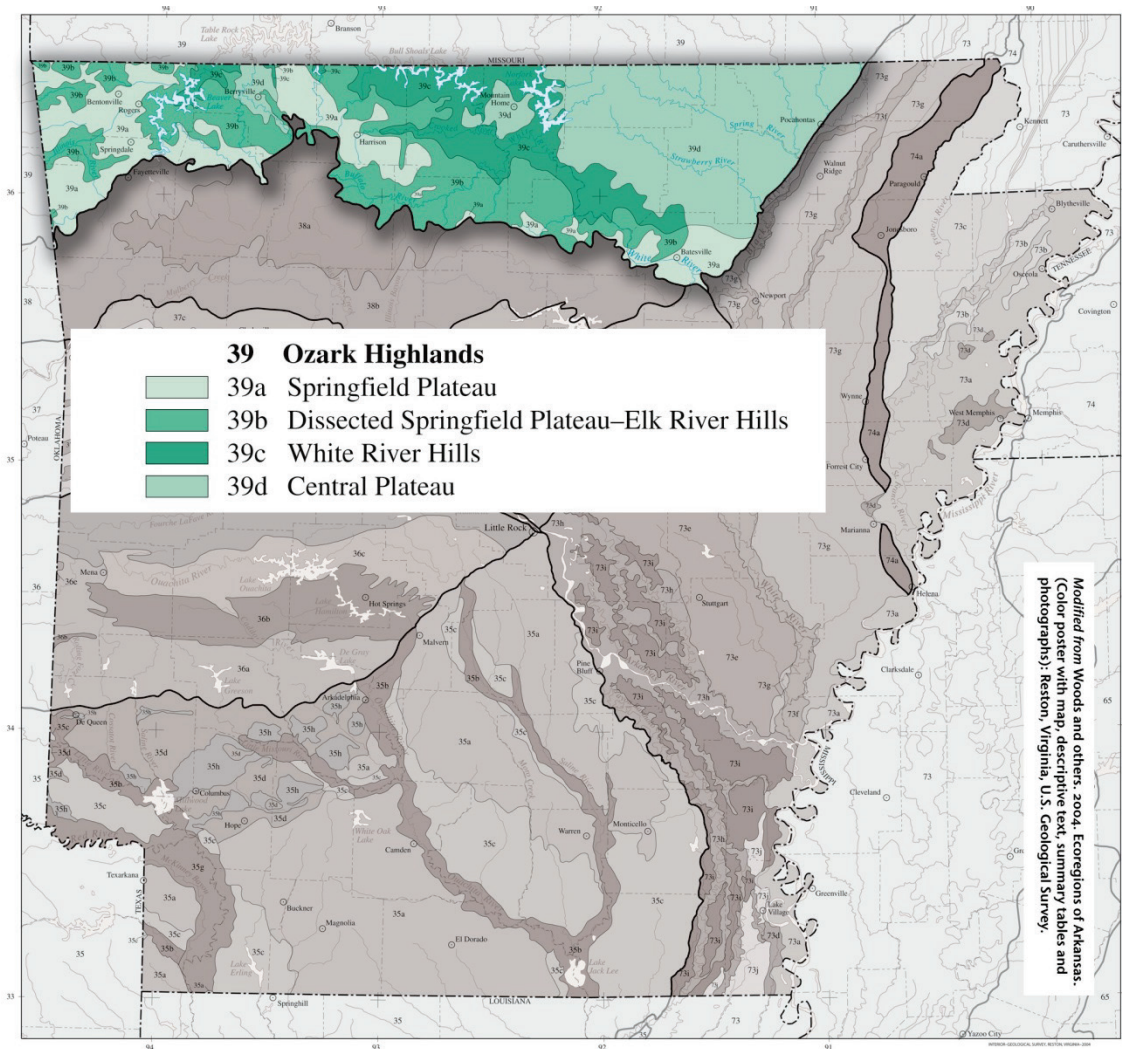


## Ozark Highlands (Ecoregion 39)

The Ozarks formed as the Ouachita mountains weighted down the edge of the North American continent, flexing the crust of the Arkoma Basin upward; younger sedimentary layers then eroded away, exposing the older, Paleozoic rocks that dominate the area. Ecoregion 39 is composed of the Springfield and Salem plateaus and largely underlain by highly soluble and fractured limestone and dolomite.

It is level to highly dissected, partly forested and rich in karst features. Caves, sink-holes and underground drainage occur, heavily influencing surficial water availability and water temperature. Clear, cold, perennial, spring-fed streams are common and typically have gravelly substrates; in addition, many small dry valleys occur.

Figure 3.4. Ozark Highlands Ecoregion.





### *Ozark Highlands - Springfield Plateau*

Ecoregion 39 is not as mountainous as Ecoregions 36 or 38, but is higher and more rugged than Ecoregion 73. Habitat diversity and species richness is high. Soils are often cherty and have developed from carbonate rocks or interbedded chert, sandstone and shale; mesic Ultisols, Alfisols and Mollisols are common. Soil order mosaic, soil temperature regime and lithology are all distinct from nearby Ecoregions 36, 37, 38, and 73.

Potential natural vegetation is mostly oak–hickory forest. Open forest dominates rugged areas and pastureland and hayland are common on nearly level sites. Shortleaf pine grows on steep, cherty escarpments and on shallow soils derived from sandstone; it becomes more common in Ecoregions 35, 36 and the southern portion of Ecoregion 38. Glades dominated by grass and eastern redcedar are found on shallow, droughty soils especially over dolomite.

