Eastern Highland Rim Prairie and Barrens

Conservation Opportunity Area

The Eastern Highland Rim Conservation Opportunity Area (COA) is a patchwork of remnant prairies, barrens, and croplands. The flora of the prairie and barrens is highly diverse, with many relict species of the Atlantic Coastal Plain that once extended into this area. These remnant habitats are home to a diverse number of breeding grassland birds, such as Henslow's Sparrows, many of which are species of Greatest Conservation Need (GCN). Habitat conversion and fragmentation from agricultural development and succession of grasslands into forest have reduced the available habitat for this species to only a few patches suitable for breeding. Many of the remaining patches are too small to support breeding pairs.

Native American use of fire once played an important role in the natural maintenance of the prairies and barrens, reducing the amount of woody vegetation that otherwise encroaches into these systems. Likewise, hydrology has a large influence on woody succession; the extremely flat topography is underlain with a hard pan, which causes surface ponding of water that in turn controls the woody vegetation.

The flora of the Eastern Highland Rim is highly diverse, and its grasslands support a diversity of rare birds. The topography and hydrology of the barrens support characteristic herbaceous and forested wetland habitats.

Small patches of forest once occurred only sporadically across the landscape in areas of higher elevation (steeper slopes) and better soils. However, lack of fire combined with altered hydrology (ditching and culverts) has allowed forests to expand beyond their former extent.

The largest threats to the prairies and barrens of this COA are habitat conversion for agricultural purposes and urban sprawl - both of which contribute to increased habitat fragmentation - as well as the elimination of fire from the ecosystem. This COA also encompasses several headwaters springs and tributaries that harbor many GCN fish species, including the Barrens Topminnow and the Barrens Darter. Invasive exotic fish species, stream habitat alteration, and overuse of water resources are a management challenge in these streams.

Top to bottom: TWRA Prescribed burn - Clarence Coffey, TWRA (retired); Henslow's Sparrow - Chris Sloan/next page: Eastern Slender Glass Llzard - Chris M. Morris

Public Lands within the COA

Arnold Engineering Development Center WMA, Bark Camp Barrens Wildlife Management Area (WMA), Headwaters WMA, Hickory Flat Woods WMA, Maple Springs WMA, May Prairie State Natural Area (SNA), Morrison Meadown, Normandy WMA, Old Stone Fort State Park (SP), Owl Hollow Mill WMA, Short Springs SNA, Tims Ford SP, Woods Reservoir Refuge

