

Clinch and Powell

Conservation Opportunity Area



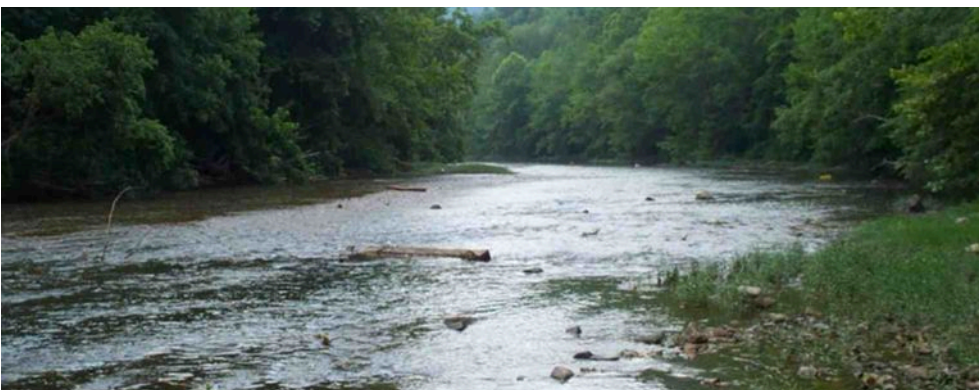
The Clinch and Powell Conservation Opportunity Area (COA) is characterized by rolling ridges and valleys, and most of the land use activity within the area is agricultural in nature. Most of the larger streams in this area meander roughly parallel to the ridges, which were created by the geologic processes of folding and faulting. The streams contain extensive cobble and gravel shoal areas. The smaller streams in this COA are characterized by limestone rubble with bedrock riffles and silty sand pool areas. These geological features increase productivity by adding nutrients to the soil and waters of this region, enhancing wildlife species diversity.

The Clinch and Powell area encompasses approximately 434 square miles and two of the most biologically diverse rivers in the United States. The headwaters of these rivers begin in the state of Virginia, and cross-state collaborations such as the Clinch Powell Clean Rivers Initiative are important to ensure protection of water quality and restore species populations. Over 900 acres of this COA are publicly owned and provide outdoor recreational opportunities to an array of user groups. TWRA's Region 4 quail focal area is also located here.

This COA provides habitat for multiple GCN species, some of which are federally protected. For example, there are more than 20 federally listed species, a large portion of which are mollusks found primarily within the Clinch and Powell Rivers.

Public Lands within the COA

Cumberland Gap National Historic Park, Cumberland Trail State



The Clinch and Powell Rivers are two of the most biologically diverse rivers in the United States. This region has rolling ridges, valleys, and agriculture as the primary land use.



Top to bottom: **Wavy-rayed Lampmussel** - Jeffrey Basinger, Freshwaters Illustrated; **Fluted Kidneyshell Mussel** - USFWS: Powell River - TWRA/next page:

