

Conservation at the Tennessee Aquarium



**Stephanie Chance, Dr. Anna George, Abbey
Holsopple, Dr. Bernie Kuhajda, and TNACI Staff**

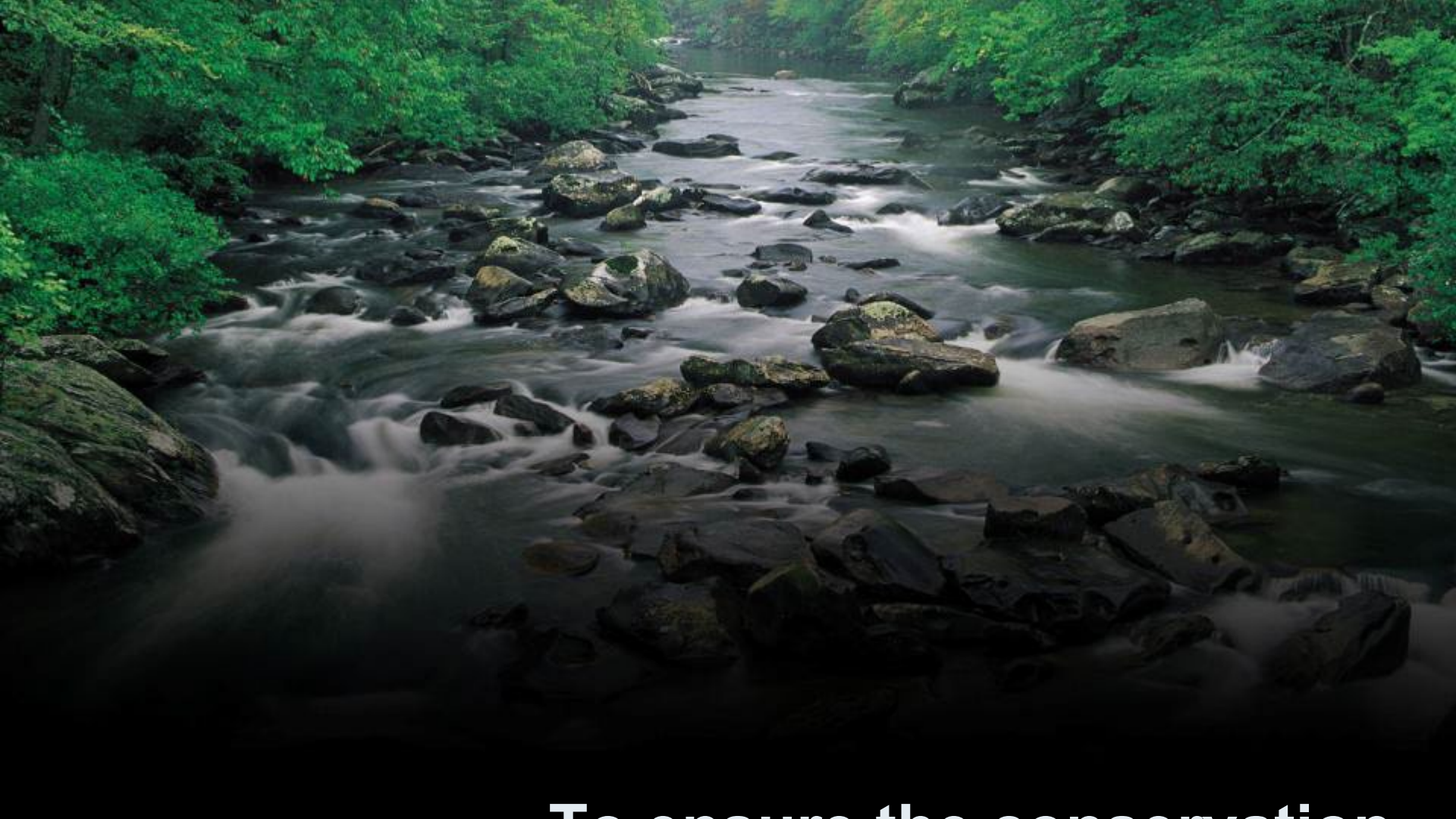




The mission of the Tennessee Aquarium is to connect people with nature and empower them to make informed decisions about water and wildlife.