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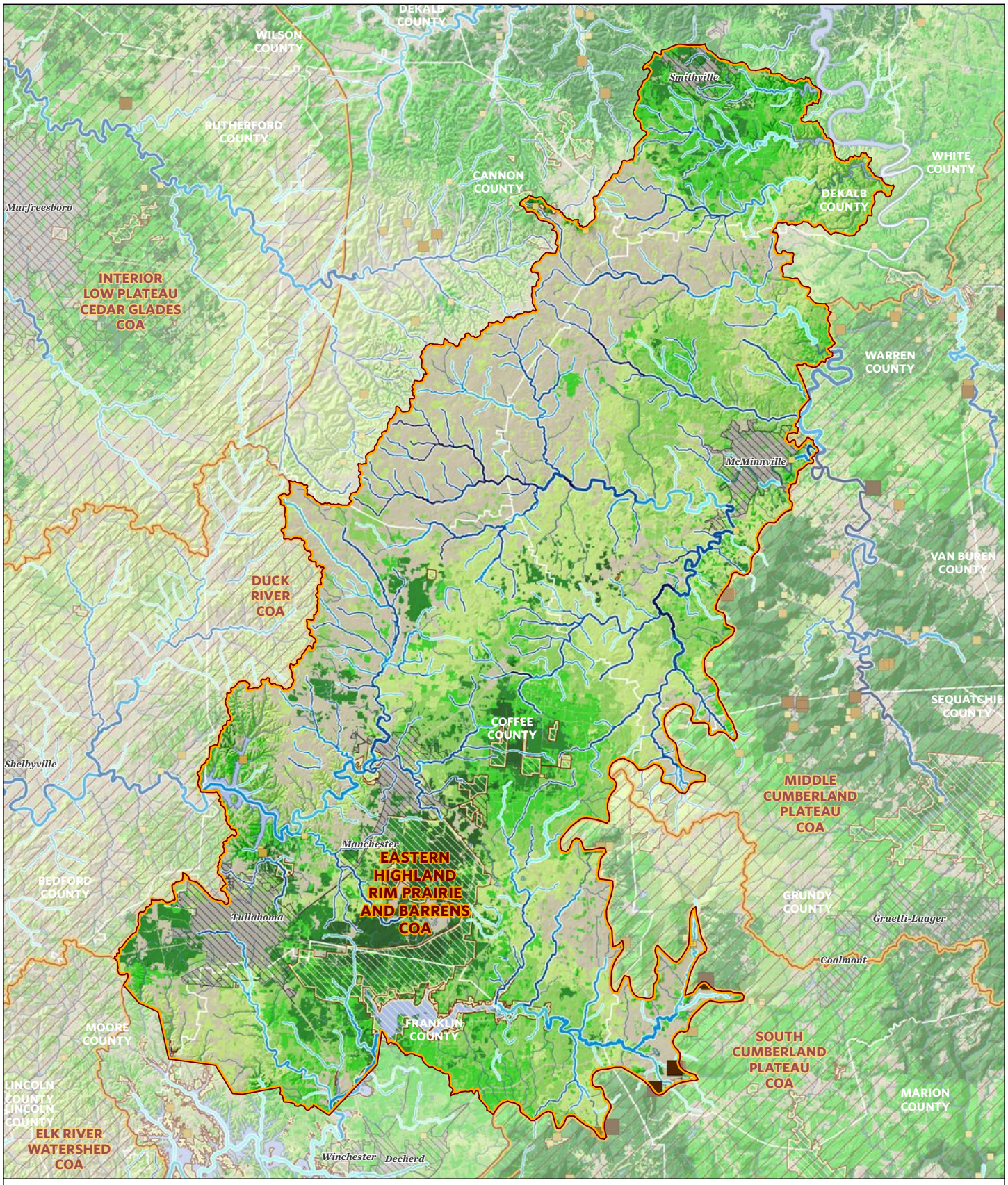
Partnerships

TWRA will increase connectivity between existing grasslands and wetlands by restoring and managing grassland habitats on public lands, as well as assessing the likelihood of increasing connectivity between public lands within the COA and improving stream habitats. Management strategies and restoration projects will be implemented on private lands within the COA through partnerships with U.S. Fish and Wildlife Service, the Natural Resources Conservation Service/National Water Quality Initiative, Arnold Air Force Base, Tennessee Valley Authority, Tennessee Dept. of Education and Conservation, the Tennessee Aquarium, The Nature Conservancy, other agencies and willing private landowners.

	Desired Change	Units
+	Use government-funded incentive programs to encourage willing private landowners to restore critical land units and aquatic resources/BMPs	Number
+	Restore pastures and agricultural lands to native ecosystems.	acres
+	Restore riparian buffers and physical stream habitat in priority locations throughout the watershed.	miles
+	Reintroduce prescribed fire into fire dependent grasslands and forest systems.	acres
+	Develop and implement an integrated pest management plan to aid in the control of native and exotic pests.	acres
+	Increase lands in conservation management by permanently protecting habitat through acquisition from willing private landowners.	acres
+	Improve population viability of native freshwater species.	animals
+	Encourage municipal and county governments to adopt zoning ordinances that limit or regulate development within critical units of aquatic, subterranean, and terrestrial habitats.	plans

To learn more about the Eastern Highland Rim Prairie and Barrens Conservation Opportunity Area, please contact: Josh Campbell, Wildlife Diversity Coordinator, Region 2 (615) 781-6626



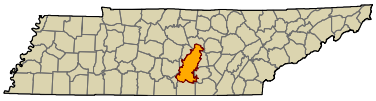
N

0 2.5 5 Miles

Habitat Priority

	Karst	Aquatic	Terrestrial
Very High			
High			
Medium			
Low			
Very Low			

Conservation Opportunity Area
Protected Land



The Nature Conservancy
Protecting nature. Preserving life.

