



**Trout Unlimited and the
U.S. Forest Service:
A Partnership that Works**

“The vast
possibilities of our
great **future** will
become **realities**
only if we make
ourselves, in a sense,
responsible for that
future.”

**Front Cover: Kara Armano fishes with
her dog, Riley, in New Mexico.**

— Gifford Pinchot
‘The Conservation of Natural Resources’, The Outlook

Trout Unlimited is guided by an ambitious mission,

“To conserve, protect and restore North America’s coldwater fisheries and their watersheds.”

Ours is a mission that cannot be accomplished without the help of partners. One of our most important partners is the United States Forest Service. The Forest Service manages over 191 million acres of public land that are jointly owned by all Americans.

It is difficult to overstate the importance of these lands to wild trout and salmon. More than 40 percent of all blue-ribbon trout streams flow across national forests. Over the past 25 years, the Forest Service has pioneered a form of collaborative stewardship that represents the future of conservation in America. Collaborative stewardship produces jobs, partnerships, and most important results on the ground.

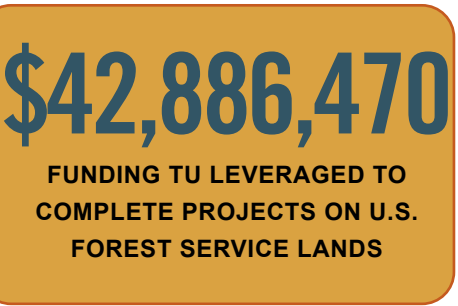
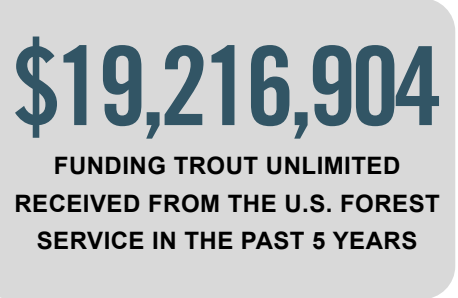
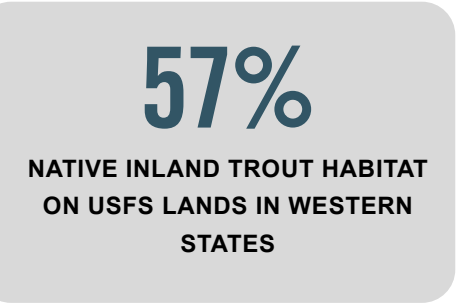
In West Virginia on the Monongahela National Forest, the Forest Service and TU works with state and federal agencies, farmers, and others to expand brook trout habitat to more than 100 miles of streams. In Idaho, we work with the Forest Service to repair the legacy of abandoned mines on the Yankee Fork, an important tributary to the fabled Salmon River. In the next few years, Trout Unlimited, in partnership with the Forest Service and more than 1,500 other partners, will reconnect and restore a whopping 600 miles of rivers across the nation.

Of course, collaborative stewardship makes fishing for native and wild trout better. But that is an incidental benefit. These projects provide high-paying, family wage jobs in rural communities. They help to improve drinking water for millions of Americans. They drive economic opportunity.

Collaborative stewardship also makes nearby communities better able to withstand the changing climate. Restoring riparian areas and floodplains on the Yankee Fork and on private lands adjacent to the Monongahela will make those communities more resilient to the effects of flood and drought. Forest thinning on forests such as the Lolo in Montana may help moderate unnaturally intense wildfires.

Trout Unlimited is proud to work with the Forest Service to bring people together to apply common sense to common problems for the common good.

--Chris Wood, President and CEO of Trout Unlimited

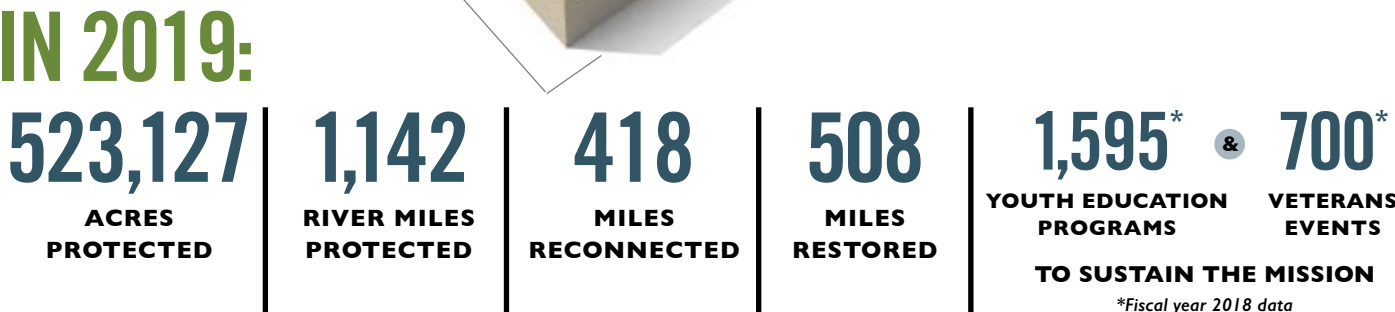


From the headwaters to the sea, we are not
daunted by the challenges we face.

Quite the **opposite** in fact.

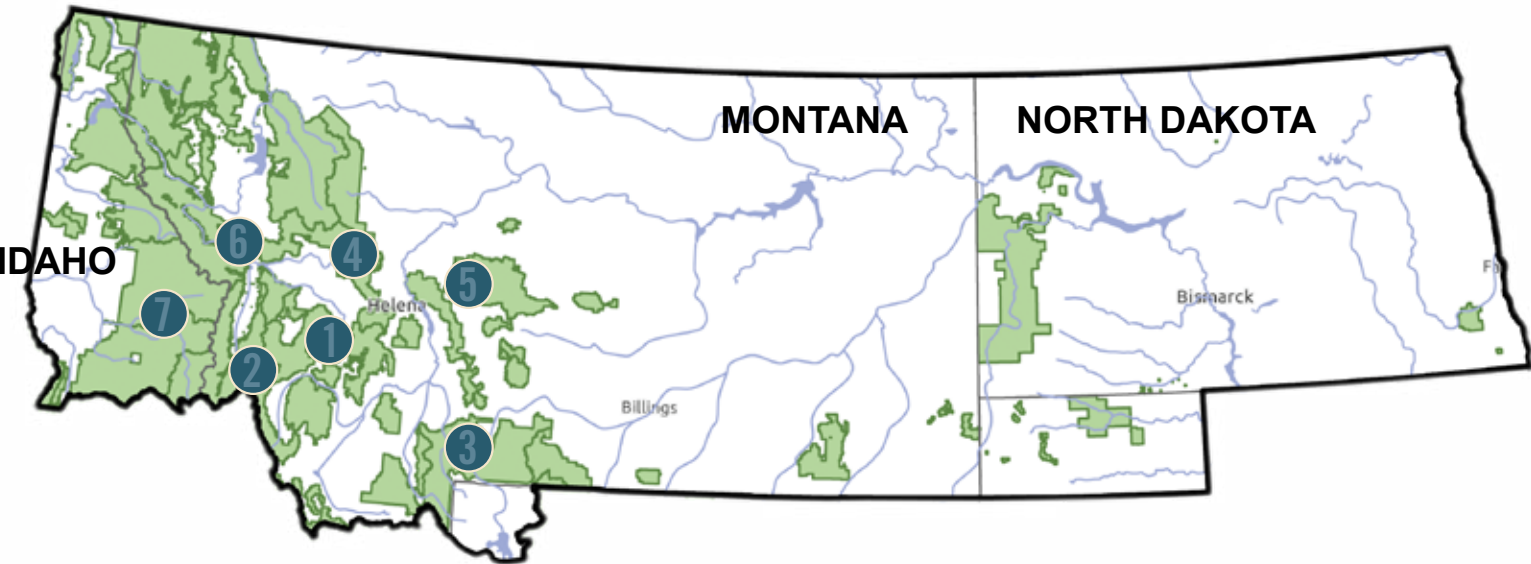
Trout Unlimited is here to **serve**.

We are here to **get things done**.



“Ninemile Creek used to generate so many trout, people referred to it as a fish factory. Runoff from mines in the area has impaired the watershed, but they’re getting cleaned up, and we’re seeing a great comeback.”

Paul Parson,
Middle Clark Fork Restoration Coordinator
2017 USFS “Rise to the Future” award recipient



BY THE
NUMBERS
\$3,169,760
FOREST SERVICE FUNDING
\$4,136,444
TU LEVERAGED FUNDING

51.5
MILES RECONNECTED
14
MILES RESTORED

80%
OF MT HABITAT FOR CUTTHROAT
TROUT WILL BE ON USFS LANDS IN
20 YEARS WITH CHANGING CLIMATE

WESTERN REGION 1

National Forests

1 Beaverhead-Deerlodge National Forest
TU project managers work with private landowners and USFS staff to implement projects that restore and reconnect native westslope cutthroat and bull trout tributaries to mainstem habitats in places like Rock Creek and Upper Clark Fork tributaries. We recently completed Aquatic Organism Passage projects on Brewster Creek and Warm Springs Creek.

