rates of hatchling lizards. *Functional Ecology* 27:490–497.

Brewster, C. L., R. S. Sikes, and M. E. Gifford. 2014. Body size and growth of the Eastern Collared Lizard (*Crotaphytus collaris*) in central Arkansas. *Herpetological Review* 45(4):580–583.

Briggler, J. T., K. A. Larson, and K. J. Irwin. 2008. Presence of the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) on hellbenders (*Cryptobranchus alleganiensis*) in the Ozark Highlands. *Herpetological Review* 39(4):443–444.

Brigham, R. M., Janet Ng, R. G. Poulin and S. D. Grindal. 2011. Common Nighthawk (*Chordeiles minor*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/213>

Briskie, J. V. [online]. 2009. Smith's Longspur (*Calcarius pictus*). In: *The Birds of North America Online* (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. <<http://bna.birds.cornell.edu/bnaproxy.birds.cornell.edu/bna/species/034>

Britzke, Eric R; Harvey, Michael J.; Loeb, Susan C. 2003. Indiana bat, *Myotis sodalis*, maternity roosts in the southern United States. *Southeastern Naturalist* 2(2):235-242.

Brown, A.V.; Brown, K.B. 1989. Stream inventory of *Lampsilis powelli* populations on national forest lands. A report to the U.S.D.A. Forest Service, Ouachita National Forest, Hot Springs. 28 p. + Appendices.

Brown, R.E.; Dickson, J.G., 1994. Swainson's Warbler (*Limnothlypis swainsonii*). The Birds of North America, No. 126 [Poole, A.; Gill, F., eds.]. Philadelphia: The Academy of Natural Sciences; Washington, DC. The American Ornithologists' Union.

Brown, W.S. 1983. Biology, status, and management of the timber rattlesnakes (*Crotalus horridus*): a guide for conservation. Soc. Study Amphib. Rept. Herpetol. Circ. No. 22, 78 pp.

Bruenderman, S.A., J.S. Faiman and A.C. Buchanan 2001. Survey for the Curtis pearly mussel, *Epioblasma florentina curtisi* (Utterback 1914) and other mussel species in Little Black River, Missouri. Final Report U.S. Fish and Wildlife Service. 23 pp.

Brussock, P.P., III; Brown, A.V. 1982. Selection of breeding ponds by the ringed salamander, *Ambystoma annulatum*. Proceedings of the Arkansas Academy of Science. 36:82-83.

Buchanan, T. M. 2005. Small fish species of Arkansas reservoirs. Journal of the Arkansas Academy of Science 59:26-42.

Buchanan, T. M., D. Wilson, L. G. Claybrook, and W. G. Layher. 2003. Fishes of the Red River in Arkansas. Journal of the Arkansas Academy of Science 57: 18-26.

Buchanan, T. M., W. G. Layher, C. T. McAllister, and H. W. Robison. 2012. The Alabama shad (*Alosa alabamae*: Clupeiformes: Clupeidae) in the White River, Arkansas. The Southwestern Naturalist 57(3):347-349.

Buchanan, T.M. 1985. Small fish species of Arkansas Reservoirs. Journal of the Arkansas Academy of Sciences. Vol. 59:26-43.

Budd and Kremetz 2011. Status and Distribution of Breeding Secretive Marshbirds in the Delta of Arkansas. Southeastern Naturalist 10(4):687-702.

Budd and Rowe 2013. An Update on the Status and Distribution of Secretive Marshbirds in the Delta of Arkansas. Unpublished document.

Buehler, D.A., P.B. Hamel, and T.J. Boves. Cerulean Warbler (*Setophaga cerulea*). 2013. The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, NY.

Bunch, Mary; Dye, Amy. 1998. Rafinesque's big-eared bat surveys and prelisting recovery: final report.

Burch, J., & Tottenham, J. 1980. North American freshwater snails: species list, ranges, and illustrations.—Walkerana, 3: 1-215. Ann Arbor, Mich.

Burkhead N. M., S. J. Walsh, B. J. Freeman, J. D. Williams 1997. Status and restoration of the Etowah River, and imperiled Southern Appalachian ecosystem. In: G. W. Benz, D. E. Collins (eds). Aquatic fauna in peril, the southeastern perspective Southeast Aquatic Research Institute, Lenz Design and Communication, Decatur, GA. pp 374-444

Burns & McDonnell, Inc. 1992. Distribution of the Arkansas fatmucket mussel (*Lampsilis powelli*) in the North Fork of the Saline River. Prepared for Hope Engineers, Benton, AR.

- Burns & McDonnell, Inc. 1992a. Report on surveys for the Arkansas fatmucket mussel. Prepared for Hope Engineers and the Saline County Rural Development Authority, Benton, AR.
- Burt, C.E. 1935. Further records of the ecology and distribution of amphibians and reptiles in the middle west. *American Midland Naturalist*. 16:311-336.
- Butcher, G.S., D.K. Niven, A.O. Panjabi, D.N. Pashley, and K.V. Rosenberg. 2007. WatchList: the 2007 WatchList for United States birds. *American Birds* 61:18-25. (16 October 2009).
- Butterfield, B.P.; Meshaka, W.E.; Trauth, S.E. 1989. Fecundity and egg mass size of the Illinois chorus frog, *Pseudacris streckeri illinoensis* (Hylidae), from northeastern Arkansas. *Southwestern Naturalist*. 34:556-657.
- Byrd, W.; Hanebrink, E.L. 1974. Geographic Distribution. *Rana areolata circulosa*. *Herpetol. Rev.* 5:69.
- Caldwell, J. M. 2011. Density, distribution, habitat use and the associated darter assemblage of the Ouachita darter in the upper Ouachita River, Arkansas. Master's thesis, Arkansas Tech University, Russellville. 113 pp.
- Call, R.E. 1895. A study of the Unionidae of Arkansas, with incidental references to their distribution in the Mississippi Valley. *Trans. Acad. Sci. St. Louis* 7:1-65.
- Callahan, Edward V. 1993. Indiana bat summer habitat requirements. Columbia, Missouri: University of Missouri-Columbia.
- Callahan, Edward V.; Drobney, Ronald D.; Clawson, Richard L. 1997. Selection of summer roosting sites by Indiana bats in Missouri. *Journal of Mammalogy*. 78(3):818-825.
- Carlton, C. E. and Cox, R. T. 1990. A new species of *Arianops* from Central Arkansas and biogeographic implications of the interior highlands *Arianops* species (Coleoptera: Pselaphidae). *The Coleopterists' Bulletin*, 365-371.
- Carr, A.F.; Goin, C.J. 1943. Neoteny in Florida salamanders. *Proc. Florida Acad. Sci.* 6:3740.
- Carrie, N.R. 1996. Swainson's Warblers Nesting in Early Seral Pine Forests in East Texas. *Wilson Bulletin*. 108(4): 802-804 pp.
- Carter, L. M., J. W. Jones, L. Berry, V. Burkett, J. F. Murley, J. Obeysekera, P. J. Schramm, and D. Wear. 2014: Ch. 17: Southeast and the Caribbean. *Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 396-417. doi:10.7930/JON-P22CB.
- Carter, Timothy C. 2003. Summer habitat use of roost trees by the endangered Indiana bat (*Myotis sodalis*) in the Shawnee National Forest of Southern Illinois. Southern Illinois University; Carbondale, Illinois.
- Carter, W.A. 1968. First record of *Hemidactylium scutatum* in Oklahoma. *Herpetologica* 24:328.



Ceas, P. A. and Page, L. M. 1997. Systematic studies of the *Etheostoma spectabile* complex (Percidae; subgenus *Oligocephalus*), with descriptions of four new species. *Copeia*, 496-522.

Chiavacci, S.J., Bader, T.J., St. Pierre, A.M., Bednarz, J.C. and Rowe, K.L. 2011. Reproductive Status of Swallow-Tailed Kites in East-Central Arkansas. *The Wilson Journal of Ornithology*, 123(1):97-101.

Christian, A.D. 1995. Analysis of the commercial mussel beds in the Cache and White rivers in Arkansas. M.S. thesis, Dept. Biological Sciences, Arkansas State University, State University, AR. 197 p.

Christian, A.D. and J.L. Harris 2004. Status Survey for the Pink Mucket (*Lampsilis abrupta* (Say, 1831)), Winged Mapleleaf (*Quadrula fragosa* (Conrad, 1835)) and Ouachita Rock Pocketbook (*Arkansia wheeleri* Ortmann and Walker, 1912) in the Little Missouri River, Arkansas. Final Report. 108 pp.

Cink, C. L. (2002). Whip-poor-will: *Caprimulgus Vociferus*. American Ornithologists' Union.

Cink, C.L.; Collins, C.T. 2002. Chimney Swift (*Chaetura pelagica*). *The Birds of North America*, No. 646 [Poole, A.; Gill, F., eds.]. *The Birds of North America*, Inc., Philadelphia, PA.

Clark, Brenda S.; Bowles, John B.; Clark, Bryon K. 1987b. Summer occurrence of the Indiana bat, Keen's Myotis, Evening Bat, Silver-haired Bat and Eastern Pipistrelle in Iowa. *Proceedings of the Iowa Academy of Science*. 94(3):89-93.

Clark, Bryon K.; Bowles, John B.; Clark, Brenda S. 1987a. Summer status of the endangered Indiana bat in Iowa. *American Midland Naturalist*. 118(1):32-39.

Clark, Donald R. 1981. Bats and environmental contaminants: a review. Washington, DC: USDI, Fish and Wildlife Service. Special Scientific Report--Wildlife No. 235.

Clark, Joseph D.; Harvey, M.J. 1986. An investigation of the summer distribution and status of Indiana bats in Missouri. Federal Aid Project W-13-R-50 (1996).

Clark, Joseph D.; Harvey, M.J. 1996. Indiana bat summer habitat patterns in Missouri. Federal Aid Project W-13-R-50 (1996).

Clark, Joseph D.; Harvey, M.J. 1997. Imperiled mammalian fauna of aquatic ecosystems in the southeast: A management perspective. Benz, George W. and D.E. Collins. *Aquatic fauna in peril: The Southeastern Perspective*. Decatur, GA: Southeast Aquatic Research

Clark, S. J. 2006. Relation of floodplain lake fish communities and river connectivity in the lower White River, Arkansas. Master's thesis, Arkansas Tech University, Russellville. 162 pages.

Clarke, A.H. 1987. Status survey of *Lampsilis streckeri* Frierson (1927) and *Arcidens wheeleri* (Ortmann and Walker, 1912). Ecosearch, Inc., Final report to the U.S. Fish and Wildlife Service, Jackson, MS. 24 p + Appendix.

Clarke, A.H. and B.K. Obermeyer. 1996. A survey of rare and possibly endangered freshwater mussels (Mollusca: Unionidae) of the Spring River basin (with observations on the Elk River basin), in Missouri. A report prepared by ECOSEARCH, Inc. for the U.S. Fish and Wildlife Service.

- Clawson, R.L. 1982. The status, distribution, and habitat preferences of the birds of Missouri. Missouri Department of Conservation Terrestrial Series, No. 11.
- Coker, R.E. 1919. Fresh-water mussels and mussel industries of the United States. Bull. U. S. Bur. Fish. 36:13-89.
- Collins, J.T. 1974. Amphibians and Reptiles in Kansas. 1st Ed. Univ. Kansas Mus. Nat. Hist. Publ. Edu. Ser. 1:1-283.
- Collins, J.T. 1991. Viewpoint: a new taxonomic arrangement for some North American amphibians and reptiles. Herpetol. Rev. 22:4243.
- Collins, J.T. 1993. Amphibians and Reptiles in Kansas. 3rd Ed. Univ. Kansas Mus. Nat. Hist. Publ. Edu. Ser. No. 13:1-397.
- Collins, P.W. 1999. Rufous-Crowned Sparrow (*Aimophila ruficeps*). The Birds of North America, No. 472 [Poole, A.; Gill, F., eds.] The Birds of North America, Inc., Philadelphia, PA.
- Conant, R. and J.T. Collins. 1998. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. 3rd Ed. Expanded. Houghton Mifflin Co., Boston. 616 pp.
- Conant, R.; Collins, J.T. 1991. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. 3rd Ed. Houghton Mifflin Co., Boston. 450 pp.
- Conner, R. N., Johnson, R. H., Rudolph, D. C., & Saenz, D. (2003). Do red-cockaded woodpeckers select cavity trees based on chemical composition of pine resin?. The Wilson Bulletin, 115(4), 397-402.
- Conner, R.N., Rudolph, D.C., and J.R. Walters. 2001. The red-cockaded woodpecker: surviving in a fire-maintained ecosystem. University of Texas Press, Austin, TX. 363p.
- Connior, M.B. and T.S. Risch. 2009a. Live trap for pocket gophers. Southwestern Naturalist 54: 100-103.
- Connior, M.B. and T.S. Risch. 2009b. Benefits of subcutaneous implantation of radiotransmitters in pocket gophers. Southwestern Naturalist 54: 214-216.
- Connior, M.B. and T.S. Risch. 2010. Home range and survival of the Ozark pocket gopher (*Geomys bursarius ozarkensis*). American Midland Naturalist 164:80-90.
- Connior, M.B., A.A. Kershen, R.E. Medlin, Jr., D.A. Elrod, D.B. Sasse and T.S. Risch. 2010. Distribution and habitat attributes of an endemic subspecies of pocket gopher. American Midland Naturalist 164: 217-229.
- Connior, M.B., I. Guenther, T. Risch, and S. Trauth. 2008. Amphibian, Reptile, and Small Mammal Associates of Ozark Pocket Gopher Habitat in IZARD County, Arkansas. Journal of the Arkansas Academy of Science 62: 45-51.
- Connior, M.B., R. Tumblison, and H.W. Robison. 2011. New records and notes on the natural history of vertebrates from Arkansas. Journal of the Arkansas Academy of Science 65: 160-165.

- Connior, M.B., R. Tumblison, and H.W. Robison. 2012. New vertebrate records and natural history notes from Arkansas. *Journal of the Arkansas Academy of Science* 66: 180-184.
- Conroy, M. J., M. W. Miller, and J. E. Hines. 2002. Identification and synthetic modeling of factors affecting American black duck populations. *Wildlife Monographs* 150.
- Cook, C. and J.J. Daigle. 1985. *Ophiogomphus westfalli* spec. nov. from the Ozark region of Arkansas and Missouri, with a key to the *Ophiogomphus* species of eastern North America (Anisoptera: Gomphidae). *Odonatologica*, 14(2), 89-99.
- Cooper, T.R. (Ed.). 2007. Henslow's Sparrow Conservation Action Plan Workshop Summary: March 7-8, 2007. Bloomington, MN. Unpublished Report.
- Cope, E.D. 1886. Synonymic list of the North American species of *Bufo* and *Rana*, with descriptions of some new species of *Batrachia*, from specimens in the National Museum. *Proc. Amer. Philos. Soc.* 23:514-526.
- Cope, E.D. 1887. The hyoid structure in the ambystomid salamanders. *American Midland Naturalist*. 21:87-88.
- Cope, E.D. 1889. The batrachia of North America. *Bull. U. S. Nat. Mus.* 34:1-525.
- Cope, J.B.; Humphrey, S.R. 1977. Spring and autumn swarming behavior in the Indiana bat, *Myotis sodalis*. *Journal of Mammalogy*. 58(1):93-95.
- Cope, James B.; Richter, Andreas R.; Mills, Richard S. 1973. A summer concentration of the Indiana bat, *Myotis sodalis*, in Wayne County, Indiana. *Indiana Academy of Science*. 83:482-484.
- Cope, James B.; Whitaker, John O. Jr.; Gummer, Sherry L. 1991. Duration of bat colonies in Indiana. *Proceedings of the Indiana Academy of Science*. 99:199-201.
- Costa, R.; Stevens, E.E.; McKay N.T.; Engstrom, R.T. 1996. A bibliographic resource for the red-cockaded woodpecker. National Fish and Wildlife Foundation, Washington, D.C. 105p.
- Cox, C. A. 2014. Population demographics and upstream migration of American eels in the Ouachita, White, and Arkansas Rivers. Masters thesis, University of Central Arkansas, Conway, 123 pages.
- Cox, W.A., F. R. Thompson III, and J. L. Reidy. 2013b. The Effects of Temperature on Nest Predation by Mammals, Birds, and Snakes. *The Auk*: October 2013, Vol. 130, No. 4, pp. 784-790.
- Cox, W.A., F.R. Thompson, J.L. Reidy, and J. Faaborg. 2013a. Temperature can interact with landscape factors to affect songbird productivity. *Global Change Biology* 19(4): 1365-2486
- Crandall, K.A. & Johnson, D. 2010. *Procambarus regalis*. The IUCN Red List of Threatened Species. Version 2015.1. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 June 2015.

Cross, F.B. and J.T. Collins. 1995. Fish in Kansas, second edition. University of Kansas Museum of Natural History Public Education Series Number 14, Lawrence, Kansas

Crump, B.G. 18 June 2003. Species Viability Evaluation (SVE) Species List Compilation from ANHI, OKHI, OOHA, TNC, ONF PETS, Endemics and locally rare species lists.

Crump, B.G.; Duzan, S.; Trauth, S.E. 16 July 2003P. SVE Amphibian/Reptile Species Status/Habitat Peer Review.

Crump, B.G.; Harris, F; Trenchi, P. 15 July 2003N. SVE Vegetation Structure Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Clingenpeel, J.A.; Fryar, R. 24 June 2003C. SVE Conservation/Habitat Targets. Peer Review Meeting.

Crump, B.G.; Holmes, J.; Davis, J.; Sasse, B.; Saugey, D.A.; Miller, D.A.; Cochran, S.; Odegard, R.; Perry, R. 7 July 2003H (PM). SVE Mammal Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Harris, J.L.; Clingenpeel, J.A.; Golden, R. 10 July 2003L. SVE Mussel Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Hooks, S.L. 25 June 2003D. SVE Conservation/Habitat Targets. Peer Review Meeting.

Crump, B.G.; Holmes, J.; Hooks, S.L.; Brod, M. 23 June 2003B. SVE Plant Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Hooks, S.L.; Finzer, R.; Fryar, R.; Trenchi, P. 9 July 2003K. SVE Fire Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Hooks, S.L.; Simon, S. 8 July 2003J. SVE Plant Species/Fire Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Hooks, S.L.; Trenchi, P. 11 July 2003M. SVE Vegetation Structure Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Leftwich, K.; Clingenpeel, J.A.; Golden, R. 21 July 2003Q. SVE Aquatics Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Leftwich, K.; Clingenpeel, J.A.; Posey, W.R.; Trenchi, P. 22 July 2003R. SVE Aquatics Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Robison, H.W.; Golden, R. 26 June 2003E. SVE Fish/Crayfish Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Robison, H.W.; Golden, R. 7 July 2003G (AM). SVE Fish/Crayfish Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Robison, H.W.; Harris, J.L.; Posey, B.R. 24 August 2003T. SVE Crayfish, Fish & Mussel Species Status/Habitat Peer Review.

Crump, B.G.; Holmes, J.; Trauth, S.E. 27 June 2003F. SVE Amphibian/Reptile Species Status/Habitat Peer Review.

Crump, B.G.; Little, A.; Golden, R.; Grippo, R.; Gagen, C.J.; Stoeckel, J.; Filipek, S.; 25 July 2003S. AR AFS SVE Fish Species Status/Habitat Peer Review.

Crump, B.G.; Mersmann, T.; Johnston, J.; Holmes, J.; Pell W.; Hooks, S.L.; Osborne, S.; Duzan, S. 20 June 2003A. SVE Methodology Review Conference Call.

Cummings, K.S.; Mayer C.A. 1992. Field guide to freshwater mussels of the midwest. Illinois Natural History Survey Manual 5.

Dane, F.; Hawkins, L.K.; Huang, Hongwen. 1999. Genetic Population Structure of *Castenea pumila* var. *ozarkensis*. J. Amer. Hort. Sci. 124(6):666-670.

Davidson, C.L. 1997. Analysis of mussel beds in the Little Missouri and Saline rivers, Blue Mountain, Ozark and Dardenelle lakes, Arkansas. M.S. thesis, Dept. Biological Sciences, Arkansas State University, State University, AR. 156 p.

Davidson, C.L. and S.A. Clem 2004. The freshwater mussel (Bivalvia:Unionacea) resources in a selected segment of the Saline River: Location, Species composition and status of mussel beds. Addendum 2 Arkansas Highway 15 to Felsenthal National Wildlife Refuge. Final Report to AGFC. 26 pp.

Davidson, C.L.; Gosse, D. 2001. Status and distribution of freshwater mussels (Bivalvia: Unionacea) inhabiting the Saline River/Holly Creek Bottoms area, Saline County, Arkansas. Prepared for the Nature Conservancy in cooperation with ALCOA. Little Rock,

Davidson, C.L.; Harp, G.L.; Harris, J.L. 1997. A survey of Mollusca (Bivalvia: Unionacea) inhabiting Myatt Creek, Fulton County, Arkansas. Proceedings of the Arkansas Academy of Science. 51:193-196.