Taxa Group	EASTERN HIGHLAND RIM PRAIRIE AND BARRENS COA GCN SPECIES (TN) Scientific & Common names
Amphibian	Aneides aeneus (Green Salamander)
Amphibian	Hemidactylium scutatum (Four-toed Salamander)
Amphibian	Hyla versicolor (Gray Treefrog)
Amphibian	Rana capito (Carolina Gopher Frog)
Bat	Corynorhinus rafinesquii (Rafinesque's Big-eared Bat)
Bat	Myotis grisescens (Gray Bat)
Bat	Myotis leibii (Eastern Small-footed Bat)
Bat	Myotis lucifugus (Little Brown Bat)
Bat	Myotis septentrionalis (Northern Myotis)
Bat	Myotis sodalis (Indiana Bat)
Bat	Perimyotis subflavus (Tri-colored Bat)
Bird	Accipiter striatus (Sharp-shinned Hawk)
Bird	Ammodramus henslowii (Henslow's Sparrow)
Bird	Ammodramus leconteii (LeConte's Sparrow)
Bird	Ammodramus savannarum (Grasshopper Sparrow)
Bird	Anas rubripes (American Black Duck)
Bird	Aquila chrysaetos (Golden Eagle)
Bird	Bartramia longicauda (Upland Sandpiper)
Bird	Botaurus lentiginosus (American Bittern)
Bird	Calidris himantopus (Stilt Sandpiper)
Bird	Caprimulgus carolinensis (Chuck-will's-widow)
Bird	Caprimulgus vociferus (Whip-poor-will)
Bird	Cardellina canadensis (Canada Warbler)
Bird	Chaetura pelagica (Chimney Swift)
Bird	Chordeiles minor (Common Nighthawk)
Bird	Circus cyaneus (Northern Harrier)
Bird	Cistothorus platensis (Sedge Wren)
Bird	Colinus virginianus (Northern Bobwhite)
Bird	Egretta caerulea (Little Blue Heron)
Bird	Empidonax minimus (Least Flycatcher)
Bird	Empidonax traillii (Willow Flycatcher)
Bird	Euphagus carolinus (Rusty Blackbird)
Bird	Falco peregrinus (Peregrine Falcon)
Bird	Geothlypis Formosa (Kentucky Warbler)
Bird	Grus americana (Whooping Crane)
Bird	Haliaeetus leucocephalus (Bald Eagle)
Bird	Helmitheros vermivorum (Worm-eating Warbler)
Bird	Hylocichla mustelina (Wood Thrush)
Bird	Icteria virens (Yellow-breasted Chat)
Bird	Icterus spurius (Orchard Oriole)
Bird	Lanius ludovicianus (Loggerhead Shrike)
Bird	Melanerpes erythrocephalus (Red-headed Woodpecker)
Bird	Nycticorax nycticorax (Black-crowned Night-heron)
Bird	Parkesia motacilla (Louisiana Waterthrush)
Bird	Peucaea aestivalis (Bachman's Sparrow)
Bird	Pluvialis dominica (American Golden Plover)
Bird	Protonotaria citrea (Prothonotary Warbler)
Bird	Riparia riparia (Bank Swallow)
Bird	Scolopax minor (American Woodcock)
Bird	Setophaga caerulescens (Black-throated Blue Warbler)
Bird	Setophaga cerulea (Cerulean Warbler)
Bird	Setophaga discolor (Prairie Warbler)
Bird	Setophaga dominica (Yellow-throated Warbler)