2 Bitterroot National Forest
TU project managers recently finished an irrigation diversion inventory to identify fish passage barriers that interrupt migrations between lower-elevation habitats on private land and upstream spawning and rearing habitat on National Forest land. Focal geographies include Burnt Fork Creek and East Fork Bitterroot River.

3 Custer Gallatin National Forest
TU works with private landowners and USFS staff to prioritize and implement AOP and stream habitat restoration projects on Gallatin River tributaries.

4 Helena National Forest
TU works to reclaim abandoned mines and rebuild degraded streams and floodplains on the Little Blackfoot River and its tributaries. Recent and ongoing projects include the Lilly Orphan Boy and Tramway abandoned mine clean-ups.

5 Lewis and Clark National Forest
TU staffers work with private landowners, ranchers and irrigators to restore stream and riparian habitat and improve instream flows for fish on tributaries to the Blackfoot River. Home of the Blackfoot Challenge, this one of our longest-standing and most successful restoration collaborations.

6 Lolo National Forest
TU project managers work on large-scale floodplain and stream reconstruction and abandoned mine restoration in the Ninemile drainage just west of Missoula. TU also works with USFS staff to design and implement channel restoration, wood augmentation and floodplain reconnection projects in other drainages in the Middle Clark Fork subbasin, including Cedar Creek, Petty Creek, Flat Creek, and the Thompson and St. Regis rivers. A larger team, including TU staffers, is also overseeing a project to remove Rattlesnake Creek Dam.

7 Nez Perce - Clearwater National Forest
TU project managers work with USFS staff and the Nez Perce tribe to improve habitat in the Clearwater Basin, including recent projects in Lochsa River tributaries (Imnamatnoon and Waw aa’ lamnime creeks). We recently hired a new project manager in Lewiston to develop additional habitat and streamflow projects in other Clearwater River tributaries. New partnership/project opportunities have emerged at Musselshell Meadows and in Lapwai Creek.



Blackfoot River

223 jobs

created in the past 20 years from restoration of the Blackfoot River.

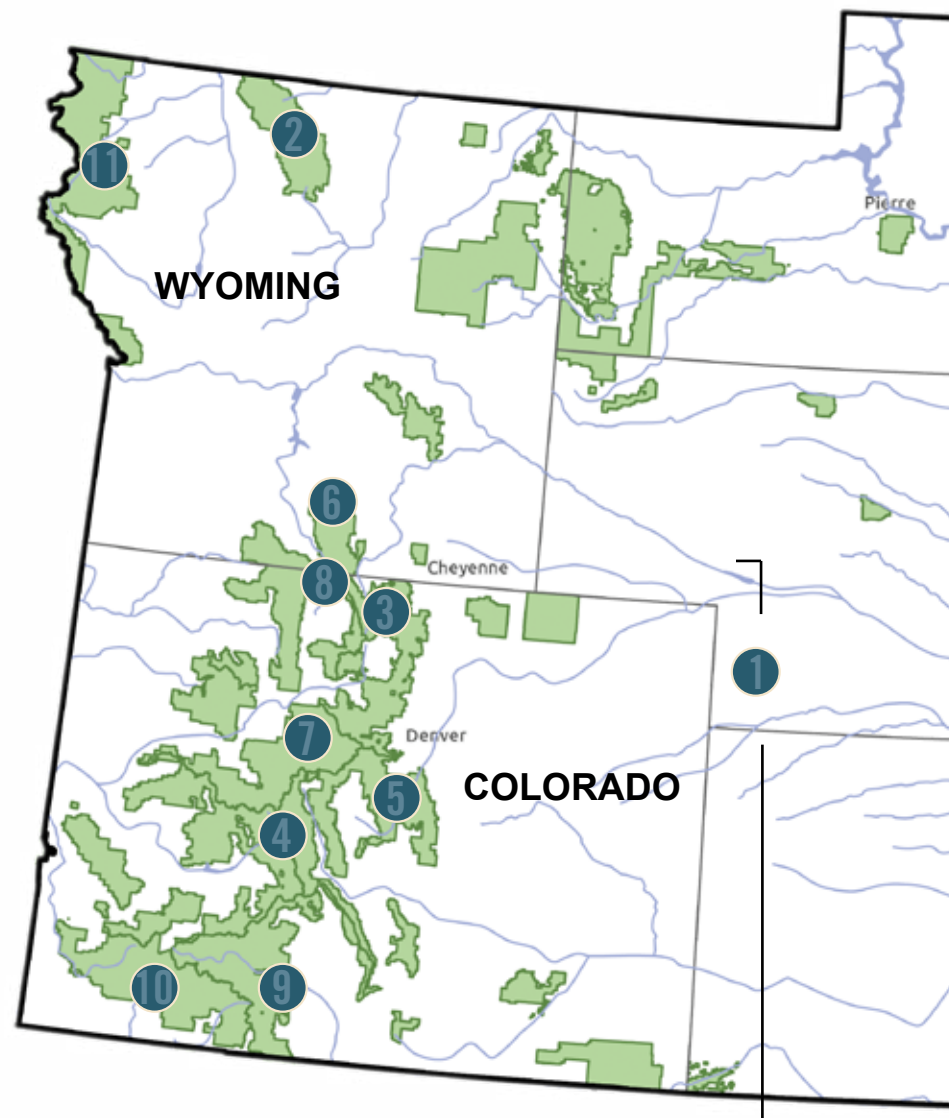
“That’s the restoration economy that’s tied to small communities. We’re hiring local. We’re buying headgates and pipe and fish screens from people right here in the valley.”

- Ryen Neudecker
restoration coordinator for the Big Blackfoot Chapter of Trout Unlimited



Partners

Montana Department of Environmental Quality, Montana Department of Fish, Wildlife and Parks, Montana Natural Resource Damage Program, Montana Trout Unlimited, Montana Department of Natural Resources and Conservation, National Fish and Wildlife Foundation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service



BY THE NUMBERS

\$4,452,202

FOREST SERVICE FUNDING

\$4,407,808

TU LEVERAGED FUNDING

122

MILES RECONNECTED

77.5

MILES RESTORED



“The Akron Mine Reclamation Project really highlights how working collaboratively can make a project come out better. After working on it for four years, and being only an hour from my house, it is a pretty important place for me.”

Jason Willis, TU Mine Restoration Project Manager, Akron Reclamation project; won 2016 Regional Forester’s Honor Award for Sustaining our Nation’s Forests and Grasslands for Region 2; 2017 National Contamination Hazard Hardrock Reclamation Award from the National Association of Abandoned Mine Land Programs

National Forests

Colorado Abandoned Mine Land

1

TU has numerous USFS partnership projects across Region 2 and is actively involved in a mixed working group that includes several Regional and Forest level staff. TU AML staff currently have a region-wide agreement to assist USFS staff on AML characterization and site identification. This allows for collaborative approaches to sampling, analysis, and design of mine sites where contamination from hard-rock mines exists.

Bighorn National Forest

2

TU partnered with the Forest Service to replace a culvert, making Canyon Creek more beneficial for wild trout populations. The East Yellowstone TU chapter has collaborated with the Forest on a variety of activities including the Soldier Creek Fence Project, Soldier Creek fish sampling, Dry Medicine Lodge sampling and habitat restoration, and youth education.

Arapaho and Roosevelt National Forests and Pawnee National Grassland

TU design and construction activities (like drainage controls, wetland expansion, and mine tailings stabilization) associated with Leavenworth Creek and Waldorf mine restoration efforts have been ongoing for six years. Jason Willis was awarded the 2017 USFS Regional Forester’s Award for Sustaining our Nation’s Forests and Grasslands for his work at the Santiago Mine Cleanup project.

3

On Lion Creek, TU has worked with the USFS, USGS, and others to complete a tracer injection study, construct a drainage diversion ditch, and plan for vegetation plantings to control erosion and mitigate contaminated seepage. We also have agreements with the Boulder and Clear Creek Ranger Districts to identify, characterize, and sample AML sites. TU is also working with the Forest, Denver Water, and Learning-By-Doing partners on native Colorado River cutthroat trout restoration on Cabin Creek including culvert replacement, flume removal, and diversion structure improvements.

Akron: Before



Akron: After



Partners

Bonneville Environmental Foundation, Cheyenne Mountain Zoo, Chicken Creek Ranch, Colorado Department of Public Health and Environment, Colorado Parks and Wildlife, Colorado River District, Colorado Water Conservation Board, Conejos Water Conservancy District, East Yellowstone TU, Freeport McMoRan, Intel, National Fish and Wildlife Foundation, National Forest Foundation, Natural Resources Conservation Service, Newmont Mining, Rio Grande Headwaters Restoration Foundation, Rio Grande Watershed Emergency Action Coordination Team, Routt County Conservation District, San Luis Valley TU, SER Conservation District, Colorado State Land Board, Steamboat Ski & Resort Corporation, Three Forks Ranch, continued next page...