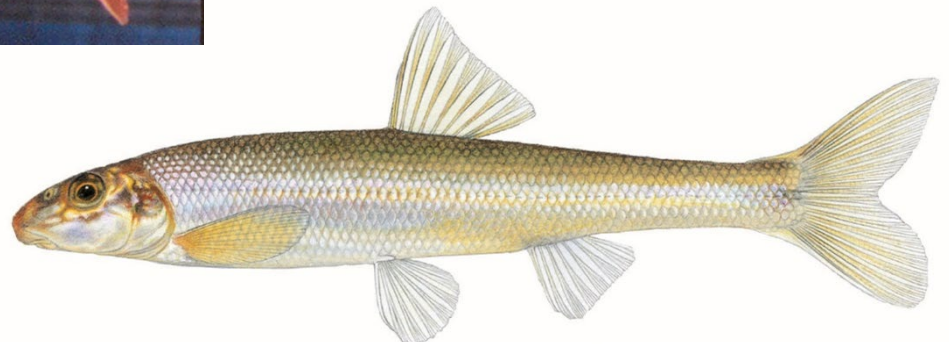
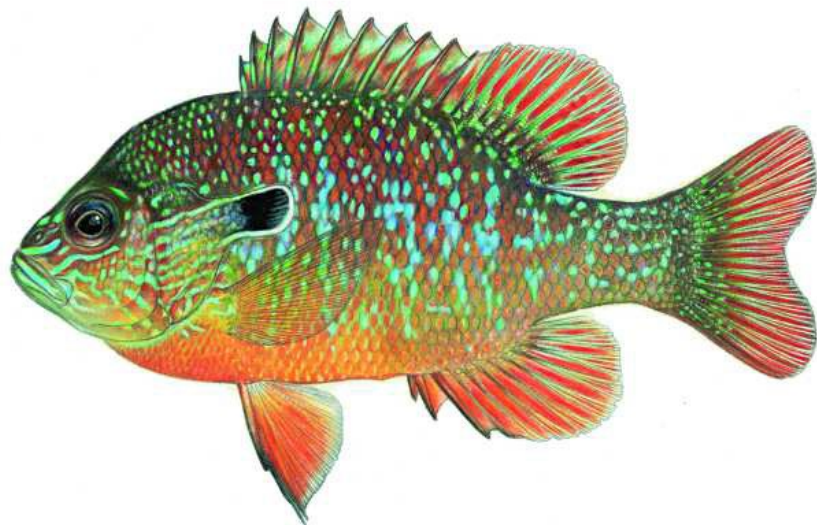
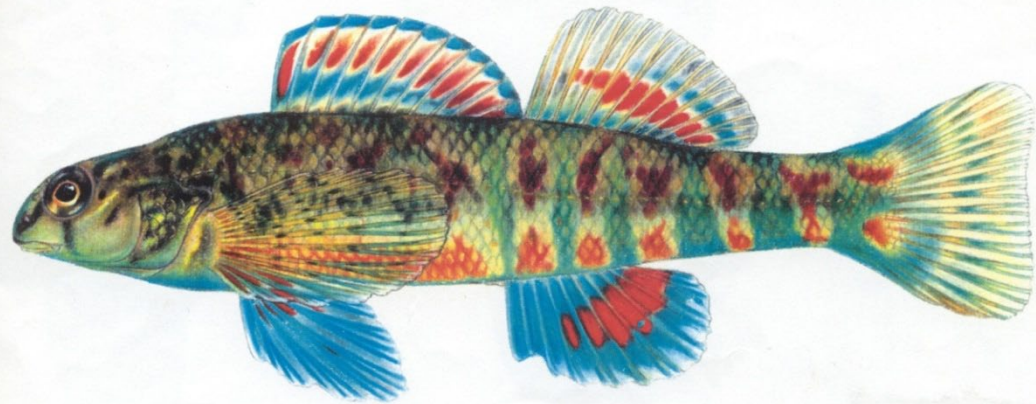






**To ensure the conservation
of native aquatic animals
and their habitats**

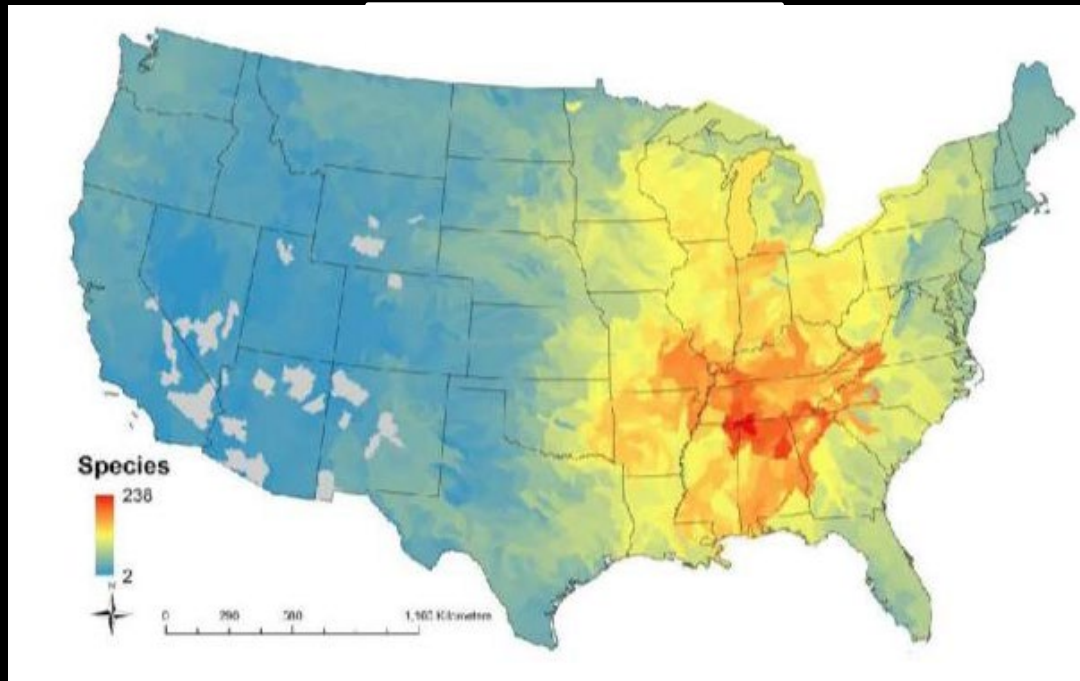
Southeastern freshwater fishes



Southeastern Aquatic Animals



The Southeast leads the nation in freshwater biodiversity!