Davidson, C.L.; Stoeckel, J.N.; Hilburn, C. 2000. Location and notes on freshwater mussels (Bivalvia: Unionacea) inhabiting Big Piney Creek within the Ozark-St. Francis National Forest, Arkansas. Annual Proc. Texas Chapter, American Fisheries Soc. 22:19-2

Davis Jr, W. E. 1993. Black-crowned Night Heron. A. Poole and F. Gill, editors. The Birds of North America, (74).

Davis, B.J.; Hollenback, H. 1978. New records for the bird-voiced treefrog, *Hyla avivoca* (Hylidae), from Arkansas and Louisiana. Southwestern Naturalist. 23:161-162.

Davis, Stephen K., Mark B. Robbins and Brenda C. Dale. 2014. Sprague's Pipit (*Anthus spragueii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:<http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/439>

Davis, Wayne H. and William Z. Lidicker. 1955. *Myotis subulatus leibii* in Missouri. Journal of Mammalogy. 36(2):288-289.

Davis, Wayne H.; Lidicker, William Z. Jr.; Sealander, John A., Jr. 1955. *Myotis austroriparius* in Arkansas. Journal of Mammalogy. 36(2):288.

- Dechant, J. A., M. L. Sondreal, D. H. Johnson, L. D. Igl, C. M. Goldade, B. D. Parkin, and B. R. Euliss. 2003. Effects of management practices on grassland birds: Sedge Wren. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/literatr/grasbird/sewr/sewr.htm> (Version 12DEC2003)
- DeGraaf, R.M. 1991. Effects of Even-Aged Management on Forest Birds at Northern Hardwood Stand Interfaces. *Forest Ecology and Management*; Vol. 47, Nos.1/4: 95-110.
- Dellinger, R. L., Wood, P. B., Keyser, P. D., & Seidel, G. 2007. Habitat partitioning of four sympatric thrush species at three spatial scales on a managed forest in West Virginia. *The Auk*, 124(4), 1425-1438.
- Dellinger, S.C.; Black, J.D. 1938. Herpetology of Arkansas: part one, the reptiles. *Occas. Pap. Univ. Arkansas Mus.* No. 1: 1-47.
- Devers, P. K., and B. Collins. 2011. Conservation action plan for the American black duck, First Edition. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Laurel, MD, USA.
- Dickson, J.G.; Conner, R.N.; Williamson, J.H. 1983. Snag Retention Increases Bird Use of a Clear-Cut. *Journal of Wildlife Management* 47(3): 799-803.
- Dillman, C. B., B. K. Wagner, and R. M. Wood. 2007. Systematics of species of special concern in the genus *Orconectes* from the Ozark Highlands - case studies from species pairs: *Orconectes neglectus neglectus*, *Orconectes neglectus chaenodactylus* and *Orconectes macrus*, *Orconectes nana*. State Wildlife Grant Project T20-2 Final Report to Arkansas Game and Fish Commission, Little Rock, Arkansas. 68 pp.
- Dillman, C. B., B. K. Wagner, and R. M. Wood. 2010. Phylogenetic Estimation of Species Limits in Dwarf Crayfishes from the Ozarks: *Orconectes nana* and *Orconectes macrus* (Decapoda:Cambaridae). *Southeastern Naturalist*. Volume 9, Special Issue 3:185-198.
- Dimmick, R.W.; Gudlin, M.J.; McKenzie, D.F. 2002. The Northern Bobwhite Conservation Initiative. Miscellaneous publication of the Southeastern Association of Fish and Wildlife Agencies, South Carolina. 96.
- Dinkelacker, S. A. and N. L. Hilzinger. 2009. Ecology of the Western Chicken Turtle (*Deirochelys reticularia miaria*) in the Arkansas valley: development of survey and monitoring protocols for a rare and secretive species. Final report to Arkansas Game and Fish Commission. 29 pp.
- Dinkelacker, S. A. and N. L. Hilzinger. 2014. Demographic and reproductive traits of Western Chicken Turtles, *Deirochelys reticularia miaria*, in central Arkansas. *Journal of Herpetology* 48(4):439-444.
- Dodd, L.E. and M.J. Lacki. 2007. Prey consumed by *Corynorhinus townsendii ingens* in the Ozark Mountain region. *Acta Chiropterologica*, 9: 451-461.
- Dodd, L.E., M.J. Lacki, and L.K. Rieske. 2008. Variation in moth occurrence and implications for foraging habitat of Ozark big-eared bats. *Forest Ecology and Management* 255: 3866-3872.

- Dodd, L.E., M.J. Lacki, and L.K. Rieske. 2011. Habitat Associations of Lepidoptera in the Ozark Mountains of Arkansas. *Journal of the Kansas Entomological Society* 84: 271–284.
- Donabauer, S. B., J. N. Stoeckel, and J. W. Quinn. 2009. Exploitation, survival, reproduction, and habitat use of gravid female paddlefish in Ozark Lake, Arkansas River, Arkansas. *American Fisheries Society Symposium* 66:123-140.
- Douglas, N. H. 1972. *Noturus taylori*, a new species of madtom (Pisces, Ictaluridae) from the Caddo River, southwest Arkansas. *Copeia*, 785-789.
- Dowling, H.G. 1956. Geographic relations of Ozarkian amphibians and reptiles. *Southwestern Naturalist*. 1:174-189.
- Dowling, H.G. 1957. A review of the amphibians and reptiles of Arkansas. *Occas. Pap. Univ. Arkansas Mus. No. 3*. 51 pp.
- Driver, L. J., and G. L. Adams. 2013. Life history and spawning behavior of the western sand darter (*Ammocrypta clara*) in Northeast Arkansas. *The American Midland Naturalist* 170(2):199-212.
- Dukat, H. and D. D. Magoulick. 1999. Effects of predation on two species of stream-dwelling crayfish (*Orconectes marchandi* and *Cambarus hubbsi*) in pool and riffle habitats. *J. Ark. Acad. of Sci.* 53:45–49.
- Duncan, R.; Highton, R. 1979. Genetic relationships of the eastern large Plethodon of the Ouachita Mountains. *Copeia* 1979:95-110.
- Dundee, H.A. 1968. First records of the four-toed salamander, *Hemidactylium scutatum*, in Mississippi with comments on its disjunct distribution in Arkansas and Louisiana. *J. Herpetol.* 1:101-1 03.
- Dundee, H.A. and D.A. Rossman. 1989. *The Amphibians and Reptiles of Louisiana*. Louisiana State Univ. Press, Baton Rouge. 300 pp.
- Dunn, E.R. 1926. *The Salamanders of the Family Plethodontidae*. Smith College. Northampton, Massachusetts. 446 pp.
- Dunn, E.R. and A.E. Heinze. 1933. A new salamander from the Ouachita Mountains. *Copeia* 1933:121-122.
- Duzan, S.; Osborne, S.; Davis, J.; Kellner, C.; James, D.; Rideout, K.; Holliman, B.; Shepard, B. 26 June 2003. SVE Bird Species Status/Habitat Peer Review.
- Duzan, S.; Osborne, S.; Davis, J.; Kellner, C.; James, D.; Rideout, K.; Holliman, B.; Shepard, B. 9 July 2003A. SVE Bird Species Status/Habitat Peer Review.
- eBird. 2014. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed: December 17, 2014).
- Echelle, A. A., M. R. Schwemm, N. C. Lang, A. M. Simmons, P. J. Unmack, W. L. Fisher, and C.W. Hoagstrom. 2014. Molecular systematics and historical biogeography of the *Nocomis biguttatus* species group (Teleostei: Cyprinidae): nuclear and mitochondrial introgression and a cryptic Ozark species. *Molecular Phylogenetics and Evolution* 81:109-119.

- Echelle, A. A., M. R. Schwemm, N. J. Lang, J. S. Baker, R. M. Wood, T. J. Near, and W. L. Fisher. 2015. Molecular systematics of the least darter (Percidae: *Etheostoma microperca*): historical biogeography and conservation implications. *Copeia* 2015(1):87-98.
- Eckert, N.L. 2003. Reproductive Biology and Host Requirement Differences among Isolated Populations of *Cyprogenia aberti* (Conrad, 1850). M.S. Thesis, Missouri State University. 96 pp.
- Ecological Consultants, Inc. 1984. Handbook of the mussels of the St. Francis, White and Cache rivers, Arkansas and Missouri. Supplement to the Final Report (Contract No. DACW66-78-C-0147), U.S. Army Corps of Engineers, Memphis District. 62 pp.
- Elliot, W.R. 1994. Conservation of western Oklahoma bat caves. *Oklahoma Underground*. 17:44-53.
- Elrod, D. A., E. G. Zimmerman, P. D. Sudman, and G. A. Heidt. 2000. A new subspecies of pocket gopher (genus *GEOMYS*) from the Ozark Mountains of Arkansas with comments on its historical biogeography. *Journal of Mammalogy* 81:852-864
- Emel, S. L. and R. M. Bonett. 2011. Considering alternative life history modes and genetic divergence in conservation: a case study of the Oklahoma Salamander. *Conserv. Genet.* (2011) 12:1243–1259.
- Engel, James M. 1976. The Indiana bat, *Myotis sodalis*, a bibliography. Washington, DC: US Fish and Wildlife Service; Special Scientific Report--Wildlife No. 196.
- Erdle, S.Y.; Hobson, C.S. 2001. Current status and conservation strategy for the eastern small-footed *Myotis* (*Myotis leibii*). Richmond, VA: Virginia Department of Conservation and Recreation, Division of Natural Heritage; Natural Heritage Technical Repo
- Ernst, C.H. 1992. *Venomous Reptiles of North America*. Smithsonian Institution Press, Washington, O. C. 236 pp.
- Etnier, D. A. 1997. Jeopardized southeastern freshwater fishes: a search for causes. *Aquatic fauna in peril: the southeastern perspective*, 1, 87-104.
- Evans, K.E.; Kirkman, R.A. 1980. *Guide to Bird Habitats of the Ozark Plateau*. U. S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. Gen.Tech NC-68.
- Evans, M., Gow, E., Roth, R. R., Johnson, M. S., and Underwood, T. J. 2011. Wood thrush (*Hylocichla mustelina*). *The birds of North America*, (246).
- Federal Register 2010. Threatened status for shovelnose sturgeon under the similarity of appearance provisions of the endangered species act. Volume 75(169):53598-53606.
- Federal Register. 2011. 90-day finding on a Petition to List the American Eel as Threatened. Document Number 2011-25084. <https://federalregister.gov/a/2011-25084>
- Federal Register. 2013. 90-day finding on a Petition to List the Alabama Shad as Threatened or Endangered under the Endangered Species Act. Document Number 2013-22869. <https://federalregister.gov/a/2013-22869>
- Fesperman, W. 1986. Geographic Distribution. *Pseudacris streckeri streckeri*. *Herpetol. Rev.* 17:91.



- Finch, D.M. 1991. Population Ecology, Habitat Requirements, and Conservation of Neotropical Birds. GTR RM-205. Fort Collins, CO. U. S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 26p.
- Finch, D.M.; Stangel, P.W. 1993. Status and management of neotropical migratory birds. GTR RM-229. Fort Collins, CO. U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 422 p.
- Finnell, J.C.; Jenkins; R.M.; Hall, G.E. 1956. The fishery resources of the Little River system, McCurtain County, Oklahoma. Fish. Res. Lab. No. 55. Norman, OK. 82 p.
- Fitch, H.S. 1955. Habits and adaptations of the Great Plains skink (*Eumeces obsoletus*). Ecol. Monogr. 25:59-83.
- Fitch, H.S. 1985. Variation in clutch and litter size in New World reptiles. Univ. Kansas Mus. Nat. Hist. 76:1-76.
- Fitch, H.S.; Pisani, G.R. 1993. Life history traits of the western diamondback rattlesnake (*Crotalus atrox*) studied from roundup samples in Oklahoma. Univ. Kansas Mus. Nat. Hist. Occ. Pap. No. 156:1-24.
- Fitzgerald, J.A. 2000. Partners in Flight Bird Conservation plan for The Ozark/Ouachitas (Physiographic Area 19). 81p. ALLBIRDS
- Fitzpatrick, J.F., Jr. 1965. A new subspecies of the crawfish *Orconectes leptogonopodus* from the Ouachita River drainage in Arkansas. Tulane Studies in Zoology 12(3): 87-91.
- Fletcher M.D., J.D. Wilhide, and R.B. McAllister. 1991. Observations on a resident population of *Myotis lucifugus*, in Jackson county, Arkansas. Proceedings of the Arkansas Academy of Science 45: 123.
- Fletcher, Milford R. 1985. Endangered bat protection at Buffalo National River, Arkansas. Missouri Speleology. 25(1-4):147-150.
- Flinders, C. A., & Magoulick, D. D. (2003). Effects of stream permanence on crayfish community structure. The American Midland Naturalist, 149(1), 134-147.
- Flinders, C. A., and D. D. Magoulick. 2005. Distribution, habitat use, and life history of stream-dwelling crayfish in the Spring River drainage of Arkansas and Missouri with a focus on the Mammoth Spring crayfish (*Orconectes marchandi*). American Midland Naturalist 154:358-374.
- Flint, O.S., Jr. 1967. The first record of the PADUNIPELLINI in the new world (Trichoptera: Psychomyiidae). Proc. Entomol. Soc. Wash. 69(4): 310-311.
- Fokidis, H.B., S.C. Brandebura, and T.S. Risch. 2005. Distribution of bats in bottomland hardwood forests of the Arkansas Delta region. Journal of the Arkansas Academy of Science 59: 74-79.
- Foster, Garry W.; Humphrey, Stephen R.; Humphrey, Pamela P. 1978. Survival rate of young southeastern brown bat, *Myotis austroriparius*, in Florida. Journal of Mammalogy. 59(2):299-304.
- Francis, C. M., J. R. Sauer, and J. R. Serie. 1998. Effect of restrictive harvest regulations on survival and recovery rates of American black ducks. Journal of Wildlife Management 62:1544-1557.

- Frazer, K. S., and Harris, S. C. (1991). New Caddisflies (Trichoptera) from the Little River Drainage in Northeastern Alabama. *Bulletin of the Alabama Museum of Natural History*, (11).
- Frederick, Peter C. and Douglas Siegel-Causey. 2000. Anhinga (*Anhinga anhinga*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/522> doi:10.2173/bna.522
- Frick, W.F., P.M. Stepanian, J.F. Kelly, K.W. Howard, C.M. Kuster, and T.H. Kunz. 2012 Climate and Weather Impact Timing of Emergence of Bats. *PLoS ONE* 7(8): e42737. doi:10.1371/journal.pone.0042737
- Frost, Darrel R. 2015. Amphibian Species of the World: an Online Reference. Version 6.0 (Date of access). Electronic Database accessible at <http://research.amnh.org/herpetology/amphibia/index.html>. American Museum of Natural History, New York, USA.
- Fulmer, T. 2013. Geographic distribution: *Hyla squirella*. *Herpetological Review* 44(4):620–621.
- Fulmer, T. and K. Fulmer. 2010. Geographic distribution: *Ambystoma talpoideum*. *Herpetological Review* 41(4): 504.
- Fulmer, T. and K. Fulmer. 2013. Geographic distribution: *Ambystoma talpoideum*. *Herpetological Review* 44(1): 102.
- Fulmer, T.; Tumlison, R. 2002. Geographic Distribution. *Hyla avivoca*. *Herpetol. Rev.* 33: 220.
- Gagen, C.J.; Stoeckel, J. N. 1994. Dry season habitat use and reproductive biology of the Ouachita madtom. Final project report to U.S. Forest Service. Hot Springs. 26 p.
- Gallant, A.L., T.R. Whittier, D.P. Larsen, J.M. Omernik, and R.M. Hughes. 1989. Regionalization as a tool for managing environmental resources. EPA/600/3-89/060. U.S. Environmental Protection Agency, Environmental Research Laboratory, Corvallis, OR. 152p.
- Gann, J. and R. Tumlison. 2004. Geographic distribution: *Terrapene ornata* (Ornate Box Turtle). *Herpetological Review*, 35:407.
- Gardner, James D.; Garner, James D. 1990. Determination of summer distribution and habitat utilization of the Indiana bat (*Myotis sodalis*) in Illinois. *Bat Research News*.
- Gardner, James E. Gene; Garner, James D.; Hofmann, Joyce E. 1990. Summer roost selection by *Myotis sodalis*. *Bat Research News*. 79.
- Gardner, James E.; Garner, James D.; Hofmann, Joyce E. 1991. Summer roost selection and roosting behavior of *Myotis sodalis* (Indiana bat) in Illinois. Final Report.
- Gardner, James E.; Hofmann, Joyce E.; Garner, James D. 1989. Progress Report: 1988 investigations of *Myotis sodalis* (Indiana bat) distribution, abundance, habitat use, and status in Illinois.
- Gardner, James E.; McDaniel, R. Rick. 1978. Distribution of bats in the Delta Region of Northern Arkansas. *Proceedings of the Arkansas Academy of Science*. 32:46-48.

Gardner, James Eugene. 1978. Activity patterns of bats in the Delta Region of Northeast Arkansas. Jonesboro: Arkansas State University.

Gates, G. E. 1977. More on the earthworm genus *Diplocardia*. *Megadrilogica*, 3(1), 1-47.

Gibbs, J. P., Reid, F. A., & Melvin, S. M. (1992). Least bittern, Number 17. *The Birds of North America*. The Academy of Natural Sciences, Philadelphia, USA and the American Ornithologists' Union, Washington DC, USA.

Girvetz, E. H., C. Zganjar, G. T. Raber, E. P. Maurer, P. Kareiva, and J. J. Lawler. 2009. Applied climate-change analysis: the climate wizard tool. *PLoS ONE* 4: r8320. Doi: 10.1371/journal.pone.0008320.

Glick, P., B.A. Stein, and N.A. Edelson, editors. 2011. *Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment*. National Wildlife Federation, Washington, D.C.

Gordon, M.E. 1980. Freshwater mollusca of the Elk River, White River above Beaver Reservoir, and Frog Bayou Drainages of the southwestern Ozarks. M.S. thesis, Dept. Zoology, Univ. Arkansas, Fayetteville. 265 pp.

Gordon, M.E. 1980a. Recent mollusca of Arkansas with annotations to systematics and zoogeography. *Proceedings of the Arkansas Academy of Science*. 34:58-62.

Gordon, M.E. 1982. Mollusca of the White River, Arkansas and Missouri. *Southwestern Naturalist*. 27(3):347-352.

Gordon, M.E. 1985. Mollusca of Frog Bayou, Arkansas. *The Nautilus* 99(1):6-9.

Gordon, M.E.; Brown A.V. 1980. Significant additions to the molluscan fauna of the Illinois River, Arkansas. *Proceedings of the Arkansas Academy of Science*. 34:113-114.

Gordon, M.E.; Brown, A.V.; Kraemer, L.R. 1979. Mollusca of the Illinois River, Arkansas. *Proceedings of the Arkansas Academy of Science*. 33:35-37.

Gordon, M.E.; Chordas III, S.W.; Harp, G.L.; Brown, A.V. 1994. Aquatic Mollusca of the White River National Wildlife Refuge, Arkansas, U.S.A. *Walkerana*. 1993-1994, 7(17/18):1-9.

Gordon, M.E.; Harris, J.L. 1983. Distribution and status of fourteen species of freshwater mussels considered rare or endangered in Arkansas. Arkansas Natural Heritage Commission, Little Rock. Project #G6301. 23 pp. + appendices I-II.

Gordon, M.E.; Harris, J.L. 1985. Distribution of *Lampsilis powelli* (Lea) (Bivalvia: Unionacea). *The Nautilus* 99(4): 142-144.

Gordon, M.E.; Kraemer, L.R. 1984. *Lampsilis reeveiana* and *Lampsilis streckeri* (Bivalvia: Unionacea): some clarification. *Malacological Review* 17:99-100.

Gordon, M.E.; Kraemer, L.R.; Brown, A.V. 1980. Unionacea of Arkansas: historical review, checklist, and observations on distributional patterns. *Bull. Am. Malacol. Union, Inc.* 1979:31-37.

Grady, J.M.; LeGrande, W.H. 1992. Phylogenetic relationships, modes of speciation and historical biogeography of the madtom catfishes, genus *Noturus* Rafinesque (Siluriformes: Ictaluridae). In: R.L. Mayden, ed. North American freshwater fishes. Stanford U

Graening, G.O., D. B. Fenolio, M. L. Niemiller, A. V. Brown, and J. B. Beard. 2010. The 30-year recovery effort for the Ozark cavefish (*Amblyopsis rosae*): analysis of current distribution, population trends, and conservation status of this threatened species. *Environmental Biology of Fish* 87:55-88.

Graening, G.O., J.B. Koppelman, B.K. Wagner, M.E. Slay, and C.L. Brickey. 2006. Range extension and status update of the endangered Hell Creek Cave Crayfish, *Cambarus zophonastes* (Decapoda: Cambaridae). *Southwestern Naturalist* 51:392-396.

Graening, G.O., M.J. Harvey, W.L. Puckette, R.C. Stark, D.B. Sasse, S.L. Hensley, and R.K. Redman. 2011. Conservation status of the endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*) – a 34 year assessment. *Publications of the Oklahoma Biological Survey* 11:1-16.