REGION 2

National Forests

Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG)

4 TU has done significant AML and other habitat restoration work on the GMUG, including the Akron Mine Cleanup Project that resulted in the removal of over 128,000 cubic yards of mine waste along with restoring 1,100 feet of Tomichi Creek. TU is also critically active on the Atlas Mine and Mill and Telluride Floor projects. Our Upper Gunnison Project Manager has worked with an array of partners to restore two miles of Middle Quartz Creek stream channel, remove diversions and increase flows to protect native Colorado River cutthroat trout on East and West Steuben Creek, and helped TU youth volunteers on an infrastructure improvement project that will benefit habitat near pastureland at the Cement Creek Ranger Station. TU's Lower Gunnison Project Manager is working with USFS and a number of other partners to complete projects in 2020 and 2021 that will improve diversions and benefit flows and habitat in Gunnison and Ouray counties.

Pike-San Isabel National Forests and Cimarron-Comanche Grasslands (PSICC)

5 TU partnership work with USFS on Chalk Creek involves flume installation at several draining mine sites to identify and quantify fluctuation in flows from portals. This will allow partners to prioritize future flow control devices to mitigate unintended surges of contaminated water. These are pilot projects for a process that could be replicable at other sites across Region 2. TU is also assisting the PSICC On-Scene-Coordinator to complete remaining CERCLA checklist items on the Mineral Park Ponds setting the table for removal actions, treatment and revegetation, and channel restoration. Finally, TU AML staff are also working with the PSICC to identify TRONOX settlement sites for additional investigation regarding impacts to adjacent water resources.

Medicine Bow National Forest and Thunder Basin National Grassland

6 The Big Creek Trout Passage Project will reconnect 58 miles of habitat between the North Platte River and this key wild trout spawning tributary. This particular fish barrier is located 400 yards downstream of the National Forest on private lands and removal will serve as a boon to fish populations throughout the system. This is the fifth reconnect project partnership between TU, USFS and other partners since 2010.

White River National Forest

7 TU is partnering with USFS on a high-priority project to protect North Elk Creek native Colorado River cutthroat trout. We will construct a fish barrier to insulate the native fish against an invasion by whirling disease-infected rainbow and brown trout. Depending on successful fundraising efforts, the \$250,000 project is slated for construction in 2020 and 2021. TU and USFS are both participants in the White River Algae Work Group. This is an important in the White River Basin, because members study factors driving a major nuisance algae problem in the mainstem.

Routt National Forest

8 TU's Northwest Colorado Project Manager oversees Forest Service partnership work on the Routt. TU has been involved with a two-pronged project on Burgess Creek to connect habitat for native Colorado River cutthroat trout (completed) and mechanically removing brook trout from cutthroat habitat and relocating them to a local pond (scheduled for 2020). Additional 2020 and 2021 projects include \$500,000 in stream and riparian restoration on First Creek, and a \$200,000 native trout fish passage project involving the replacement of two culverts on West Fork South Fork Slater Creek. TU's Yampa River Project Coordinator is also overseeing culvert removal to restore upstream fish passage for Colorado River cutthroat trout and native non-game mottled sculpin on Smith Creek.

REGION 2

Rio Grande National Forest

9 TU is involved with a number of partnership projects, including installing a bottomless arch culvert and reconnecting over seven miles of Rio Grande cutthroat habitat on Middle Fork Carnero Creek, and improving a boat ramp at the USFS Rio Grande Campground near Creede. TU also coordinates a complicated and multi-partner long-term Winter Flow Program that in 2019-2020 will have positive benefits on over 50 miles of USFS lands by delivering over 4,000 acre-feet of water to Clear Creek, Beaver Creek, South Fork Rio Grande, and the Conejos River. We're also conducting design work on the Conejos River low flow channel project (in coordination with the Winter Flow Program), installing bottomless culverts on Jim Creek, and initiating sub-basin characterization studies to help guide Rio Grande cutthroat trout reintroduction efforts on USFS lands. Our AML work on the Forest includes completion of third-phase construction on the Kerber Creek / Minnie Lynch Mine capping a three-year CERCLA cleanup costing over \$400,000. Future Forest activities include seven acres of floodplain cleanup in Kerber Creek headwaters and sampling sites near Platoro Reservoir on the Upper Conejos to prioritize future reclamation.

San Juan National Forest

10 With the rediscovery of the genetically distinct San Juan cutthroat trout, TU is exploring restoration opportunities with the Forest Service, Colorado Division of Wildlife, private landowners, and others. This includes upper Wolf Creek, where TU's Garrett Hanks is working with partners to restore wetland and riparian habitat and reintroduce the native trout. TU recently secured National Fish and Wildlife Foundation (NFWF) funding for watershed characterization studies that will be coordinated between San Juan and Rio Grande cutthroat habitat in southern Colorado and northwest New Mexico to help prioritize additional reintroduction and restoration opportunities in historic native trout habitats. TU helped remove a culvert and decommission a road to protect a Colorado River cutthroat trout population in the Dolores Ranger District. We have also monitored temperatures over the past three years in the Dolores River Basin with over 40 sensors deployed and continuously monitored by TU, The Forest, and Colorado Parks and Wildlife. District-wide NEPA for fisheries and habitat work will help set the table for a variety of funding sources and partners to complete additional native trout habitat work.

Shoshone National Forest

11 TU and USFS have enjoyed a decades-long partnership to restore key Bighorn River tributaries that drain from the Shoshone National Forest. TU's Wyoming Water and Habitat Program has overseen partnership efforts with the USFS on the Bull Creek siphon upgrade and barrier removal (South Fork Shoshone River), North Fork Ditch Screen (North Fork Shoshone River), Greybull fish passage projects including seven barriers removed and complete reconnection of Timber Creek to the Greybull, Francs Fork culvert removal/bridge installation, Francs Fork infiltration gallery and fish screen, and Upper Sunshine fish ladder. Additional projects have included Wind River tributaries like the Bitterroot Ranch tributary reconnect (diversion removal and water use efficiency project) and radio telemetry project to track fish, prioritize project work, and involve local schools in Adopt-A-Trout programs. TU's AML Program has been working on intensive water and soil sampling in the Stinkingwater and Kirwin mining district to locate, quantify, and prioritize reclamation sites for future cleanup work with an emphasis on the Wood River because of potential impacts to a regionally significant native Yellowstone cutthroat trout fishery.



North Platte River

“Part of my job is fostering stewardship, especially with young people on the watersheds. People living here are hungry for that connection and we can provide it. A letter from a bunch of second graders telling me they had a great time playing in the water with me is as important as anything I do.”

- Jeff Streeter
North Platte Project Manager and
winner of the 2019 National Rise
to the Future Watershed Resource
Award