Jenkins, C. N., Van Houtan, K. S., Pimm, S. L., & Sexton, J. O. 2015. US protected lands mismatch biodiversity priorities. *Proceedings of the National Academy of Sciences*, 112:5081-5086.

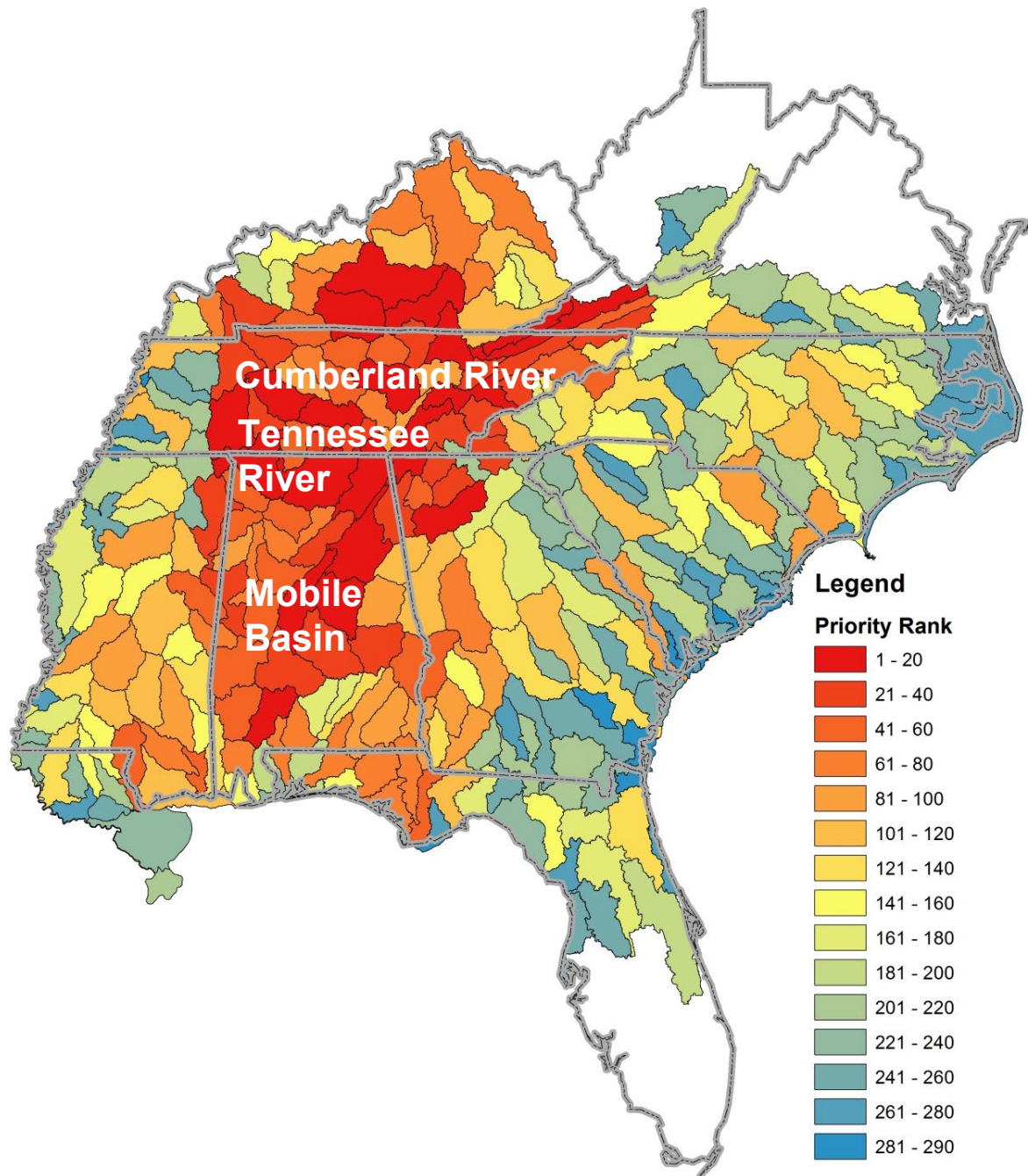
HUC 8 Priority Watersheds

> 400 fish species

Tenn, Mobile, Cumberland

**48% of fish diversity
in U.S. & Canada**

1.4% of area

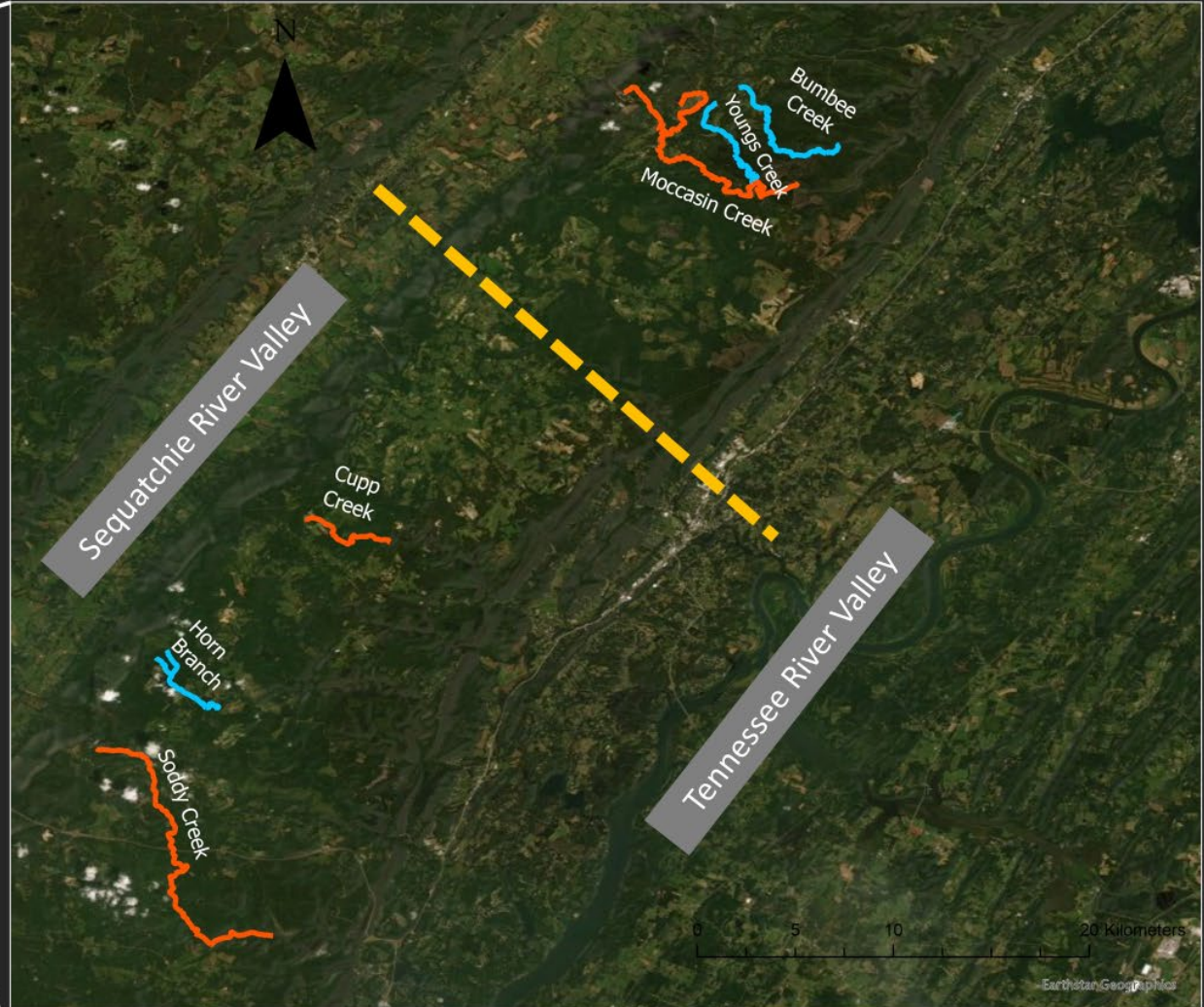