Graening, G.O., Slay, M.E., & Brown, A.V. 2001. Subterranean biodiversity in the Ozark Plateaus of Arkansas. A report submitted to Arkansas Game and Fish Commission and Arkansas Department of Natural Heritage: Department of Biological Sciences, University of Arkansas, Fayetteville

Graening, Gary O, Horton H. Hobbs III, Michael E. Slay, Brian K. Wagner, and Charles L. Brickey. In progress. Status update of the endangered Hell Creek Cave crayfish, *Cambarus zophonastes* (Decapoda: Cambaridae). The Nature Conservancy, Arkansas Field Office.

Grandmaison, D., Mayasich, J., and Etnier, D. 2003. Crystal darter status assessment report. US Fish and Wildlife Service, Fort Snelling, Minnesota.

Graves, Frank F. Jr.; Harvey, Michael J. 1974. Distribution of Chiroptera in western Tennessee. *Journal of the Tennessee Academy of Science*. 49(3):106-109.

Graves, G. R. 2002. Habitat characteristics in the core breeding range of the Swainson's Warbler. *The Wilson Bulletin*, 114(2), 210-220.

Graves, G.R. 2014 Recent large-scale colonisation of southern pine plantations by Swainson's Warbler *Limnothlypis swainsonii*. *Bird Conservation International* <http://bit.ly/1sYr9hm>.

Graves, R. C. and D. L. Pearson. 1973. The tiger beetles of Arkansas, Louisiana, and Mississippi (Coleoptera: Cicindelidae). *Transactions of the American Entomological Society* 99:157–203.

Grimes, G. T. 2015. Investigating a marine fish in freshwater: Population dynamics of striped mullet *Mugil cephalus* in the Arkansas River, USA (Doctoral dissertation, UNIVERSITY OF CENTRAL ARKANSAS).

Grimsley, A. A. 2012. A reexamination of the Eastern Collared Lizard (*Crotaphytus collaris collaris*) in Arkansas. Masters Thesis. University of Arkansas, Fayetteville.

Grippio, R.S. and S.A. Massa. 2000. Mercury in free ranging bats collected from fish-consumption advisory areas in Arkansas. Unpublished report to the Arkansas Game and Fish Commission, Jonesboro. 65 pp.

- Grzybowski, J. A. 1980. Ecological relationships among grassland birds during winter. Ph.D. dissertation, University of Oklahoma, Norman, OK.
- Grzybowski, J.A. 1982. Population structure in grassland bird communities during winter. *Condor* 84:137-15
- Guthrie, Mary J. 1933. Notes on the seasonal movements and habits of some cave bats. *Journal of Mammalogy*. 14(1):1-19.
- Hackett, H.M., D.B. Lesmeister, J.Desanty-Combes,W.G. Montague, J.J. Milspaugh, and M.E. Gompper. 2007. Detection rates of eastern spotted skunks (*Spilogale putorius*) in Missouri and Arkansas using live-capture and non-invasive techniques. *American Midland Naturalist* 158: 123-131.
- Haig, S. M. and E. Elliott-Smith. 2004. Piping Plover (*Charadrius melodus*). *The birds of North America*. Number 2.
- Hall, E. R. 1981. *The Mammals of North America*, Vols. I & II. John Wiley & Sons, New York, New York. 1181 p.
- Hall, John S. 1962. A life history and taxonomic study of the Indiana bat, *Myotis sodalis*. Reading, PA: Reading Public Museum and Art Gallery; Scientific Publication Number 12.
- Hamel, P.B. 1992. Land Manager's Guide to the Birds of the South. Bird Habitat Relationships on Southeastern Forest Lands: [Hamel, P.B.; LeGrand, Jr., H.E.; Lennartz, M.R.; Gauthreaux, S.A., Jr., eds.] The Nature Conservancy, Chapel Hill, NC. 436 p. and
- Hamel, P.B. 2000. Cerulean Warbler (*Dendroica cerulean*). *The Birds of North America*, No. 511 [Poole, A.; Gill, F., eds.]. *The Birds of North America, Inc.*, Philadelphia, PA.
- Hamerstrom, F., F. N. Hamerstrom, and J. Hart. 1973. Nest boxes: an effective management tool for kestrels. *J. Wildl. Manage.* 37: 400-403.
- Hardy, L.M.; Raymond, L.R. 1980. The breeding migration of the mole salamander, *Ambystoma talpoideum*, in Louisiana. *J. Herpetol.* 14:327-335.
- Hargrave CW. 1998. Status of Arkansas darter (*Etheostoma cragini*) and least darter (*Etheostoma microperca*) in Arkansas. Fayetteville: Arkansas Cooperative Fish and Wildlife Research Unit. Publication No. 30. 113 p
- Harris, J. L. 2002. Freshwater mussel survey of the White River and Lafferty Creek, Arkansas in the vicinities of Lock and Dam 1, Lock and Dam 2, and Lock and Dam 3. Welch/Harris, Inc., Little Rock, AR. Prepared for Crist Engineers, Inc., Little Rock, AR. 14 p. + Appendix A (field data sheets) (UNPUBLISHED)
- Harris, J. L., W. R. Posey II, C. L. Davidson, J. L. Farris, S. Rogers Oetker, J. N. Stoeckel, B. G. Crump, M. Scott Barnett, H. C. Martin, M. W. Matthews, J. H. Seagraves, N. J. Wentz, R. Winterringer, C. Osborne, and A. D. Christian. 2010. Unionoida (Mollusca: Margaritiferidae, Unionidae) in Arkansas, third status review. *Journal of the Arkansas Academy of Science* 63:50-86.
- Harris, J.L and W. R Posey II. 2015. Revised conservation status assessments for Arkansas mussels. Final Report. Natural Heritage Commission. Little Rock, AR. 17 pp.
- Harris, J.L. 1986. Relocation of the fat pocketbook pearly mussel (*Proptera capax*) in the St. Francis River at Madison, Arkansas. Performed in cooperation with the Arkansas Game and Fish Commission, Little Rock. 14 p.

Harris, J.L. 1987. Survey of mussel beds in the White River between river miles 90-94 and 240-243. Prepared for Mobley Construction Company, Inc., Morrilton, AR. 40 p.

Harris, J.L. 1989a. Survey of mussels in the Black River at proposed Soil Conservation Service work site LA-1 near Clover Bend, Lawrence County, Arkansas. Prepared for the USDA Soil Conservation Service, Little Rock, AR. 7 p.

Harris, J.L. 1989b. Mussel survey of the Ouachita River near Arkadelphia, Clark County, Arkansas in the vicinity of the proposed Bowater Paper Plant. Prepared for Sirrene Environmental Consultants, Greenville, SC. 19 p.

Harris, J.L. 1989c. Mussel survey of the Caddo River below the DeGray Reservoir reregulating dam near Caddo Valley, Clark County, Arkansas. Prepared for JDJ Energy Co., Inc., Little Rock, AR. 11 p.

Harris, J.L. 1989d. Mussel survey of the White River at DeValls Bluff at the proposed Arkansas Game and Fish Commission boat ramp. Prepared for the Arkansas Game and Fish Commission, Little Rock, AR. 8 p.

Harris, J.L. 1990a. Survey of the St. Francis River for the endangered fat pocketbook (*Potamilus capax*) at the proposed crossing for the Oklahoma - Arkansas pipeline project, St. Francis County, Arkansas. Prepared for Woodward - Clyde Consultants, Houston

Harris, J.L. 1990b. Survey of Tulot Seep Ditch and Ditch 60 for the fat pocketbook (*Potamilus capax*) in the vicinity of Trumann, Poinsett County, Arkansas. Prepared for Crist Engineers, Inc., Little Rock, AR. 14 p.

Harris, J.L. 1990c. Survey of the White River for endangered mussels at the proposed crossing for the Oklahoma - Arkansas pipeline project, White - Woodruff counties, Arkansas. Prepared for Woodward - Clyde Consultants, Houston, TX. 11 p.

Harris, J.L. 1991a. Survey for *Lampsilis powelli* at Site 2, South Fork Watershed Project, Montgomery County, Arkansas. Prepared for U.S. Department of Agriculture, Soil Conservation Service, Little Rock, AR. 18 p.

Harris, J.L. 1991b. Survey for *Lampsilis streckeri* in the Middle Fork Little Red River at the proposed NOARK pipeline crossing, Van Buren County, Arkansas. Prepared for ENSR Consulting and Engineering, Houston, TX. 10 p.

Harris, J.L. 1991c. A mussel survey of Lake Dardanelle in the vicinity of the proposed River Mountain Pumped Storage Project. Prepared for CPS Arkansas, Inc., Greenwich, CT. 19 p.

Harris, J.L. 1991d. Survey for *Lampsilis rafinesqueana* in the Illinois River at the proposed Siloam Springs water intake structure. Prepared for McClelland Consulting Engineers, Inc., Fayetteville, AR. 10 p.

Harris, J.L. 1992a. Status of *Lampsilis streckeri* in segments of the Middle, South, and Archey forks of the Little Red River, Stone and Van Buren Counties, Arkansas. Prepared for the U.S. Fish and Wildlife Service, Endangered Species Office, Jackson, MS 2

Harris, J.L. 1992b. Survey of the freshwater mussels (Mollusca: Unionidae) of the South Fourche LaFave River and major tributaries. Prepared for the U.S.D.A. Forest Service, Ouachita National Forest, Hot Springs, AR. 18 p. + field notes.

Harris, J.L. 1992c. Temporary relocation of the speckled pocketbook (*Lampsilis streckeri*) at the NOARK pipeline crossing, Middle Fork Little Red River, Van Buren County, Arkansas. Prepared for ENSR Consulting and Engineering, Houston, TX. 10 p. + Appendix

Harris, J.L. 1993. Habitat characterization and species associates of the speckled pocketbook (*Lampsilis streckeri* Frierson) in the Middle Fork Little Red River, Arkansas. Prepared for the U.S. Fish and Wildlife Service, Endangered Species Office, Jackson

Harris, J.L. 1994a. Microhabitat and population analysis of *Lampsilis powelli* (Lea, 1852) in the South Fork Ouachita River, Montgomery County, Arkansas. Prepared for U.S.D.A. Forest Service, Ouachita National Forest, Hot Springs, AR. 26 p. + Appendices.

Harris, J.L. 1994b. Survey of the freshwater mussels (Mollusca: Unionidae) of the Poteau River drainage in Arkansas. Prepared for the U.S.D.A. Forest Service, Ouachita National Forest, Hot Springs, AR. 23 p. + Appendices.

Harris, J.L. 1994c. Mussel survey of the White River between river miles 260.0 - 264.0 in Independence and Jackson counties, Arkansas. Prepared for Mobley Construction Co., Inc., Morrilton, AR. 11 p.

Harris, J.L. 1995. Mussel survey of the White River between river miles 264.0 - 274.0 near Oil Trough, Independence County, Arkansas. Prepared for Mobley Construction Co., Inc., Morrilton, AR. 14 p.

Harris, J.L. 1996. The freshwater mussel resources of the Buffalo National River, Arkansas: Phase I qualitative survey: Location, species composition and status of mussel beds. Prepared for the U.S.D.I., Buffalo National River, Harrison, AR. 19 p. + Appen

Harris, J.L. 1997a. A population assessment of recolonization by the fat pocketbook mussel of dredged habitat in the St. Francis Floodway, Arkansas. Final report to the U.S. Fish and Wildlife Service, Jackson, MS. 14 p. + appendices.

Harris, J.L. 1997b. Status survey of *Lampsilis rafinesqueana* Frierson, the Neosho mucket, in Arkansas. Prepared for the U.S. Fish and Wildlife Service, Vicksburg, MS. 6 p. + Appendices.

Harris, J.L. 1997c. Evaluation of impacts of commercial gravel dredging to three unionid bivalve aggregations in the White River, Arkansas. Prepared for Mobley Construction Co., Inc. 10 p. + Appendices A-C.

Harris, J.L. 1999. Freshwater mussel survey: Carpenter-Remmel project, FERC No. 271. Final Report. Prepared for Entergy Arkansas, Inc. by Welch/Harris, Inc., Little Rock, AR.

Harris, J.L. 1999a. Status of aquatic resources: aquatic animals and their habitats: diversity of mussels in U.S. Department of Agriculture, Forest Service Ozark-Ouachita Highlands Assessment: aquatic conditions. Report 3 of 5. Gen. Tech. Rep. SRS-33.

Harris, J.L. 2001. Distribution and relative abundance of freshwater bivalves (Unionacea) in sections of the Fourche La Fave River and Petit Jean River, Arkansas. Report to U. S. Department of Agriculture, Ouachita National Forest, Hot Springs, AR. 18 p.

- Harris, J.L. 2001a. Freshwater mussel survey of Lower Buffalo Creek, St. Francis River Basin, Mississippi County, Arkansas. Prepared for Memphis District Corps of Engineers. 10 p.
- Harris, J.L. 2001b. Freshwater mussel survey of State Line Outlet Ditch, St. Francis River Basin, Mississippi County, Arkansas with population estimate for *Potamilus capax*. Prepared for Memphis District Corps of Engineers. 15 p.
- Harris, J.L. 2002a. Translocation report of *Potamilus capax* (Green, 1832), fat pocketbook, for AHTD Job Number 110288, St. Francis River Structure and Approaches, U. S. Highway 64, Cross County, Arkansas. Environmental Division, Arkansas Highway & Transportation Department
- Harris, J.L., J.L Farris and A.D. Christian. 2007. Status of *Epioblasma florentina curtisii* (Frierson and Utterback 1916), Curtis Pearlymussel, in Arkansas. Final Report. 99 pp.
- Harris, J.L., W.R. Hoeh, A. D. Christian, J. Walker, J.L. Farris, R.L. Johnson, and M.E. Gordon. 2004. Species Limits and Phylogeography of Lampsilinae (Bivalvia; Unionoida) in Arkansas with Emphasis on Species of *Lampsilis*. Final Report. Ark. Game and Fish Comm. And U.S. Fish and Wildlife Serv. 79 pp.
- Harris, J.L.; Doster, R.H. 1992. Survey for the Arkansas fatmucket, *Lampsilis powelli* (Lea), in the Caddo River at Interstate 30, Clark County, Arkansas. Environmental Division, Arkansas Highway and Transportation Department, Little Rock. 10 pp. + appendi
- Harris, J.L.; Doster, R.H.; McLean, J. 1992. Relocation of the Arkansas fatmucket, *Lampsilis powelli* (Lea), at the U.S. Highway 270 bridge in Mt. Ida, Montgomery County, Arkansas. Final report prepared by the Environmental Division, Arkansas Highway and T
- Harris, J.L.; Gordon, M.E. 1985. Survey of the Ouachita River in Arkadelphia, Arkansas for the endangered freshwater mussel *Lampsilis orbiculata* (Hildreth). Report prepared for Arkansas Louisiana Gas Company. 8 pp.
- Harris, J.L.; Gordon, M.E. 1987. Distribution and status of rare and endangered mussels (Mollusca: Margaritiferidae, Unionidae) in Arkansas. Proceedings Arkansas Academy of Science 41(1987):49-56.
- Harris, J.L.; Gordon, M.E. 1988. Status survey of *Lampsilis powelli* (Lea, 1852). Prepared for the U.S. Fish and Wildlife Service, Office of Endangered Species, Jackson, MS. 44 p. + Appendices.
- Harris, J.L.; Gordon, M.E. 1990. Arkansas Mussels. Arkansas Game and Fish Commission, Little Rock, AR. 32 p.
- Harris, J.L.; Milam, C.D. 2002. Field identification notebook: mussels of the St. Francis River Basin Arkansas and Missouri. Prepared for the Memphis District, U. S. Army Corps of Engineers, Memphis, TN. 76 p. + Appendix I.
- Harris, J.L.; Milam, C.D. 2002a. Field identification notebook: mussels of the White River from Newport to the Arkansas River. Prepared for the Memphis District, U. S. Army Corps of Engineers, Memphis, TN. 100 p. + Appendix I.
- Harris, J.L.; Rust, P.J.; Christian, A.D.; Posey, II, W.R.; Davidson, C.L.; Harp, G.L. 1997. Revised status of rare and endangered Unionacea (Mollusca: Margaritiferidae, Unionidae) in Arkansas. J. AR Acad. Sci. 51:66-89.
- Harris, R.N.; Gill, D.E. 1980. Communal nesting, brooding behavior and embryonic survival of the four-toed salamander *Hemidactylium scutatum*. Herpetologica 36:141-144.



- Harvey, M. J.; MacGregor, J.R.; Currie, R.R. 1991. Distribution and status of Chiroptera in Kentucky and Tennessee. *Journal of the Tennessee Academy of Science*. 66(4):191-193.
- Harvey, M.J. 1975a. Status of endangered bats in the Blanchard Springs Caverns Area. 1st National Cave Management Symposium; pp. 63.
- Harvey, M.J. 1980. Status of the endangered bats, *Myotis sodalis*, *M. grisescens*, and *Plecotus townsendii ingens* in the southern Ozarks. *Proceedings of the Fifth International Bat Research Conference*; pp. 221-223.
- Harvey, M.J. 1984. Protection of endangered gray bat (*Myotis grisescens*) colonies in Arkansas. *Arkansas Academy of Science Proceedings*. 38:96.
- Harvey, M.J. 1987. Recent population declines and recovery efforts for the endangered Indiana bat, *Myotis sodalis*, in Arkansas and Tennessee. (3-4): 35.
- Harvey, M.J. 1991. Management of endangered bat caves in Arkansas. 1995 National Cave Management Symposium Proceedings; pp 150-154.
- Harvey, M.J. 1994. Status of endangered gray bat (*Myotis grisescens*) hibernating populations in Arkansas. *Proceedings of the Arkansas Academy of Science*. 48:250-251.
- Harvey, M.J. 1996. Status and management of endangered bats in Arkansas. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies*. 50:246-253.
- Harvey, M.J. 1997. Status of bats in the United States. *American Caves*. 10(1):10-13.
- Harvey, M.J.; Cassidy, J.J.; O'Hagan, G.G. 1979. Status of the endangered bats, *Myotis sodalis*, *M. grisescens*, and *Plecotus townsendii ingens*, in Arkansas. *Proceedings of the Arkansas Academy of Science*. 33:81.
- Harvey, M.J.; Clark, J.D. 1997. Imperiled Mammalian Fauna of Aquatic Ecosystems in the Southeast: A historical perspective. pp. 245-258.
- Harvey, M.J.; Kennedy, M.L.; Hardin, J.W. 1975. Status and movements of *Myotis grisescens* in the southern Ozarks. 6th North American Symposium on Bat Research; Las Vegas.
- Harvey, M.J.; McDaniel, V.R. 1986. Population decline of the endangered Indiana bat, *Myotis sodalis*, in Arkansas. *Proceedings of the Arkansas Academy of Science*. 40:87-88.
- Hayes, D.M. 2010. Genetic diversity and distribution of selected freshwater mollusks (Gastropoda and Bivalvia) from west of the Mississippi River with an emphasis on Arkansas Taxa. Ph.D. Dissertation. Arkansas State University. 144 pp.
- Hayes, William A. and Rollin D. Riemer. 1977. *Faxonella blairi*, a new crawfish from the Red River drainage of Oklahoma and Arkansas. *Proceedings of the Biological Society of Washington*. 90(1):1-5.
- Heath, D.R; Heidt, G.A.; Saugey, D.A.; McDaniel, V.R. 1983. Arkansas range extensions of the seminole bat and eastern big-eared bat and additional county records for the hoary bat, silver-haired bat, and evening bat. *Arkansas Academy of Science Proceeding*

- Heidt, G.A.; Elrod, D.A.; McDaniel, V.R. 1996. Biogeography of Arkansas mammals with notes on species of questionable status. *Proceedings of the Arkansas Academy of Science*. 50:60-65.
- Heidt, G.A.; Saugey, D.A.; Bradford-Luck, S.R. 1987. Reported bat rabies in Arkansas. *Proceedings of the Arkansas Academy of Science*. 41:105-107.
- Heitzman, J. R. and J. E. Heitzman. 1996. *Butterflies and Moths of Missouri*. Missouri Department of Conservation, Jefferson City, MO.
- Henry W. Robison, Chris T. McAllister, Jesse W. Breinholt, and Keith A. Crandall. 2007. Status, distribution, and genetics of Blair's fencing crayfish, *Faxonella blairi* (Decapoda:Cambaridae). *The Southwestern Naturalist*, 59(2):244-250. Published By: Southwestern Association of Naturalists.
- Herkert, J. R., Vickery, P. D., and Kroodsma, D. E. 2002. Henslow's Sparrow: *Ammodramus henslowii*. *Birds of North America, Incorporated*.
- Herkert, J.R., D.E. Kroodsma, and J.P. Gibbs. 2001. Sedge wren (*Cistothorus platensis*). In: A. Poole and F. Gills, eds. *The Birds of North America*, Number 582. The Birds of North America, Inc., Philadelphia, Pennsylvania.
- Herman, T. A. 2009. Range-wide phylogeography of the Four-toed Salamander (*Hemidactylium scutatum*): out of Appalachia and into the glacial aftermath. Masters thesis, Bowling Green State University, Bowling Green, Ohio. 64 pp.
- Herrala, J. R., P. T. Kroboth, N. M. Kuntz, and H. L. Schramm Jr. 2014. Habitat use and selection by adult pallid sturgeon in the lower Mississippi River. *Transactions of the American Fisheries Society* 143:153-163.
- Hershler, R., and Thompson, F. G. 1987. North American Hydrobiidae (Gastropoda: Rissoacea): redescription and systematic relationships of *Tryonia* Stimpson, 1865 and *Pyrgulopsis* Call and Pilsbry, 1886. *Nautilus*, 101(1), 25-32.
- Highton, R. 1962a. Revision of North American salamanders of the genus *Plethodon*. *Bull. Florida State Mus., Biol. Ser.* 6:235-367.
- Highton, R. 1989. Part I, Geographic protein variation. Pp. 1-76. In *Biochemical Evolution in the Slimy Salamanders of the Plethodon glutinosus Complex in the Eastern United States*. (R. Highton, G.C. Maha, and L.R. Maxon, eds.). *Illinois Biol. Monogr.* No.
- Hiler, W. R., B. A. Wheeler, and S. E. Trauth. 2013. The decline of the Ozark Hellbender (*Cryptobranchus alleganiensis bishopi*) in the Spring River, Arkansas, USA. *Herpetological Conservation and Biology* 8(1):114–121.
- Hines, R. E., T. J. Bader, and G. R. Graves. 2013. Chimney Swifts (*Chaetura pelagica*) nest in tree cavities in Arkansas. *Southeastern Naturalist* 12(4):N18-N20.
- Hobbs, H.H., Jr. 1989. A checklist of the American crayfishes (Decapoda: Astacidae, Cambaridae, and Parastacidae). *Smithsonian Contrib. to Zoology* No. 480. Smithsonian Institute Press. Washington, D.C. 236 p.