Primary land uses are logging, housing, recreation and, especially, poultry and livestock farming. Water quality in the Ozark Highlands (39) is different from the other ecoregions in Arkansas and is strongly influenced by lithology and land use practices. Alkalinity, total dissolved solids and total hardness values are relatively high, reflecting the influence of Ecoregion 39's distinctive limestone and dolomite. Fecal coliform and nitrite-nitrate values are elevated downstream of

improved pastureland that is intensively grazed by cattle and fields where animal wastes from confined poultry and hog operations have been applied. Parts of Ecoregion 39 are experiencing rapid population growth along with associated habitat alteration and water pollution. Fish communities characteristically have a preponderance of sensitive species and are usually dominated by a diverse minnow community along with sunfishes and darters.

## Springfield Plateau

39a. The nearly level to rolling Springfield Plateau is underlain by cherty limestone of the Mississippian Boone Formation; it is less rugged and wooded than Ecoregions 38, 39b and 39c and lacks the Ordovician dolomite and limestone of Ecoregions 39c and 39d. Karst features, such as sinkholes and caves, are common. Cold, perennial, spring-fed streams occur.

Upland potential natural vegetation is primarily oak–hickory and also oak–hickory– pine forests; savannas and tall grass prairies also occurred and were maintained by fire. Today, most of the forest and almost all of the prairies have been replaced by agriculture or expanding residential areas. Poultry, cattle and hog farming are primary land uses; pastureland and hayland are common. Application of poultry litter to agricultural fields is a non-point source that can impair water quality. Total suspended solids and turbidity values in streams are usually low, but total dissolved solids and hardness values are high.

## Dissected Springfield Plateau–Elk River Hills

39b. The Dissected Springfield Plateau–Elk River Hills are underlain by cherty limestone of the Mississippian Boone Formation and contain many karst features. Cold, perennial, spring-fed streams occur. Ecoregion 39b is more rugged and wooded than the lithologically similar Springfield Plateau (39a) and the lithologically dis- similar Central Plateau (39d).

Potential natural vegetation is oak–hickory and oak–hickory–pine forests. Short- leaf pine grows on the thin, cherty soils of steep slopes and is more common than in Ecoregion 39a, 39c and 39d. Scattered limestone glades occur, but are less extensive than on the dolomites of the lithologically distinct Ecoregion 39c.

Today, Ecoregion 39b remains dominated by forest and woodland. Logging, live- stock farming, woodland grazing, recreation, quarrying and housing are primary land uses.

## White River Hills

39c. The forested White River Hills ecoregion is a highly dissected portion of the Salem Plateau that is underlain by cherty Ordovician dolomite and limestone. Soils are usually thin, rocky, steep and nonarable. Flat land is uncommon except along the White River. Ecoregion 39c is lithologically unlike another highly dissected portion of the Ozarks, Ecoregion 39b, where Mississippian cherty limestone of the Boone Formation predominates. Clear, cold, perennial,

spring-fed streams are common, but dry valleys occur.

Potential natural vegetation is oak–hickory forest, oak–hickory–pine forest and cedar glades. Glades are more extensive than elsewhere in Arkansas and occur on thin, droughty soils derived from carbonates. Pine is most common on steep, thin, cherty soils. Ecoregion 39c includes Table Rock, Bull Shoals, Norfolk and Beaver lakes. Turbidity and total suspended solids are usually low in its streams and rivers, but total dissolved solids and hardness values are high.

## Central Plateau

39d. The Central Plateau is an undulating to hilly portion of the Salem Plateau that is dominated by agriculture. Ecoregion 39d is largely underlain by cherty Ordovician dolomite and limestone; it is lithologically distinct from another slightly dissected part of the Ozarks, the Springfield Plateau (39a). Karst features occur. The Central Plateau (39d) is less rugged and wooded than Ecoregions 38, 39b and 39c.

Natural vegetation is oak–hickory forest, oak–hickory–pine forest (often on soils derived from sandstone), barrens (on thin soils) and scattered cedar glades (on shallow, rocky, droughty soils from dolomite or limestone).

Today, pastureland, hayland and housing are common, but remnant forests and savannas occur in steeper areas. Turbidity, total suspended solids, total dissolved solids and hardness values are often higher than in Ecoregions 39a and 39c (adapted from Woods and others 2004).

## Ozark Highlands Ecoregion:

### Species of Greatest Conservation Need (SGCN)

Species of greatest conservation need (SGCN) in the Ozark Highlands are presented by taxa association (Table 3.2). A higher priority score indicates a greater need for actions to conserve the species. Calculation of the priority score is discussed in Section 2, pages 5-8. A ranked list of all SGCN associated with the ecoregion is presented in Table 3.3.

**Table 3.2.** SGCN by taxa association in the Ozark Highlands.

Taxa Association	Common Name	Scientific Name	Priority Score
Amphibian	Ozark Hellbender	<i>Cryptobranchus bishopi</i>	100
	Oklahoma Salamander	<i>Eurycea tynnerensis</i>	27
	Crawfish Frog	<i>Lithobates areolatus</i>	23
	Ringed Salamander	<i>Ambystoma annulatum</i>	19
	Grotto Salamander "western clade"	<i>Eurycea spelaea</i>	19
	Grotto Salamander "eastern clade"	<i>Eurycea spelaea</i>	19
	Grotto Salamander "northern clade"	<i>Eurycea spelaea</i>	19

