

# Mill Creek Watershed

## Conservation Opportunity Area



**Mill Creek is a tributary of the Cumberland River** and flows approximately 27 miles through Williamson and Davidson Counties. Given its location within Metro-Davidson County (Nashville), much of the watershed surrounding Mill Creek is urbanized. Mill Creek and its tributaries are the only known localities in the world that harbor the Nashville Crayfish (*Orconectes shoupi*). This species is listed as endangered by both the U.S. Fish and Wildlife Service and TWRA. The Nashville crayfish occupies free-flowing waters containing large slab rocks on top of the bedrock substrate within just two streams in Davidson and Williamson Counties.

Since the occurrence of this species is in a highly developed metropolitan area, threats to this crayfish and other species in the watershed include pollutants contained in storm water runoff, sedimentation from construction located along the streams and within the watershed, and stream modifications such as dry bed retention dams. This species is typically not found in turbid waters within the creek, therefore erosion associated with development in the watershed poses a major threat.

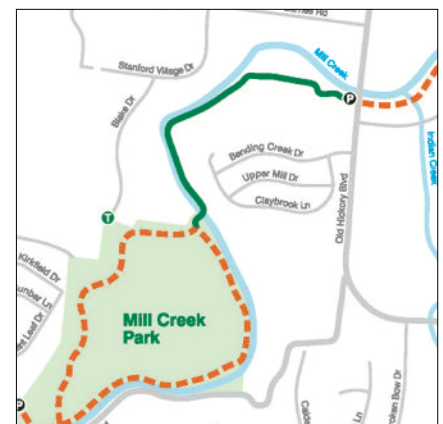
Given the amount of development that has previously occurred within the watershed, it is imperative to implement habitat protection measures to ensure the remaining aquatic habitat is not destroyed or lost. Bioaccumulation of contaminants is a concern for the crayfish and other aquatic species in the watershed.

### Public Lands within the COA

Ellington Agricultural Center, Mill Creek Bottoms Greenway, Radnor Lake State Park/State Natural Area



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Top to bottom: Nashville Crayfish - Carl Williams, TWRA; Mapped section of the Mill Creek Greenway in Nashville - TN.gov/next page: Upland Chorus Frog - Matt Niemiller, TWRA

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## Partnerships

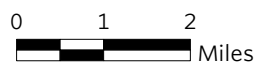
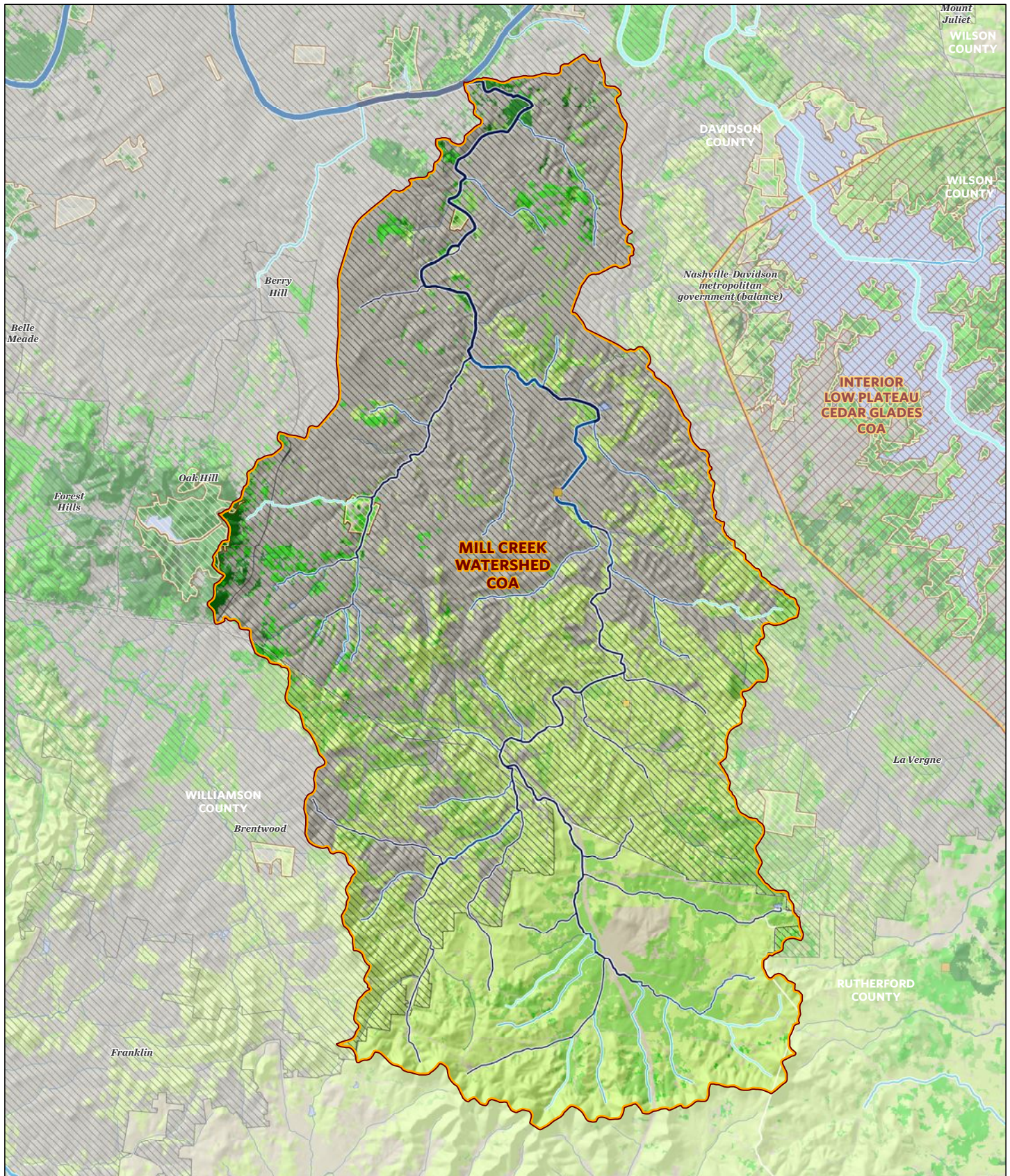
To address these threats to Mill Creek and the Nashville Crayfish, TWRA will develop and expand new programs and foster partnerships with the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Tennessee Dept. of Environment and Conservation, Tennessee Valley Authority, Walden’s Puddle, watershed associations, and metro Davidson County government. The Agency will partner with zoning and planning committees to help minimize the impact of planned developments through improved zoning ordinances.