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Bird	Setophaga fusca (Blackburnian Warbler)
Bird	Sitta pusilla (Brown-headed Nuthatch)
Bird	Sturnella magna (Eastern Meadowlark)
Bird	Thryomanes bewickii (Bewick's Wren)
Bird	Tryngites subruficollis (Buff-breasted Sandpiper)
Bird	Tyto alba (Barn Owl)
Bird	Vermivora chrysoptera (Golden-winged Warbler)
Bird	Vermivora cyanoptera (Blue-winged Warbler)
Bivalve	Lasmigona holstonia (Tennessee Heelsplitter)
Bivalve	Pleurobema gibberum (Cumberland Pigtoe)
Bivalve	Pleuronaia barnesiana (Tennessee Pigtoe)
Bivalve	Simpsonaias ambigua (Salamander Mussel)
Bivalve	Villosa iris (Rainbow)
Bivalve	Villosa vanuxemensis (Mountain Creekshell)
Crustacean	Cambarus clivosus (Short Mountain Crayfish)
Fish	Erimystax dissimilis (Streamline Chub)
Fish	Etheostoma forbesi (Barrens Darter)
Fish	Etheostoma luteovinctum (Redband Darter)
Fish	Etheostoma olivaceum (Sooty Darter)
Fish	Fundulus julisia (Barrens Topminnow)
Fish	Hemitremia flammea (Flame Chub)
Fish	Notropis rubellus (Rosyface Shiner)
Gastropod	Anguispira alabama (Alabama Tigersnail)
Gastropod	Daedalochila auriformis (Rockpile Liptooth)
Gastropod	Paravitrea tantilla (Teasing Supercoil)
Mammal	Neotoma magister (Allegheny Woodrat)
Mammal	Ochrotomys nuttalli (Golden Mouse)
Mammal	Sorex cinereus (Cinereus Shrew)
Mammal	Sorex hoyi (American Pygmy Shrew)
Mammal	Sorex longirostris (Southeastern Shrew)
Mammal	Zapus hudsonius (Meadow Jumping Mouse)
Plant	Agalinis oligophylla (Ridge-stem False-foxglove)
Plant	Allium burdickii (Narrow-leaf Ramps)
Plant	Allium tricoccum (Ramps)
Plant	Berberis canadensis (American Barberry)
Plant	Carex barrattii (Barratt's Sedge)
Plant	Clematis glaucophylla (White-leaved Leatherflower)
Plant	Clematis morefieldii (Morefield's Leather-flower)
Plant	Clethra alnifolia (Coastal Sweet Pepper-bush)
Plant	Cotinus obovatus (American Smoketree)
Plant	Cypripedium kentuckiense (Southern Lady's-slipper)
Plant	Dichanthelium acuminatum ssp. spretum (Eaton's Witchgrass)
Plant	Drosera brevifolia (Dwarf Sundew)
Plant	Echinacea pallida (Pale-purple Coneflower)
Plant	Eleocharis lanceolata (Lance-like Spike-rush)
Plant	Eryngium integrifolium (Blue-flower Coyote-thistle)
Plant	Eupatorium leucolepis (White-bracted Thoroughwort)
Plant	Frullania obcordata (Swamp Frullania)
Plant	Gaylussacia dumosa (Dwarf Huckleberry)
Plant	Gentiana puberulenta (Downy Gentian)
Plant	Gymnopogon brevifolius (Broad-leaved Beardgrass)
Plant	Helianthemum propinquum (Low Frostweed)
Plant	Helianthus eggertii (Eggert's Sunflower)