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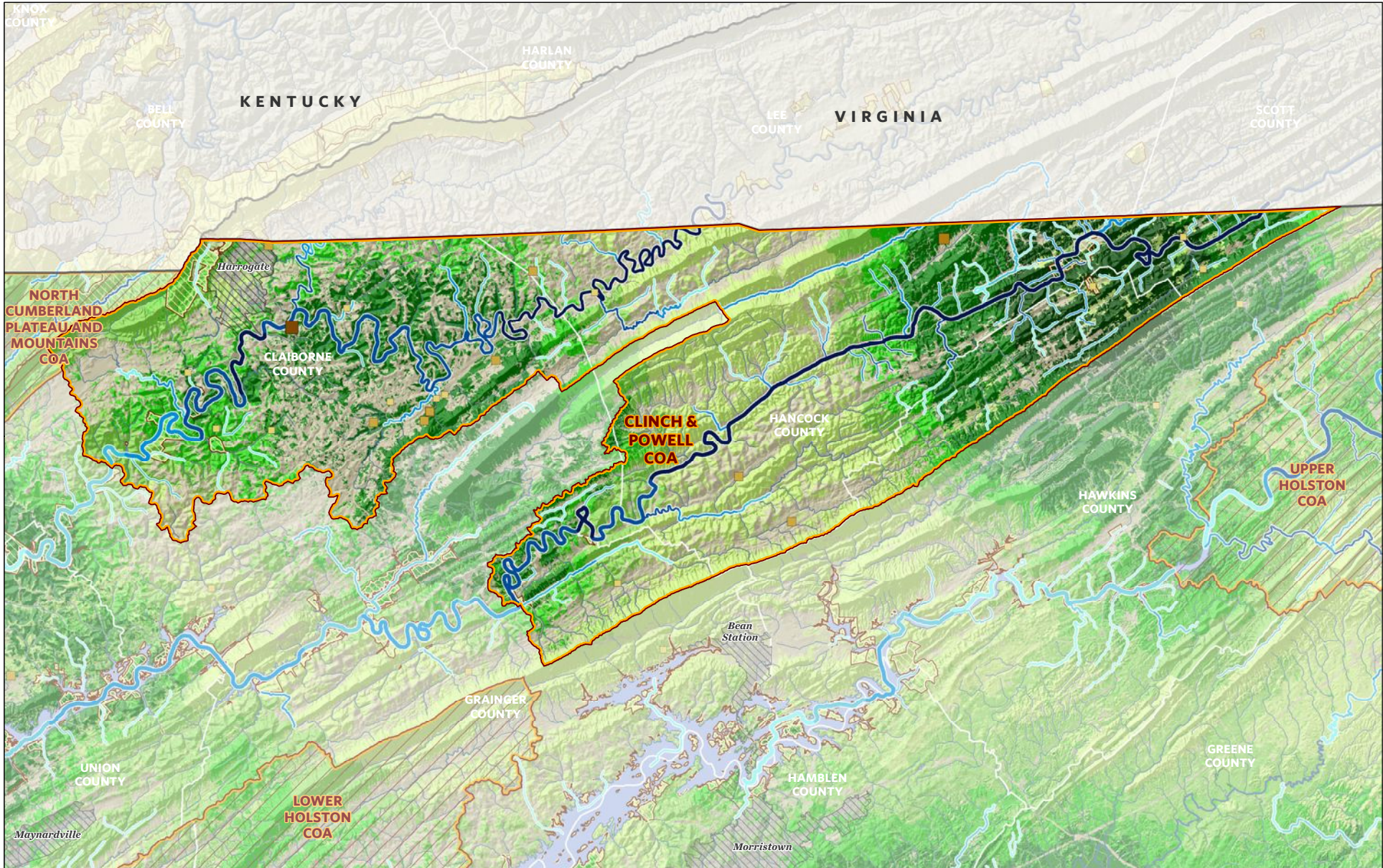
Partnerships

To implement priority conservation and management strategies, TWRA will build on relationships with the US Fish & Wildlife Service, the Office of Surface Mining, Reclamation and Enforcement, the Tennessee Valley Authority, the Tennessee Department of Environment and Conservation, Tennessee Division of Forestry, The Nature Conservancy, the Clinch and Powell RC&D, the Clinch-Powell Clean Rivers Initiative, and the Tennessee Clean Water Network. TWRA will also seek to educate local governments and private developers about sensitive habitats and water quality issues.

Desired Change	Units
+ Increase the application of Best Management Practices to benefit GCN species and habitats on private lands using government funded incentive programs.	number
+ Increase forest acres in or near critical habitat units by restoring degraded forests and other areas.	acres
+ Restore acres or stream miles of habitat through natural process restoration.	acres/miles
+ Increase acres of fire-dependent grasslands and forest that are managed with prescribed fire.	acres
+ Develop and implement integrated pest management plan to aid in the control of native and exotic pests.	acres
+ Improve knowledge of the geographical distribution and ecological requirements of GCN species and/or habitat changes through scientific surveys.	projects
+ Increase acres of protected habitat through purchase of land - whether fee title or easements - to secure critical habitat units and areas for restoration and management.	acres
+ Increase and improve the awareness, education, and cooperation of stakeholders/citizens pertaining to GCN species and habitat.	number
- Decrease the negative effects of development on GCN species and habitats by providing data to municipalities in planning/zoning processes with potential impacts on GCN species.	plans
+ Increase GCN species populations (propagation/translocation).	animals
- Avoid negative impacts from fossil fuel extraction activities by participating in environmental reviews and ensuring compliance with environmental regulations in neighboring states.	reviews