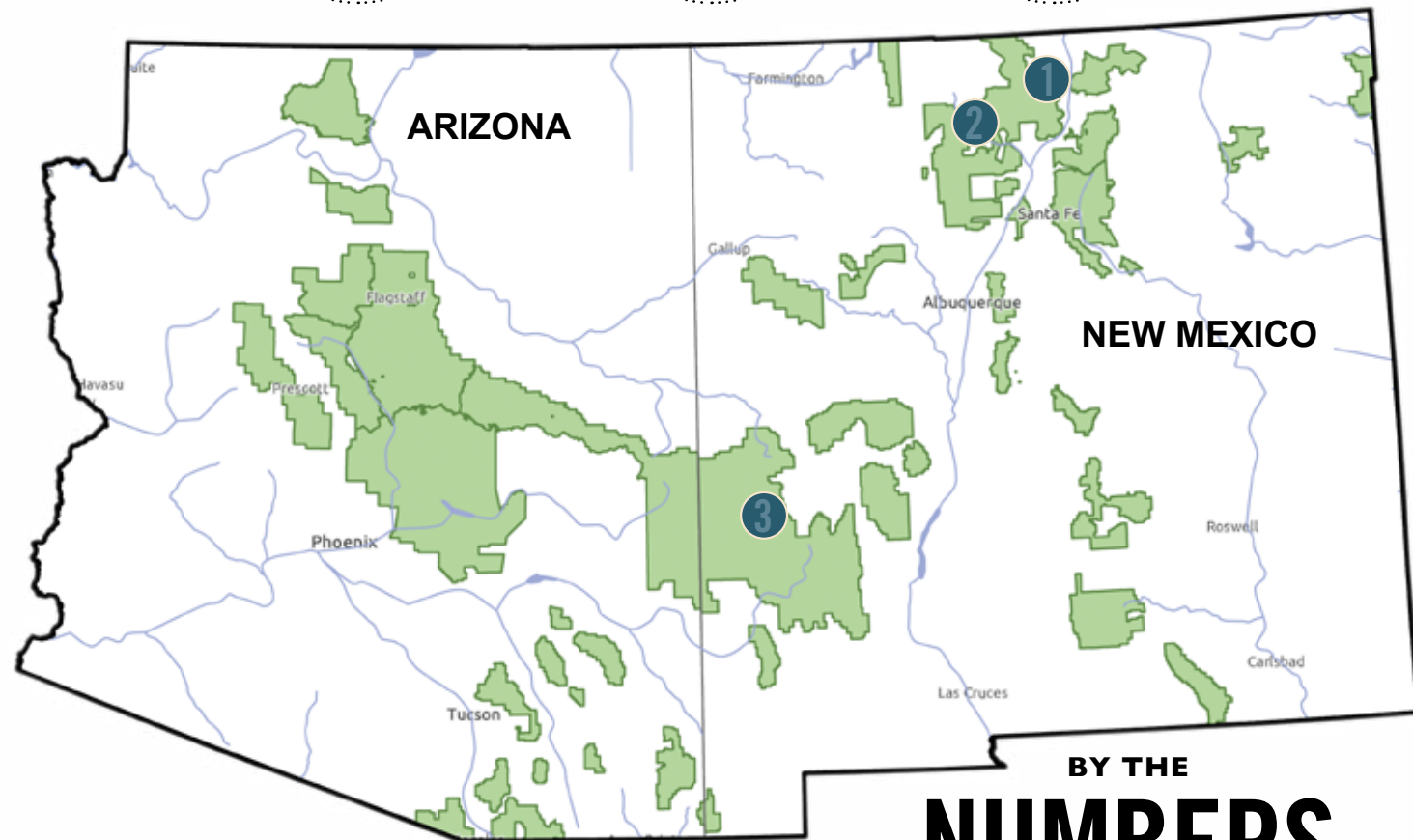
Partners

Tiffany & Co. Foundation, Trout and Salmon Foundation, U.S. Fish and Wildlife Service, Watershed Restoration LLC, Wyoming Department of Environmental Quality, Wyoming Department of Transportation, Wyoming Game and Fish Department, Wyoming Governor's Big Game License Coalition, Wyoming Flycasters, Wyoming Landscape Conservation Initiative, Wyoming Wildlife and Natural Resource Trust, Yampa Valley Fly Fishers, Yampa Valley Stream Improvement Charitable Trust.

64%
OF NATIVE TROUT
HABITAT ON USFS LANDS
IN ARIZONA

70%
OF NATIVE TROUT
HABITAT ON USFS LANDS
IN NEW MEXICO

45%
OF NATIVE TROUT HABITAT
ON USFS LANDS IN
WESTERN STATES



BY THE
NUMBERS

\$134,000

FOREST SERVICE FUNDING

\$704,500

TU LEVERAGED FUNDING

23

MILES RESTORED



National Forests



Carson National Forest

TU's New Mexico Water and Habitat Program Director oversees most of the TU-Forest Service partnership work in the state. This includes helping leverage private restoration dollars in the Comanche Creek Watershed – an important tributary to the Rio Costilla which is one of the main aquatic arteries of the Rio Grande River. Comanche Creek is critical native Rio Grande cutthroat trout habitat. Through restoration efforts to reconnect channel to floodplain, the riparian water table has been raised up to 12 inches on more than 10 miles of Comanche Creek. TU has helped oversee a comprehensive concept design for restoration of the entire Comanche Creek watershed. TU is also working with the Forest on fish barriers to protect relic Rio Grande cutthroat trout populations on two Rio Hondo tributaries. Finally, TU supports Carson National Forest efforts to plan for and implement forest health and habitat restoration activities, and has engaged with rural communities like Questa and Penasco to build support for efforts to meld recreation, fisheries, and rural sustainability.

Santa Fe National Forest

TU has partnered closely with USFS and the San Diego and Cebolla/San Antonio grazing associations on range improvement projects intended to protect and restore riparian areas in the Jemez Mountains. This effort has included the installation of upland watering and distribution infrastructure, fencing, and the drilling of a supply well to help keep cattle away from stream corridors. TU has raised funds and overseen the development of a grazing infrastructure priority list to further improve riparian conditions while providing flexible operations for grazing operations.

Local TU chapter leaders and volunteers provide funding and boots-on-the-ground support for projects involving water infrastructure improvement, beaver dam analog installation, and invasive fish removal activities.

Gila National Forest

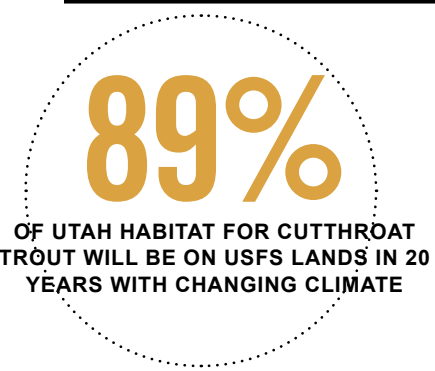
The TU Gila/Rio Grande Chapter provides funding and volunteer support for Gila Trout recovery efforts. On Willow Creek, TU has engaged in multi-year data collection efforts associated with the development of a citizen science habitat assessment protocol.

Partners

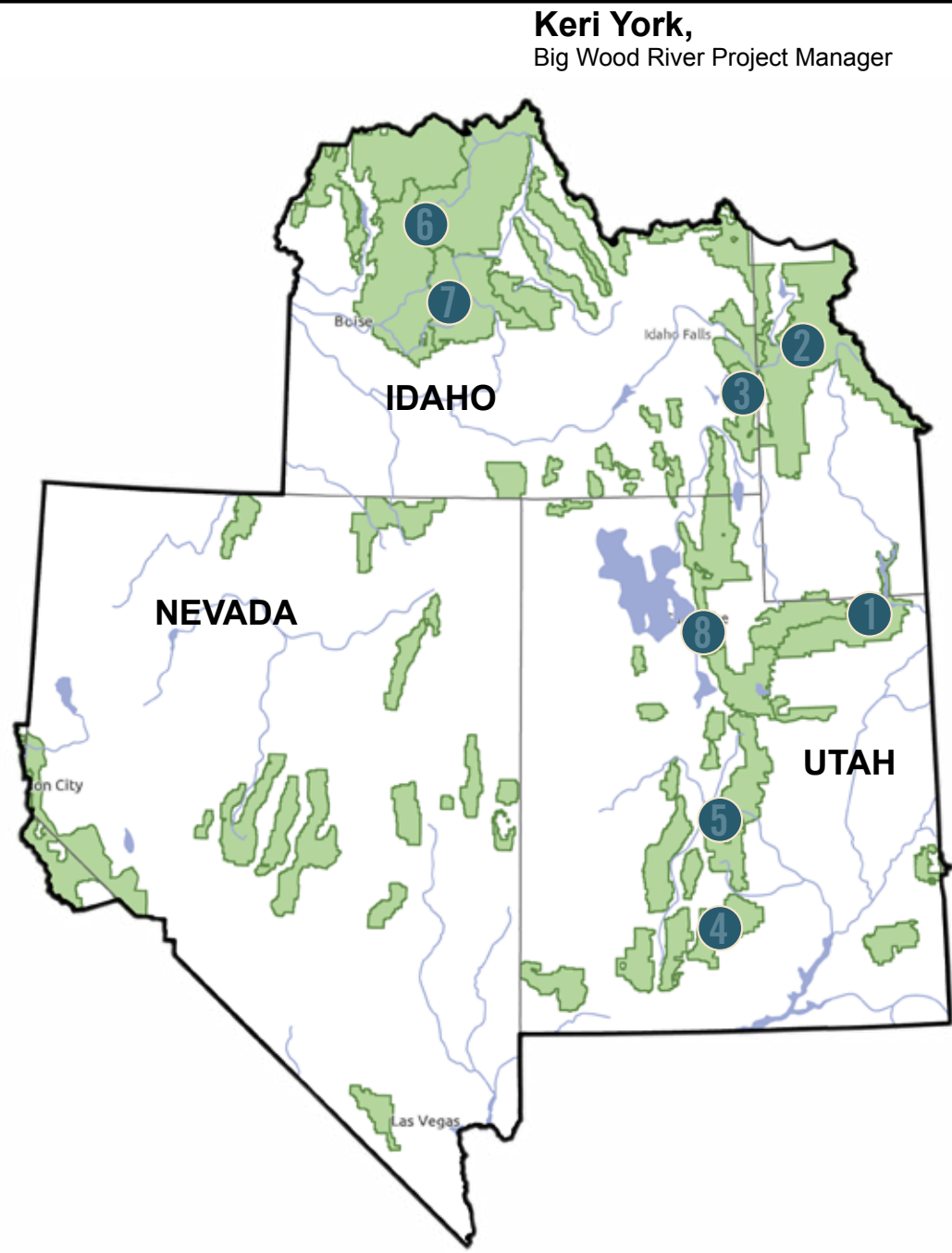
Amigos Bravos, Bonneville Environmental Foundation, Cebolla/San Antonio Grazing Association, Coca-Cola Foundation, Facebook, Intel, National Forest Foundation, Natural Resource Damage Assessment, New Mexico TU, San Diego Grazing Association, Stranahan Foundation, Thornburg Foundation.