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Plant	Iris prismatica (Slender Blue Flag)
Plant	Isoetes melanopoda (Blackfoot Quillwort)
Plant	Juglans cinerea (Butternut)
Plant	Lachnanthes caroliana (Carolina Redroot)
Plant	Lathyrus palustris (Marsh Pea)
Plant	Lechea pulchella (Leggett's Pinweed)
Plant	Lejeunea sharpii (Sharp's Lejeunea)
Plant	Lespedeza angustifolia (Narrowleaf Bushclover)
Plant	Lilium michiganense (Michigan Lily)
Plant	Liparis loeselii (Fen Orchid)
Plant	Listera australis (Southern Twayblade)
Plant	Lobelia canbyi (Canby's Lobelia)
Plant	Lycopodiella alopecuroides (Foxtail Clubmoss)
Plant	Lysimachia terrestris (Swamp Loosestrife)
Plant	Lysimachia x producta (Loosestrife)
Plant	Marshallia trinervia (Broad-leaved Barbara's-buttons)
Plant	Muhlenbergia torreyana (Torrey's Dropseed)
Plant	Panax quinquefolius (American Ginseng)
Plant	Parnassia grandifolia (Large-leaved Grass-of-parnassus)
Plant	Pedicularis lanceolata (Swamp Lousewort)
Plant	Pellia appalachiana ((a liverwort))
Plant	Platanthera integra (Yellow Fringeless Orchid)
Plant	Platanthera nivea (Snowy Orchid)
Plant	Pogonia ophioglossoides (Rose Pogonia)
Plant	Polygala nuttallii (Nuttall's Milkwort)
Plant	Ponthieva racemosa (Shadow-witch)
Plant	Prenanthes aspera (Rough Rattlesnake-root)
Plant	Prunus pumila (Sand Cherry)
Plant	Rhynchospora caduca (Falling Beaked-rush)
Plant	Rhynchospora chalarocephala (Loose-headed Beakrush)
Plant	Rhynchospora perplexa (Obscure Beak-rush)
Plant	Rhynchospora rariflora (Few-flowered Beak-rush)
Plant	Scleria verticillata (Low Nutrush)
Plant	Silphium brachiatum (Cumberland Rosinweed)
Plant	Silphium pinnatifidum (Southern Prairie-dock)
Plant	Solidago stricta var. gracillima (Virginia Goldenrod)
Plant	Spiranthes lucida (Shining Ladies'-tresses)
Plant	Triantha racemosa (Coastal False-asphodel)
Plant	Trichomanes boschianum (Bristle-fern)
Plant	Trillium pusillum (Least Trillium)
Plant	Utricularia cornuta (Horned Bladderwort)
Plant	Utricularia subulata (Zigzag Bladderwort)
Plant	Vaccinium macrocarpon (Cranberry)
Plant	Xyris laxifolia var. iridifolia (Wide-leaved Yellow-eyed Grass)
Plant	Zigadenus leimanthoides (Death-camas)
Reptile	Crotalus horridus (Timber Rattlesnake)
Reptile	Heterodon platirhinos (Eastern Hognosed Snake)
Reptile	Pituophis melanoleucus melanoleucus (Northern Pinesnake)
Reptile	Terrapene carolina (Eastern Box Turtle)
Subterranean - Amphibian	Gyrinophilus palleucus (Tennessee Cave Salamander)
Subterranean - Amphibian	Gyrinophilus palleucus necturoides (Big Mouth Cave Salamander)
Subterranean - Arachnid	Agyneta sp. (Trussell Cave Sheet-web Spider)
Subterranean - Arachnid	Anthrobia mammouthia ((a cave obligate spider))