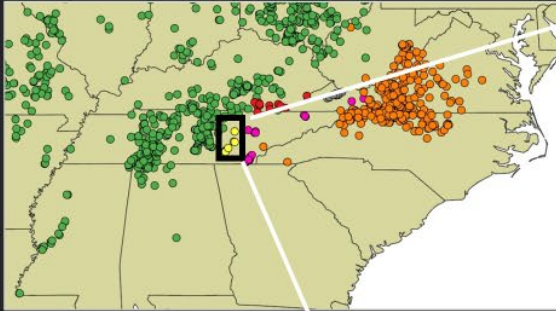




6 DA 4 =? A PK 5 =RA PDA . =QNAH&=? A π
(ED 1 QP KB9 =PAN



LD site map



Laurel Dace
Chrosomus saylori

Threats to the Laurel Dace

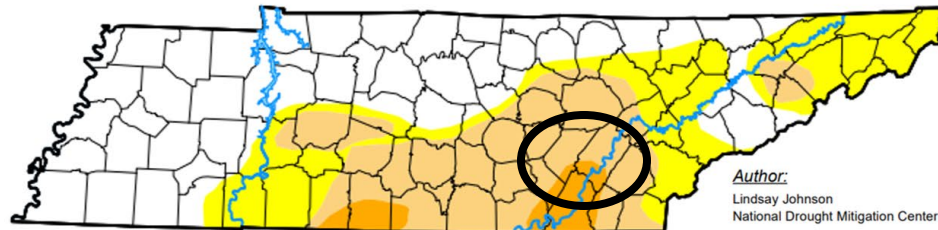


U.S. Drought Monitor Tennessee

Intensity:

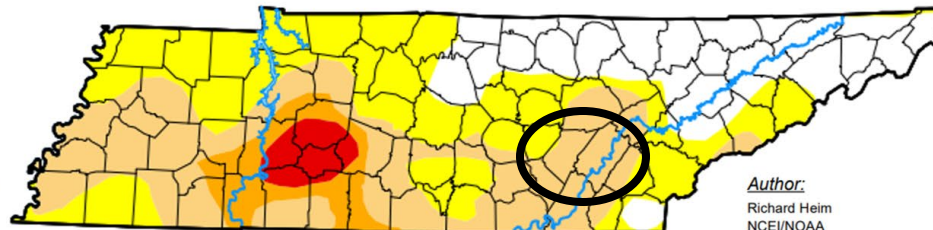
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