Hobbs, Horton H. Jr. 1973. New species and relationships of the members of the genus *Fallicambarus*. *Proceedings of the Biological Society of Washington*. 86(40):461-482.

Hobbs, Horton H. Jr. 1989. An illustrated checklist of the American crayfishes (Decapoda: Astacidae, Cambaradae, and Parastacidae). Smithsonian Institution Press, Washington DC. 236pp.

Hobbs, Horton H. Jr. and Henry W. Robison, 1982. A new crayfish of the genus *Procambarus* from southwestern Arkansas. *Proceedings of the Biological Society of Washington*. 95(3):545-553.

Hobbs, Horton H. Jr. and Henry W. Robison, 1988. The crayfish subgenus *Girardiella* (Decapoda: Cambaridae) in Arkansas, with the descriptions of two new species and a key to the members of the *gracilis* group in the genus *Procambarus*. *Proceedings of the Biological Society of Washington*. 101(2):391-413.

Hobbs, Horton H. Jr. and Henry W. Robison. 1985. A new burrowing crayfish (Decapoda: Cambaridae) from southwestern Arkansas. *Proceedings of the Biological Society of Washington*. 98(4):1035-1041.

Hobbs, Horton H. Jr. and Henry W. Robison. 1989. On the crayfish genus *Fallicambarus* (Decapoda-Cambaridae) in Arkansas, with notes on the *fodiens* complex and descriptions of two new species. *Proceedings of the Biological Society of Washington*. 102 (3):651-697.

Hobbs, Horton H., Jr. and Arthur V. Brown. 1987. A new troglobitic crayfish from northwestern Arkansas. (Decapoda: Cambaridae. *Proceedings of the Biological Society of Washington*. 100(4): 1040-1048.

Hobbs, Horton H., Jr.. 1977. The crayfish *Bouchardina robisoni*, a new genus and species (Decapoda: Cambaridae) from southern Arkansas. *Proceedings of the Biological Society of Washington*. 89(62): 733-742.

Hodges, R. W., Dominick, T., Davis, D. R., Ferguson, D. C., Franclemont, J. G., Munroe, E. G., and Powell, J. A. 1983. Check list of the Lepidoptera of America North of Mexico, including Greenland. EW Classey Ltd.

Hoff, C. C. 1945. The pseudoscorpion subfamily *Olpiinae*. American Museum of Natural History.

Hoff, C.C., and J.E. Bolsterti. 1956. Pseudoscorpions of the Mississippi River drainage area basin. *Trans. Amer. Micros. Soc.* 75:155-179.

Hoffmeister, D.F.; Goodpaster, W.W. 1962. Observations of a colony of big-eared bats, *Plecotus rafinesquii*. *Transactions of the Illinois State Academy of Science*. 55(2):87-89.

Hofmann, J.E.; Gardner, J.E.; Krejca, J.K.; Gardner, J.D. 1999. Summer records and a maternity roost of the southeastern *Myotis* (*Myotis austroriparius*) in Illinois. *Transactions of the Illinois State Academy of Science*. 92(1&2):95-107.

Holimon, W.C. and W.G. Montague. 2003. Reciprocal translocation reestablishes breeding status of Mississippi Alluvial Plain population of red-cockaded woodpeckers in Arkansas. *Journal of the Arkansas Academy of Science* 57:197-198.

- Holimon, W.C., C.T. Witsell, W.H. Baltosser, and C.W. Rideout. 2008. Density and habitat associations of Henslow's Sparrows wintering in saline soil barrens in southern Arkansas. *Journal of Field Ornithology* 79:364–370.
- Holimon, W.C., J.A. Akin, W.H. Baltosser, C.W. Rideout, and C.T. Witsell. 2012. Structure and composition of grassland habitats used by wintering Smith's Longspurs: the importance of native grasses. *Journal of Field Ornithology* 83:351-361.
- Holimon, W.C., R.H. Doster, D.A. James, M.A. Mlodinow, J.C. Neal, and W.M. Shepherd. 2004. First Documentation that Henslow's sparrow regularly occurs during the breeding and wintering seasons in Arkansas. *Journal of the Arkansas Academy of Science* 59:111-117.
- Holsinger, J. R. 1967. Systematics, speciation, and distribution of the subterranean amphipod genus *Stygonectes* (Gammaridae) (No. 259). Smithsonian Institution Press.
- Hothem, Roger L., Brianne E. Brussee and William E. Davis, Jr. 2010. Black-crowned Night-Heron (*Nycticorax nycticorax*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/074/>
- Hubricht, L. 1979. New Species of *Amnicola* from an Arkansas Cave (Hydrobiidae). *Nautilus*, 93(4), 142-142.
- Hubricht, L., and Mackin, J. G. 1949. The freshwater isopods of the genus *Lirceus* (Asellota, Asellidae). *The American Midland Naturalist*, 42(2), 334-349.
- Hughes, J. K. 1999. Yellow-billed Cuckoo (*Coccyzus americanus*). *The Birds of North America*, (418), 28.
- Humphrey, S. R. and J.B. Cope. 1977. Survival rates of the endangered Indiana bat, *Myotis sodalis*. *Journal of Mammalogy*. 58(1):33-36.
- Humphrey, S. R.; Richter, A.R.; Cope, J.B. 1977. Summer habitat and ecology of the endangered Indiana bat, *Myotis sodalis*. *Journal of Mammalogy*. 58(2):334-346.
- Humphrey, S.R. 1978. Status, winter habitat, and management of the endangered Indiana bat, *Myotis sodalis*. *Florida Scientist*. 41(2):65-76.
- Humphries, J.M.; Cashner, R.C. 1994. *Notorpis suttkus*, a new cyprinid from the Ouachita uplands of Oklahoma and Arkansas, with comments on the status of Ozarkian populations of *N. rubellus*. *Copeia*. (1): 82-90.
- Huntington, C., T. N. Stuhlman, and D. J. Cullen. 1993. *Plethodon Sequoyah*. *Cat. Amer. Amphib. Rept.* 557.1-557.2
- Hurst, T.E.; Lacki, M.J. 1999. Roost selection, population size and habitat use by a colony of Rafinesque's big-eared bats (*Corynorhinus rafinesquii*). *American Midland Naturalist*. 142:363-371.
- Hurter, J.; Strecker, J.K., Jr. 1909. The amphibians and reptiles of Arkansas. *Trans. Acad. Sci. St. Louis* 18:11-27.

- Hutcherson, J.E.; Peterson, C.L.; Wilkinson, R.F. 1989. Reproductive and larval biology of *Ambystoma annulatum*. *J. Herpetol.* 23:181-183.
- Hutchison, D.W.; Malcomber, S.I.; Pletscher, L.S. 1999. A multidisciplinary investigation of the applicability of the Pleistocene herpetofaunal stability model to collared lizards (*Crotaphytus collaris*). *Herpetol. Monogr.* 13:81-141.
- Inebnit, T. E. III. 2009. Aspects of the reproductive and juvenile ecology of Alligator gar in the Fourche LaFave River, Arkansas. Master's thesis, University of Central Arkansas. 69 pp.
- Intergovernmental Panel on Climate Change [IPCC]. 2007. Climate change 2007: synthesis report. Contribution of Working Groups I, II, and III to the fourth assessment report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K. and Reisinger, A. (eds.)]. Geneva, Switzerland: Intergovernmental Panel on Climate Change. 104. Available at [http://www.ipcc.ch/publications\\_and\\_data/publications\\_ipcc\\_fourth\\_assessment\\_report\\_synthesis\\_report.htm](http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm). (Accessed March 16, 2015).
- Inuoe, K., A.L. McQueen, J.L. Harris and D.J. Berg. 2014. Molecular phylogenetics and morphological variation reveal recent speciation in freshwater mussels of the genera *Arcidens* and *Arkansia* (Bivalvia: Unionidae). *Bio. Jour. Linnean Society* (112, 535–545)
- Irwin, K. J. and L. K. Irwin. 2001. Geographic distribution: *Pseudacris streckeri* (Strecker's Chorus Frog). *Herpetological Review* 32(3):190.
- Irwin, K. J., J. T. Briggler, and T. L. Crabill. 2014. Natural History Notes: *Cryptobranchus alleganiensis bishopi* (Ozark Hellbender) Diet. *Herpetological Review* 45(3):472.
- Jackson, J.L. 2004. Effects of wildlife stand improvements and prescribed burning on bat and insect communities: Buffalo Ranger District, Ozark-St. Francis National Forest, Arkansas. Unpublished Masters Thesis, Arkansas State University, Jonesboro. 152 pp.
- Jacobs, R.B. 2001. Birds in Missouri. Missouri Dept. of Conservation, Jefferson City, MO. 375p.
- James, D.A.; Kellner, C.J.; Self, J.; Davis, J. 2001. Breeding Season Distribution of Cerulean Warblers in Arkansas in the 1990's. *Journal of the Arkansas Academy of Science*. Vol. 55
- James, Douglas and Joe Neal. 1986. Arkansas Birds: Their Distribution and Abundance. University of Arkansas Press, Fayetteville. 402 pp.
- James, F.C. 1971. Ordinations of Habitat Relationships among Breeding Birds. *Wilson Bull.* 83:215-236.
- James, P.W. 1996. Threatened fishes of the world: *Percina pantherina* (Moore and Reeves, 1955) (Percidae). *Environmental Biology of Fishes* 45: 342.
- Jamieson, D.H.; Trauth, S.E.; McAllister, C.T. 1993. Food habits of male bird-voiced treefrogs, *Hyla avivoca* (Anura: Hylidae), in Arkansas. *Texas J. Sci.* 45:4549.
- Jehl, Jr., Joseph R., Joanna Klima and Ross E. Harris. 2001. Short-billed Dowitcher (*Limnodromus griseus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology;

- Jenkinson, J.J. and S.A. Ahlstedt. 1987. A search for additional populations of *Potamilus capax* in the St. Francis and Cache river watersheds, Arkansas and Missouri. Final report for Memphis District, U.S. Army Corps of Engineers. 304 p.
- Jenkinson, J.J. and S.A. Ahlstedt. 1994. A search for additional populations of *Potamilus capax* in the St. Francis and Cache River watersheds, Arkansas and Missouri, U.S.A. *Walkerana*. 1993-1994, 7(17/18):71-157.
- Johnson, J. R., K. M. Faries, J. J. Rabenold, R. S. Crowhurst, J. T. Briggler, J. B. Koppelman, and L. S. Eggert. 2009. Polymorphic microsatellite loci for studies of the Ozark hellbender (*Cryptobranchus alleganiensis bishopi*). *Conservation Genetics* 10:1795–1797.
- Johnson, O.W. 2003. Pacifica and American Golden-Plovers: reflections on conservation needs. *Wader study group bulletin* 100:10-13.
- Johnson, R. L., S. E. Trauth, and J. Trauth. 2007. Gene flow and genetic structuring of Illinois Chorus Frogs (*Pseudacris streckeri illinoensis*) in Clay County, Arkansas. Final report to Arkansas Game and Fish Commission.
- Johnson, R.I. 1980. Zoogeography of North American Unionacea (Mollusca: Bivalvia) north of the maximum pleistocene glaciation. *Bull. Mus. Comp. Zool.* 149(2):77-189.
- Johnson, S. A.; Brack, V. Jr.; Rolley, R.E. 1998. Overwinter weight loss of Indiana bats (*Myotis sodalis*) from hibernacula subject to human visitation. *American Midland Naturalist*. 139:255-261.
- Johnson, T.R. 1977. The Amphibians of Missouri. *Univ. Kansas Mus. Nat. Hist. Publ. Ed. Ser.* 6:1-134.
- Johnson, T.R. 1987. The Amphibians and Reptiles of Missouri. Missouri Dept. Cons., Jefferson City, 368 pp.
- Johnson, T.R. 2000. The Amphibians and Reptiles of Missouri 2nd Edition. Missouri Department of Conservation, Jefferson City. 400 pp.
- Jones, C. D., J. A. Cox, and R. J. Cooper. 2014. Bachman's sparrow (*Peucaea aestivalis*) response to variation in the extent of burns conducted during the nesting season. *Avian Conservation and Ecology* 9: 3.
- Jones, C. D., J. A. Cox, E Toriani-Moura, and R. J. Cooper. 2013. Nest-site characteristics of Bachman's sparrows and their relationship to plant succession following prescribed burns. *The Wilson Journal of Ornithology* 125:293-300.
- Jones, R.N.; Orth, D. J.; Maughan, O.E. 1984. Abundance and preferred habitat of the leopard darter, *Percina pantherina*, in Glover River, Oklahoma. *Copeia* 1984: 378-384.
- Jones, S. L. 2010. Sprague's Pipit (*Anthus spragueii*) conservation plan. U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C.
- Kaiser, S. A. and C. A. Lindell. 2007. Effects of distance to edge and edge type on nesting growth and nest survival in the Wood Thrush. *Condor* 109:288–303.

Kellner, C.J. and E.L. Combs Harper. In Prep. Influence of Selective Timber Harvesting and Controlled Burning on Abundance of Cerulean Warblers in an Upland Hardwood Forest

Kennedy, E. Dale and Douglas W. White. 2013. Bewick's Wren (*Thryomanes bewickii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/315>

Keppie, D.M.; Whitting, Jr., R.M. 1994. American Woodcock (*Scolopax minor*). The Birds of North America, No. 100 [Poole, A.; Gill, F., eds.] Philadelphia: The Academy of Natural Sciences; Washington, DC. The American Ornithologists' Union.

Kilgore, K. J., J. J. Hoover, S. G. George, B. R. Lewis, C. E. Murphy, and W. E. Lancaster. 2007. Distribution, relative abundance and movements of pallid sturgeon in the free-flowing Mississippi River. *Journal of Applied Ichthyology* 23:476-483.

Kiser, J.D.; Elliot, C.L. 1996. Foraging habitat, food habits, and roost tree characteristics of the Indiana bat (*Myotis sodalis*) during autumn in Jackson County, Kentucky.

Klauber, L.M. 1956. Rattlesnakes: Their Habits, Life Histories, and Influence on Mankind. 2 Vols. Univ. California Press, Berkeley. 1533 pp.

Klima, J., and Jehl Jr, J. R. 1998. Stilt Sandpiper (*Calidris himantopus*). The birds of North America, (341), 20.

Kraemer, L.R.; M.E. Gordon. 1981. Comparison of mollusks retrieved by crowfoot dredge and ponar grab sampler from the White River at St. Charles, Arkansas with comment on population structure of *Corbicula fluminea* (Bivalvia: Sphaeriacea).

Krementz, D. G. and J. S. Christie. 1999. Scrub-successional bird community dynamics in young and mature longleaf pine–wiregrass savannahs. *Journal of Wildlife Management* 63(3):803-814.

Kuehne, R., and Barbour, R. 1983. The American darters. Univ. Press Kentucky, Lexington. Kuehne The American darters 1983.

Kunkel, K.E., L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Weubbles, C.E. Konrad, C.M. Fuhrmann, B.D. Keim, M.C. Kruk, A. Billot, H. Needham, M. Shafer, and J.G. Dobson. 2013. Regional Climate Trends and Scenarios for the U.S. National Climate Assessment. Part 2: Climate of the Southeast United States. NOAA Technical Report NESDIS 142-2.

Kurta, A.; Kath, J.; Smith, E.L.; Foster, R.; Orick, M.W.; Ross, R. 1992. Do Indiana bats require shaded maternity roosts. 63.

Kurta, A.; Kath, J.; Smith, E.L.; Foster, R.; Orick, M.W.; Ross, R. 1993. A maternity roost of the endangered Indiana bat (*Myotis sodalis*) in an unshaded, hollow, sycamore tree (*Platanus occidentalis*). *American Midland Naturalist*. 130:405-407.

Kurta, A.; Kennedy, J. 2002. The Indiana bat: biology and management of an endangered species. Bat Conservation International. Austin, Texas. Keywords: *Myotis sodalis*/ biology/ management

- Kushlan, J. A., Steinkamp, M. J., Parsons, K. C., Capp, J., Cruz, M. A., Coulter, M., ... And Erwin, R. M. 2002. Waterbird conservation for the Americas: the North American waterbird conservation plan, version 1.
- Lamb, T. and D. A. Beamer. 2012. Digits lost or gained? Evidence for pedal evolution in the Dwarf Salamander complex (Eurycea, Plethodontidae). PLoS ONE 7(5):e37544. doi:10.1371/journal.pone.0037544
- Lanctot, R. B., and Laredo, C. D. 1994. Buff-breasted Sandpiper. American Ornithologists' Union.
- Landers, J.L.; Mueller, B.S. 1986. Bobwhite Quail Management: A Habitat Approach. Publication No. 6. Tall Timbers Research Station. Tallahassee, FL. 39 p.
- Larson JR, R. D. 1991. Present Status and Distribution of the Arkansas River Shiner, *Notropis*. (Doctoral dissertation, Oklahoma State University).
- LaVal, R. K. 1970. Intraspecific relationships of bats of the species *Myotis austroriparius*. Journal of Mammalogy. 51(3):542-552.
- LaVal, R. K. and M.L. LaVal. 1980. Ecological studies and management of Missouri bats with emphasis on cave-dwelling species. Jefferson City, MO: Missouri Department of Conservation; Terrestrial Studies #8.
- Layher, W. G. 1998. Status and distribution of pallid sturgeon, blue sucker and other large river fishes in the Red River, Arkansas. Layher Biologics RTEC, Incorporated.
- Layher, W. G., B. S. Crabb, and M. Spurlock. 2005. A three year fish faunal survey of Arkansas' large rivers. Layer BioLogics RTEC, Inc., Pine Bluff, Arkansas. State Wildlife Grant T24-01 Final Report. 80 pages.
- Layher, W.G. and J.W. Phillips. 2000. Status and distribution of alligator gar, *Lepisosteus spatula*, in several large river systems in Arkansas. Contract No. 0019869, submitted to the Arkansas Game and Fish Commission. Layher BioLogics RTEC, Inc., Pine Bluff, AR. 32 pp.
- Layman, S. R. and Mayden, R. L. 2012. Morphological diversity and phylogenetics of the darter subgenus *Doration* (Percidae: Etheostoma), with descriptions of five new species. Bulletin of the Alabama Museum of Natural History, 30, 1-83.
- Layman, Steven R. and Richard L. Mayden. 2012. Morphological diversity and phylogenetics of the darter subgenus *Doration* (Percidae: Etheostoma), with descriptions of five new species. Bulletin of the Alabama Museum of Natural History. Bulletin 30. 83 pages.
- Lehnen, S. E., and D. G. Kremetz. 2013. Use of Aquaculture Ponds and Other Habitats by Autumn Migrating Shorebirds along the Lower Mississippi River. Environmental Management 52:417-426.
- Leone, F. J., J. N. Stoeckel, and J. W. Quinn. 2012. Difference in paddlefish populations among impoundments of the Arkansas River, Arkansas. North American Journal of Fisheries Management 32:731-744.