To learn more about the Clinch and Powell Conservation Opportunity Area, please contact:
Scott Dykes, Wildlife Diversity Coordinator, Region 4 (423) 587-7037

Clinch & Powell Conservation Opportunity Area



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Miles

Habitat Priority	Very High			
	High			
	Medium			
	Low			
	Very Low			

Karst Aquatic Terrestrial

Conservation Opportunity Area

Protected Land



CLINCH AND POWELL COA GCN SPECIES (TN)	
Taxa Group	Scientific & Common Names
Amphibian	<i>Cryptobranchus alleganiensis</i> (Hellbender)
Bat	<i>Corynorhinus rafinesquii</i> (Rafinesque's Big-eared Bat)
Bat	<i>Myotis grisescens</i> (Gray Bat)
Bat	<i>Myotis leibii</i> (Eastern Small-footed Bat)
Bat	<i>Myotis lucifugus</i> (Little Brown Bat)
Bat	<i>Myotis septentrionalis</i> (Northern Myotis)
Bat	<i>Myotis sodalis</i> (Indiana Bat)
Bat	<i>Perimyotis subflavus</i> (Tri-colored Bat)
Bird	<i>Accipiter striatus</i> (Sharp-shinned Hawk)
Bird	<i>Anas rubripes</i> (American Black Duck)
Bird	<i>Aquila chrysaetos</i> (Golden Eagle)
Bird	<i>Bonasa umbellus</i> (Ruffed Grouse)
Bird	<i>Caprimulgus carolinensis</i> (Chuck-will's-widow)
Bird	<i>Chaetura pelagica</i> (Chimney Swift)
Bird	<i>Chordeiles minor</i> (Common Nighthawk)
Bird	<i>Circus cyaneus</i> (Northern Harrier)
Bird	<i>Colinus virginianus</i> (Northern Bobwhite)
Bird	<i>Euphagus carolinus</i> (Rusty Blackbird)
Bird	<i>Falco peregrinus</i> (Peregrine Falcon)
Bird	<i>Geothlypis Formosa</i> (Kentucky Warbler)
Bird	<i>Haliaeetus leucocephalus</i> (Bald Eagle)
Bird	<i>Hylocichla mustelina</i> (Wood Thrush)
Bird	<i>Icteria virens</i> (Yellow-breasted Chat)
Bird	<i>Icterus spurius</i> (Orchard Oriole)
Bird	<i>Lanius ludovicianus</i> (Loggerhead Shrike)
Bird	<i>Melanerpes erythrocephalus</i> (Red-headed Woodpecker)
Bird	<i>Nycticorax nycticorax</i> (Black-crowned Night-heron)
Bird	<i>Parkesia motacilla</i> (Louisiana Waterthrush)
Bird	<i>Riparia riparia</i> (Bank Swallow)
Bird	<i>Setophaga discolor</i> (Prairie Warbler)
Bird	<i>Setophaga dominica</i> (Yellow-throated Warbler)
Bird	<i>Setophaga fusca</i> (Blackburnian Warbler)
Bird	<i>Sturnella magna</i> (Eastern Meadowlark)
Bird	<i>Tyto alba</i> (Barn Owl)
Bird	<i>Vermivora cyanoptera</i> (Blue-winged Warbler)
Bivalve	<i>Actinonaias ligamentina</i> (Mucket)
Bivalve	<i>Actinonaias pectorosa</i> (Pheasantshell)
Bivalve	<i>Alasmidonta marginata</i> (Elktoe)
Bivalve	<i>Cumberlandia monodonta</i> (Spectaclecase)
Bivalve	<i>Cyprogenia stegaria</i> (Fanshell)
Bivalve	<i>Dromus dromas</i> (Dromedary Pearlymussel)
Bivalve	<i>Epioblasma brevidens</i> (Cumberlandian Combshell)
Bivalve	<i>Epioblasma capsaeformis</i> (Oyster Mussel)
Bivalve	<i>Epioblasma triquetra</i> (Snuffbox)
Bivalve	<i>Fusconaia cor</i> (Shiny Pigtoe)
Bivalve	<i>Fusconaia cuneolus</i> (Finerayed Pigtoe)
Bivalve	<i>Fusconaia subrotunda</i> (Longsolid)
Bivalve	<i>Hemistena lata</i> (Cracking Pearlymussel)
Bivalve	<i>Lampsilis abrupta</i> (Pink Mucket)
Bivalve	<i>Lasmigona complanata complanata</i> (White Heelsplitter)
Bivalve	<i>Lasmigona holstonia</i> (Tennessee Heelsplitter)
Bivalve	<i>Lemiox rimosus</i> (Birdwing Pearlymussel)
Bivalve	<i>Ligumia recta</i> (Black Sandshell)