REGION 3

“We focus on trout habitat, but the positive impact we want to have is on people. By fixing these rivers and streams, we are also creating more flood and fire resilient communities, which can save millions of dollars, not to mention lives.”



BY THE
NUMBERS
\$1,804,661
FOREST SERVICE FUNDING
\$7,027,359
TU LEVERAGED FUNDING
138
MILES RECONNECTED
34.5
MILES RESTORED



National Forests

- Ashley National Forest**

1 TU has partnered with Utah Division of Wildlife Resources and USFS staff to restore Colorado River Cutthroat Trout to over nine miles of habitat in the Sheep Creek drainage via rotenone treatment and barrier construction.
- Bridger-Teton National Forest**

2 TU project managers have worked with USFS staff and other partners to reconnect 20 miles of habitat for Colorado cutthroat trout on LaBarge Creek and to restore habitat for Bonneville cutthroat trout in the Thomas and Smiths Fork drainages of the Bear River. In the Upper Snake River, we have completed large-scale restoration and reconnection projects on the Gros Ventre and Hoback Rivers and Spread Creek, and are in the middle of a watershed restoration project on the Greys River to reconnect over 20 miles of habitat for Yellowstone Cutthroat Trout.
- Caribou-Targhee National Forest**

3 TU was a founding member of the Upper Blackfoot Confluence partnership, which works with the USFS to restore Yellowstone cutthroat trout populations. TU is teaming up with USFS and other partners to restore Bonneville cutthroat trout populations in the Bear River. We received a USFS award in 2019 for work in the Salt River drainage to restore five miles of Yellowstone cutthroat trout habitat on Tin Cup Creek.
- Dixie National Forest**

4 TU works in the Escalante Watershed Partnership, which is focused on watershed-scale restoration projects on both private and National Forest land. TU's Boise-based Science staff developed a watershed analysis to aid in the identification and prioritization of restoration projects.
- Manti-La Sal National Forest**

5 Through the La Sal Sustainable Grazing Collaborative, TU recently helped develop a rotational grazing strategy to improve rangeland and riparian conditions on the forest. With USFS, we are improving fish passage on Beaver Creek, a Greenback cutthroat trout stream, and reducing phosphorous levels in Scofield Reservoir by improving water quality on feeder tributaries.
- Salmon-Chalis National Forest**

6 TU is working on a multi-year project to restore habitat complexity, stream function, and floodplain connectivity in the Yankee Fork of the Salmon River. Five miles of the stream was turned upside-down by a dredge mining operation during the last century, resulting in loss of habitat for several ESA-listed species of salmon and trout.
- Sawtooth National Forest**

7 TU is working with USFS, local communities and partners to restore the Wood River and its tributaries—improving habitat for wild trout populations, and increasing flood and drought resiliency for local communities.
- Uinta-Wasatch-Cache National Forest**

8 TU project managers are restoring habitat and connectivity for Colorado cutthroat trout in Beaver Creek and the Henry's Fork drainage on the North Slope of the Uinta Mountains. In 2020, we will install a fish screen at a large diversion on the East Fork of the Bear River to reconnect 22 miles of Bonneville cutthroat trout habitat.

“More than 15 partners have come together...out of recognition of the project’s importance for native cutthroat trout and other native species. Many of the funding partners doubled and tripled down for multiple years of support.”



- Leslie Steen
Snake River Headwaters
Project Manager
2019 USFS Partnerships and
Volunteerism Award,
Tincup Creek

Partners

Bear Lakes Grazing District, Blaine County Land, Water, and Wildlife Program, Bonneville Power Administration, Bureau of Reclamation, Caribou County, Community Foundation of Jackson Hole, Wyoming Department of Environmental Quality, Environmental Protection Agency, Desert Fishes Habitat Partnership and Western Native Trout Initiative, East Side Soil and Water Conservation District, Idaho Department of Fish and Game, Idaho Department of Parks and Recreation, Idaho Department of Transportation, Bayer, Agrium, Jackson Hole Trout Unlimited Chapter, Jefferson Soil and Water Conservation District, National Fish and Wildlife Foundation, National Forest Foundation, Natural Resources Conservation Service, Nutrien, Pacific Coastal, Salmon Recovery Fund, River Bend Ranch, Rocky Mountain Elk Foundation, Rockefeller, Simplot, Shoshone-Bannock Tribe, Snake River Cutthroats TU Chapter, Southeast Idaho Mitigation Fund, Star Valley TU Chapter, Sublette County Conservation District, Teton Conservation District, The Trust for Public Land, US Fish and Wildlife Service, Utah Watershed Restoration Initiative, West Side Soil and Water Conservation District, Westmoreland Coal, Wyoming Fly Casters, Wyoming Game and Fish Department, Wyoming Wildlife and Natural Resource Trust.

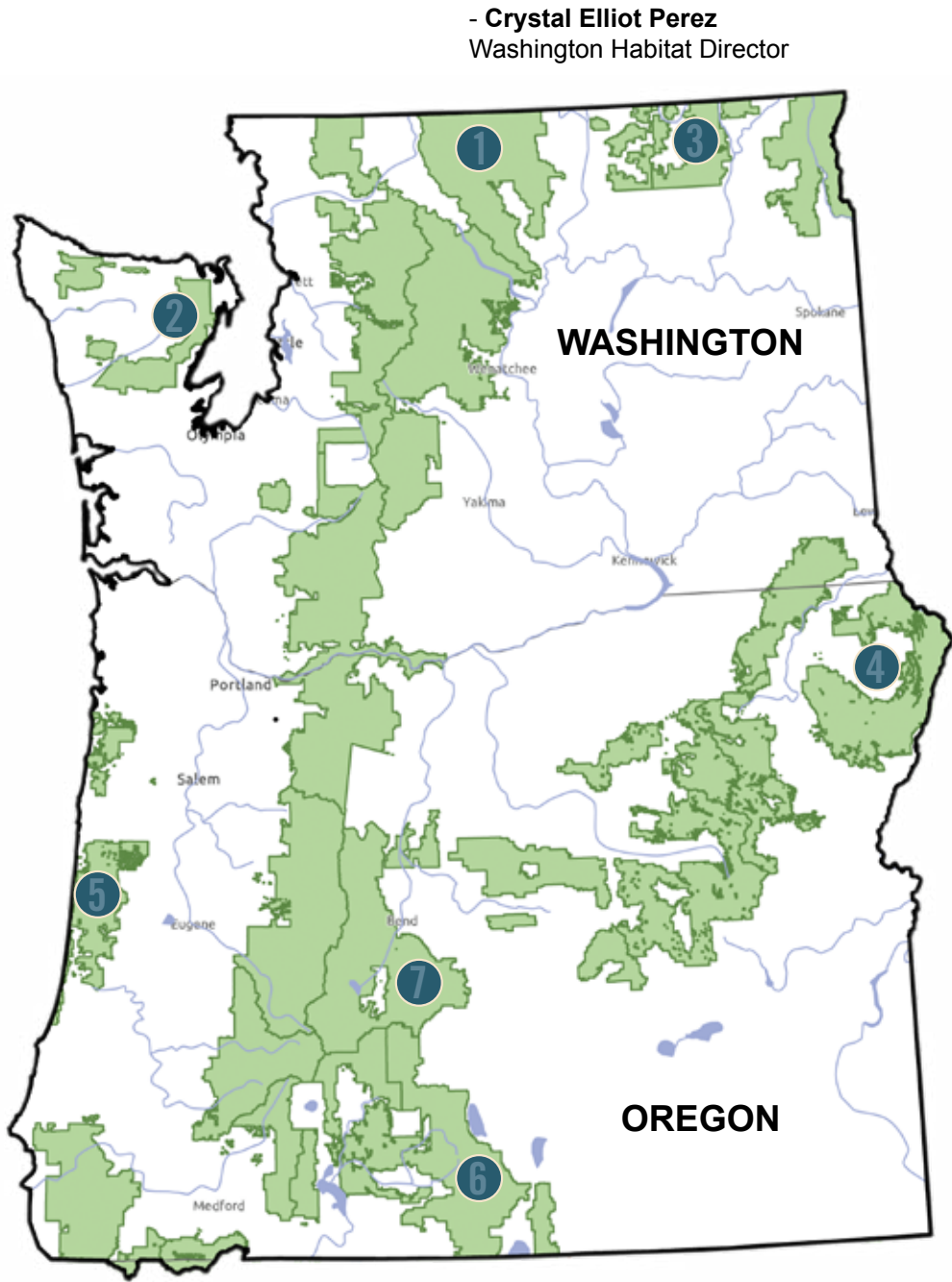
REGION 4

There are so many benefits to re-introducing beaver at a watershed scale. As they make their home on the landscape, they create water storage, and in a place where water is becoming scarce and water temperatures going up, this is critical for climate resiliency.