- Lesmeister, D. B., Gompper, M. E., & Millspaugh, J. J. 2009. Habitat selection and home range dynamics of eastern spotted skunks in the Ouachita Mountains, Arkansas, USA. *The Journal of Wildlife Management*, 73(1), 18-25.
- Lesmeister, D.B., J.J. Milspaugh, M.E. Gompper, and T.W. Mong. 2010. Eastern Spotted Skunk (*Spilogale putorius*) Survival and Causespecific Mortality in the Ouachita Mountains, Arkansas. *American Midland Naturalist* 164: 52-60.
- Lesmeister, D.B., J.J. Milspaugh, S.E. Wade, M.E. Gompper. 2008b. A Survey of Parasites Identified in the Feces of Eastern Spotted Skunks (*Spilogale putorius*) in Western Arkansas. *Journal of Wildlife Disease* 44: 1041-1044.
- Lesmeister, D.B., M.E. Gompper, and J.J. Millspaugh. 2008a. Summer resting and den site selection by eastern spotted skunks (*Spilogale putorius*) in Arkansas. *Journal of Mammalogy* 89: 1512-1520.
- Lesmeister, D.B., R.S. Crowhurst, J.J. Millspaugh, and M.E. Gompper. 2013. Landscape ecology of eastern spotted skunks in habitats restored for red-cockaded woodpeckers. *Restoration Ecology* 21: 267-275.
- Lewis, J.J. 1983. *Caecidotea fonticulus*, first troglobitic asellid from the Ouachita Mountains (Crustacea: Isopoda: Asellidae). *Proc Biol Soc Wash* 96(1):149-153.
- Lohoefer, R.; Jones, R.L. 1991. Field survey report of Ouachita endemic salamanders. U. S. Fish Wildl. Ser., Unpubl. Rep., Endangered Species Office, Jackson, Mississippi. 23 p.
- Lowther, P.E. 2005. LeConte's Sparrow (*Ammodramus leconteii*). *The birds of North America online* (A. Poole, ed.). Cornell Laboratory of Ornithology, Ithaca, NY.
- MacGregor, J.R.; Kiser, J.D.; Gumbert, M.W.; Reed, T.O. 1999. Autumn roosting habitat of male Indiana bats (*Myotis sodalis*) in a managed forest setting in Kentucky. Stringer, J. W and D.L. Loftis. *Proceedings of the 12th Central Hardwood Conference*; Lexin
- MacWhirter, R. B., Austin-Smith, P., and Kroodsma, D. E. 2002. Sanderling: *Calidris alba*. *Birds of North America*, Incorporated.
- Magoulick, D. D. and R. J. DiStefano. 2007. Invasive crayfish *Orconectes neglectus* threatens native crayfishes in the Spring River drainage of Arkansas and Missouri. *Southeastern Naturalist* 6: 141-150.
- Martin, K.W. 2001. Effects of passage manipulation on cave climate and bat behavior: management implications for cave-dwelling bats: Oklahoma State University.
- Martin, K.W.; Puckette, W.L; Hensley, S.L; Leslie, D.M. Jr. 2000. Internal cave gating as a means of protecting cave-dwelling bat populations in eastern Oklahoma. *Proceedings of the Oklahoma Academy of Science*. 80:133-137.
- Martin, M.M. 1981. A herpetological survey of Polk County, Arkansas. M.S. Thesis. Northeast Louisiana Univ., Monroe. 103 pp.

- Martin, T.E. and D.M. Finch. 1995. Ecology and management of neotropical migratory birds. Oxford University Press. 489p.
- Martof, B. 1955. Observations on the life history and ecology of the amphibians of the Athens area, Georgia. *Copeia* 1955:167.
- Masters, J. H. 1968. *Euphydryas phaeton* in the Ozarks. *Entomological News* 79:85-91.
- Masters, R. E., J. E. Skeen, and J. Whitehead. 1995. Preliminary fire history of McCurtain County 'Wilderness Area and implications for red-cockaded woodpecker management, in DL Kulhavy, RG Hooper, and R Costa eds., Red-cockaded Woodpecker Symposium III: Recovery, Ecology and Management, held 24-28 January 1993, North Charleston, South Carolina. Nacogdoches, TX, Center for Applied Studies in Forestry, College of Forestry, Stephen F. Austin State University, p. 290-302.
- Mather, C.M. 1990. Status survey of the western fanshell and the Neosho mucket in Oklahoma. Final report to the Oklahoma Dept. of Wildlife Conservation. 22 pp. + appendices.
- Mathis, M. L., and Bowles, D. E. 1989. A New Microcaddisfly Genus (Trichoptera: Hydroptilidae) from the Interior Highlands of Arkansas, USA. *Journal of the New York Entomological Society*, 187-191.
- Matta, J. F., and Wolfe, G. W. 1979. New species of nearctic *Hydroporus* (Coleoptera: Dytiscidae)[*Hydroporus sulphurius*, *Hydroporus ouachitus*, *Hydroporus alleghenianus*]. *Proceedings of the Biological Society of Washington (USA)*.
- Matthews, M. 2007. Freshwater bivalve (Mollusca: Unionidae, Corbiculidae) assemblages in an Ozark river: structure and role in nutrient recycling. M.S. Thesis Arkansas State University. 197 pp.
- Mawdsley, J., R. O'Malley, and D. Ojima. 2009. A Review of Climate-Change Adaptation Strategies for Wildlife Management and Biodiversity Conservation. *Conservation Biology* 23(5): 1080-1089.
- Mayasich, J., Grandmaison, D., and Phillips, C. 2003. Eastern hellbender status assessment report. Natural Resources Research Institute, Technical Report, 9, 1-41.
- Mayden, R. L. 2010. Systematics of the *Etheostoma punctulatum* species group (Teleostei: Percidae), with descriptions of two new species. *Copeia*, 2010 (4), 716-734.
- McAllister, C. T., and H. W. Robison. 2010. Distribution of the endemic Redspotted Crayfish, *Orconectes acares* (Decapoda: Cambaridae), in Arkansas. *Journal of the Arkansas Academy of Science*. 64:136-140.
- McAllister, C. T., Layher, W. G., Robison, H. W., & Buchanan, T. M. (2010). Distributional Records for Fishes from Five Large Rivers in Arkansas. *The Southwestern Naturalist*, 55(4), 587-591.
- McAllister, C. T., W. C. Starnes, H. W. Robison, R. E. Jenkins, and M. E. Raley. 2009. Distribution of the silver redhorse *Moxostoma anisurum* (Cypriniformes: Catostomidae), in Arkansas. *The Southwestern Naturalist* 54(4):514-518.
- McAllister, C.T. 1980a. Ecological observations of the eastern collared lizard, *Crotaphytus collaris collaris* (Say), in northcentral Arkansas. M.S. Thesis, Arkansas State Univ., Jonesboro. 124 pp.

- McAllister, C.T. 1983. Aquatic behavior of collared lizards, *Crotaphytus collaris collaris*. *Herpetol. Rev.* 14:11
- McAllister, C.T. 1985b. Food habits and feeding behavior of *Crotaphytus collaris collaris* (Iguanidae) from Arkansas and Missouri. *Southwestern Naturalist.* 30:597-600.
- McAllister, C.T. 1987a. *Eumeces septentrionalis obtusirostris*, reproduction. *Herpetol. Rev.* 18:75.
- McAllister, C.T., Trauth, S.E.; Ubelaker, J.E. 1985. *Oochoristica crotaphyti* n. sp. (Eucestoda: Linstowiidae) from *Crotaphytus collaris* (Sauna: Iguanidae) in northern Arkansas. *J. Parasitol.* 71:803-807.
- McAllister, C.T.; Bursey, C.R.; Trauth, S.E. 2002. Parasites of four species of endemic *Plethodon* from Arkansas and Missouri. *Proceedings of the Arkansas Academy of Science.* 56:239-242.
- McAllister, C.T.; Trauth, S.E. 1982. An instance of the eastern collared lizard, *Crotaphytus collaris collaris* (Sauna: Iguanidae), feeding on *Sigmodon hispidus* (Rodentia: Cricetidae). *Southwestern Naturalist.* 27:358-359.
- McAllister, C.T.; Trauth, S.E. 1985. Endoparasites of *Crotaphytus collaris collaris* (Sauria: Iguanidae) from Arkansas. *Southwestern Naturalist.* 30:363-370.
- McAllister, C.T.; Trauth, S.E. 1996a. Food habits of paedomorphic mole salamanders, *Ambystoma talpoideum* (Caudata: Ambystomatidae), from northeastern Arkansas. *Southwestern Naturalist.* 41: 62-64.
- McAllister, C.T.; Trauth, S.E.; Cochran, B.G. 1995d. Endoparasites of the ringed salamander, *Ambystoma annulatum* (Caudata: Ambystomatidae), from Arkansas. *Southwestern Naturalist.* 40:327-330.
- McAllister, C.T.; Trauth, S.E.; Gage, L.D. 1995. Vertebrate fauna of abandoned mines at Gold Mine Springs, Independence County, Arkansas. *Proceedings of the Arkansas Academy of Science.* 45:184-187.
- McAllister, C.T.; Trauth, S.E.; Upton, S.J.; Jamieson, D.H. 1993b. Endoparasites of the bird-voiced treefrog, *Hyla avivoca* (Anura: Hylidae), from Arkansas. *J. Helminth. Soc. Wash.* 60:140-143.
- McAllister, Chris T., Henry W. Robison, Thomas M. Buchanan, and David A. Etnier. 2012. Distributional records for four fishes from the Arkansas, Mississippi, and White rivers of Arkansas. *The Southwestern Naturalist* 57(2): 217-219.
- McCafferty, W. P. 1977. Biosystematics of *Dannella* and related subgenera of *Ephemerella* (Ephemeroptera: Ephemerellidae). *Annals of the Entomological Society of America*, 70(6), 881-889.
- McCallum, M. L. and Trauth, S. E. 2001a. Are Tadpoles of the Illinois Chorus Frog (*Pseudacris streckeri illinoensis*) Cannibalistic?. *Transactions of the Illinois State Academy of Science*, 94(3), 171-178.
- McCallum, M. L., and Trauth, S. E. 2001b. *Pseudacris streckeri illinoensis* (Illinois Chorus Frog). *Terrestrial Feeding. Herpetological Review*, 32, 35.
- McCallum, M. L., and Trauth, S. E. 2002. An investigation of the distribution and status of the Illinois chorus frog (*Pseudacris streckeri illinoensis*) and condition of breeding habitat in northeastern Arkansas: A needs assessment for conservation. Final Report to the Arkansas Game and Fish Commission, Little Rock.

- McCallum, M. L., Klotz, T. L., & Trauth, S. E. (2003). *Rana sylvatica* (Wood frog). Death feigning. *Herpetological Review*, 34(1), 54-55.
- McCallum, M.L., B.A. Wheeler, and S.E. Trauth. 2001. *Pseudacris sterckeri illinoensis*. Dysfunctional vocal sac. *Herpetolo. Rev.* 34:46.
- McComb W.C. & Noble R.E. 1981. Nest-box and natural-cavity use in three mid-south forest habitats. *The Journal of Wildlife Management*, 45, 93-101.
- McDaniel, V.R. 1975. Geographic Distribution. *Ambystoma annulatum*. *Herpetol. Rev.* 6:115.
- McDaniel, V.R. and D.A. Saugey. 1977. Geographic Distribution. *Ambystoma annulatum*. *Herpetol. Rev.* 8:38.
- McDaniel, V.R.; Gardner, J.E. 1977. Cave fauna of Arkansas: Vertebrate taxa. *Arkansas Academy of Science Proceedings*. 31:68-71.
- McDaniel, V.R.; Harvey, M.J.; Tumilson, R.; Paige, K.N. 1982. Status of the small-footed bat, *Myotis leibii*, in the southern Ozarks. *Arkansas Academy of Science Proceedings*. 36(92-94).
- McGuire, J.A. 1996. Phylogenetic systematics of crotaphytid lizards (Reptilia: Iguania: Crotaphytidae). *Bull. Carnegie Mus. Nat. Hist.* 32:1-143.
- McKellar, A. E., Kesler, D. C., Mitchell, R. J., Delaney, D. K., & Walters, J. R. 2014. Geographic variation in fitness and foraging habitat quality in an endangered bird. *Biological Conservation* 175:52-64.
- McVay, J. D. and B. Carstens. 2013. Testing monophyly without well-supported gene trees: Evidence from multi-locus nuclear data conflicts with existing taxonomy in the snake tribe *Thamnophiini*. *Molecular Phylogenetics and Evolution* 68(2013):425–431.
- Meanley, B. 1969. Natural history of the king rail. *North American Fauna* (67). Bureau of Sport Fisheries and Wildlife.
- Medlin Jr., R.E. and T.S. Risch. 2008. Habitat Associations of Bottomland Bats, with Focus on Rafinesque's Big-Eared Bat and Southeastern *Myotis*. *American Midland Naturalist* 160: 400-412.
- Medlin Jr., R.E., M.B. Connior, K.F. Gaines, and T.S. Risch. 2010. Responses of Bats to Forest Fragmentation in the Mississippi River Alluvial Valley, Arkansas, USA. *Diversity* 2: 1146-1157.
- Medlin Jr., R.E., S.C. Brandebura, H.B. Fokidis, and T.S. Risch. 2006. Distribution of Arkansas's bottomland bats. *Journal of the Arkansas Academy of Science* 60: 189-191.
- Meek, S.E.; Clark, H.W. 1912. The mussels of the Big Buffalo Fork of the White River, Arkansas. U. S. Bureau of Fisheries Document 759:1-20.
- Mehlhop-Cifelli, P.; Miller, E.K. 1989. Status and distribution of *Arkansia wheeleri* Ortmann & Walker, 1912 (syn. *Arcidens wheeleri*) in the Kiamichi River, Oklahoma. Report to the U.S. Fish and Wildlife Service, Tulsa, OK.

- Menzel, M.A.; Menzel, J.M.; Carter, T.C.; Ford, W.M.; Edwards, J.W. 2001. Review of the forest habitat relationships of the Indiana bat (*Myotis sodalis*). USDA Forest Service; Gen. Tech. Rep. NE-284.
- Meshaka, W.E., Jr. and P. McLarty. 1988. Geographic distribution: *Ambystoma talpoideum*. *Herpetol. Rev.* 19:17.
- Meshaka, W.E., Jr.; Trauth, S.E. 1995. Reproductive cycle of the Ozark zigzag salamander, *Plethodon dorsalis angusticlavius* (Caudata, Plethodontidae), in north central Arkansas. *Alytes* 12:175-182.
- Meyer, J., M. Sale, J. Sale, P. Mulholland, and N. Poff. 1999. Impacts of Climate Change on Aquatic Ecosystem Functioning and Health. *Journal of the American Water Resources Association* 35(2): 1373-1386.
- Meyer, K. D. 1995. Swallow-tailed Kite (*Elanoides forficatus*). No. 138 in *The birds of North America* (A. Poole and F Gill, Eds.). Academy of Natural Sciences, Philadelphia, Pennsylvania, and the American Ornithologists' Union, Washington, DC.
- Mikel, G.A., G.A. Heidt, and D.W. Clark. 2010. Distribution of the southeastern shrew (*Sorex longirostris longirostris*) in Arkansas. *Journal of the Arkansas Academy of Science* 64: 97-100.
- Miller, A.C.; Harris, J.L. 1987. A survey for molluscs in the White River Near Newport, Arkansas, 1986. Misc. Paper EL-87-5, U.S. Army Corps of Engineers Waterways Exp. Station, Vicksburg, MS. 25 p., Appendix A.
- Minton, S.A., Jr. and J.E. Minton. 1948. Notes on a herpetological collection from the middle Mississippi Valley. *American Midland Naturalist.* 40:378-390.
- Mitchell, C. D. 1994. Trumpeter Swan: *Cygnus Buccinator*. American Ornithologists' Union.
- Mitchell, Carl D. and Michael W. Eichholz. 2010. Trumpeter Swan (*Cygnus buccinator*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology
- Monroe, A. 2010. Winter bird habitat use at multiple scales in a heterogeneous tallgrass prairie. M. S. thesis, Oklahoma State University, Stillwater, OK.
- Montague, W.G.; Neal, J.C.; Johnson, J.E.; James, D.A. 1995. Techniques for excluding southern flying squirrels from cavities of red-cockaded woodpeckers. In: Kulhavy, David L.; Hooper, Robert G.; Costa, Ralph, eds. Red-cockaded woodpecker: species recove
- Moriarty, E. C., and Cannatella, D. C. 2004. Phylogenetic relationships of the North American chorus frogs (*Pseudacris*: Hylidae). *Molecular phylogenetics and evolution*, 30(2), 409-420.
- Moriarty-Lemmon, E., A. R. Lemmon, J. T. Collins, J. A. Lee-Yawa, and D. C. Cannatella. 2007. Phylogeny-based delimitation of species boundaries and contact zones in the trilling chorus frogs (*Pseudacris*). *Molecular Phylogenetics and Evolution*, Vol. 44(3):1068–1082.
- Mount, R.H. 1975. *The Reptiles and Amphibians of Alabama*. Auburn Univ. Agric. Exp. Sta., Auburn. 347 pp.
- Mumford, R.E; Cope, J.B. 1964. Distribution and status of the Chiroptera of Indiana. *American Midland Naturalist.* 72(2):473-489.

Myers, R.F. 1964. Ecology of three species of myotine bats in the Ozark Plateau. Columbia, MO: University of Missouri-Columbia.

National Audubon Society (2010). The Christmas Bird Count Historical Results [Online]. Available <http://www.christmasbirdcount.org> [accessed: 8 January, 2015]

National Audubon Society. 2002. The Christmas Bird Count Historical Results [Online]. Available <http://www.christmasbirdcount.org>

National Fish, Wildlife and Plants Climate Adaptation Partnership (NFWPCAS). 2012. National Fish, Wildlife and Plants Climate Adaptation Strategy. Association of Fish and Wildlife Agencies, Council on Environmental Quality, Great Lakes Indian Fish and Wildlife Commission, National Oceanic and Atmospheric Administration, and U.S. Fish and Wildlife Service, Washington, D.C.

National Research Council. 2012. Climate Change: Evidence, Impacts, and Choices; answers to common questions about the science of climate change. 36 pp.

NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. <Http://www.natureserve.org/explorer>.

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>.

Neal, J.C. 1992. Factors affecting breeding success of red-cockaded woodpeckers in the Ouachita National Forest, Arkansas. M.Sci. thesis, University of Arkansas, Fayetteville, AR.

Neal, J.C.; James, D.A.; Montague, W.G.; Johnson, J.E. 1993a. Effects of weather and helpers on survival of nestling red-cockaded woodpeckers. *Wilson Bulletin* 105: 666-673.

Neal, J.C.; Montague, W.G.; James, D.A. 1992. Sequential occupation of cavities by red-cockaded woodpeckers and red-bellied woodpeckers in the Ouachita National Forest. *Proceedings of the Arkansas Academy of Science* 46: 106-108.

Neal, J.C.; Montague, W.G.; James, D.A. 1993b. Climbing by black rat snakes on cavity trees of red-cockaded woodpeckers. *Wildlife Society Bulletin* 21: 160-165.

Neal, J.C.; Montague, W.G.; Richardson, D.M.; Withgott, J.H. 1998. Exclusion of rat snakes from red-cockaded woodpecker cavities. *Wildlife Society Bulletin* 26: 851-854.

Neill, W.T. 1963. *Hemidactylum scutatum*. *Cat. Amer. Amphib. Rept.* 2.1-2.2.

Nekola, J. C. and B. F. Coles. 2001. Systematics and ecology of *Gastrocopta rogersensis* (Gastropoda: Pupillidae), a new species from the midwest of the United States of America. *The Nautilus* 115: 105–114.

Nelson, J. S., E. J. Crossman, H. Espinosa-Perez, L. T. Findley, C. R. Gilbert, R. N. Lea, and J. D. Williams. 2004. Common and scientific names of fishes from the United States, Canada, and Mexico. American Fisheries Society Special Publication 29, Bethesda, Maryland, 386 pp.

Nelson, T.A.; Saugey, D.A.; Carolan, L.E. 1991. Range extension of the endangered gray bat, *Myotis grisescens*, into the Arkansas River Valley. *Proceedings of the Arkansas Academy of Science*. 45:129-131.

Newell, P. J. 2013. Winter ecology of the rusty blackbird (*Euphagus carolinus*) (Doctoral dissertation, University of Georgia).

Nickerson, M. A., K.L. Krysko, and R. D. Owen. 2002. Ecological status of the hellbender (*Cryptobranchus alleganiensis*) and the mudpuppy (*Necturus maculosus*) salamanders in the Great Smoky Mountains National Park. *Journal of the North Carolina Academy of Science* 118(1): 27-34.

Niemiller, M. L., T. J. Near, and B. M. Fitzpatrick. 2011. Delimiting species using multilocus data: diagnosing cryptic diversity in the southern cavefish, *Typhlichthys subterraneus* (Teleostei: Amblyopsidae). *Evolution* 66:846-866.

NOAA Climatic Data Center. Historical average temperatures for Arkansas. <http://www.ncdc.noaa.gov/temp-and-precip/state-temps/>. Accessed 9 September 2015.

Noble, G.K.; Marshall, B.C. 1929. The breeding habits of two salamanders. *Amer. Mus. Novitates* 347:111-112.