CLINCH AND POWELL COA GCN SPECIES (TN)	
Taxa Group	Scientific & Common Names
Bivalve	Medionidus conradicus (Cumberland Moccasinshell)
Bivalve	Obovaria subrotunda (Round Hickorynut)
Bivalve	Plethobasus cooperianus (Orangefoot Pimpleback)
Bivalve	Plethobasus cyphus (Sheepnose)
Bivalve	Pleurobema cordatum (Ohio Pigtoe)
Bivalve	Pleurobema oviforme (Tennessee Clubshell)
Bivalve	Pleurobema plenum (Rough Pigtoe)
Bivalve	Pleurobema rubrum (Pyramid Pigtoe)
Bivalve	Pleuonaia barnesiana (Tennessee Pigtoe)
Bivalve	Pleuonaia dolabelloides (Slabside Pearlymussel)
Bivalve	Ptychobranthus subtentum (Fluted Kidneyshell)
Bivalve	Quadrula cylindrica cylindrica (Rabbitsfoot)
Bivalve	Quadrula cylindrica strigillata (Rough Rabbitsfoot)
Bivalve	Quadrula intermedia (Cumberland Monkeyface)
Bivalve	Quadrula sparsa (Appalachian Monkeyface)
Bivalve	Strophitus undulatus (Creeper)
Bivalve	Toxolasma lividum (Purple Lilliput)
Bivalve	Villosa iris (Rainbow)
Bivalve	Villosa perpurpurea (Purple Bean)
Bivalve	Villosa taeniata (Painted Creekshell)
Bivalve	Villosa vanuxemensis (Mountain Creekshell)
Crustacean	Cambarus angularis (Angled Crayfish)
Crustacean	Orconectes forceps (Surgeon Crayfish)
Fish	Acipenser fulvescens (Lake Sturgeon)
Fish	Ammocrypta clara (Western Sand Darter)
Fish	Chrosomus tennesseensis (Tennessee Dace)
Fish	Erimystax cahni (Slender Chub)
Fish	Erimystax dissimilis (Streamline Chub)
Fish	Erimystax insignis (Blotched Chub)
Fish	Etheostoma acuticeps (Sharphead Darter)
Fish	Etheostoma cinereum (Ashy Darter)
Fish	Etheostoma denoncourti (Golden Darter)
Fish	Etheostoma tippecanoe (Tippecanoe Darter)
Fish	Etheostoma vulneratum (Wounded Darter)
Fish	Notropis asperifrons (Burrhead Shiner)
Fish	Notropis rubellus (Rosyface Shiner)
Fish	Noturus flavipinnis (Yellowfin Madtom)
Fish	Noturus stanauli (Pygmy Madtom)
Fish	Percina aurantiaca (Tangerine Darter)
Fish	Percina burtoni (Blotchside Logperch)
Gastropod	Io fluvialis (Spiny Riversnail)
Gastropod	Triodopsis claibornensis (Claiborne Threetooth)
Insect	Gomphus consanguis (Cherokee Clubtail)
Mammal	Neotoma magister (Allegheny Woodrat)
Mammal	Ochrotomys nuttalli (Golden Mouse)
Mammal	Sorex fumeus (Smoky Shrew)
Mammal	Sorex hoyi (American Pygmy Shrew)
Mammal	Synaptomys cooperi (Southern Bog Lemming)
Plant	Aureolaria patula (Spreading False-foxglove)
Plant	Berberis canadensis (American Barberry)
Plant	Cimicifuga rubifolia (Appalachian Bugbane)
Plant	Juglans cinerea (Butternut)
Plant	Lilium canadense (Canada Lily)