Desired Change	Units
<b>+</b> Restore instream flows and physical structure to channelized or impounded streams.	miles
<b>✓</b> Develop a monitoring program to measure bioaccumulation of contaminants in target species.	projects
<b>+</b> Expand the network of trained volunteers to assist in monitoring the Nashville Crayfish.	number
<b>✓</b> Develop a multi-agency network of professional aquatic biologists to assist the Tennessee Division of Water Resources (TDEC) in gathering documentation and supporting evidence to enforce existing water quality laws.	number
<b>-</b> Decrease the negative effects of development on GCN species and habitats by encouraging municipal and county governments to limit or regulate development within critical units of aquatic, subterranean, and terrestrial habitats.	plans
<b>+</b> Improve conservation outcomes for GCN species and habitats through participation in environmental planning and permitting.	reviews

To learn more about the Mill Creek Watershed Conservation Opportunity Area, please contact: Josh Campbell, Wildlife Diversity Coordinator, Region 2 (615) 781-6626





Habitat Priority	Karst Aquatic Terrestrial			
	Very High			
	High			
	Medium			
	Low			
Very Low				

- Conservation Opportunity Area
- Protected Land



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MILL CREEK WATERSHED COA GCN SPECIES	
Taxa Group	Scientific & Common names
Bat	<i>Myotis grisescens</i> (Gray Bat)
Bird	<i>Accipiter striatus</i> (Sharp-shinned Hawk)
Bird	<i>Ammodramus leconteii</i> (LeConte's Sparrow)
Bird	<i>Anas rubripes</i> (American Black Duck)
Bird	<i>Aquila chrysaetos</i> (Golden Eagle)
Bird	<i>Asio flammeus</i> (Short-eared Owl)
Bird	<i>Bartramia longicauda</i> (Upland Sandpiper)
Bird	<i>Botaurus lentiginosus</i> (American Bittern)
Bird	<i>Calidris mauri</i> (Western Sandpiper)
Bird	<i>Calidris pusilla</i> (Semipalmated Sandpiper)
Bird	<i>Caprimulgus carolinensis</i> (Chuck-will's-widow)
Bird	<i>Caprimulgus vociferus</i> (Whip-poor-will)
Bird	<i>Cardellina canadensis</i> (Canada Warbler)
Bird	<i>Chaetura pelagica</i> (Chimney Swift)
Bird	<i>Chordeiles minor</i> (Common Nighthawk)
Bird	<i>Circus cyaneus</i> (Northern Harrier)
Bird	<i>Cistothorus platensis</i> (Sedge Wren)
Bird	<i>Colinus virginianus</i> (Northern Bobwhite)
Bird	<i>Egretta caerulea</i> (Little Blue Heron)
Bird	<i>Empidonax minimus</i> (Least Flycatcher)
Bird	<i>Empidonax traillii</i> (Willow Flycatcher)
Bird	<i>Euphagus carolinus</i> (Rusty Blackbird)
Bird	<i>Falco peregrinus</i> (Peregrine Falcon)
Bird	<i>Geothlypis Formosa</i> (Kentucky Warbler)
Bird	<i>Grus americana</i> (Whooping Crane)
Bird	<i>Haliaeetus leucocephalus</i> (Bald Eagle)
Bird	<i>Helmitheros vermivorum</i> (Worm-eating Warbler)
Bird	<i>Hylocichla mustelina</i> (Wood Thrush)
Bird	<i>Icteria virens</i> (Yellow-breasted Chat)