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Subterranean - Arachnid	Antrodiaetus sp. ((a foldingdoor trap-door spider))
Subterranean - Arachnid	Bishopella sp. Probably laciniosa (harvestman)
Subterranean - Arachnid	Calymmaria persica (Cave-loving funnel-web spider)
Subterranean - Arachnid	Chitrella archeri ((a cave obligate pseudoscorpion))
Subterranean - Arachnid	Cicurina breviaria (funnel-web spider)
Subterranean - Arachnid	Cicurina placida (funnel-web spider)
Subterranean - Arachnid	Coras taugynus (funnel-web spider)
Subterranean - Arachnid	Erebomaster sp. (harvestmen)
Subterranean - Arachnid	Hesperochernes mirabilis (Southeastern Cave Pseudoscorpion)
Subterranean - Arachnid	Kleptochthonius barri ((a cave obligate pseudoscorpion))
Subterranean - Arachnid	Kleptochthonius magnus ((a cave obligate pseudoscorpion))
Subterranean - Arachnid	Kleptochthonius tantalus ((a cave obligate pseudoscorpion))
Subterranean - Arachnid	Liocranoides archeri (Archer's two-clawed spider)
Subterranean - Arachnid	Liocranoides sp. (Two-clawed spider)
Subterranean - Arachnid	Meta ovalis (American cave orb weaver)
Subterranean - Arachnid	Nesticus barri ((a cave obligate spider))
Subterranean - Arachnid	Phalangodes appalachius (Appalachian Cave Harvestman)
Subterranean - Arachnid	Phalangodes sp. (cave harvestmen)
Subterranean - Arachnid	Phanetta subterranea (Subterranean sheet-web spider)
Subterranean - Crustacean	Acanthocyclops parasensitivus ((a copepod))
Subterranean - Crustacean	Caecidotea bicrenata bicrenata ((a cave obligate isopod))
Subterranean - Crustacean	Cambarus tenebrosus (Cavespring Crayfish)
Subterranean - Crustacean	Diacyclops sp. (Indiana Groundwater Copepod)
Subterranean - Crustacean	Diacyclops yeatmani (Yeatman's Groundwater Copepod)
Subterranean - Crustacean	Gammarus minus (Lesser spring amphipod)
Subterranean - Crustacean	Haplophthalmus danicus ((a terrestrial cave isopod))
Subterranean - Crustacean	Ligidium elrodii hancockensis ((a cave obligate isopod))
Subterranean - Crustacean	Megacyclops donnaldsoni (Donnaldson's cave copepod)
Subterranean - Crustacean	Miktoniscus barri ((a cave obligate isopod))
Subterranean - Crustacean	Miktoniscus medcofi (Medcof's terrestrial isopod)
Subterranean - Crustacean	Orconectes australis (Southern Cave Crayfish)
Subterranean - Crustacean	Pseudocandona jeanneli (Jeannel's Cave Ostracod)
Subterranean - Crustacean	Pseudocandona sp. (groundwater ostracods)
Subterranean - Crustacean	Stygobromus exilis (Central Kentucky Cave Obligate)
Subterranean - Crustacean	Stygobromus sp. 22 (Swamp River Cave Amphipod)
Subterranean - Crustacean	Stygobromus sp. 4 (Southern cave amphipod)
Subterranean - Fish	Typhlichthys subterraneus (Southern Cavefish)
Subterranean - Flatworm	Cambarincola alienus ((a cave obligate roundworm))
Subterranean - Flatworm	Sphalloplana percoeca ((a cave obligate planarian))
Subterranean - Gastropod	Carychium stygium (Cave Thorn)
Subterranean - Gastropod	Glyphyalinia specus (Hollow Glyph)
Subterranean - Gastropod	Helicodiscus barri (Raccoon Coil)
Subterranean - Gastropod	Helicodiscus hadenoecus (Cricket Coil)
Subterranean - Gastropod	Helicodiscus notius specus ((a cave snail))
Subterranean - Insect	Aleochara lucifuga ((a rove beetle))
Subterranean - Insect	Aleochara sp. ((a rove beetle))
Subterranean - Insect	Anillinus longiceps ((a cave obligate beetle))
Subterranean - Insect	Arrhopalites pavo ((a cave springtail))
Subterranean - Insect	Arrhopalites sp. 4 near lacuna ((undescribed cave springtail))
Subterranean - Insect	Atheta sp. ((a rove beetle))
Subterranean - Insect	Atheta troglophila ((a troglophilic rove beetle))
Subterranean - Insect	Batrisodes valentinei ((a cave obligate beetle))
Subterranean - Insect	Bembidion lacunarium (ground beetle)