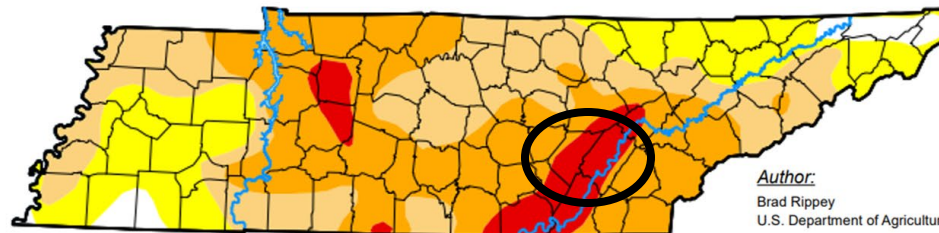
Author:
Lindsay Johnson
National Drought Mitigation Center

July 30, 2024
(Released Thursday, Aug. 1, 2024)
Valid 8 a.m. EDT



Author:
Richard Heim
NCEI/NOAA

August 27, 2024
(Released Thursday, Aug. 29, 2024)
Valid 8 a.m. EDT



Author:
Brad Rippey
U.S. Department of Agriculture

September 17, 2024
(Released Thursday, Sep. 19, 2024)
Valid 8 a.m. EDT

Drought



Bumbee Creek

June 13



July 30



September 17





Number of Laurel Dace Collected from Bumbee Creek

Date	Adult	Young of Year	Mortalities	Total Rescued	Holding Facility
7/24/2024	105	0	1 adult	104	TNAQ
9/9/2024	109	8	1 adult 1 yoy	115	TNAQ (37), Wolf Creek (78)
9/17/2034	28	19	--	47	TNAQ (32), Wolf Creek (15)
Total				266	

Youngs Creek

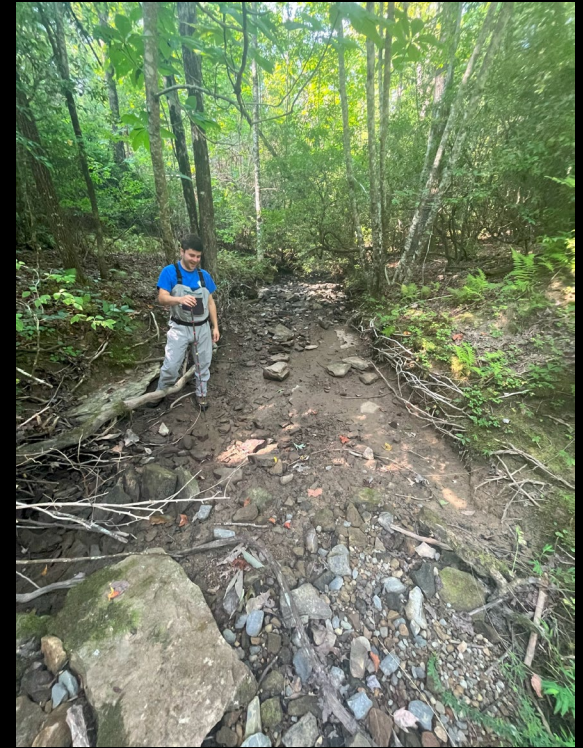
June 25



July 30



August 16



August 21



August 27



Number of Laurel Dace Collected from Youngs Creek

Date	Adult	Young of Year	Mortalities	Total Rescued	Holding Facility
8/27/2024	14	16	1 adult	29	TNAQ
9/9/2024	1	5	1 adult	5	TNAQ
Total				34	



Endangerment of a rare fish species due to the ongoing drought

Audrey Shroyer Aug 30, 2024 Updated Sep 5, 2024



WATCH NOW LOCAL 3 NEWS

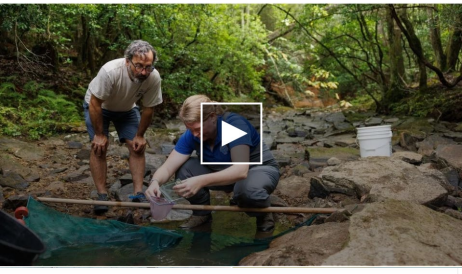
LOCAL 3 NEWS WATCH LOCAL 3 NEWS

LOCAL 3 WEATHER

CHATTANOOGA	72	82
MEMPHIS	74	84
NASHVILLE	74	84
KNOXVILLE	72	82
SPRINGFIELD	70	80

Drought prompts emergency rescue of one of America's most-endangered aquatic species

by WTVC
Thu, August 22nd 2024 at 4:43 PM
Updated Mon, August 26th 2024 at 12:05 PM



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Tennessee Aquarium rescues endangered fish species from disappearing stream

Laurel Dace have needed protection since the early 2000s, according to the U.S. Fish and Wildlife Service. By Tony Garcia
Published Aug 27, 2024 at 1:44 PM EDT

CHATTANOOGA, Tenn. (WSMV) - Wildlife preservationists successfully removed an endangered fish from streams reaching dangerously low levels in Tennessee last month.