89%
OF OR HABITAT FOR CUTTHROAT
TROUT WILL BE ON USFS LANDS IN 20
YEARS WITH CHANGING CLIMATE

BY THE
NUMBERS
\$1,765,116
FOREST SERVICE FUNDING
\$11,434,000
TU LEVERAGED FUNDING

110+
MILES RECONNECTED
51+
MILES RESTORED



National Forests

Okanogan-Wenatchee National Forest

The Okanogan-Wenatchee National Forest (OWNF) offers important habitat in the Upper Columbia basin of WA for numerous ESA-listed salmonids, including anadromous steelhead and Spring Chinook salmon as well as resident and migratory bull trout. TU and the Forest Service work in tandem to support these and other native fish species through water conservation, habitat restoration, and aquatic ecosystem protection projects. As a key aquatic restoration lead for the North Central WA Forest Health Collaborative, we have focused on supporting the OOWNF's transition to watershed-scale restoration through implementing upper tributary restoration work, including beaver habitat enhancement, wet meadow preservation, and fish passage improvements.

1 Our Upper Columbia beaver-powered restoration program is hard at work implementing numerous beaver habitat enhancement projects across the region in the Wenatchee, Entiat, and Methow sub-basins, with plans for rapidly scaling-up this work in 2020 and 2021 through our basin-wide habitat suitability modeling efforts and subsequent project identification/implementation. Through beaver reintroduction and beaver dam analog work, these projects improve floodplain connectivity, recharge groundwater aquifers, increase late season base flows, and improve instream habitat for ESA-listed fish in these thirsty watersheds. This and other water conservation work (e.g., surface to well conversions) and AOP projects in partnership with the OOWNF will result in restoration of approximately 15+% baseflow in target sub-watersheds and reconnection of over 4 miles of high-quality steelhead habitat.

(Right) Deborah Vester, Triple Creek Land Steward



Olympic National Forest

2 The Olympic National Forest (ONF) and surrounding area on the Olympic Peninsula (OP) boasts some of the highest-quality salmon and steelhead habitat in the Lower 48. While population numbers continue to decline and habitat quality in dire need of improvement, the OP serves as a remaining stronghold for many of these species. In just three years since placing a staff member to spearhead steelhead restoration work on the Olympic Peninsula, TU has become the go-to organization for implementing critical fish habitat restoration work on the OP. TU works hand-in-hand with ONF tribes, local governments, and other partners to reconnect and restore salmon and steelhead habitat on USFS and adjacent lands in priority steelhead/salmon watersheds, including the Calawah and Quinault. TU has decades of steelhead science experience in OP rivers and contributes critical baseline data and a strong research element to enhance our restoration work and project effectiveness monitoring.

Colville National Forest

3 Collaborative-based Watershed Restoration: TU is partnering with USFS and North Central Washington Forest Health Collaborative Partners on the Mt. Hull Project, with the objective of increasing the pace and scale of forest health restoration and aquatic habitat enhancement. TU sits on the steering committee of the NCWFHC and is the co-chair of the Projects Workgroup.

Partners

Klamath Tribes, Quinault Tribe, Quileute Tribe, Hoh Tribe, Colville Confederated Tribes, Tillamook County, Jefferson County, Clallam County, Wild Salmon Center, Coast Salmon Partnership, The Nature Conservancy, Oregon Creamery Association, Tillamook Estuary Partnership, Children's Forest of Central Oregon, Discover Your Forest, WA Department of Fish and Wildlife, WA Department of Natural Resources, HCP Tributary Committee, Drinking Water Providers Partnership, Washington State Salmon Recovery Funding Board, Washington Conservation Commission, National Fish & Wildlife Foundation, Bonneville Environmental Foundation, Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, NOAA, Bureau of Reclamation, Bureau of Land Management, along with several conservation districts, Oregon watershed councils, 3 chapters of Trout Unlimited, and many others.

REGION 6

National Forests

Umatilla and Wallowa Whitman National Forest

4 TU works with USFS to restore habitat and fish passage (AOP projects) in the Upper Grande Ronde (UGR), and North Fork John Day River (NFJD). During the summer of 2019, UGR efforts on Sheep Creek included placing over 50 LWD structures and eight whole trees per mile in over nine-and-a-half miles of habitat. In 2020, TU will work with partners on the Desolation Meadows Floodplain Restoration Project, and an additional six miles of headwater stream treatments across various NFJD tributaries. The small streams work on these Forests is a long-term initiative working with U.S. War Vets as a roving hand-based wood placement crew. TU is also working on private lands projects in the UGR and on the Wallowa River which benefit habitat, flow and aquatic connectivity to nearby and connected USFS lands.

Siuslaw National Forest

5 TU participates in the Salmon SuperHwy Project in the Tillamook-Nestucca Basin, a collaborative partnership to replace 95 culverts and dams that block salmon and steelhead spawning migrations and exacerbate local flooding in 10 years. The real magic in this program is the merging of increased fish habitat with improved transportation infrastructure and public safety. USFS provides critical funding for staff and for projects via a Joint Chiefs Award. Projects are located on five rivers throughout the region, on a mix of private land and the Siuslaw National Forest. The partnership is wrapping up the final year of the Joint Chiefs Award and was recently recommended for funding (\$1.2 million) through NOAA's Community Based Restoration Program. They have completed 29 projects since 2014 opening over 80 miles of habitat.

Salmon SuperHighway: Bear Creek



Fremont-Winema National Forest

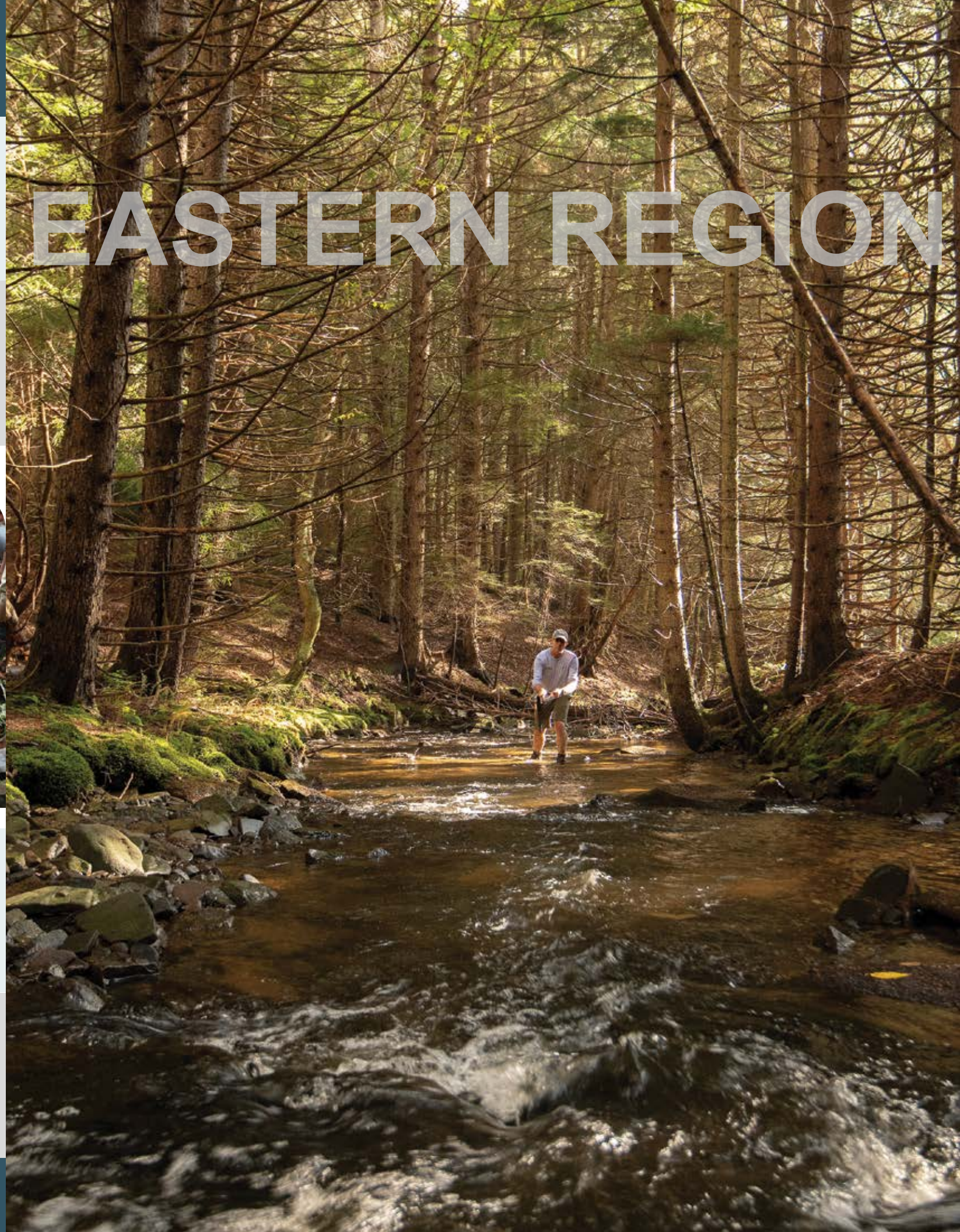
6 TU maintains a staff in Klamath Falls working on a variety of projects on private ranch lands and the National Forest to improve fish passage and habitat, restore instream flows, and improve water quality. A particular focus of our joint efforts is bull trout recovery, and the team is collaboratively working to address every identified limiting factor in the recovery plan. They currently have three active joint projects that are restoring more than eight stream miles of historic channel, augmenting instream flows, and improving habitat function on the Threemile, Sun, and Annie Creek tributaries to Upper Klamath Lake. These joint collaborations include leveraged funding, technical support and project implementation. Each project also includes substantial coordination from USFS for incorporating Oregon Spotted Frog management and habitat restoration.