	Boreal Chorus Frog	<i>Pseudacris maculata</i>	19
	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	19
	Hurter's Spadefoot	<i>Scaphiopus hurterii</i>	19
	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	15
	Wood Frog	<i>Lithobates sylvaticus</i>	15
Bird	Piping Plover	<i>Charadrius melodus</i>	43
	Henslow's Sparrow	<i>Ammodramus henslowii</i>	33
	Sprague's Pipit	<i>Anthus spragueii</i>	33
	Bachman's Sparrow	<i>Peucaea aestivalis</i>	33
	Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	29
	Rusty Blackbird	<i>Euphagus carolinus</i>	29
	Bewick's Wren	<i>Thryomanes bewickii</i>	29
	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 migrans</i>	24
	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	24
	American Woodcock	<i>Scolopax minor</i>	24
	Cerulean Warbler	<i>Setophaga cerulea</i>	24
	American Bittern	<i>Botaurus lentiginosus</i>	23
	Willow Flycatcher	<i>Empidonax traillii</i>	23
	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	21
	Sedge Wren	<i>Cistothorus platensis</i>	21
	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
	Purple Finch	<i>Haemorhous purpureus</i>	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
	Black-bellied Plover	<i>Pluvialis squatarola</i>	19
	Bell's Vireo	<i>Vireo bellii</i>	19

	Trumpeter Swan	<i>Cygnus buccinator</i>	17
	American Kestrel	<i>Falco sparverius</i>	15
	American Golden-Plover	<i>Pluvialis dominica</i>	15
Crayfish	Benton County Cave Crayfish	<i>Cambarus aculabrum</i>	80
	Hell Creek Cave Crayfish	<i>Cambarus zophonastes</i>	80
	Coldwater Crayfish	<i>Orconectes eupunctus</i>	50
	Mammoth Spring Crayfish	<i>Orconectes marchandi</i>	46
	Bristly Cave Crayfish	<i>Cambarus setosus</i>	34
	Williams' Crayfish	<i>Orconectes williamsi</i>	34
	Meek's Short Pointed Crayfish	<i>Orconectes meeki brevis</i>	30
	Midget Crayfish	<i>Orconectes nana</i>	30
	Hubbs' Crayfish	<i>Cambarus hubbsi</i>	27
	Neosho Midget Crayfish	<i>Orconectes macrus</i>	23
	Gapped Ringed Crayfish	<i>Orconectes neglectus chaenodactylus</i>	20
Fish	Arkansas Darter	<i>Etheostoma cragini</i>	43
	Ozark Cavefish	<i>Troglichthys rosae</i>	43
	Crystal Darter	<i>Crystallaria asprella</i>	38
	Stargazing Darter	<i>Percina uranidea</i>	38
	Western Sand Darter	<i>Ammocrypta clara</i>	33
	Ozark Shiner	<i>Notropis ozarcanus</i>	33
	Strawberry River Darter	<i>Etheostoma fragi</i>	29
	Least Darter	<i>Etheostoma microperca</i>	29
	Silver Redhorse	<i>Moxostoma anisurum</i>	29
	Longnose Darter	<i>Percina nasuta</i>	27
	Southern Cavefish	<i>Typhlichthys subterraneus</i>	27
	American Eel	<i>Anguilla rostrata</i>	24
	Paddlefish	<i>Polyodon spathula</i>	24
	Blue Sucker	<i>Cycleptus elongatus</i>	23
	Bluntnose Shiner	<i>Cyprinella camura</i>	23
	Spotfin Shiner	<i>Cyprinella spiloptera</i>	23
	Sabine Shiner	<i>Notropis sabiniae</i>	23
	Autumn Darter	<i>Etheostoma autumnale</i>	19
	Sunburst Darter	<i>Etheostoma mihileze</i>	19
	Current Darter	<i>Etheostoma uniporum</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
	Channel Shiner	<i>Notropis wickliffi</i>	19
	Gilt Darter	<i>Percina evides</i>	19
	Slenderhead Darter	<i>Percina phoxocephala</i>	19
	Highfin carpsucker	<i>Carpoides velifer</i>	17

	Highland Darter	<i>Etheostoma teddyroosevelt</i>	15
	Least Brook Lamprey	<i>Lampetra aepyptera</i>	15
	Saddleback Darter	<i>Percina vigil</i>	15
Insect	winter stonefly	<i>Allocaonia warreni</i>	80
	Sulphur Springs Hydroporus Diving Beetle	<i>Hydroporus sulphurius</i>	80
	beetle	<i>Rimulincola divalis</i>	80
	winter stonefly	<i>Allocaonia jeanae</i>	50
	American Burying Beetle	<i>Nicrophorus americanus</i>	42
	Linda's Roadside-Skipper	<i>Amblyscirtes linda</i>	38
	Swamp Metalmark	<i>Calephelis muticum</i>	34
	Ozark Emerald	<i>Somatochlora ozarkensis</i>	34
	Prairie Mole Cricket	<i>Gryllotalpa major</i>	32
	Ozark Snaketail Dragonfly	<i>Ophiogomphus westfalli</i>	32
	Ozark Swallowtail	<i>Papilio joanae</i>	30
	Mottled Duskywing	<i>Erynnis martialis</i>	29
	Meske's Skipper	<i>Hesperia meskei</i>	29
	Lace-winged Roadside-Skipper	<i>Amblyscirtes aesculapius</i>	27
	Appalachian Azure	<i>Celastrina neglectamajor</i>	27
	Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>	27
	Giant Stag Beetle	<i>Lucanus elephus</i>	25
	Northern Metalmark	<i>Calephelis borealis</i>	23
	Outis Skipper	<i>Cogia outis</i>	23
	Yehl Skipper	<i>Poanes yehl</i>	23
	Byssus Skipper	<i>Problema byssus</i>	23
	Ozark Pseudactium	<i>Pseudactium ursum</i>	23
	Bell's Roadside-Skipper	<i>Amblyscirtes belli</i>	21
	Golden-banded Skipper	<i>Autochton cellus</i>	21
	Scrubland Tiger Beetle	<i>Cicindela obsoleta</i>	21
	Leonard's Skipper	<i>Hesperia leonardus</i>	19
	Cobweb Skipper	<i>Hesperia metea</i>	19
	predaceous diving beetle	<i>Heterosternuta phoebeae</i>	19
	Ouachita Diving Beetle	<i>Hydroporus ouachitus</i>	19
	Gray Comma	<i>Polygonia progne</i>	19
	Oak Hairstreak	<i>Satyrium favonius ontario</i>	19
	Dusky Azure	<i>Celastrina nigra</i>	15
	Gorgone Checkerspot	<i>Chlosyne gorgone</i>	15
	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>	15
	Monarch	<i>Danaus plexippus</i>	15
	Twelve-spotted Tiger Beetle	<i>Cicindela duodecimguttata</i>	13
	Arkansas agapetus caddisfly	<i>Agapetus medicus</i>	8
	contorted ochrotrichian microcaddisfly	<i>Ochrotrichia contorta</i>	8