The Tennessee Aquarium said the emergency rescue operation was launched after seeing reports of streams drying up along Walden Ridge where Laurel Dace is known to live.

The rescue effort was carried out by members of the Tennessee Aquarium, the U.S. Fish and Wildlife Service, and the University of Georgia's River Basin Center, in coordination with the Tennessee Wildlife Resources Agency.

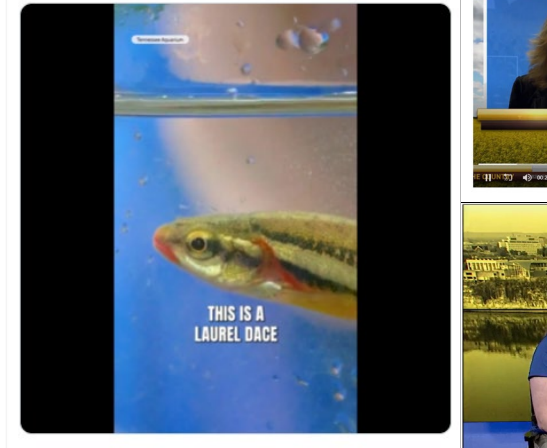


Tennessee Aquarium rescues endangered fish species from disappearing stream



From wsmv.com
6:03 PM · Sep 7, 2024 · 779 Views

Patttn @patttn
This is a story about an epic rescue mission to save a fish on the brink of extinction. w/ @TNAquarium #conservation #savewildlife #animairescue



3:00 PM · Sep 4, 2024 · 577 Views

Summer drought is impacting small streams and aquaculture in Tennessee

September 13, 2024 12:17 PM

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Trending Stories

- Not everyone will be affected by the US Cattle @rakes
- Could each cattle sales lose money this
- Let's meet our award-winning @agout



FISH OUT OF WATER
SAVING THE LAUREL DACE

Wolf Creek National Fish Hatchery
September 20 at 10:24 AM

Wolf Creek National Fish Hatchery, in conjunction with the Tennessee Ecological Services Field Office, joined staff from the Tennessee Aquarium Conservation Institute (TNACI) to rescue a population of federally endangered Laurel Dace (*Chrosomus sayloni*)

Based on the observations of monitored sites and the lack of meaningful rain in the extended forecast, it was decided to collect the Laurel Dace that remained in isolated pools subject to drought conditions and transfer the adult fish to the hatchery.

Our Threatened and Endangered Species Lab is now home to 93 endangered Laurel Dace and approximately 85 endangered Barrens Topminnows (*Fundulus julisia*).

Thanks to our partners at the Tennessee Ecological Services Field Office and the Tennessee Aquarium for their combined conservation efforts.

For more information about Laurel Dace, please visit <https://www.fws.gov/species/laurel-dace-chrosomus-sayloni>
PC: USFWS



Fish out of water: Drought prompts emergency rescue of one of America's most-endangered aquatic species

By Special to the Banner Aug 24, 2024

Few things trigger louder or more distressing alarm bells among freshwater biologists than watching a waterway dry up during a severe, prolonged drought. That's especially true when the disappearing stream is home to one of America's most-imperiled fish.

12 WDEF News 12 @wdefnews12

FISH RESCUE: The Tennessee Aquarium along with other organizations assisted in the rescue of an endangered fish due to a dried up stream.

More Details:



TN Aquarium aids in rescuing endangered aquatic species - WDEF
From wdef.com

6:00 PM · Aug 22, 2024 · 164 Views

TCD

NEWSLETTER HOME AUTO TECH OUTDOORS BUSINESS SHOP

BUSINESS

State aquarium rescues endangered species from severe drought: 'Inaction could have led to the permanent extinction of this species'

"As soon as we stepped out of the vans at the site, I had no doubt that what we were doing was absolutely necessary."

