Pennyroyal Plains and Barrens

Conservation Opportunity Area

The barrens of the Pennyroyal Plain ecosystem were once the dominant habitat type pre-European settlement. There are numerous accounts of settlers describing these areas dominated by grasses and wildflowers with short, stunted trees scattered across the landscape. Post-settlement, much of this ecosystem was converted to agricultural production with the natural, intermittent fire regime being all but eliminated due to fire suppression.

Natural or prescribed fires reduce encroachment by woody vegetation and slow or stop succession of this habitat into forests. The largest remnant of barrens within the Pennyroyal Plain lies on Fort Campbell Military Reservation, where the Department of Defense regularly manages the barrens with fire supporting training and readiness as well as habitat enhancement.

The diversity of plants within this Conservation Opportunity Area (COA) is extremely high, as researchers have documented over 340 species across multiple barrens. Dominated by little bluestem, this habitat type supports numerous rare plant species, many of which are also fire-dependent. Numerous species of Greatest Conservation Need occur within this COA, including Henslow's Sparrow, Grasshopper Sparrow, Prairie Warbler, Hognosed Snake, and Timber Rattlesnake.

Public Lands within the COA

Barnett's Woods State Natural Area, Bellamy Cave Wildlife Refuge, Fort Campbell Military Reservation and Wildlife Management Area

Researchers have documented over 340 plant species across multiple barren habitats in the Pennyroyal Plain ecosystem, many of which are fire-dependent.

Top to bottom: Hognose Snake - Rob Colvin, TWRA; Prescribed burn - Clarence Coffey, TWRA (retired); Little bluestem in fall - aecole2010/ next page: Prairie Warbler - Chris Sloan