Deschutes and Ochoco National Forest

7 TU works with the USFS to restore riparian habitat that has been degraded from excessive recreational use, improving water retention and floodplain function, and restoring stream and river habitat for native fish (bull trout, redband trout, Sockeye salmon, and Spring Chinook salmon). 2019 efforts included meadow restoration projects on Indian Ford Creek and Glaze Meadow (DNF), floodplain restoration on Lower Deep Creek (ONF), and habitat restoration on popular stretches of the Deschutes River Trail and Metolius River. TU continues to be an active member of the Children's Forest of Central Oregon, teaching watershed education to over 700 local students annually on National Forest land.

REGION 6

EASTERN REGION



Trout fishing contributes \$383 million annually to the economy in the state of North Carolina, which only hints at the immeasurable qualities of life experienced by the people who visit and recreate in coldwater streams.

34%

OF HABITAT FOR SOUTHERN APPALACHIAN BROOK TROUT WILL BE ON USFS LANDS IN 20 YEARS WITH CHANGING CLIMATE

BY THE

NUMBERS

\$1,804,661

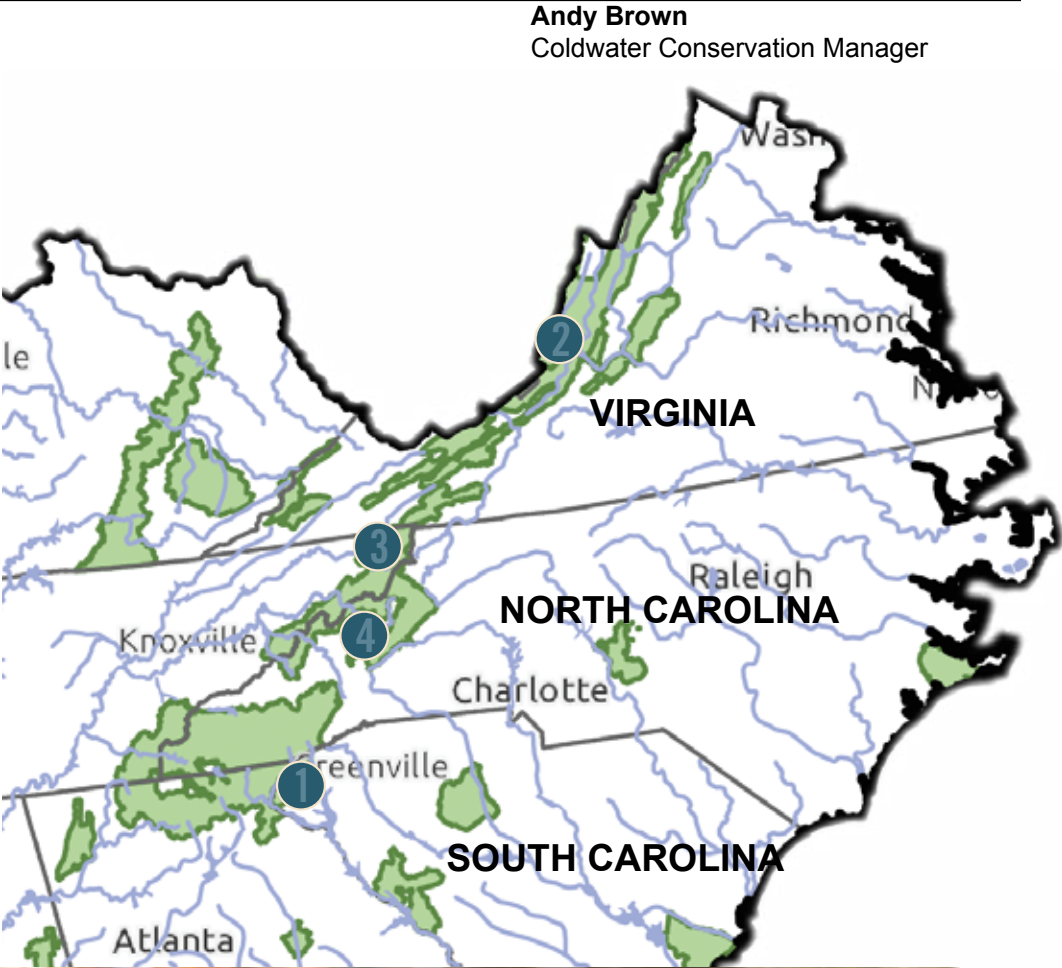
FOREST SERVICE FUNDING

\$7,027,359

TU LEVERAGED FUNDING

39.4

MILES RECONNECTED



REGION 8

National Forests

- 1

Sumter National Forest

Sumter National Forest in Upstate South Carolina contains the southernmost extent of Eastern brook trout and its associated coldwater ecosystem in North America. The SNF is an essential ally in TU's efforts to conserve this native fish here and sustain wild populations of non-native, wild rainbow and brown trout as well. Currently, we are focusing our conservation effort in those headwater streams originating on the Andrew Pickens District that flow into Lakes Jocassee and Keowee. Over the next two years we will be replacing three stream crossings on Crane Creek that are barriers to fish movement with Aquatic Organism Passage (AOP) stream crossings. We will also be performing habitat assessments on Crane Creek and its tributary Moody Creek and, based upon results, installing coarse woody material to enhance habitat for the SNF's recent native brook trout restoration in this watershed. Additionally, we are assisting the SNF with the acquisition of two private tracts of land in these source watersheds that the owners have recently offered for sale.
- 2

George Washington-Jefferson National Forest

The George Washington Jefferson National Forest harbors some of the most intact and resilient populations of native eastern brook trout in Virginia. TU first partnered with the George Washington National Forest in 2004 to re-establish native brook trout habitat in North River and, to date, projects have restored perennial flow, pool habitat for summer refugia, and large woody material additions to over eight miles of stream. Brook trout numbers have rebounded. TU's collaboration with the Forest on removing barriers to fish movement have reconnected 12 miles of habitat and successfully repatriated brook trout to the headwaters of Passage Creek where they had been extirpated for decades.
- 3

Cherokee National Forest

The main focus in the Cherokee is to finish design and construction on the Wolf Creek Aquatic Organism Passage (AOP) project in the French Broad River watershed, the last remaining action item of 11 essential projects outlined in the CNF's Wolf Creek Watershed Restoration Action Plan. TU has contracted the design with a private engineering firm and, partnering with The Nature Conservancy, is raising additional private, state and federal funds to match the USFS financial investment to pay for implementation. TU will be assisting in the supervision of construction once all project funds have been acquired. In 2018 in the spirit of "good neighbor" collaboration, TU worked across national forest system land boundaries in the CNF's north zone on two brook trout streams in the CNF's high priority Watauga River watershed to remediate a farm access path and ford and construct one AOP. The farm access path was constructed on State of Tennessee heritage farm property and the AOP was built on private land conservancy property – both directly adjacent to national forest land at the Roan Highlands.
- 4

Pisgah and Nantahala National Forests

TU is utilizing citizen scientists to collect data at stream crossings to help identify fish passage barriers and prioritize their replacement with AOP structures and collecting data on Forest Service roads and trails to identify serious erosion issues that need remediation. This work will help inform the construction of the Sky Island Coldwater Conservation Plan, scheduled for completion in fall 2020, which will provide a priority list of AOP and road/trail remediation projects in the Nantahala.

TU has assisted in the design and installation of AOP projects over the last five years in the Nantahala. This includes three AOP structures on Buck Creek in Clay County that resulted in reconnecting 5.4 miles of trout stream and the installation of two AOP structures on private land, reconnecting one mile of Slatten Branch just outside of Panthertown.