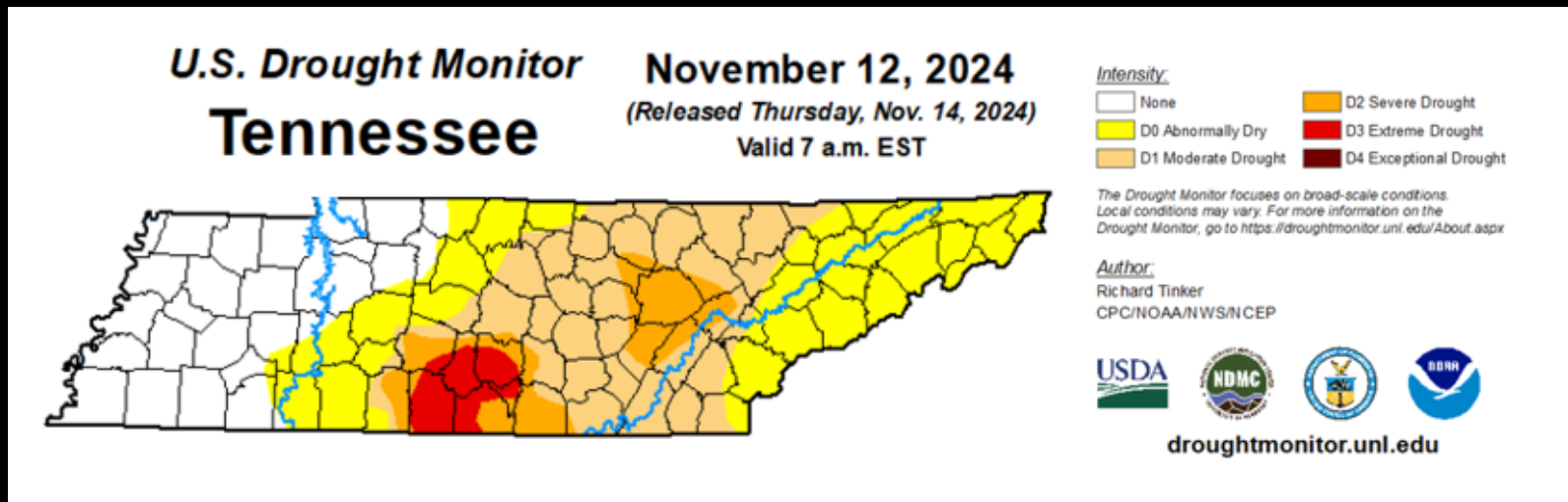


Giving Tuesday – The Race to Save the Laurel Dace

Gifts of \$10 or more receive a Laurel Dace sticker, gifts of \$25 or more receive a sticker and a magnet

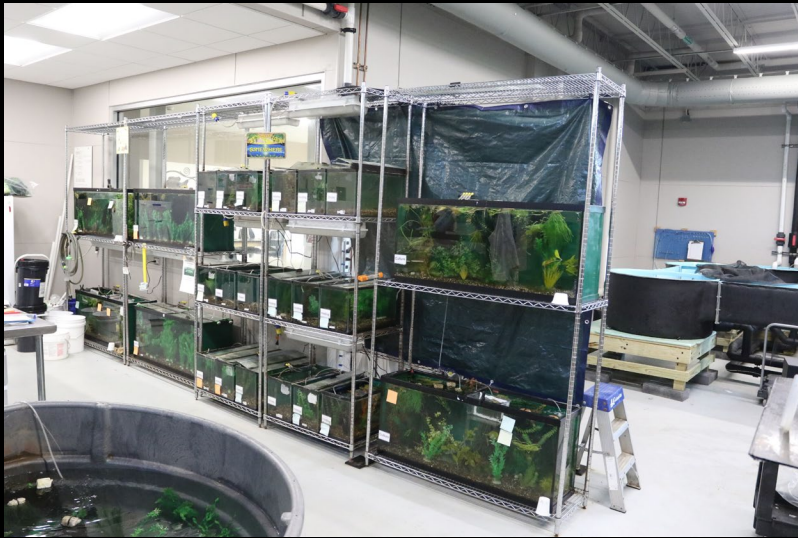
What's Next?

- Monitoring stream and drought levels
- Additional sampling in December



What's Next?

- Form an advisory group for establishment of an ark population



What's Next?

- Determine genetic differences (if any) between Bumble and Youngs creek populations and archived tissues from historical populations (Moccasin and Cupp Creek, Horn and Lick Branch).
- Determine genetic diversity of Laurel Dace broodstock at TNACI to inform propagation and augmentation decisions.

What's Next?

- eDNA and physical surveys



What's Next?

- Search for snail populations in Youngs Creek watershed
- Determine the effect of Yellow Grub disease on the behavior of Laurel Dace.



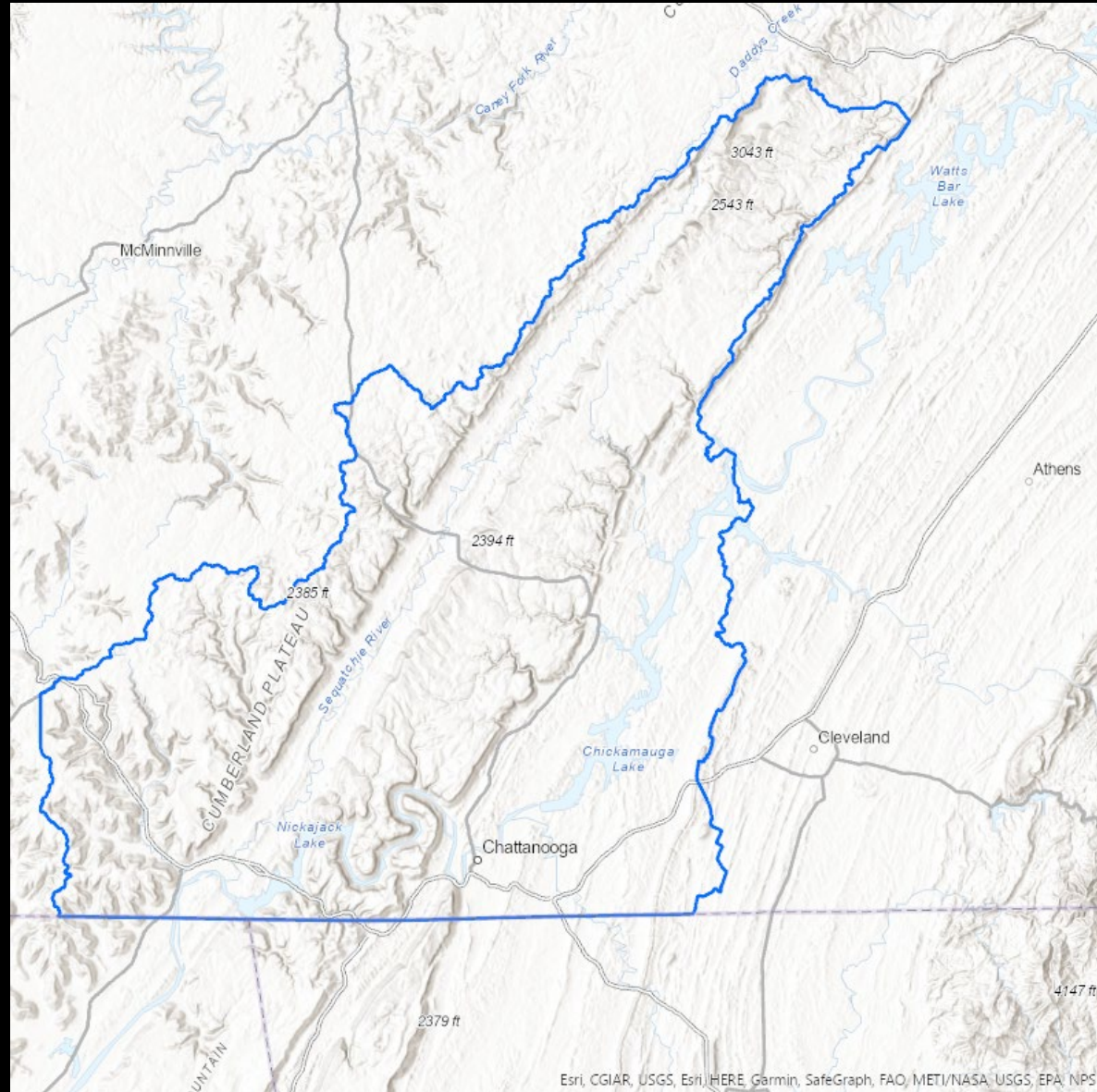
Regional Conservation Partnership Program