Invertebrate - other	isopod	<i>Lirceus bidentatus</i>	80
	Ozark Pyrg	<i>Pyrgulopsis ozarkensis</i>	80
	Thicklipped Pebblesnail	<i>Somatogyus crassilabris</i>	80
	Foushee Cavesnail	<i>Amnicola cora</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
	cave obligate springtail	<i>Schaefferia alabamensis</i>	65
	cave obligate millipede	<i>Trigenotyia parca</i>	65
	Arkansas Wedge	<i>Xolotrema occidentale</i>	65
	bat cave isopod	<i>Caecidotea macropropoda</i>	57
	amphipod	<i>Bactrurus pseudomucronatus</i>	42
	isopod	<i>Caecidotea dimorpha</i>	42
	cave obligate planarian	<i>Dendrocoelopsis americana</i>	42
	Shelled Cave Springtail	<i>Pseudosinella testa</i>	42
	White Liptooth	<i>Millerelix peregrina</i>	34
	isopod	<i>Caecidotea ancyla</i>	30
	isopod	<i>Caecidotea steevesi</i>	30
	isopod	<i>Caecidotea stiladactyla</i>	30
	land snail	<i>Gastrocopta rogersensis</i>	27
	isopod	<i>Lirceus bicuspidatus</i>	27
	Ozark Cave Amphipod	<i>Stygobromus ozarkensis</i>	27
	springtail	<i>Arrhopalites clarus</i>	25
	pseudoscorpion	<i>Microcreagris ozarkensis</i>	23
	isopod	<i>Caecidotea salamensis</i>	8
Mammal	Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>	80
	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	63
	Indiana Bat	<i>Myotis sodalis</i>	62
	Ozark Pocket Gopher	<i>Geomys bursarius ozarkensis</i>	57
	Eastern Small-Footed Bat	<i>Myotis leibii</i>	34
	Little Brown Bat	<i>Myotis lucifugus</i>	33
	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	29
	Southeastern Bat	<i>Myotis austroriparius</i>	24
	Plains Harvest Mouse	<i>Reithrodontomys montanus</i>	23
	Black-tailed Jackrabbit	<i>Lepus californicus</i>	21
	Eastern Spotted Skunk	<i>Spilogale putorius</i>	21
	Crawford's Gray Shrew	<i>Notiosorex crawfordi</i>	19
	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>	19
	Southeastern Shrew	<i>Sorex longirostris</i>	19
	Gray Bat	<i>Myotis grisescens</i>	16
	American Badger	<i>Taxidea taxus</i>	16
	Long-tailed Weasel	<i>Mustela frenata</i>	15



	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	15
Mussel	Curtis Pearlymussel	<i>Epioblasma florentina curtisi</i>	100
	Turgid Blossom	<i>Epioblasma turgidula</i>	100
	Scaleshell	<i>Leptodea leptodon</i>	95
	White Hickorynut	<i>Obovaria sp. Cf arkansasensis</i>	80
	Neosho Mucket	<i>Lampsilis rafinesqueana</i>	57
	"Ozark" Fanshell	<i>Cyprogenia aberti</i>	52
	Purple Lilliput	<i>Toxolasma lividum</i>	52
	Pink Mucket	<i>Lampsilis abrupta</i>	46
	Snuffbox	<i>Epioblasma triquetra</i>	43
	Salamander Mussel	<i>Simpsonaias ambigua</i>	34
	Rabbitsfoot	<i>Quadrula cylindrica</i>	33
	Slippershell Mussel	<i>Alasmidonta viridis</i>	31
	Ozark Pigtoe	<i>Fusconaia ozarkensis</i>	27
	Ohio Pigtoe	<i>Pleurobema cordatum</i>	27
	Ellipse	<i>Venustaconcha ellipsiformis</i>	27
	"Elongate" Pigtoe	<i>Fusconaia sp. Cf. sampsoniana</i>	24
	Ouachita Kidneyshell	<i>Ptychobranchnus occidentalis</i>	23
	Bleedingtooth Mussel	<i>Venustaconcha pleasii</i>	23
	Elktoe	<i>Alasmidonta marginata</i>	19
	Hickorynut	<i>Obovaria olivaria</i>	19
	Lilliput	<i>Toxolasma parvum</i>	19
	Round Pigtoe	<i>Pleurobema sintoxia</i>	17
	Rainbow	<i>Villosa iris</i>	17
	Little Spectaclecase group	<i>Villosa sp. Cf lienosa</i>	17
	Fatmucket	<i>Lampsilis siliquoidea</i>	15
Reptile	Collared Lizard	<i>Crotaphytus collaris</i>	24
	Great Plains Skink	<i>Plestiodon obsoletus</i>	23
	Ground Snake	<i>Sonora semiannulata</i>	23
	Lined Snake	<i>Tropidoclonion lineatum</i>	23
	Ornate Box Turtle	<i>Terrapene ornata ornata</i>	19
	Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	15

**Table 3.3.** All species of greatest conservation need (SGCN) in the Ozark Highlands ranked by priority score. A higher priority score indicates a greater need for actions to conserve the species. Of the 377 SGCN, 209 occur in this ecoregion.