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Subterranean - Insect	Ceratophysella sp. (springtails)
Subterranean - Insect	Ceuthophilus sp. (cave crickets)
Subterranean - Insect	Hadenoecus barri (Barr's cave cricket)
Subterranean - Insect	Lesteva pallipes (rove beetle)
Subterranean - Insect	Litocampa cookei (Cooke's Cave Dipluran)
Subterranean - Insect	Litocampa valentinei ((a cave obligate bristletail))
Subterranean - Insect	Macrocera nobilis (fungus gnat)
Subterranean - Insect	Megaselia cavernicola (cave hump-backed fly)
Subterranean - Insect	Pseudanophthalmus humeralis ((a cave obligate beetle))
Subterranean - Insect	Pseudanophthalmus intermedius (Intermediate cave beetle)
Subterranean - Insect	Pseudanophthalmus macradei ((a cave obligate beetle))
Subterranean - Insect	Pseudanophthalmus robustus ((a cave obligate beetle))
Subterranean - Insect	Pseudanophthalmus sp. 36 (Gunters Cave Beetle)
Subterranean - Insect	Pseudanophthalmus templetoni ((a cave obligate beetle))
Subterranean - Insect	Pseudanophthalmus tullahoma (Duck River Cave Beetle)
Subterranean - Insect	Pseudosinella aera ((a cave obligate springtail))
Subterranean - Insect	Pseudosinella christianseni (Christiansen's Cave Springtail)
Subterranean - Insect	Pseudosinella hirsuta (Hirsute Cave Springtail)
Subterranean - Insect	Pseudosinella pecki (Peck's cave springtail)
Subterranean - Insect	Pseudosinella spinosa (Spinose Cave Springtail)
Subterranean - Insect	Psyllipsocus ramburi ((a cave barklice))
Subterranean - Insect	Ptomaphagus hatchi (Hatch's cave fungus beetle)
Subterranean - Insect	Rhadine caudata (ground beetle)
Subterranean - Insect	Spelobia tenebrarum (Cave dung fly)
Subterranean - Insect	Subterrochus ferus (cave ant beetle)
Subterranean - Insect	Tomocerus bidentatus (Two-toothed springtail)
Subterranean - Insect	Tomocerus flavescens (Golden springtail)
Subterranean - Insect	Tomocerus missus (Relict cave springtail)
Subterranean - Insect	Trechus cumberlandus (Cumberland Ground Beetle)
Subterranean - Millipede	Cambala sp. (millipeds)
Subterranean - Millipede	Chaetaspis sp. (cave millipeds)
Subterranean - Millipede	Pseudotremia sp. (cave millipeds)
Subterranean - Millipede	Pseudotremia sp. 7 (Barr's cave milliped)
Subterranean - Millipede	Scoterpes jackdanieli ((a cave obligate millipede))
Subterranean - Millipede	Scoterpes tricorner ((a cave obligate millipede))
Subterranean - Millipede	Scoterpes ventus (Eastern Tennessee Cave Millipede)
Subterranean - Millipede	Tetracion tennesseensis ((a cave obligate millipede))

EASTERN HIGHLAND RIM PRAIRIE AND BARRENS COA HABITATS (TN)	
Terrestrial Habitat Type	**Total acres of very high, high, and medium ranked habitat**
Natural habitats	
Eastern Highland Rim Prairie and Barrens	61472
Southern Interior Low Plateau Dry-Mesic Oak Forest	32624
South-Central Interior Mesophytic Forest	16845
Southern Ridge and Valley / Cumberland Dry Calcareous Forest	11398
South-Central Interior Small Stream and Riparian	4598
Allegheny-Cumberland Dry Oak Forest and Woodland	2776
Southern Appalachian Low-Elevation Pine Forest	805
South-Central Interior Large Floodplain	204
Semi-natural habitats	
Pasture	30782
Cropland	10015
Old Field / Successional	6636
Forest Plantation	1739
Aquatic Habitat Type	**Total stream miles of very high, high, and medium ranked habitat**
Headwaters and Streams	492
Small River	58