Ridges to Rivers

2018 Farm Bill -
\$10 million

Project Partners -
\$11.8 million



RCPP Partners

Conservation Partnerships = \$11,830,231.00 Contributions

- Crabtree Farms
- Land Trust for Tennessee
- Open Space Institute
- Soil Conservation Districts: Bledsoe, Hamilton, Marion
- Southeast Tennessee Resource Conservation & Development Council
- Tennessee Department of Agriculture: Agricultural Enhancement Program, Division of Forestry
- Tennessee Department of Environment and Conservation: Division of Water Resources
- TennGreen Land Conservancy
- Thrive Regional Partnership
- University of Tennessee Chattanooga: IGTLab
- US Fish & Wildlife Service: Ecological Services Program, Partners for Fish and Wildlife Program, Science Applications Program

Priority
Species

Sequatchie River Species

Laurel Dace



76 species of
fishes
39 species of
mussels
10 species of
crayfishes



Outcomes

- Reintroduction of one native fish species into former Laurel Dace habitat
- Remove one impaired waterway from 303d list

2024 Outreach Summary



May – Dayton Strawberry Parade



March – Ag Day on the Hill



April – Biodiversity in the Sequatchie River



July – River Teachers



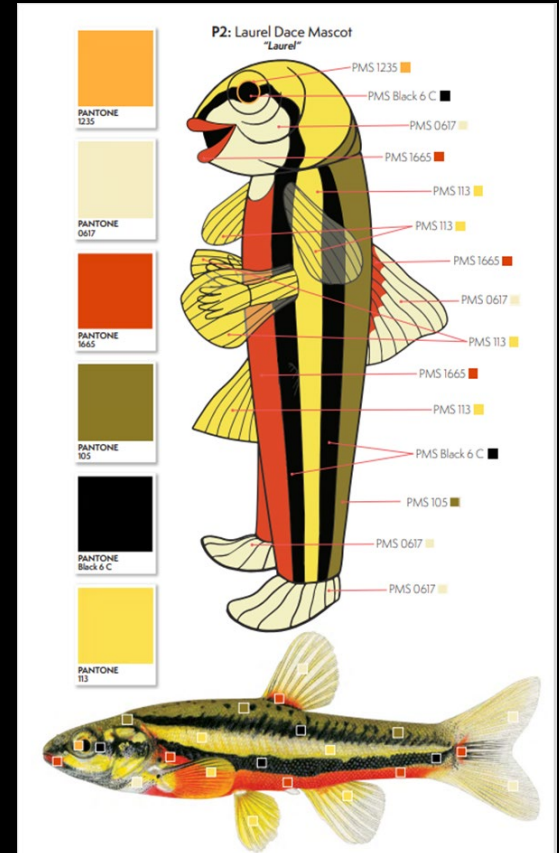
August – Ag Night



September – Crabtree Farms Fall Festival

Save the Date for Laurel Dace Day!!

- May 17th 2025, Spring City, TN
- 5k "Race to Save the Laurel Dace"
- Snorkel the Piney River
- Guided Hike along Moccasin Creek
- Pop up farmers market
- And so much more!!!





Southern Appalachian Brook Trout





**TNACI receives
2,000+ Lake Sturgeon
early June**

About ½ inch long





**Release when > 6 inches long
September - October**

Over 300,000 Lake Sturgeon released since 2000 by TNACI and its many partners





Questions?