Score	Common Name Association	Scientific Name	Taxa
100	Ozark Hellbender	<i>Cryptobranchus bishopi</i>	Amphibian
100	Curtis Pearlymussel	<i>Epioblasma florentina curtisi</i>	Mussel
100	Turgid Blossom	<i>Epioblasma turgidula</i>	Mussel
95	Scaleshell	<i>Leptodea leptodon</i>	Mussel
80	Benton County Cave Crayfish	<i>Cambarus aculabrum</i>	Crayfish
80	Hell Creek Cave Crayfish	<i>Cambarus zophonastes</i>	Crayfish
80	winter stonefly	<i>Allocaonia warreni</i>	Insect
80	Sulphur Springs Hydroporus Diving	<i>Hydroporus sulphurius</i>	Insect
80	beetle	<i>Rimulincola divalis</i>	Insect
80	isopod	<i>Lirceus bidentatus</i>	Invertebrate - other
80	Ozark Pyrg	<i>Pyrgulopsis ozarkensis</i>	Invertebrate - other
80	Thicklipped Pebblesnail	<i>Somatogyryus crassilabris</i>	Invertebrate - other
80	Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>	Mammal
80	White Hickorynut	<i>Obovaria sp. Cf arkansasensis</i>	Mussel
65	Foushee Cavesnail	<i>Amnicola cora</i>	Invertebrate - other
65	cave obligate pseudoscorpion	<i>Apochthonius titanicus</i>	Invertebrate - other
65	cave obligate harvestman	<i>Crosbyella distincta</i>	Invertebrate - other
65	cave obligate harvestman	<i>Crosbyella roeweri</i>	Invertebrate - other
65	Calico Rock Oval	<i>Patera clenchi</i>	Invertebrate - other
65	cave obligate springtail	<i>Schaefferia alabamensis</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	Indiana Bat	<i>Myotis sodalis</i>	Mammal
57	bat cave isopod	<i>Caecidotea macropropoda</i>	Invertebrate - other
57	Ozark Pocket Gopher	<i>Geomys bursarius ozarkensis</i>	Mammal
57	Neosho Mucket	<i>Lampsilis rafinesqueana</i>	Mussel
52	"Ozark" Fanshell	<i>Cyrogenia aberti</i>	Mussel
52	Purple Lilliput	<i>Toxolasma lividum</i>	Mussel
50	Coldwater Crayfish	<i>Orconectes eupunctus</i>	Crayfish
50	winter stonefly	<i>Allocaonia jeanae</i>	Insect
46	Mammoth Spring Crayfish	<i>Orconectes marchandi</i>	Crayfish
46	Pink Mucket	<i>Lampsilis abrupta</i>	Mussel
43	Piping Plover	<i>Charadrius melodus</i>	Bird
43	Arkansas Darter	<i>Etheostoma cragini</i>	Fish
43	Ozark Cavefish	<i>Troglichthys rosae</i>	Fish
43	Snuffbox	<i>Epioblasma triquetra</i>	Mussel
42	American Burying Beetle	<i>Nicrophorus americanus</i>	Insect
42	amphipod	<i>Baetiscus pseudomucronatus</i>	Invertebrate - other
42	isopod	<i>Caecidotea dimorpha</i>	Invertebrate - other
42	cave obligate planarian	<i>Dendrocoelopsis americana</i>	Invertebrate - other
42	Shelled Cave Springtail	<i>Pseudosinella testa</i>	Invertebrate - other
38	Crystal Darter	<i>Crystallaria asprella</i>	Fish
38	Stargazing Darter	<i>Percina uranidea</i>	Fish