CLINCH AND POWELL COA GCN SPECIES (TN)	
Taxa Group	Scientific & Common Names
Plant	<i>Panax quinquefolius</i> (American Ginseng)
Plant	<i>Phlox subulata</i> (Moss Phlox)
Plant	<i>Platanthera flava</i> var. <i>herbiola</i> (Tuberclad Rein-orchid)
Plant	<i>Spiranthes lucida</i> (Shining Ladies'-tresses)
Reptile	<i>Terrapene carolina</i> (Eastern Box Turtle)
Subterranean - Arachnid	<i>Kleptochthonius affinis</i> ((a cave obligate pseudoscorpion))
Subterranean - Arachnid	<i>Kleptochthonius</i> undescribed sp. (cave pseudoscorpions)
Subterranean - Arachnid	<i>Nesticus paynei</i> ((a cave obligate spider))
Subterranean - Arachnid	<i>Phanetta subterranea</i> (Subterranean sheet-web spider)
Subterranean - Arachnid	<i>Porrhomma cavernicola</i> (Appalachian Cave Spider)
Subterranean - Crustacean	<i>Amerigoniscus nicholasi</i> ((a cave obligate isopod))
Subterranean - Crustacean	<i>Bactrurus angulus</i> (Cumberland Gap Cave Amphipod)
Subterranean - Crustacean	<i>Caecidotea nickajackensis</i> (Nickajack Cave Isopod)
Subterranean - Crustacean	<i>Caecidotea recurvata</i> (Southwestern Virginia Cave Isopod)
Subterranean - Crustacean	<i>Caecidotea</i> sp. (cave isopods)
Subterranean - Crustacean	<i>Stygobromus finleyi</i> (Finley's Cave Amphipod)
Subterranean - Crustacean	<i>Stygobromus mackini</i> (Southwestern Virginia Cave Amphipod)
Subterranean - Flatworm	<i>Sphalloplana consimilis</i> (Powell Valley Planarian)
Subterranean - Flatworm	<i>Sphalloplana</i> sp. ((flatworms))
Subterranean - Insect	<i>Litocampa cookei</i> (Cooke's Cave Dipluran)
Subterranean - Insect	<i>Litocampa inexpectata</i> ((a bristletail))
Subterranean - Insect	<i>Pseudanophthalmus engelhardti</i> (Engelhart's Cave Beetle)
Subterranean - Insect	<i>Pseudanophthalmus longiceps</i> (Long-headed Cave Beetle)
Subterranean - Insect	<i>Pseudanophthalmus pallidus</i> (Pale Cave Beetle)
Subterranean - Insect	<i>Pseudanophthalmus rotundatus</i> ((a cave obligate beetle))
Subterranean - Millipede	<i>Pseudotremia deprehendor</i> ((a cave obligate millipede))
Subterranean - Millipede	<i>Pseudotremia</i> n. sp. ((a cave obligate millipede))
Subterranean - Millipede	<i>Pseudotremia nodosa</i> ((a cave obligate millipede))
Subterranean - Millipede	<i>Pseudotremia</i> sp. (cave millipeds)
Subterranean - Millipede	<i>Pseudotremia valga</i> ((a cave obligate millipede))

CLINCH AND POWELL HABITATS (TN)	
Terrestrial Habitat Type	Total acres of very high, high, and medium ranked habitat
Natural habitats	
Southern Ridge and Valley / Cumberland Dry Calcareous Forest	65478
South-Central Interior Mesophytic Forest	21628
Allegheny-Cumberland Dry Oak Forest and Woodland	17356
Southern Appalachian Low-Elevation Pine Forest	9549
South-Central Interior Small Stream and Riparian	891
Appalachian (Hemlock)-Northern Hardwood Forest	762
Southern and Central Appalachian Cove Forest	661
Southern Appalachian Montane Pine Forest and Woodland	326
Semi-natural habitats	
Old Field / Successional	74
Aquatic Habitat Type	Total stream miles of very high, high, and medium ranked habitat
Headwaters & Streams	87
Small River	38
Medium River	87