North American Bird Conservation Initiative, U.S. Committee. 2014. The State of the Birds 2014 Report. U.S. Dept. of Interior, Washington, D.C. 16 pages.

Nupp, T. and J. Watterson. 2007. Examination of Interior Least Tern Nesting Colonies in the Arkansas River Valley, Arkansas, Summer 2007. Report to U.S. Fish and Wildlife Service, Conway, AR.

Nyman, S.; Wilkinson, R.F.; Hutcherson, I.E. 1993. Cannibalism and size relations in a cohort of larval ringed salamanders (*Ambystoma annulatum*). *J. Herpetol.* 27:78-84.

Odegard, R. 2003. Ozark mammal database.

Oesch, R.D. 1995. Missouri naiades: a guide to the mussels of Missouri. Missouri Dept. of Conservation, Jefferson City, Missouri. 271 p.

Ohio River Valley Ecosystem Team, Mollusk Subgroup. 2003. Status assessment for the spectaclecase, *Cumberlandia monodonta*, occurring in the Mississippi River system. Final Report. 69 pp. + append.

Oklahoma Natural Heritage Inventory. 2003. Oklahoma element of occurrence records.

Omernik, J.M. 1995. Ecoregions: A spatial framework for environmental management. In: *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. Davis, W.S. and T.P. Simon (eds.) Lewis Publishers, Boca Raton, FL. Pp. 49-62.

Opler, P. A. and V. Malikul. 1998. *Eastern Butterflies* (Peterson Field Guide). Houghton Mifflin Company. New York.

Opler, P. A., K. Lotts, and T. Naberhaus, Coordinators. 2010. *Butterflies and Moths of North America*. Bozeman, MT: Big Sky Institute. (<http://www.butterfliesandmoths.org>)

Ortenburger, A.I. 1929. Reptiles and amphibians from southeastern Oklahoma and southwestern Arkansas. *Copeia* 1929:8-12.

- Page, L. M., and Smith, P. W. 1971. The life history of the slenderhead darter, *Percina phoxocephala*, in the Embarras River, Illinois. Biological notes; no. 074.
- Palmer, E.J. 1924. The ligneous flora of Rich Mountain, Arkansas and Oklahoma. *J. Arnold Arboretum* 5:108-134.
- Parker, M.V. 1947. Notes on the herpetology of Clay and Greene counties, Arkansas. *Proceedings of the Arkansas Academy of Science*. 2:15-30.
- Parmesan, C., Ryrholm, N., Stefanescu, C., Hill, J., Thomas, C., Descimon, H., Huntley, B., Kaila, L., Kullberg, J., Tammuru, T., Tennent, W., Thomas, J., and Warren, M. 1999. Poleward shifts in geographical ranges of butterfly species associated with regional warming. *Nature*: 399: 579-583.
- Patterson, K.K. 1978. Life history aspects of pedomorphic populations of the mole salamander, *Ambystoma talpoideum*. *Copeia* 1978:649-655.
- Paulson, D. R. and Dunkle, S. W. 1999. A Checklist of North American Odonata. Slater Museum of Natural History
- Peck, J.H. Clark, J.D.; Sheldon, T.; Heidt, G.A. 1985. Analysis of Arkansas fur harvest records-1942-1984: II. Species accounts. *Arkansas Academy of Science Proceedings*. 39:84-88.
- Penor, J.R.; Karlin, A.V.; Heidt, G.A. 1996. Biodiversity of Camp Joseph T. Robinson Military Installation North Little Rock, Arkansas 1994-1995. *Proceedings of the Arkansas Academy of Science*. 50(91-95).
- Perkins, R.M. 1928. Collecting reptiles near Little Rock, Arkansas. *Bull. Antivenin Inst. Amer.* 1928:47-50.
- Perkins, R.M.; Lentz, M.J.R. 1932. Contribution to the herpetology of Arkansas. *Copeia* 1934: 139-140.
- Perry, R. H., Surdick, R. W., & Anderson, D. M. 1974. Observations on the biology, ecology, behavior, and larvae of *Dryobius sexnotatus* Linsley (Coleoptera: Cerambycidae). *The Coleopterists' Bulletin*, 169-176.
- Perry, R.W. and R.E. Thill. 2007. Roost selection by male and female northern long-eared bats in a pine dominated landscape. *Forest Ecology and Management* 247: 220-226.
- Perry, R.W., R.E. Thill, and D.M. Leslie, Jr. 2008. Scale dependent effects of landscape structure and composition on diurnal roost selection by forest bats. *Journal of Wildlife Management* 72: 913-925.
- Peterson, C.L.; Wilkinson, R.F.; Moll, D.; Holder, T. 1992. Estimating the number of female *Ambystoma annulatum* (Caudata: Ambystomatidae) based on oviposition. *Southwestern Naturalist*. 37:425-426.
- Petranka, J.W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D. C. 587 pp.



- Pflieger, W.L. 1996. The crayfishes of Missouri. Missouri Conservation Dept. Jefferson City. 152 pp.
- Pflieger, W.L. 1997. The fishes of Missouri. Missouri Dept. Conservation. Jefferson City, MO. 372 pp.
- Piaggio, A.J., D.A. Saugey, D.B. Sasse. 2011. Phylogenetic and population genetic assessment of Rafinesque's big-eared bat (*Corynorhinus rafinesquii*). Pages 101-110 In Loeb, S.C.; Lacki, M.J.; Miller, D.A., eds. 2011. Conservation and management of eastern big-eared bats: a symposium. Gen. Tech. Rep. SRS-145. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 157 pp.
- Pilsbry HA and Ferriss JH. 1906 Mollusca of the southwestern states. II. Proceedings of the Academy of Natural Sciences of Philadelphia 58: 123–175, plates V–IX.
- Pingjun, L.I. 1994. Breeding Productivity, Microhabitat Requirements, and Parental Care of Neotropical Migrant Birds in the Ozarks of Arkansas. The University of Arkansas. Fayetteville, AR
- Pitts, R.M.; Choate, J.R.; Clawson, R.L. 1996. The distribution of Missouri bats. Transactions of the Missouri Academy of Science. 30:37-60.
- Plummer, M.V. 1977. Geographic Distribution: *Rana areolata circulosa*. Herpetological Review 8:38.
- Plummer, M.V. 1982. The status of the Caddo Mountain and Fourche Mountain salamanders (*Plethodon caddoensis*, *P. fourchensis*) in Arkansas. Rept. Arkansas Nat. Herit. Comm. Little Rock.
- Plummer, M.V. and B.A. Dye. 1992. Geographic Distribution: *Ambystoma talpoideum*. Herpetol. Rev. 23:84.
- Plummer, M.V. and J.D. White. 1992. Geographic Distribution: *Rana areolata circulosa*. Herpetol. Rev. 23:87.
- Polhemus, D. A. 1993. Conservation of aquatic insects: Worldwide crisis or localized threats? American Zoologist, 33(6), 588-598.
- Pope, C.H. 1964. *Plethodon caddoensis*. Cat. Amer. Amphib. Rept. 14.1.
- Pope, C.H.; Pope, S.H. 1951. A study of the salamander, *Plethodon ouachitae* and the description of an allied form. Bull. Chicago Acad. Sci. 9:129-152.
- Posey, W.R. II. 1997. Location, species composition, and community estimates for mussel beds in the St. Francis and Ouachita rivers in Arkansas. M.S. thesis, Dept. Biological Sciences, Arkansas State University, State University, AR. 178 p.
- Posey, W.R. J.L. Harris and G.L. Harp 1996. New distributional records for freshwater mussels in the Ouachita River, Arkansas. Proceedings of the Arkansas Academy of Science. Vol. 52. Pp. 96-98.
- Poulton and Stewart. 1987. Three new species of stoneflies (Plecoptera) from the Ozark-Ouachita Mountain region. Proceedings of the Entomological Society of Washington (Proc. Entomol. Soc. Wash.) 89(2):296-302.

- Probst, J. R. and F. R. Thompson, III. 1996. A multiscale assessment of the geographic and ecological distributions of Midwestern Neotropical migratory birds. Pages 22-40 in F. R. Thompson, III, Ed. Managing Midwestern landscapes for the conservation of Neotropical migratory birds. USDA For. Serv. North Central Forest Experiment Station Gen. Tech. Rep. NC-187.
- Quinn, J. W., W. R. Posey, II, F. J. Leone, and R. L. Limbird. 2009. Management of the Arkansas River commercial paddlefish fishery with check stations and special seasons. *American Fisheries Society Symposium* 66:261-275.
- Rabalais, M. R., and Magoulick, D. D. 2006. Influence of an invasive crayfish species on diurnal habitat use and selection by a native crayfish species in an Ozark stream. *The American midland naturalist*, 155(2), 295-306.
- Raney, H. 2012. Arkansas Butterfly Checklist. [[www.hr-rna.com/RNA/Bflypages/ARButterflymaplist.htm](http://www.hr-rna.com/RNA/Bflypages/ARButterflymaplist.htm)]
- Ranvestel, A.W., and B.M. Burr. 2004. Conservation assessment for bluehead shiner (*Pteronotropis hubbsi*). *American Currents* 30(1) [Winter]:17-25.
- Raymond, L.R.; Hardy, L.M. 1990. Demography of a population of *Ambystoma talpoideum* (Caudata: Ambystomatidae) in northwestern Louisiana. *Herpetologica* 46:371-382.
- Raymond, L.R.; Hardy, L.M. 1991. Effects of a clearcut on a population of the mole salamander, *Ambystoma talpoideum*, in an adjacent unaltered forest. *J. Herpetol.* 25:509-512.
- Reagan, D. P. 1974. Threatened native amphibians of Arkansas. Pp. 93-99. In Arkansas Natural Area Plan Arkansas Department of Planning. Little Rock.
- Reddin, C. 2014. Small mammal community associations and habitat use at Pea Ridge National Military Park, Benton County, Arkansas. Masters Thesis, University of Arkansas at Fayetteville, 54 pp.
- Reimer, RD. 1966. Two new species of the genus *Cambarus* from Arkansas (Decapoda, astacidae). *Tulane studies in zoology*. 13 (1):9-15.
- Rhoden, C. M., Taylor, C. A., & Peterman, W. E. (2016). Highway to heaven? Roadsides as preferred habitat for two narrowly endemic crayfish. *Freshwater Science*, 35(3), 000-000.
- Rhoden, Cody M., Christopher A. Taylor, and Brian K. Wagner. 2016. Habitat assessment and range updates for two rare Arkansas Burrowing crayfishes: *Fallicambarus harpi* and *Procambarus reimeri*. *Southeastern Naturalist* 15(3): 448-458.
- Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Iñigo-Elias, and others. 2004. Partners in Flight North American landbird conservation plan. Cornell Laboratory of Ornithology, Ithaca, New York.
- Ricker, W. E., and Ross, H. H. 1969. The genus *Zealeuctra* and its position in the family Leuctridae (Plecoptera, Insecta). *Canadian Journal of Zoology*, 47(6), 1113-1127.
- Rigsby, J. M. 2009. Status and genetics of the stargazing darter in Arkansas. Master's thesis, Arkansas Tech University. 118 pp

- Robbins, C.S., D.K. Dawson, and B.A. Dowell. 1989. Habitat area requirements of breeding forest birds of the Middle Atlantic states. Wildlife Monographs No. 103.
- Robbins, M.B.; Easterla, D.A. 1992. Birds of Missouri: Their Distribution and Abundance. University of Missouri Press, Columbia, MO
- Robertson, S. M. 2015. Life history, oviposition patterns, and management of the Ozark Baltimore Checkerspot (*Euphydryas phaeton ozarkae*). MS Thesis. University of Arkansas at Little Rock.
- Robertson, S.M. 2015. Life history, oviposition patterns, and management of the Baltimore Checkerspot (*Euphydryas phaeton ozarkae*). MS Thesis. University of Arkansas at Little Rock.
- Robinson, S. K., Fitzpatrick, J. W., and Terborgh, J. 1995. Distribution and habitat use of Neotropical migrant landbirds in the Amazon basin and Andes. Bird Conservation International, 5(2-3), 305-323.
- Robinson, S.R.; Heske, E.J.; Brawn, J.D. 1999. Factors Affecting the Nesting Success of Edge and Shrubland Birds. Final Report to Illinois Department of Natural Resources, Federal Aid project, No. W-125-R.
- Robinson, S.R.; Thompson, F.R., III; Donovan, T.M.; Whitehead, D.R.; Faaborg. 1995. Regional Forest Fragmentation and the Success of Migratory Birds. Science 267:1987-1990.
- Robison HW and RT Allen. 1995. Only in Arkansas: A study of the endemic plants and animals of the state. University of Arkansas Press, Fayetteville. 121 pp.
- Robison HW and TM Buchanan. 1994. First record of the Channel Shiner, *Notropis wickliffi* Trautman, in Arkansas and comments on the Current River population of *Notropis volucellus* (Cope). Proceedings of the Arkansas Academy of Science 48:264-5.
- Robison, H. W. 2005. Distribution and status of the Kiamichi Shiner, *Notropis ortenburgeri* Hubbs (Cyprinidae). Journal of the Arkansas Academy of Science 59: 137-147.
- Robison, H. W. 2006a. Status of the Arkansas Endemic Crayfish, *Bouchardina robisoni* Hobbs. State Wildlife Grant Project T26R-11 Final Report to Arkansas Game and Fish Commission, Little Rock, Arkansas. 51 pp. + appendices.
- Robison, H. W. 2008. Distribution, Life History Aspects, and Conservation Status of Three Ouachita Mountain Crayfishes: *Procambarus tenuis*, *P. reimeri*, and *Orconectes menae*. Final Report to U.S.D.A. Forest Service, Hot Springs, Arkansas. 32 pp.
- Robison, H. W. 2004. A survey of the paleback darter, *Etheostoma pallidorsum* Distler and Metcalf, an upper Ouachita River system endemic. Final report for Ouachita NF.
- Robison, H. W. 2006b. Status survey of the peppered shiner, *Notropis perpallidus* Hubbs and Black, in Arkansas and Oklahoma. Journal of the Arkansas Academy of Science 60:101-107.
- Robison, H. W. and B. K. Wagner. 2005. Status survey of the endemic crayfish, *Fallicambarus gilpini* Hobbs and Robison. Journal of the Arkansas Academy of Science. 59:158-162.

- Robison, H. W. and Harp, G. L. 1985. Distribution, Habitat and Food of the Ouachita Madtom, *Noturus lachneri*, a Ouachita River Drainage Endemic. *Copeia*, 1985(1), 216-220.
- Robison, H. W., K. A. Crandall, and B. K. Wagner. 2009. Distribution, Genetics, and Conservation Status of Three Arkansas Crayfishes. State Wildlife Grant Project T2-1-11 Final Report to Arkansas Game and Fish Commission, Little Rock, Arkansas. 17 pp.
- Robison, H. W., R. C. Cashner, M. E. Raley, and T. J. Near. 2014. A new species of darter from the Ouachita highlands in Arkansas related to *Percina nasuta* (Percidae: Etheostomatinae). *Bulletin of the Peabody Museum of Natural History* 55(2):237-252.
- Robison, H., C. McAllister, C. Carlton, and G. Tucker. 2008. The Arkansas Endemic Biota: An Update with Additions and Deletions. *Journal of the Arkansas Academy of Science*. 62:84-96.
- Robison, H.W. 1992. Distribution and status of the Ouachita River form of the longnose darter in the Ouachita National Forest, Arkansas. Final Report to U.S. Forest Service, Ouachita National Forest. Hot Springs, AR 58 p.
- Robison, H.W. 1993. Effects of barite mining on the distribution, life history aspects, and status of the Caddo madtom, *Noturus taylori* Douglas (Pisces: Ictaluridae) in the Ouachita National Forest, Arkansas. Final Report to USDA Forest Service. Ouachita
- Robison, H.W. 1995. Status survey of the Ozark Shiner, *Notropis ozarcanus* Meek, in Arkansas. Final Report submitted to the U.S. Fish and Wildlife Service. Jackson, Mississippi.
- Robison, H.W. 2001. Distribution and status of the Kiamichi shiner, *Notropis ortenburgeri* Hubbs (Cyprinidae). Final Report to USDA Forest Service. Hot Springs, AR 50 pp.
- Robison, H.W. and S.A. Winters. 1978. Geographic Distribution. *Ambystoma talpoideum*. *Herpetol. Rev.* 9:21.
- Robison, H.W. and T.M. Buchanan. 1988. *Fishes of Arkansas*. Univ. Arkansas. Fayetteville. 536 pp.
- Robison, H.W.; Douglas, N.H. 1979. First records of *Eumeces obsoletus* in Arkansas. *Southwestern Naturalist*. 23:538-539.
- Robison, Henry W. 2001. Final report: A status survey of the Arkansas endemic crayfish, *Fallicambarus petilicarpus* Hobbs and Robison. Report to USFWS Conway Arkansas. 17pp.
- Robison, Henry W. and Betty Crump, 2004. Distribution, natural history aspects, and status of the Arkansas endemic crayfish, *Fallicambarus harpi* Hobbs and Robison, 1985. *Journal of the Arkansas Academy of Science*. 58:91-94.
- Robison, Henry W., and Robert T. Allen. 1995. Only in Arkansas: A study of the endemic plants and animals of the state. University of Arkansas Press, Fayetteville. 121pp.
- Robotham, C. D. and Allen, R. T. 1988. *Paraleptophlebia calcarica*, n. sp. (Ephemeroptera: Leptophlebiidae) from western Arkansas. *Journal of the Kansas Entomological Society*, 317-320.
- Rodewald, P.G.; Smith, K.G. 1998. Short-Term Effects of Understory and Overstory Management on Breeding Birds in Arkansas Oak-Hickory Forests. *Journal of Wildlife Management* 62: 1411-1417.

- Rodgers, J. A., and Smith, H. T. 1995. Set-back distances to protect nesting bird colonies from human disturbance in Florida. *Conservation Biology*, 9(1), 89-99.
- Roe, K.J. 2002. Conservation assessment for the snuffbox (*Epioblasma triquetra*) (Rafinesque, 1820). Final Report USDA Forest Service, Eastern Region. 12 pp.
- Roe, K.J., and P.J. Chong. 2014. Species Delineation and Estimation of Genetic Diversity in the Freshwater Mussel Genus *Cyprogenia* (Bivalvia: Unionidae). Final Report. USFWS-Arkansas Field Office. 27 pp.
- Romero, A., and M. Conner. 2007. Status report for the southern cavefish, *Typhlichthys subterraneus* in Arkansas. Final Report, State Wildlife Grant T20-1, Arkansas State University. 38 pages.
- Rosenberg, K.V., D. Pashley, B. Andres, P. J. Blancher, G.S. Butcher, W.C. Hunter, D. Mehlman, A.O. Panjabi, M. Parr, G. Wallace, and D. Wiedenfeld. 2014. The State of the Birds 2014 Watch List. North American Bird Conservation Initiative, U.S. Committee. Washington, D.C. 4 pages
- Rosenberg, K.V.; Barker, S.E.; Rohrbaugh, R.W. 2000. An Atlas of Cerulean Warbler Populations. Cornell Lab of Ornithology, Ithaca, NY.
- Rosene, W. 1969. The Bobwhite Quail: Its Life and Management. Rutgers University Press, New Brunswick, N.J. 418 p.
- Ross, H. H. 1938. Descriptions of Nearctic Caddis Flies (Trichoptera), with Special Reference to the Illinois Species. Illinois Natural History Survey Bulletin; v. 021, no. 04.
- Ross, H.H. 1964. New species of winter stoneflies of the genus *Allocapnia* (Plecoptera: Capniidae). *Entomological News*, 75:169-177.
- Rudolph, D. C., C. A. Ely, R. R. Schaefer, J. H. Williamson, and R. E. Thill. 2006. The Diana Fritillary (*Speyeria diana*) and Great Spangled Fritillary (*S. cybele*): Dependence on fire in the Ouachita Mountains of Arkansas. *Journal of the Lepidopterists' Society* 60:218-226.
- Rudolph, D. C., R. N. Conner, D. K. Carrie, and R. R. Shaefer. 1992. Experimental reintroduction of red-cockaded woodpeckers. *Auk* 109:914-916.
- Rusch, D. H., C. D. Ankney, H. Boyd, J. R. Longcore, F. Montalbano, J. K. Ringelman, and V. D. Stotts. 1989. Population ecology and harvest of the American black duck. *Wildlife Society Bulletin* 17:379-406.
- Rust, P. J. 1993. Analysis of the commercial mussel beds in the Black, Spring, Strawberry and Current rivers in Arkansas. M.S. thesis, Dept. Biological Sciences, Arkansas State University, State University, AR. 118 p.
- Salveter, A.L. 1994. Effects of Prescribed Burning on Neotropical Migrant and Resident Birds in Pine Forests of the Arkansas Ozarks. M.S. Thesis, University of Arkansas, Fayetteville, AR. 65 p.
- Sanderson, M. W. and Miller, A. 1941. A new species of ground beetle of the genus *Rhadine* from an Arkansas cave (Coleoptera: Carabidae). In *Proc. Ark. Acad. Sci* (Vol. 1, pp. 39-40).
- Sasse, D. B., G. Heidt, R. Sikes, T. Risch, S. Brandenbura, November 17, 2004. Species list/peer review.