38	Linda's Roadside-Skipper	<i>Amblyscirtes linda</i>	Insect
34	Bristly Cave Crayfish	<i>Cambarus setosus</i>	Crayfish
34	Williams' Crayfish	<i>Orconectes williamsi</i>	Crayfish
34	Swamp Metalmark	<i>Calephelis muticum</i>	Insect
34	Ozark Emerald	<i>Somatochlora ozarkensis</i>	Insect
34	White Liptooth	<i>Millerelix peregrina</i>	Invertebrate - other
34	Eastern Small-Footed Bat	<i>Myotis leibii</i>	Mammal
34	Salamander Mussel	<i>Simpsonaias ambigua</i>	Mussel
33	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Bird
33	Sprague's Pipit	<i>Anthus spragueii</i>	Bird
33	Bachman's Sparrow	<i>Peucaea aestivalis</i>	Bird
33	Western Sand Darter	<i>Ammocrypta clara</i>	Fish
33	Ozark Shiner	<i>Notropis ozarcanus</i>	Fish
33	Little Brown Bat	<i>Myotis lucifugus</i>	Mammal
33	Rabbitsfoot	<i>Quadrula cylindrica</i>	Mussel
32	Prairie Mole Cricket	<i>Gryllotalpa major</i>	Insect
32	Ozark Snaketail Dragonfly	<i>Ophiogomphus westfalli</i>	Insect
31	Slippershell Mussel	<i>Alasmidonta viridis</i>	Mussel
30	Meek's Short Pointed Crayfish	<i>Orconectes meeki brevis</i>	Crayfish
30	Midget Crayfish	<i>Orconectes nana</i>	Crayfish
30	Ozark Swallowtail	<i>Papilio joanae</i>	Insect
30	isopod	<i>Caecidotea ancyla</i>	Invertebrate - other
30	isopod	<i>Caecidotea steevesi</i>	Invertebrate - other
30	isopod	<i>Caecidotea stiladactyla</i>	Invertebrate - other
29	Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	Bird
29	Rusty Blackbird	<i>Euphagus carolinus</i>	Bird
29	Mottled Duskywing	<i>Erynnis martialis</i>	Insect
29	Meske's Skipper	<i>Hesperia meskei</i>	Insect
29	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	Mammal
27	Oklahoma Salamander	<i>Eurycea tynerensis</i>	Amphibian
27	Hubbs' Crayfish	<i>Cambarus hubbsi</i>	Crayfish
27	Longnose Darter	<i>Percina nasuta</i>	Fish
27	Southern Cavefish	<i>Typhlichthys subterraneus</i>	Fish
27	Lace-winged Roadside-Skipper	<i>Amblyscirtes aesculapius</i>	Insect
27	Appalachian Azure	<i>Celastrina neglectamajor</i>	Insect
29	Mottled Duskywing	<i>Erynnis martialis</i>	Insect
27	Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>	Insect
27	land snail	<i>Gastrocopta roarsensis</i>	Invertebrate - other
27	isopod	<i>Lirceus bicuspidatus</i>	Invertebrate - other
27	Ozark Cave Amphipod	<i>Stvaobromus ozarkensis</i>	Invertebrate - other
27	Ozark Pigtoe	<i>Fusconaia ozarkensis</i>	Mussel
27	Ohio Pigtoe	<i>Pleurobema cordatum</i>	Mussel
27	Ellipse	<i>Venustaconcha ellipsiformis</i>	Mussel
25	Giant Stag Beetle	<i>Lucanus elephus</i>	Insect
25	springtail	<i>Arrhopalites clarus</i>	Invertebrate - other
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	Migrant Loggerhead Shrike	<i>Lanius ludovicianus miarans</i>	Bird
24	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	Bird
24	American Woodcock	<i>Scolopax minor</i>	Bird
24	Cerulean Warbler	<i>Setophaga cerulea</i>	Bird

24	American Eel	<i>Anaquilla rostrata</i>	Fish
24	Paddlefish	<i>Polvodon spathula</i>	Fish
24	Southeastern Bat	<i>Myotis austroriparius</i>	Mammal
24	"Elongate" Pigtoe	<i>Fusconaia sp. Cf. sampsoniana</i>	Mussel
24	Collared Lizard	<i>Crotaphytus collaris</i>	Reptile
23	Crawfish Frog	<i>Lithobates areolatus</i>	Amphibian
23	American Bittern	<i>Botaurus lentiginosus</i>	Bird
23	Willow Flycatcher	<i>Empidonax traillii</i>	Bird
23	Neosho Midget Crayfish	<i>Orconectes macrus</i>	Crayfish
23	Blue Sucker	<i>Cycleptus elonqatus</i>	Fish
23	Bluntnose Shiner	<i>Cyprinella camura</i>	Fish
23	Spotfin Shiner	<i>Cyprinella spiloptera</i>	Fish
23	Sabine Shiner	<i>Notropis sabiniae</i>	Fish
23	Northern Metalmark	<i>Calephelis borealis</i>	Insect
23	Outis Skipper	<i>Coqia outis</i>	Insect
23	Yehl Skipper	<i>Poanes yehl</i>	Insect
23	Byssus Skipper	<i>Problema byssus</i>	Insect
23	Ozark Pseudactium	<i>Pseudactium ursum</i>	Insect
23	pseudoscorpion	<i>Microcreaaris ozarkensis</i>	Invertebrate - other
23	Plains Harvest Mouse	<i>Reithrodontomys montanus</i>	Mammal
23	Ouachita Kidneyshell	<i>Ptychobranthus occidentalis</i>	Mussel
23	Bleedingtooth Mussel	<i>Venustaconcha pleasii</i>	Mussel
23	Great Plains Skink	<i>Plestiodon obsoletus</i>	Reptile
23	Ground Snake	<i>Sonora semiannulata</i>	Reptile
23	Lined Snake	<i>Tropidoconion lineatum</i>	Reptile
21	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Bird
21	Sedge Wren	<i>Cistothorus platensis</i>	Bird
21	Bell's Roadside-Skipper	<i>Amblyscirtes belli</i>	Insect
21	Golden-banded Skipper	<i>Autochton cellus</i>	Insect
21	Scrubland Tiger Beetle	<i>Cicindela obsoleta</i>	Insect
21	Black-tailed Jackrabbit	<i>Lepus californicus</i>	Mammal
21	Eastern Spotted Skunk	<i>Spilogale putorius</i>	Mammal
20	Gapped Ringed Crayfish	<i>Orconectes neglectus chaenodactylus</i>	Crayfish
19	Ringed Salamander	<i>Ambystoma annulatum</i>	Amphibian
19	Grotto Salamander "western clade"	<i>Eurycea spelaea</i>	Amphibian
19	Grotto Salamander "eastern clade"	<i>Eurycea spelaea</i>	Amphibian
19	Grotto Salamander "northern clade"	<i>Eurycea spelaea</i>	Amphibian
19	Boreal Chorus Frog	<i>Pseudacris maculata</i>	Amphibian
19	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	Amphibian
19	Hurter's Spadefoot	<i>Scaphiopus hurterii</i>	Amphibian
19	Sharp-shinned Hawk	<i>Accipiter striatus</i>	Bird
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	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	Tricolored Heron	<i>Egretta tricolor</i>	Bird