Pennyroyal Plains and Barrens Conservation Opportunity Area

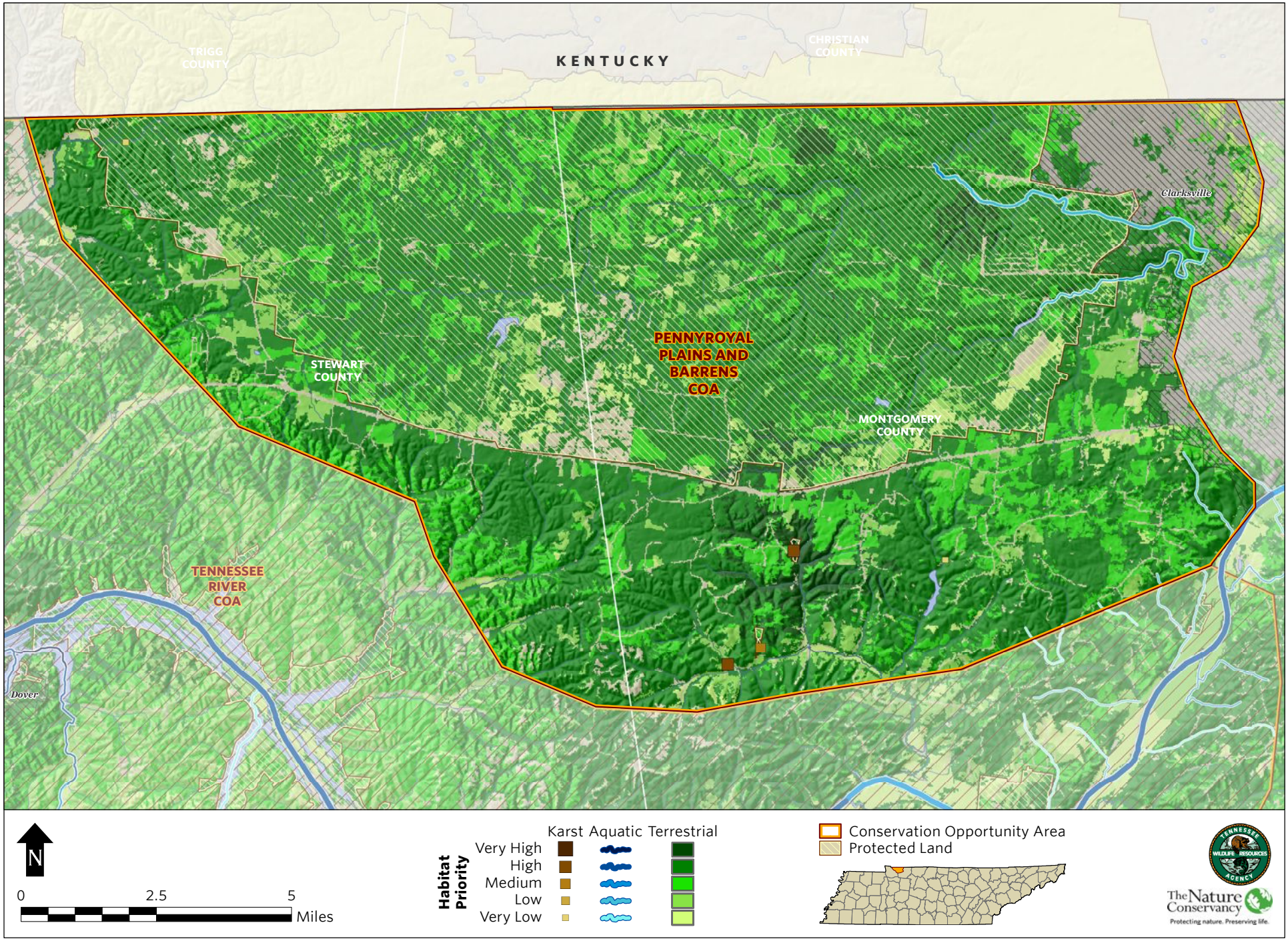
Partnerships

TWRA will develop and expand partnerships with the U.S. Fish and Wildlife Service, U.S. Army Dept. of Defense (Ft. Campbell), Tennessee Dept. of Environment and Conservation, The Nature Conservancy, universities, and the planning departments of local city and county governments.

	Desired Change	Units
+	Restore riparian buffers and physical stream habitat in priority locations throughout the watershed.	miles
+	Increase acres of fire-dependent grasslands and forest managed with prescribed fire within critical units of terrestrial habitat.	acres
+	Increase understanding of target species' geographic distribution, life history, and ecological needs to improve management aimed at promoting survival over the long-term.	projects
+	Increase acres of habitat under permanent conservation management to benefit GCN species/ increase habitat connectivity.	acres
✓	Develop and/or participate in regional conservation planning initiatives sponsored by federal, state, and local agencies.	plans
+	Improve ecosystem management in conservation areas by developing and implementing integrated conservation plans for all public/private conservation areas within the COA.	plans

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

Pennyroyal Plains and Barrens Conservation Opportunity Area



	PENNYROYAL PLAINS AND BARRENS COA GCN SPECIES (TN)
Taxa Group	**Scientific & Common names**
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	Asio flammeus (Short-eared Owl)
Bird	Bartramia longicauda (Upland Sandpiper)
Bird	Botaurus lentiginosus (American Bittern)
Bird	Calidris pusilla (Semipalmated 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	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	Ictinia mississippiensis (Mississippi Kite)
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 cerulea (Cerulean Warbler)
Bird	Setophaga discolor (Prairie Warbler)
Bird	Setophaga fusca (Blackburnian Warbler)
Bird	Sturnella magna (Eastern Meadowlark)
Bird	Tyto alba (Barn Owl)
Bird	Vermivora chrysoptera (Golden-winged Warbler)
Bird	Vermivora cyanoptera (Blue-winged Warbler)
Bird	Vireo bellii (Bell's Vireo)
Bivalve	Villosa vanuxemensis (Mountain Creekshell)