- Sasse, D.B. 2005. Pesticide residues in guano of gray bats (*Myotis grisescens*) in Arkansas. *Journal of the Arkansas Academy of Science* 59: 214-217.
- Sasse, D.B. and D.A. Saugey. 2008. Rabies prevalence among and new distribution records of Arkansas bats. *Journal of the Arkansas Academy of Science* 62: 159-160.
- Sasse, D.B. and D.A. Saugey. 2014. Protection of water wells used as winter roosts by Rafinesque's big-eared bats. *Bat Research News* 55(2): 17-20.
- Sasse, D.B., D.A. Saugey, and D.R. England. 2011. Winter roosting behavior of Rafinesque's big-eared bat in southwestern Arkansas. Pages 123-128 In Loeb, S.C.; Lacki, M.J.; Miller, D.A., eds. 2011. Conservation and management of eastern big-eared bats: a symposium. Gen. Tech. Rep. SRS-145. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 157 pp.
- Sasse, D.B., D.A. Saugey, and R.W. Perry. 2011. Current status of the Little brown bat (*Myotis lucifugus*) in Arkansas. *Journal of the Arkansas Academy of Science* 65: 180-182.
- Sasse, D.B., M.L. Caviness, M.J. Harvey, J.L. Jackson, P.N. Jordan, T.L. Klotz, P.R. Moore, R.W. Perry, R.K. Redman, T.S. Risch, D.A. Saugey, and J.D. Wilhide. (In Press 2014). New records and notes on the ecology of the northern long-eared bat (*Myotis septentrionalis*) in Arkansas. *Journal of the Arkansas Academy of Science*.
- Sasse, D.B., R.L. Clawson, M.J. Harvey, and S.L. Hensley. 2007. Status of western populations of the endangered gray bat. *Southeastern Naturalist* 6(1): 165-172.
- Sasse, D.B., T.S. Risch, D.A. Saugey, M.J. Harvey, J.D. Wilhide, R.K. Redman, J.J. Jackson, T. Klotz, and P.R. Moore. 2013. New records of the eastern small-footed bat (*Myotis leibii*) in Arkansas. *Journal of the Arkansas Academy of Science*. 67: 214-216.
- Sauer, J. R., Link, W. A., & Niven, D. K. (2004). Statistical analyses make the Christmas Bird Count relevant for conservation. *American Birds*, 58 (104th Christmas Bird), 21-25.
- Saugey, D.A.; England, D.R.; Chandler-Mozisek, L.R.; McDaniel, V.R.; Rowe, M.C.; Cochran, B.G. 1993. Arkansas range extensions of the eastern small-footed bat, and northern long-eared bat and additional county records for the silver-haired bat, hoary bat.
- Saugey, D.A.; Heath, D.R.; Heidt, G.A. 1989. The bats of the Ouachita Mountains. *Proceedings of the Arkansas Academy of Science*. 43:71-77.
- Saugey, D.A.; Heidt, G.A.; Heath, D.R. 1985. Summer use of abandoned mines by the Caddo salamander, *Plethodon caddoensis* (Plethodontidae), in Arkansas. *Southwestern Naturalist*. 30:318-319.
- Saugey, D.A.; Trauth, S.E. 1991. Distribution and habitat utilization of the four-toed salamander, *Hemidactylium scutatum*, in the Ouachita Mountains of Arkansas. *Proceedings of the Arkansas Academy of Science*. 45:88-91.
- Schmidt, K.P. 1953. A checklist of North American amphibians and reptiles. 6th ed. Amer. Soc. Ichthyol. Herpetol. 280 pp.
- Schuijer, J. P.; Dickson, J.W.; Harvey, M.J. 1972. Herpetofauna of Sylamore Ranger District, Ozark National Forest, Arkansas: preliminary report. *Proceedings of the Arkansas Academy of Science*. 26:61-66.

Schwardt, J. 1938. Reptiles of Arkansas. Bull. Univ. Arkansas Agri. Exp. Sta. 357:3-47.

Schweitzer, D. F. 1989. A review of category 2 Insecta in USFWS regions 3, 4, 5. Unpublished report prepared for the U.S. Fish and Wildlife Service, Newton Corners, MA

Schweitzer, D. F., M. C. Minno, and D. L. Wagner. 2011. Rare, Declining, and Poorly Known Butterflies and Moths (Lepidoptera) of Forests and Woodlands in the Eastern United States. FHTET-2011-01.

Schwemm, M. R. 2013. Zoogeography of Ouachita Highland Fishes (Doctoral dissertation, Oklahoma State University).

Scott, J. A. 1986. The Butterflies of North America: A Natural History and Field Guide. Stanford University Press, Stanford.

Scott, M.C., Helfman, G.S., McTammany, M.E., Benfield, E.F. & Bolstad, P.V. 2002. Multiscale influences on physical and chemical stream conditions across Blue Ridge landscapes. Journal of the American Water Resources Association 38:1379–1392.

Scott, Mary 2004. Life history and population biology of the Arkansas fatmucket, *Lampsilis powellii* (Lea, 1852). MS Thesis. Arkansas State University, State University, AR py pp. + append.

Seagraves JH. 2006. The reproductive biology and habitat characterization of the endangered Ouachita rock pocketbook, *Arkansia wheeleri*, (Ortmann and Walker 1912) [MS thesis]. State University (AR): Arkansas State University. 76 p.+ appendices A-F.

Sealander, J.A. 1956. A provisional check-list and key to the mammals of Arkansas (with Annotations). American Midland Naturalist. 56(2):257-296.

Sealander, J.A. 1960. Some noteworthy records of Arkansas mammals. Journal of Mammalogy. 525-526.

Sealander, J.A.; Heidt, G.A. 1990. Arkansas mammals: their natural history, classification, and distribution. Revised ed. Fayetteville, Arkansas: University of Arkansas Press.

Sealander, J.A.; Young, H. 1955. Preliminary observations on the cave bats of Arkansas. Arkansas Academy of Science Proceedings. 7(21-31).

Seaman, B. D. and D. G. Kremetz. 2000. Movements and survival of Bachman's Sparrows in response to prescribed summer burns in South Carolina. Proceedings of the Annual Meeting of the Southeastern Association of Fish and Wildlife Agencies 54:227-240.

Secor, S.M. 1988. Perch sites of calling male bird-voiced treefrogs, *Hyla avivoca* in Oklahoma. Proceedings of the Oklahoma Academy of Science. 68:71-73.

Sedgwick, J. A. 2000. The Birds of North America, No. 533: Willow Flycatcher. The Birds of North America, Inc., Philadelphia, PA.

Semlitsch, R.D. 1985 Reproductive strategy of a facultatively paedomorphic salamander *Ambystoma talpoideum*. Oecologia (Ben.). 65:306-313.

- Semlitsch, R.D. 1987a. Relationship of pond drying to the reproductive success of the salamander *Ambystoma talpoideum*. *Copeia* 1987:61 -69.
- Semlitsch, R.D. 1987b. Density-dependent growth and fecundity in the paedomorphic salamander *Ambystoma talpoideum*. *Ecology* 68:1003-1008.
- Sharov, A., M. Wilbery, and J. Robinson. 2014. Developing biological reference points and identifying stock status for management of paddlefish (*Polyodon spathula*) in the Mississippi River basin. Final Report to the Association of Fish and Wildlife Agencies. 210 pages
- Shepard, D. B. and F. T. Burbrink. 2008. Lineage diversification and historical demography of a sky island salamander, *Plethodon ouachitae*, from the Interior Highlands. *Molecular Ecology*, (2008)17:5315-5335.
- Shepard, D. B. and F. T. Burbrink. 2009. Phylogeographic and demographic effects of Pleistocene climatic fluctuations in a montane salamander, *Plethodon fourchensis*. *Molecular Ecology*, (2009)18:2243–2262.
- Shepard, D. B. and F. T. Burbrink. 2011. Local-scale environmental variation generates highly divergent lineages associated with stream drainages in a terrestrial salamander, *Plethodon caddoensis*. *Molecular Phylogenetics and Evolution*, (2011) 59:399–411.
- Shepard, D. B., K. J. Irwin, and F. T. Burbrink. 2011. Morphological Differentiation in Ouachita Mountain Endemic Salamanders. *Herpetologica*, 67(4):355-368.
- Shepherd, M. D. 2005. Species Profile: *Callophrys irus*. In Shepherd, M. D., D. M. Vaughn, and S. H. Black (Eds.) Red List of Pollinator Insects of North America. The Xerces Society for Invertebrate Conservation.
- Shoop, C.R. 1960. The breeding habits of the mole salamander *Ambystoma talpoideum* (Holbrook) in southeastern Louisiana. *Tulane Stud. Zool.* 8:65-82.
- Shoop, C.R. 1964. *Ambystoma talpoideum*. *Cat. Amer. Amphib. Rept* 8.1-8.2.
- Showen, L.L. 2006. Effects of oak woodland restoration on small mammals in the Ozark National Forest. Masters Thesis, Arkansas Tech University.
- Sievert, D. 1986. An investigation of the distribution and population status of the Rich Mountain salamander (*Plethodon ouachitae*) in Oklahoma. Final Report. Oklahoma Department of Wildlife Conservation. 30 pp.
- Skagen, S. K., and F. L. Knopf. 1994. Migrating shorebirds and habitat dynamics at a prairie wetland complex. *Wilson Bulletin* 106:91-105.
- Slay, M. E. 2014. Recharge Delineation for a New Population of Hell Creek Cave Crayfish and Survey of Potential Cave Crayfish Habitat in Marion County, Arkansas. Section 6 Grant Project E1510-02 Final Report to Arkansas Game and Fish Commission, Little Rock, Arkansas. 150 pp.
- Smetana, J. G. 1983. Social-cognitive development: Domain distinctions and coordinations. *Developmental Review*, 3(2), 131-147.
- Smith, D.G. 2001. Ecology and Evolution of the Freshwater Mussels Unionoida. Springer. G. Bauer and K. Wachtler (Eds.) 400 pp.



- Smith, K.L.; Pell, W.F.; Rettig, J.H.; Davis, R.H.; Robison, H.W. 1984. Arkansas's Natural Heritage. August House Publ., Little Rock. 116 pp.
- Smith, P. W. 1979. The fishes of Illinois. University of Illinois Press. Urbana. 314 pp.
- Smith, P.W. 1961. The amphibians and reptiles of Illinois. Illinois Nat. Hist. Surv. Bull. 28:1-298.
- Smith, P.W. 1966a. *Pseudacris streckeri*. Cat. Amer. Amphib. Rept. 27.1-27.2.
- Smith, P.W. 1966b. *Hyla avivoca*. Cat. Amer. Amphib. Rept. 28.1-28.2. Species Bulletin 28(2): 10-11.
- Spencer, L. A. 2006. Arkansas Butterflies and Moths. Ozark Society Foundation, Little Rock.
- Spotila, I.R.; Beumer, R.J. 1970. The breeding habits of the ringed salamander, *Ambystoma annulatum* (Cope), in northwestern Arkansas. American Midland Naturalist. 84:77-87
- Spotila, J.R. 1972. Role of temperature and water in the ecology of lungless salamanders. Ecol. Monog. 42:95-125.
- Staines, C.L. 2001. Distribution of *Lucanus elaphus* Linnaeus (sic) (Coleoptera: Lucanidae) in North America. The Coleopterists Bulletin, 55(4): 397-404.
- Stansbery, D. 1970. Eastern freshwater mollusks (1) the Mississippi and St. Lawrence River systems. Malacologia 10:9-21.
- Stansbery, D.H.; Stein, C.B. 1982. The unionid mollusks of the lower Saint Francis River in Arkansas. Museum of Zoology, Ohio State University, Columbus. Report to the U. S. Fish and Wildlife Service, Atlanta, GA. 23 pp. + appendices.
- Stark, B. P. 1998. The Anacroneuria of Costa Rica and Panama (Insecta: Plecoptera: Perlidae). Proc. Biol. Soc. Wash. 11: 551-603.
- Steeves, Tanner K., Shannon B. Kearney-McGee, Margaret A. Rubega, Calvin L. Cink and Charles T. Collins. 2014. Chimney Swift (*Chaetura pelagica*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/646>
- Steffen, M. A., K. J. Irwin, A. L. Blair, and R. M. Bonett. 2014. Larval masquerade: A new species of pedomorphic salamander (Caudata: Plethodontidae: Eurycea) from the Ouachita Mountains of North America. Zootaxa 3786(4):423-442.
- Stein, B.A., P. Glick, N. Edelson, and A. Staudt. (eds.). 2014. Climate-Smart Conservation: Putting Adaptation Principles into Practice. National Wildlife Federation, Washington, D.C.
- Stein, C.B.; Stansbery, D.H. 1980. Final report on the distribution of naiad mollusks of the White River in the vicinity of the proposed U.S. Route 67 bridge, Jackson County, Arkansas. 9 p.

- Stejneger, L.; Barbour, T. 1917. A Check List of North American Amphibians and Reptiles. Harvard University Press, Cambridge. 125 pp.
- Steward, T.W. 1988. Distributions and habitat affinities of the mammals of southwest Arkansas. M.S. Thesis. Arkansas State Univ. 77 pp.
- Steward, T.W. 1988. Distributions and habitat affinities of the mammals of southwest Arkansas. Proceedings of the Arkansas Academy of Science. 40:72-73.
- Stober, J. M. and D. G. Kremetz. 2000. Survival and reproductive biology of the Bachman's Sparrow. Proceedings of the Annual Meeting of the Southeastern Association of Fish and Wildlife Agencies 54:383-390.
- Stoddard, H.L., Sr. 1931. The Bobwhite Quail – Its Habits, Preservation, and Increase. Charles Scribners's Sons, New York, NY. 559 p.
- Stoeckel, J. and K. Mole, K. 2002. Status survey for the scaleshell mussel, *Leptodea leptodon*, with a summary of baseline data on other freshwater mussel species, of the South fourche LaFave River, Arkansas. 25p.
- Stoeckel, J. N., C. J. Gagen, and R. W. Standadge. 2011. Feeding and reproductive biology of the Ouachita madtom. American Fisheries Society Symposium 77:267-279.
- Stoeckel, J.N.; Davidson, C.L.; Antwine, M.; Jones, C.; Brod, M.; Mole, K. 2000. Location and notes on freshwater mussels (*Bivalvia: Unionacea*) inhabiting Big Piney Creek, and East and Middle Forks Illinois Bayou within the Ozark-St. Francis National Fore
- Stoeckel, J.N.; Lewis, L.; Harlan, J. 1996. Mulberry River freshwater mussel survey. Prepared for the U.S.D.A. Forest Service, Ozark-St. Francis National Forest, Russellville, AR. 52 p.
- Stone, W. 1904. A collection of reptiles and salamanders from Arkansas, Indiana Territory, and western Texas. Proc. Acad. Nat. Sci. Philadelphia 55:538-558.
- Strecker, J.K. 1924. Notes on the herpetology of Hot Springs, Arkansas. Baylor Bull. 27:29-47.
- Stroman, J. A. 2014. Examining the population status of the stargazing darter, *Percina uranidae*, in the Saline River, Arkansas. Unpublished report, University of Arkansas at Little Rock.
- Stys, B. 1993. Ecology and habitat protection needs of the Southeastern American Kestrel (*Falco sparverius* Paulus) on large-scale development sites in Florida. Florida Game and Freshwater Fish Commission Nongame Wildlife Program. Technical Report #13. Tallahassee Fl. 35 pp.
- Sutton, K B. and K.N. Paige. 1980. Geographic Distribution. *Ambystoma talpoideum*. Herpetol. Rev. 11:13.
- Szymanski, J. 1998. *Leptodea leptodon* (scaleshell mussel) rangewide status assessment 1998. U. S. Fish and Wildlife Service, Endangered Species Division, Ft. Snelling, MN. 16 pp. + appendices.
- Taylor, C.L.; Wilkinson, R.F., Jr.; Peterson, C.L. 1990. Reproductive patterns of five plethodontid salamanders from the Ouachita Mountains. Southwestern Naturalist. 35:468-472.

- Taylor, E.H. 1935. Arkansas amphibians and reptiles in the Kansas University Museum. Univ. Kansas Sci. Bull. 22:207-218.
- The Nature Conservancy, Ouachita Ecological Conservation Planning Tool. 2003. Arkansas Chapter, The Nature Conservancy, 601 North University Avenue, Little Rock, Arkansas.
- Thomas, S.R. 2005. Status and distribution of Crawford's gray shrew (*Notiosorex crawfordi*) in Arkansas. Masters Thesis, University of Arkansas at Little Rock, 96 pp.
- Thompson FG and Hershler R. 2002. Two genera of North American freshwater snails: *Marstonia* Baker, 1926, resurrected to generic status, and *Floridobia*, new genus (Prosobranchia: Hydrobiidae: Nymphophilinae). *Veliger* 45:269-271
- Thompson, B. C., Jackson, J. J., Burger, J., Hill, L. A., Kirsch, E. M., and Atwood, J. L. 1997. Least tern (*Sterna antillarum*), in the Birds of North America, no. 290.
- Thompson, F.R., III. 1995. Management of Midwestern Landscapes for the Conservation of Neotropical Migratory Birds. GTR NC-187. St. Paul, MN; U.S. Department of Agriculture, Forest Service. 208 p.
- Thompson, F.R., III; Fritzell, E.K. 1990. Bird Densities and Diversity in Clearcut and Mature Oak-Hickory Forests. USDA Forest Service North Central Experiment Station Research Paper NC-293. St. Paul, MN.
- Thompson, F.R., III; Probst, J.R ; Raphael, M.G. 1995. Impacts of Silviculture: Overview and Management Recommendations. Ecology and Management of Neotropical Migratory Birds [Martin, T.E.; Finch, D.M., eds.]. New York: Oxford University Press: 201–219.
- Thompson, F.R., III; Robinson, S.K.; Whitehead, D.R.; Brawn, J.D. 1996. Management of Central Hardwood Landscapes for the Conservation of Migratory Birds. Management of Midwestern Landscapes for the Conservation of Neotropical Migratory Birds [Thompson, F
- Thompson, S.G. 2011. The distribution, occupancy, and habitat affinities of Bewick's Wrens (*Thyromanes bewickii*) in Arkansas. Thesis. Arkansas State University, Jonesboro, Arkansas.
- Thomson, C. E. 1982. *Myotis sodalis*. *Mammalian Species*. 163: 1-5.
- Thurrow, G.R. 1976. Aggression and competition in eastern *Plethodon* (Amphibia, Urodela, Plethodontidae). *Journal of Herpetology*. 10:277-291.
- Tibbs, J. E. 1998. Fathead chub: rangewide status assessment. US Fish and Wildlife Service, Region 3.
- Tihen, J.A. 1958. Comments on the osteology and phylogeny of ambystomatid salamanders. Bull. Florida State Mus., Biol. Ser. 3:1-50.
- Titus, T.A.; Larson, A. 1997. Molecular phylogenetics of desmognathine salamanders (Caudata: Plethodontidae): a reevaluation of evolution in ecology, life history, and morphology. *Syst. Biol.* 45:451-472.
- Trapp, M.M. 1956 (1957). Range and natural history of the ringed salamander, *Ambystoma annulatum* (Cope) (Ambystomatidae). *Southwestern Naturalist*. 1:78-82.