19	Purple Finch	<i>Haemorhous purpureus</i>	Bird
19	Wood Thrush	<i>Hylocichla mustelina</i>	Bird
19	Least Bittern	<i>Ixobrychus exilis</i>	Bird
19	Short-billed Dowitcher	<i>Limnodromus ariseus</i>	Bird
19	Swainson's Warbler	<i>Limnothlypis swainsonii</i>	Bird
19	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	Bird
19	Black-bellied Plover	<i>Pluvialis squatarola</i>	Bird
19	Bell's Vireo	<i>Vireo bellii</i>	Bird
19	Autumn Darter	<i>Etheostoma autumnale</i>	Fish
19	Sunburst Darter	<i>Etheostoma mihileze</i>	Fish
19	Current Darter	<i>Etheostoma uniporum</i>	Fish
19	Mooneye	<i>Hiodon tergisus</i>	Fish
19	American Brook Lamprey	<i>Lethenteron appendix</i>	Fish
19	Pealip Redhorse	<i>Moxostoma pisolabrum</i>	Fish
19	Striped Mullet	<i>Muqil cephalus</i>	Fish
19	Redspot Chub	<i>Nocomis asper</i>	Fish
19	Channel Shiner	<i>Notropis wickliffi</i>	Fish
19	Gilt Darter	<i>Percina evides</i>	Fish
19	Slenderhead Darter	<i>Percina phoxocephala</i>	Fish
19	Leonard's Skipper	<i>Hesperia leonardus</i>	Insect
19	Cobweb Skipper	<i>Hesperia metea</i>	Insect
19	predaceous diving beetle	<i>Heterosternuta phoebeae</i>	Insect
19	Ouachita Diving Beetle	<i>Hydroporus ouachitus</i>	Insect
19	Gray Comma	<i>Polyaonia proane</i>	Insect
19	Oak Hairstreak	<i>Satyrium favonius ontario</i>	Insect
19	Crawford's Gray Shrew	<i>Notiosorex crawfordi</i>	Mammal
19	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>	Mammal
19	Southeastern Shrew	<i>Sorex lonairostris</i>	Mammal
17	Trumpeter Swan	<i>Cyanus buccinator</i>	Bird
17	Highfin carpsucker	<i>Carpionodes velifer</i>	Fish
17	Round Pigtoe	<i>Pleurobema sintoxia</i>	Mussel
17	Rainbow	<i>Villosa iris</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	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	Amphibian
15	Wood Frog	<i>Lithobates sylvaticus</i>	Amphibian
15	American Kestrel	<i>Falco sparverius</i>	Bird
15	American Golden-Plover	<i>Pluvialis dominica</i>	Bird
15	Highland Darter	<i>Etheostoma teddvroosevelt</i>	Fish
15	Least Brook Lamprey	<i>Lampetra aepyptera</i>	Fish
15	Saddleback Darter	<i>Percina viqil</i>	Fish
15	Dusky Azure	<i>Celastrina niara</i>	Insect
15	Gorgone Checkerspot	<i>Chlosyne qoraqone</i>	Insect
15	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>	Insect
15	Monarch	<i>Danaus plexippus</i>	Insect
15	Long-tailed Weasel	<i>Mustela frenata</i>	Mammal
15	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Mammal
15	Fatmucket	<i>Lampsilis siliquoidea</i>	Mussel
15	Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	Reptile
13	Twelve-spotted Tiger Beetle	<i>Cicindela duodecimguttata</i>	Insect
8	Arkansas agapetus caddisfly	<i>Aagapetus medicus</i>	Insect

8	contorted ochrotrichian microcaddisfly	<i>Ochrotrichia contorta</i>	Insect
8	isopod	<i>Caecidotea salamensis</i>	Invertebrate - other

## Habitats that occur in the Ozark Highlands

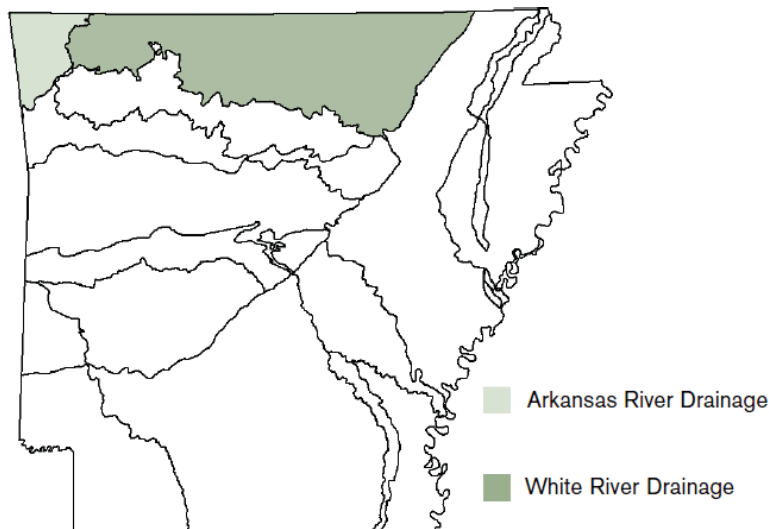
Of the 37 terrestrial habitats in Arkansas, 21 occur in the Ozark Highlands ecoregion (Table 3.4). Of 18 ecobasins in Arkansas, two occur in the Ozark Highlands ecoregion (Figure 3.5). These associations are described in the Section 4. Terrestrial Habitats and Section 5. Aquatic Habitats.