	PENNYROYAL PLAINS AND BARRENS COA GCN SPECIES (TN)
Taxa Group	**Scientific & Common names**
Crustacean	Orconectes barrenensis ((a crayfish))
Fish	Etheostoma barrenense (Splendid Darter)
Fish	Etheostoma bellum (Orangefin Darter)
Mammal	Sorex cinereus (Cinereus Shrew)
Mammal	Sorex hoyi (American Pygmy Shrew)
Mammal	Sorex longirostris (Southeastern Shrew)
Mammal	Synaptomys cooperi (Southern Bog Lemming)
Mammal	Zapus hudsonius (Meadow Jumping Mouse)
Plant	Apios priceana (Price's Potato-bean)
Plant	Boechera shortii (Short's Rock-cress)
Plant	Cimicifuga rubifolia (Appalachian Bugbane)
Plant	Hottonia inflata (Featherfoil)
Plant	Juglans cinerea (Butternut)
Plant	Packera plattensis (Prairie Ragwort)
Plant	Prenanthes crepidinea (Nodding Rattlesnake-root)
Plant	Ranunculus flabellaris (Yellow Water-crowfoot)
Plant	Ribes odoratum (Buffalo Currant)
Plant	Solidago rupestris (Rock Goldenrod)
Reptile	Crotalus horridus (Timber Rattlesnake)
Reptile	Heterodon platirhinos (Eastern Hognosed Snake)
Reptile	Ophisaurus attenuatus longicaudus (Eastern Slender Glass Lizard)
Reptile	Terrapene carolina (Eastern Box Turtle)
Subterranean - Arachnid	Calymmaria persica (Cave-loving funnel-web spider)
Subterranean - Arachnid	Hesperochernes mirabilis (Southeastern Cave Pseudoscorpion)
Subterranean - Arachnid	Liocranoides gertschi (Gertsch's tengellid spider)
Subterranean - Arachnid	Phanetta subterranea (Subterranean sheet-web spider)
Subterranean - Crustacean	Caecidotea bicrenata ((a cave obligate isopod))
Subterranean - Crustacean	Caecidotea bicrenata bicrenata ((a cave obligate isopod))
Subterranean - Crustacean	Cambarus tenebrosus (Cavespring Crayfish)
Subterranean - Crustacean	Haplophthalmus danicus ((a terrestrial cave isopod))
Subterranean - Crustacean	Orconectes pellucidus (Mammoth Cave Crayfish)
Subterranean - Crustacean	Stygobromus exilis (Central Kentucky Cave Obligate)
Subterranean - Fish	Typhlichthys subterraneus (Southern Cavefish)
Subterranean - Gastropod	Carychium stygium (Cave Thorn)
Subterranean - Insect	Aleochara lucifuga ((a rove beetle))
Subterranean - Insect	Atheta annexa ((a rove beetle))
Subterranean - Insect	Atheta troglophila ((a troglophilic rove beetle))
Subterranean - Insect	Batrisodes sp. (ant beetles)
Subterranean - Insect	Ceratophysella denticulata (Toothed springtail)
Subterranean - Insect	Ceuthophilus sp. (cave crickets)
Subterranean - Insect	Desoria trispinata (Three-spined springtail)
Subterranean - Insect	Desoria truncata (Truncate springtail)
Subterranean - Insect	Folsomia stella (Stellate springtail)
Subterranean - Insect	Macrocera nobilis (fungus gnat)
Subterranean - Insect	Megaselia cavernicola (cave hump-backed fly)
Subterranean - Insect	Platynus tenuicollis (ground beetle)
Subterranean - Insect	Prionochaeta opaca (small carrion beetle)
Subterranean - Insect	Pseudanophthalmus ciliaris ciliaris ((a cave obligate beetle))
Subterranean - Insect	Pseudanophthalmus colemanensis (Coleman Cave Beetle)
Subterranean - Insect	Pseudosinella aera ((a cave obligate springtail))
Subterranean - Insect	Pseudosinella hirsuta (Hirsute Cave Springtail)
Subterranean - Insect	Sciara sp. (fungus gnats)
Subterranean - Insect	Sensillanura barberi (Barber's Springtail)
Subterranean - Insect	Sinella cavernarum ((a springtail))

	PENNYROYAL PLAINS AND BARRENS COA GCN SPECIES (TN)
Taxa Group	**Scientific & Common names**
Subterranean - Insect	Spelobia tenebrarum (Cave dung fly)
Subterranean - Insect	Tomocerus bidentatus (Two-toothed springtail)
Subterranean - Millipede	Pseudotremia undescribed sp. (Shear's cave milliped)

PENNYROYAL PLAINS AND BARRENS COA HABITATS (TN)	
Terrestrial Habitat Type	**Total acres of very high, high, and medium ranked habitat**
Natural habitats	
South-Central Interior Mesophytic Forest	47946
Southern Interior Low Plateau Dry-Mesic Oak Forest	37046
South-Central Interior Small Stream and Riparian	290
South-Central Interior Large Floodplain	135
Central Interior Calcareous Cliff and Talus	4
Semi-natural habitats	
Pasture	10528
Old Field / Successional	6167
Cropland	4554
Forest Plantation	2714
Aquatic Habitat Type	**Total stream miles of very high, high, and**
Headwaters and Streams	2