- Trapp, M.M. 1959. Studies on the life history of *Ambystoma annulatum* (Cope). M.S. Thesis. University of Arkansas, Fayetteville. 36 pp.
- Trauth, J. B., R. L. Johnson, and S. E. Trauth. 2007. Conservation implications of a morphometric comparison between the Illinois Chorus Frog (*Pseudacris streckeri illinoensis*) and Strecker's Chorus Frog (*P.s. streckeri*) (Anura: Hylidae) from Arkansas, Illinois, Missouri, Oklahoma, and Texas. *Zootaxa* 1589:23–32.
- Trauth, S. E. 2011. Rapid reservoir inundation causes complete extirpation of the Eastern Collared Lizard (*Crotaphytus collaris*) along the shoreline of Bull Shoals Lake in northern Arkansas. *Journal of Arkansas Academy of Science*, 65:133–137.
- Trauth, S. E., H. W. Robison, and M. V. Plummer. 2004. *The Amphibians and Reptiles of Arkansas*. University of Arkansas Press, Fayetteville. xviii + 421 pp.
- Trauth, S. E., R. L. Cox, Jr., J. D. Wilhide, and H. Worley. 1995. Egg mass characteristics of terrestrial morphs of the mole salamander, *Ambystoma talpoideum* (Caudata: Ambystomatidae), from northeastern Arkansas and clutch comparisons with other *Ambystoma* species. *Proceedings of the Arkansas Academy of Science* 49:193-196.
- Trauth, S.E. 1974. Demography and reproduction of the eastern collared lizard, *Crotaphytus collaris collaris* (Say), from northern Arkansas. M.S. Thesis. Univ. Arkansas, Fayetteville. 109 pp.
- Trauth, S.E. 1978. Ovarian cycle of *Crotaphytus collaris* (Reptilia, Lacertilia, Iguanidae) from Arkansas with emphasis on corpora albicantia, follicular atresia, and reproductive potential. *J. Herpetol.* 12:461-470.
- Trauth, S.E. 1979. Testicular cycle and timing of reproduction in the collared lizard (*Crotaphytus collaris*) in Arkansas. *Herpetologica* 35:184-192.
- Trauth, S.E. 1980b . Geographic Distribution. *Ambystoma annulatum*. *Herpetol. Rev.* 11:37.
- Trauth, S.E. 1986b. Geographic Distribution. *Crotalus atrox*. *Herpetol. Rev.* 17:67.
- Trauth, S.E. 1989a. Distributional survey of the eastern collared lizard, *Crotaphytus collaris collaris* (Squamata: Iguanidae), within the Arkansas River valley of Arkansas. *Proceedings of the Arkansas Academy of Science*. 43:101-104.
- Trauth, S.E. 1992b. Distributional survey of the bird-voiced treefrog, *Hyla avivoca* (Anura: Hylidae) in Arkansas. *Proceedings of the Arkansas Academy of Science*. 46:80-82.
- Trauth, S.E. 2000. Winter breeding as a common occurrence in the ringed salamander, *Ambystoma annulatum* (Caudata: Ambystomatidae), in the Ozark National Forest of northcentral Arkansas. *Proceedings of the Arkansas Academy of Science*. 54:157-158.
- Trauth, S.E.; Caldwell, R.S. 1986. Geographic Distribution. *Hemidactylium scutatum*. *Herpetol. Rev.* 17:92.
- Trauth, S.E.; Cartwright, M.E. 1989. An albino larva in the ringed salamander, *Ambystoma annulatum*, from Arkansas. *Bull. Chicago Herpetol. Soc.* 24:128.
- Trauth, S.E.; Cartwright, M.E.; Meshaka, W.E. 1989b. Winter breeding in the ringed salamander, *Ambystoma annulatum* (Caudata: Ambystomatidae), from Arkansas. *Southwestern Naturalist*. 34:145-146.

- Trauth, S.E.; Cochran, B.G. 1991. Hemidactylium scutatum. Predation. Herpetol. Rev. 22:55.
- Trauth, S.E.; Cochran, B.G. 1992. In search of western diamondback rattlesnakes (*Crotalus atrox*) in Arkansas. Bull. Chicago Herpetol. Soc. 27:89-94.
- Trauth, S.E.; Cochran, B.G.; Saugey, D.A.; Posey, W.R.; Stone, W.A. 1993a. Distribution of the mole salamander, *Ambystoma talpoideum* (Urodela: Ambystomatidae), in Arkansas with notes on paedomorphic populations. Proceedings of the Arkansas Academy of Science
- Trauth, S.E.; Cox, R.L.; Butterfield, B.P.; Saugey, D.A.; Meshaka, W.E. 1990. Reproductive phenophases and clutch characteristics of selected Arkansas amphibians. Proceedings of the Arkansas Academy of Science. 44:107-113.
- Trauth, S.E.; McCallum, M.L.; Ball, B.J.; Hoffman, V.E. 2000a. *Plethodon caddoensis* (Caddo Mountain salamander) and *Plethodon serratus* (Southern redback salamander). Nocturnal climbing activity. Herpetol. Rev. 31:232-233.
- Trauth, S.E.; Robinette, J.W. 1990a. Notes on distribution, mating activity, and reproduction in the bird-voiced treefrog, *Hyla avivoca*. Arkansas. Bull. Chicago Herpetol. Soc. 25:218-219
- Trauth, S.E.; Robinette, J.W. 1990b. Geographic Distribution. *Hyla avivoca*. Herpetol. Rev. 21:95.
- Trauth, S.E.; Wilhide, J.D. 1999. Status of three plethodontid salamanders (genus *Plethodon*) from the Ouachita National Forest of southwestern Arkansas. Proceedings of the Arkansas Academy of Science. 53:125-137.
- Tucker, G.E. 1989. Interim Management Guide for Ozark Chinquapin.
- Tucker, J. W., Jr., W. D. Robinson, and J. B. Grand. 2006. Breeding productivity of Bachman's Sparrows in fire-managed longleaf pine forests. Wilson Journal of Ornithology 118:131-137. [http:// dx.doi.org/10.1676/05-022.1](http://dx.doi.org/10.1676/05-022.1)
- Tumlison, R, and H. W. Robison. 2010. New records and notes on the natural history of selected vertebrates from southern Arkansas. Journal of the Arkansas Academy of Science 64:145-150.
- Tumlison, R, D.B. Sasse, M.E. Cartwright, S.C. Brandebura, and T. Klotz. 2012. The American badger (*Taxidea taxus*) in Arkansas, with emphasis on expansion of its range into northeastern Arkansas. Southwestern Naturalist 57(4): 467-471.
- Tumlison, R. 1995. Morphological discrimination of crania of big-eared bats in Oklahoma. Proceedings of the Oklahoma Academy of Science. 75:57-58.
- Tumlison, R. 2001. Report of the study of bats on the Jessieville Ranger District, Ouachita National Forest, including a survey to determine the presence of the endangered Indiana bat (*Myotis sodalis*). Henderson State University, Arkadelphia, AR; Challeng
- Tumlison, R. and K. Benjamin. 2011. Occurrence of two rare prairie insects, *Tetraloniella albata* (Cresson) and *Microstylum morosum* (Loew), at Terre Noire Natural Area, Clark County, Arkansas. Journal of the Arkansas Academy of Science 65:183-186.
- Tumlison, R. and K. Benjamin. 2013. Observations of the Behavior of the Giant Prairie Robberfly, *Microstylum morosum* Loew (Diptera: Asilidae), at Terre Noire Natural Area, Clark County, Arkansas. Journal of the Arkansas Academy of Science 67:217-220.

- Turgeon, D.D.; Bogan, A.E.; Coan, E.V.; Emerson, W.K.; Lyons, W.G.; Pratt, W.L.; Roper, C.F.E.; Scheltema, A.; Thompson, F.G.; Williams, J.D. 1988. Common and scientific names of aquatic invertebrates from the United States and Canada: mollusks. Amer. Fish. Soc. Spec. Publ. 16; 277 p.
- Turner, T.F.; Trexler, J.C.; Harris, J.L.; Haynes, J.L. 2000. Nested cladistic analysis indicates population fragmentation shapes genetic diversity in a freshwater mussel. *Genetics* 154: 777-785.
- Turner, Thomas, F., and H. W. Robison. 2006. Genetic diversity of the Caddo madtom, *Noturus taylori*, with comments on factors that promote genetic divergence in fishes endemic to the Ouachita highlands. *The Southwestern Naturalist* 51(3):338-345.
- Turnipseed, G. 1976. Geographic Distribution. *Hyla avivoca*. *Herpetol. Rev.* 7:178-179.
- Turnipseed, G. 1980b . Geographic Distribution. *Hyla avivoca*. *Herpetol. Rev.* 11:14.
- Turnipseed, G.; Gallagher, M. 1991. Geographic Distribution. *Ambystoma annulatum*. *Herpetol. Rev.* 22:133.
- Turnipseed, G.; Shepherd, B.1985. Geographic Distribution. *Pseudacris streckeri streckeri*. *Herpetol. Rev.* 16:115.
- U. S. Fish and Wildlife Service. 2003. Recovery Plan for the Red-Cockaded Woodpecker (*Picoides borealis*): second revision. U.S. Fish and Wildlife Service, Atlanta, GA. 296p.
- U.S. Department of Agriculture, Forest Service (USDA FS). 1999. Ozark-Ouachita Highlands Assessment: Reports 1-5. Gen.Tech. Rep. SRS 31-35. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 317p.
- U.S. Department of the Interior, Fish and Wildlife Service (USDI FWS). 1990. Endangered and threatened wildlife and plants; threatened status determined for the Arkansas fatmucket, *Lampsilis powelli*. *Federal Register* 55(66):12797-12801.
- U.S. Department of the Interior, Fish and Wildlife Service (USDI FWS). 1992. Arkansas fatmucket mussel (*Lampsilis powelli*) recovery plan. U.S. Department of Interior, Fish and Wildlife Service, Jackson, MS. 19 p.
- U.S. Department of the Interior, Fish and Wildlife Service (USDI FWS). 1994. Ouachita rock-pocketbook *Arkansia wheeleri* Ortmann and Walker, 1912. Recovery plan. Albuquerque, NM. 90 p.
- U.S. Department of the Interior, Fish and Wildlife Service (USDI FWS). 1998. Range wide status assessment for scaleshell mussel (*Leptodea leptodon*). Fort Snelling, MN. 30 pp.
- U.S. Department of the Interior, Fish and Wildlife Service (USDI FWS). 1999. Endangered and threatened wildlife and plants; proposed rule to list the scaleshell mussel as endangered. *Federal Register* 64(156):44171-44182.
- U.S. Environmental Protection Agency (USEPA). 2011. <https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states>
- U.S. Fish and Wildlife Service (USFWS). 1998. Final rule to list the Arkansas River basin population of the Arkansas River shiner (*Notropis girardi*) as threatened. *Federal Register* 63(225):64777-64799.

U.S. Fish and Wildlife Service (USFWS). 2011. Ozark cavefish (*Amblyopsis rosae* Eigenmann 1898). 5-year review: summary and evaluation. USFWS, Arkansas Ecological Services Field Office, Conway, Arkansas. 29 pp.

U.S. Fish and Wildlife Service 1985. Recovery plan for the Tuberculed-blossom pearly mussel *Epioblasma* (=Dysonmia) *torulosa torulosa* (Rafinesque, 1820), Turgid-blossom pearly mussel *Epioblasma* (=Dysonmia) *turgidula* (Lea, 1858) and Yellow-blossom pearly mussel *Epioblasma* (=Dysnomia) *florentina florentina* (Lea, 1857). U.S. Fish and Wildlife Service. January 25, 1985. 42 pp.

U.S. Fish and Wildlife Service. 1988. Determination of Threatened Status for the Ozark Cavefish (*Amblyopsis rosae*). Federal Register 49(213): 43965-43969. 1 November 1984.

U.S. Fish and Wildlife Service. 2013. Petition to list the Rattlesnake-Master Borer Moth (*Papaipema eryngii*) as an endangered or threatened species. Federal Register 78(157): 49422-49440. [Wednesday, August 14, 2013]

U.S. Fish and Wildlife Service. 1978. Final threatened status and critical habitat for the leopard darter. Federal Register 43:19.

U.S. Fish and Wildlife Service. 2013. Interior Least Tern (*Sternula antillarum*) 5-Year Review: Summary and Evaluation. Mississippi Field Office, Jackson, MS. 73 pp.

U.S. Fish and Wildlife Service. 2013. Petition to List the Rattlesnake-Master Borer Moth (*Papaipema eryngii*) as an endangered or threatened species. Federal Register 78(157):49422-492440.

U.S. Fish and Wildlife Service. 2014. Adaptive Harvest Management: 2014 Hunting Season. U.S. Department of Interior, Washington, D.C. 63 pp. Available online at <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/AHM/AHM-intro.htm>

U.S. Shorebird Conservation Plan. 2004. High Priority Shorebirds –2004. Unpublished Report, U.S. Fish and Wildlife Service, 4401 N. Fairfax Dr., MBSP 4107, Arlington, VA, 22203 USA. 5 pp.

U.S. Fish and Wildlife Service 2004. Endangered and threatened wildlife and plants; review of plant and animal taxa that are candidates for listing as endangered or threatened species. Federal Register 69(86):24876-24879.

United States Fish and Wildlife Service (USFWS) 1988. *Cambarus zophonastes* Recovery Plan. Atlanta, Georgia. 18pp.

United States Fish and Wildlife Service (USFWS). 1993. Final listing rules approved for 39 species. Endangered species technical bulletin. XVIII (2): 13.

USFWS. 2013. Endangered and Threatened Wildlife and Plants; Endangered Status for the Neosho Mucket and Threatened Status for the Rabbitsfoot. Final Rule. Vol 78 (180): 57076-57097.

Vance, T. 1985. Annotated checklist and bibliography of Arkansas reptiles. Smithsonian Herpetol. Serv. No. 63.

Vance, T. 1987. A new county record and range extension of the western diamondback rattlesnake in Arkansas. Herpetology 17:7-9.

- Vaughan, D. M. and M. D. Shepherd. 2005. Species Profile: *Euphues dukesi*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds.) Red List of Pollinator Insects of North America. The Xerces Society for Invertebrate Conservation.
- Vaughn, C.C. 1996. Survey of mussel assemblages in the Glover River. Final report to The Nature Conservancy, OK Field Office. 4 pp. + appendices.
- Vaughn, C.C.; Mather, C.M.; Pyron, M.; Mehlhop, P.; Miller, E.K. 1996. The current and historical mussel fauna of the Kiamichi River, Oklahoma. *Southwestern Naturalist*. 41(3):325-328.
- Vaughn, C.C.; Pyron, M.; Certain, D. 1993. Habitat use and reproductive biology of *Arkansia wheeleri* in the Kiamichi River, Oklahoma - Final Report. Unpublished report to the Oklahoma Dept. Wildlife Cons., Oklahoma City, OK. 104 pp.
- Vaughn, C.C.; Spooner, D. 2000. Mussel survey of the Mountain Fork River. Oklahoma Biological Survey, University of Oklahoma, Norman. Report submitted to USDA Forest Service, Ouachita National Forest, Hot Springs, AR. 8 pp. + appendices.
- Vaughn, C.C.; Taylor, C.M.; Eberhard, K.J. 1997. A comparison of the effectiveness of timed searches vs. quadrat sampling in mussel surveys. Pages 157-162 in K.S. Cummings, A.C. Buchanan, C.A. Mayer, and T.J. Naimo, eds. Conservation and management of fre
- Vickery, P. D. 1996. Grasshopper Sparrow: *Ammodramus Savannarum*. American Ornithologists' Union.
- Vogt, N. E. 2013. Spatial transition of the fish community and environmental characteristics in the White River below Bull Shoals Dam. Master's thesis, Arkansas Tech University, Russellville. 63 pp.
- Volpe, E.P.; Wilkens, M.A.; Dobie, J.L. 1961. Embryonic and larval development of *Hyla avivoca*. *Copeia* 1961:340-349.
- Wagner, B. A., Echelle, A. A., and Maughan, O. E. 1987. Abundance and habitat use of an uncommon fish, *Notropis perpallidus* (Cyprinidae): comparison with sympatric congeners. *The Southwestern Naturalist*, 251-260.
- Wagner, B. K., C. A. Taylor, and M. D. Kottmyer. 2008. Stream Crayfish of the Northeast Arkansas Ozarks. State Wildlife Grant Project T20-8 Final Report to Arkansas Game and Fish Commission, Little Rock, Arkansas. 76 pp.
- Wagner, B. K., C. A. Taylor, and M. D. Kottmyer. 2010. Status and Distribution of *Orconectes williamsi* (Williams' Crayfish) in Arkansas, with New Records from the Arkansas River Drainage. *Southeastern Naturalist*. Volume 9, Special Issue 3:175-184.
- Wagner, B. K., C. A. Taylor, and M. D. Kottmyer. 2010. Status and Distribution of the Gapped Ringed Crayfish, *Orconectes neglectus chaenodactylus*, in Arkansas. *Journal of the Arkansas Academy of Science*. 64:115-122.
- Wagner, B. K., M. D. Kottmyer, and M. E. Slay. 2011. Summary of previous and new records of the Arkansas darter (*Etheostoma cragini*) in Arkansas. *Journal of the Arkansas Academy of Science* 65: 138-142.
- Wagner, B.K., M. D. Kottmyer, and M. E. Slay. 2012. Summary of previous and new records of the least darter (*Etheostoma microperca*) in Arkansas. *Journal of the Arkansas Academy of Science* 66:173-179.



- Wallace E. LaBerge. 2001. Revision of the bees of the genus *Tetraloniella* in the New World (Hymenoptera: Apidae). *Illinois Natural History Survey Bulletin* 36(3):67–162.
- Walters, J. R., L. B. Crowder, and J. A. Priddy. 2002. Population viability analysis for red-cockaded woodpeckers using an individual-based model. *Ecological Applications* 12:249-260.
- Warren, R.E. 1991. Ozarkian fresh-water mussels (Unioidea) in the upper Eleven Point River, Missouri. *Amer. Malacol. Bull.* 8(2) (1991):131-137.
- Warriner, M. D. 2004. First Arkansas record of the robber fly *Microstylum morosum* (Diptera: Asilidae). *The Southwestern Naturalist*, 49(1), 83-84.
- Watts, B. D. 1995. Yellow-crowned Night-heron: *Nyctanassa violacea*. American Ornithologists' Union.
- Webb, R.G. 1970. Reptiles of Oklahoma. Univ. Oklahoma Press. Norman. 370 pp.
- West, R. L., and Hess, G. K. 2002. Purple gallinule (*Porphyrio martinicus*). The birds of North America online, (626). Ithaca: Cornell Lab of Ornithology.
- Westhoff, J. T., J. A. Guyot, and R. J. Distefano. 2006. Distribution of the imperiled Williams' crayfish (*Orconectes williamsi*) in the upper White River drainage of Missouri: Associations with multi-scale environmental variables. *American Midland Naturalist* 156(2): 273-288.
- Wheeler, B. A., Hiler, W. R., Trauth, S. E., & Christian, A. D. (2005, May). Comparison of the Reach Scale Habitat Characteristics of Historic and Current Ozark Hellbender (*Cryptobranchus alleganiensis bishopi*) Localities Using Standardized Assessment Protocols. In AGU Spring Meeting Abstracts.
- Wheeler, B. A., McCallum, M. L., and Trauth, S. E. 2002. Abnormalities in the Ozark Hellbender, *Cryptobranchus alleganiensis bishopi*. *Journal of the Arkansas Academy of Science*, 56, 250-252.
- Wheeler, B. A., Prosen, E., Mathis, A., and Wilkinson, R. F. 2003. A case of amphibian decline in a long-lived salamander: a long term study of hellbender populations. *Biol Conserv*, 109, 151-156.
- Wheeler, H.E. 1918. The Mollusca of Clark County, Arkansas. *The Nautilus* 31(4):109-125.
- White, D.S. 1977. Changes in the freshwater mussel populations of the Poteau River system, LeFlore County, Oklahoma. *Proceedings of the Oklahoma Academy of Science*. 57:103-105.
- Wilhide, J.D.; Harvey, M.J.; McDaniel, V.R.; Hoffman, V.E. 1998. Highland pond utilization by bats in the Ozark National Forest, Arkansas. *Proceedings of the Arkansas Academy of Science*. 52:110-112.
- Wilhide, J.D.; McDaniel, V.R.; Harvey, M.J.; White, D.R. 1998. Telemetric observations of foraging Ozark big-eared bats in Arkansas. *Proceedings of the Arkansas Academy of Science*. 52:113-116.
- Wilkes, Samuel. 1999. Report describing location and habitat type for *Valerianella nuttallii* (T. & G.) Walp. in Arkansas. Unpublished report for the Arkansas Natural Heritage Inventory.
- Williams, Austin B. 1954. Speciation and distribution of crayfishes of the Ozark plateaus and Ouachita provinces. *University of Kansas Science Bulletin*. 36(12):803-918.

Williams, J.D.; Warren, Jr., M.L.; Cummings, K.S.; Harris, J.L.; Neves, R.J. 1993. Conservation status of freshwater mussels of the United States and Canada. *Fisheries*. 18(9):6-22.

Wilson, L.A. 1995. Land manager's guide to the amphibians and reptiles of the south. The Nature Conservancy, Southeastern Region, Chapel Hill, NC. 360 pp.

Wood, J. T. 1955. The Nesting of the Four-Toed Salamander, *Hemidactylium scutatum* (Schlegel), in Virginia. *American Midland Naturalist*, 381-389.

Wood, P.B., J. Sheehan, P. Keyser, D. Buehler, J. Larkin, A. Rodewald, S. Stoleson, T.B. Wigley, J. Mizel, T.J. Boves, G. George, M. Bakermans, T. Beachy, A. Evans, M. McDermott, F. Newell, K. Perkins, and M. White. 2013. Management guidelines for enhancing Cerulean Warbler breeding habitat in Appalachian hardwood forests. American Bird Conservancy. The Plains, Virginia. 28 pp.

Wood, R. M., and Raley, M. E. 2000. Cytochrome b sequence variation in the crystal darter *Crystallaria asprella* (Actinopterygii: Percidae). *Copeia*, 2000(1), 20-26.

Woods, A. J., T. L. Foti, S. S. Chapman, J. M. Omernik, J. A. Wise, E. O. Murray, W. L. Prior, J. B. Pagan (Jr.), J. A. Comstock, and M. Radford. 2004. Ecoregions of Arkansas (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,000,000).

Wootton, J. Timothy. 1996. Purple Finch (*Haemorhous purpureus*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/208>

Yosef, Reuven. 1996. Loggerhead Shrike (*Lanius ludovicianus*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/231doi:10.2173/bna.231>