**Table 3.4. Terrestrial Habitats in the Ozark Highlands.**

### Habitat Name

Caves, Mines & Sinkholes, and other Karst Habitat  
Crop Land  
Cultivated Forest  
Herbaceous Wetland  
Interior Highlands Calcareous Glade and Barrens  
Interior Highlands Dry Acidic Glade and Barrens  
Mud Flats  
Ozark-Ouachita Cliff and Talus  
Ozark-Ouachita Forested Seep  
Ozark-Ouachita Dry Oak and Pine Woodland  
Ozark-Ouachita Dry-Mesic Oak Forest  
Ozark-Ouachita Mesic Hardwood Forest  
Ozark-Ouachita Pine-Oak Forest/Woodland  
Ozark-Ouachita Prairie and Woodland  
Ozark-Ouachita Riparian  
Pasture Land  
Ponds, Lakes, and Water Holes  
Ozark-Ouachita Large Floodplain  
Urban/Suburban

**Figure 3.5. Ecobasin Distribution in the Ozark Highlands.**



## Problems faced by Species of Greatest Conservation Need (SGCN)

Taxa association teams listed problems faced by SGCN individually in the Species Reports. A summary of the problems faced by SGCN in the Ozark Highlands is presented below. Each problem has a score which is a sum of all Species Priority Scores associated with species for which this problem was assigned. A higher score implies a higher quantity of SGCN and/or more greatly imperiled species associated with problems listed here.

**Table 3.5.** Problems faced by SGCN.

Problem Faced	Score
Urban development	3804
Grazing/Browsing	3213
Road construction	2033
Forestry activities	2015
Confined animal operations	1912
Agricultural practices	1793
Dam	1765
Resource extraction	1575
Recreation	933
Municipal/Industrial point source	695
Channel alteration	632
Fire suppression	621
Parasites/pathogens	516
Conversion of riparian forest	427
Water diversion	423
Commercial/industrial development	411
Channel maintenance	401
Exotic species	375
Excessive groundwater withdrawal	230
Non-point source pollution	181
Predation	139
Excessive non-commercial harvest or collection	108
Management of/for certain species	103
Restricted range in Arkansas	57
Interspecific competition	48
Commercial harvest	43
Unknown	33

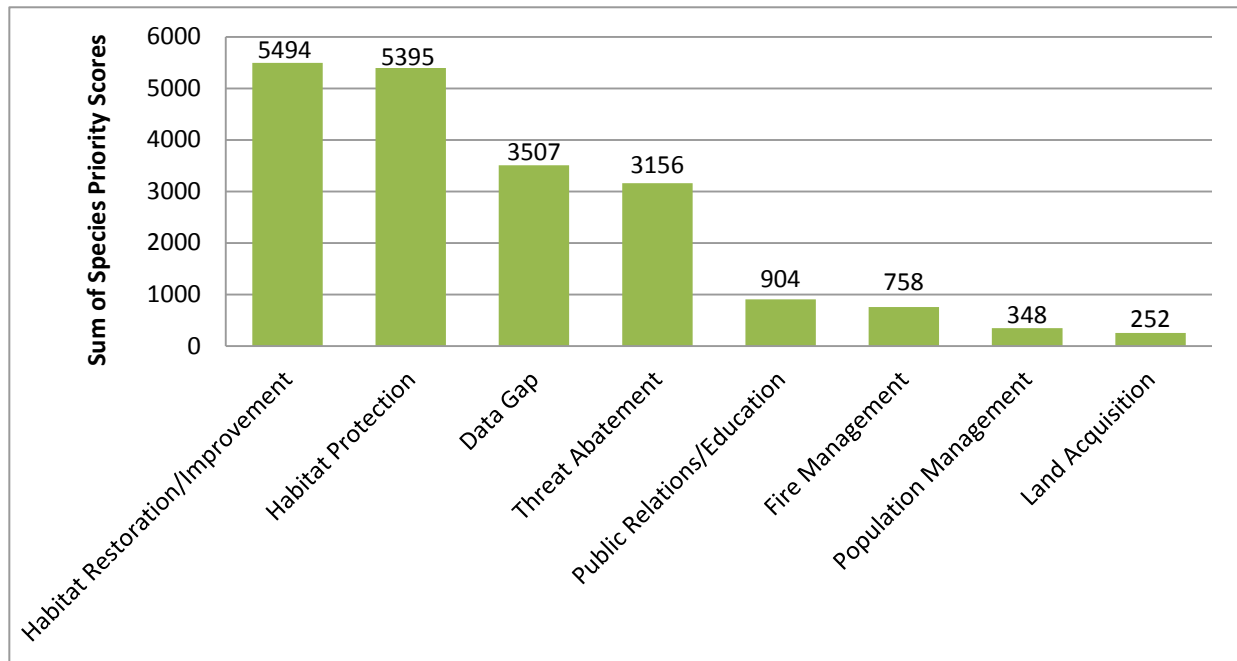


## Conservation actions needed in the Ozark Highlands

Descriptions of conservation actions linked to individual species on the list of SGCN are presented in the Species Reports, pages 44-1113. Below are categories of conservation actions recommended by the taxa association teams (Figure 3.6). An explanation of the categories follows in Table 3.6.

The score associated with the conservation action category is the sum of all priority scores associated with species for which a conservation action has been assigned, weighted by the importance of the conservation action category to the species. A higher score implies a higher quantity of SGCN and/or more greatly imperiled species would be affected by actions within this conservation action category.

These scores may be used as guides to directing the apportionment of funding toward conservation actions benefiting habitats and species of greatest conservation need.



**Figure 3.6.** Conservation action categories recommended for the Ozark Highlands.

**Table 3.6.** Conservation action categories explained.

Habitat Restoration/Improvement	Involves the improvement or restoration of habitat or habitat components
Habitat Protection	Involves the protection of existing habitat or habitat components
Fire Management	Management of fire regime
Land Acquisition	Purchase of land or conservation easements critical to species of concern
Population Management	Direct manipulation of populations of species of concern, including restocking, harvest management, and translocation efforts
Threat Abatement	Mitigation of an existing threat, such as predation, pollution, or competing species
Data Gap	Not enough information is known at this time to formulate conservation
Public Relations/Education	Public outreach and education involving species of concern or key habitats
Other	Other conservation actions not covered by these categories