Bird	<i>Icterus spurius</i> (Orchard Oriole)
Bird	<i>Ictinia mississippiensis</i> (Mississippi Kite)
Bird	<i>Lanius ludovicianus</i> (Loggerhead Shrike)
Bird	<i>Limnothlypis swainsonii</i> (Swainson's Warbler)
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>Protonotaria citrea</i> (Prothonotary Warbler)
Bird	<i>Riparia riparia</i> (Bank Swallow)
Bird	<i>Scolopax minor</i> (American Woodcock)
Bird	<i>Setophaga cerulea</i> (Cerulean Warbler)
Bird	<i>Setophaga discolor</i> (Prairie Warbler)
Bird	<i>Setophaga fusca</i> (Blackburnian Warbler)
Bird	<i>Sturnella magna</i> (Eastern Meadowlark)
Bird	<i>Thryomanes bewickii</i> (Bewick's Wren)
Bird	<i>Tryngites subruficollis</i> (Buff-breasted Sandpiper)
Bird	<i>Tyto alba</i> (Barn Owl)
Bird	<i>Vermivora chrysoptera</i> (Golden-winged Warbler)
Bird	<i>Vermivora cyanoptera</i> (Blue-winged Warbler)
Crustacean	<i>Orconectes shoupi</i> (Nashville Crayfish)
Fish	<i>Etheostoma luteovinctum</i> (Redband Darter)
Fish	<i>Etheostoma striatulum</i> (Striated Darter)
Plant	<i>Acalypha deamii</i> (Deam's Copperleaf)
Plant	<i>Astragalus tennesseensis</i> (Tennessee Milk-vetch)
Plant	<i>Boechera shortii</i> (Short's Rock-cress)

<b>MILL CREEK WATERSHED COA GCN SPECIES</b>	
<b>Taxa Group</b>	<b>Scientific &amp; Common names</b>
Plant	<i>Castanea dentata</i> (American Chestnut)
Plant	<i>Echinacea tennesseensis</i> (Tennessee Coneflower)
Plant	<i>Juglans cinerea</i> (Butternut)
Plant	<i>Paysonia densipila</i> (Duck River Bladderpod)
Plant	<i>Phemeranthus calcaricus</i> (Limestone Fame-flower)
Plant	<i>Phlox bifida</i> ssp. <i>stellaria</i> (Glade Cleft Phlox)
Plant	<i>Stellaria fontinalis</i> (Water Stitchwort)
Plant	<i>Zanthoxylum americanum</i> (Northern Prickly-ash)
Subterranean - Crustacean	<i>Caecidotea bicrenata</i> ((a cave obligate isopod))
Subterranean - Crustacean	<i>Stygobromus exilis</i> (Central Kentucky Cave Obligate)
Subterranean - Flatworm	<i>Sphalloplana buchmanii</i> ((a cave obligate planarian))
Subterranean - Flatworm	<i>Sphalloplana percoeca</i> ((a cave obligate planarian))
Subterranean - Insect	<i>Pseudosinella hirsuta</i> (Hirsute Cave Springtail)
Subterranean - Millipede	<i>Scoterpes musicarustica</i> ((a cave obligate millipede))

MILL CREEK WATERSHED COA HABITATS (TN)	
Terrestrial Habitat Type	Total acres of very high, high, and medium ranked habitat
<b>Natural habitats</b>	
Southern Interior Low Plateau Dry-Mesic Oak Forest	1289
South-Central Interior Mesophytic Forest	637
Nashville Basin Limestone Glade and Woodland	140
South-Central Interior Small Stream and Riparian	54
South-Central Interior Large Floodplain	9
<b>Semi-natural habitats</b>	
Pasture	1598
Old Field / Successional	781
Cropland	128
Aquatic Habitat Type	Total stream miles of very high, high, and medium ranked habitat
Headwaters and Streams	74
Small River	13