On the Pisgah, TU members and citizens of the adjacent communities are collecting data on fish passage barriers at road/stream crossings, sedimentation from eroding trails and roads, and water temperature. The data is being used to help inform the development of Coldwater Conservation Plans for the Sky Island and Wilson Creek focal areas, illuminating a list of 30 to 50 priority coldwater conservation projects that we intend to implement together over the next 15 years. Projects will include Aquatic Organism Passage (AOP), stream and riparian restoration, road/trail remediation and other watershed improvements. We have already constructed three AOP projects in Sky Island and have one planned for next year. We completed installation of six rain gardens in Sky Island this past October. In Wilson Creek, we have one AOP and a 12-mile trail remediation project scheduled for construction in 2020.

Partners

NC Wildlife Resources Commission, NC Clean Water Management Trust Fund, US Fish and Wildlife Service, National Forest Foundation, National Fish & Wildlife Foundation, NC Department of Agriculture, Duke Energy, American Rivers, Southern Off Road Bicycle Association, Friends of Mountains to Sea Trail, Mills River Partnership, Haywood Waterways Association, Watershed Association for the Tuckaseigee River and 10 chapters of Trout Unlimited.

BY THE
NUMBERS

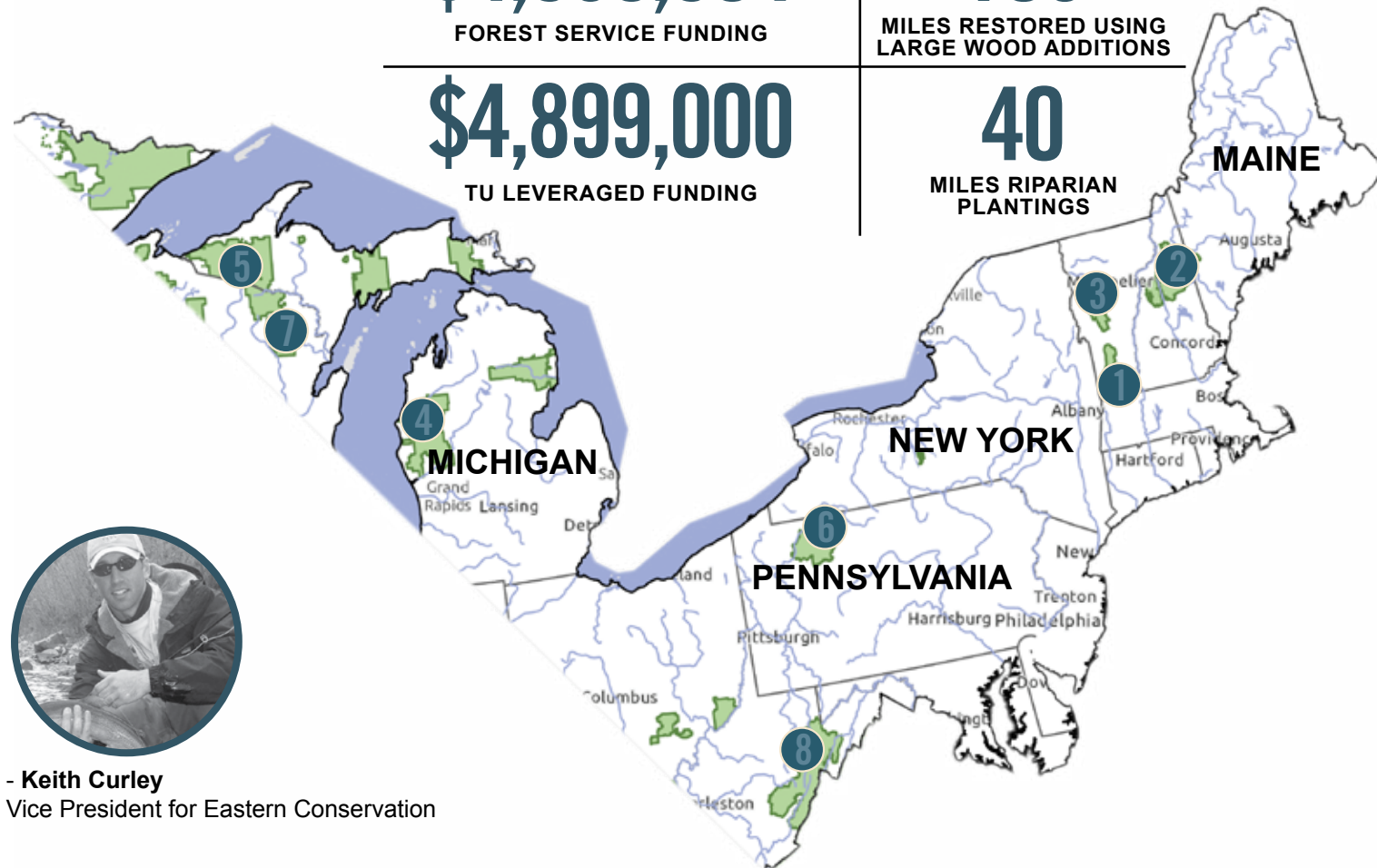
213
MILES RECONNECTED

\$4,586,504
FOREST SERVICE FUNDING

108
MILES RESTORED USING
LARGE WOOD ADDITIONS

\$4,899,000
TU LEVERAGED FUNDING

40
MILES RIPARIAN
PLANTINGS



- Keith Curley
Vice President for Eastern Conservation

“The Northeast and upper Midwest are experiencing increasingly intense flooding, and the Forest Service is leading the way with its Stream Simulation design approach to more flood-resilient road-stream crossings. TU is proud to partner with the Forest Service and local communities to simultaneously improve infrastructure resiliency and aquatic habitat connectivity.”

National Forests

Finger Lakes National Forest

1 Trout Unlimited is currently working with FLNF staff providing technical assistance to restore two severely degraded road stream crossings within the town of Hector, N.Y. TU successfully leveraged over \$400,000 in two National Fish and Wildlife Foundation (NFWF) grants supporting FLNF aquatic restoration efforts, which received \$500,000 in community financial support from USFS. Over the past five years TU has been worked closely with project partners (FLNF, town DPW and landowners) to build in flood resiliency to each structure as well as to recreate viable brook trout habitat where native fish have been previously extirpated. Replacement of these severely damaged crossings will now allow the reintroduction of native trout to migrate in and out of these streams from both Cayuga and Seneca Lakes. Additionally, TU will provide support installing approximately six miles of large wood habitat over the next couple of years to recreate new habitat features in the newly reconnected 20 miles of brook trout habitat.

White Mountain National Forest

2 Over the last eight years, Trout Unlimited has played an active role providing WMNF staff with additional technical assistance and engineering services restoring multiple road stream crossings and road washouts after devastating severe weather events such as Tropical Storm Irene. In the last five years, TU supported restoration efforts on both Eastside Road (ESR) and Tunnel Brook (TB) recreation areas. Popular visitor destinations, and severely damaged by floods, washouts and blowdowns, these locations were high priority WMNF restoration sites needing additional technical partner support. Part of the ESR effort was to redesign a road relocation, install two new crossings, and replace two damaged and undersized culverts with bridges. TU's role was to oversee the development, selection, and installation of four large bridges reconnecting over 20 miles of excellent brook trout habitat. On Tunnel Brook, TU worked with WMNF staff and engineers to design bank stabilizations, instream log jams, and major grade control structures to minimize erosion and maintain elevations. TU also worked with the WMNF staff to evaluate damaged areas across the forest and together developed alternative restoration options focused on environmentally sound techniques rather than hardened restoration designs restricting the natural movement of both rivers and forests. TU is currently working with the WMNF to develop new citizen science program to help review and validate the National Hydrography Dataset in NH.

Green Mountain National Forest

3 Between the headwaters of the Mettawee River situated in the Green Mountain National Forest and the free-flowing main stem, Trout Unlimited and US Forest Service partners identified six barriers to fish passage in a two-mile stretch of river. Native eastern brook trout in this highly-productive coldwater fishery were largely separated from several miles of upstream habitat and thermal refugia in the headwaters. Working with partnering agencies and numerous landowners, we have increased fish passage at three of the barriers with two more set for restoration in 2020. Additionally, the work undertaken in this partnership included nearly 1,000 assessed culverts in the Deerfield, Walloomsac, and Hoosic watersheds between 2012-2016. These assessments are included in the Vermont Agency of Natural Resources database and are used to help towns and the state identify, understand, and prioritize undersized culverts that create geomorphic issues and barriers to fish passage. Trout Unlimited's most recent work continued in the Robinson Integrated Resource Project Area near Rochester, VT, to improve in-stream woody habitat through strategic wood additions in roughly seven miles of the Michigan Brook and Chittenden Brook watersheds. We anticipate continuing this beneficial work in the coming years, covering 3-5 miles of stream habitat per year.



Citizen Science

“Nearly 200 anglers have provided almost 400 field observations for our program, providing extensive and valuable information.”

Jake Lemon
Eastern Angler
Science Coordinator



REGION 9

Partners

Town of Hector, NYS DER, NFWF, private foundations and local TU chapters, NY County Soil and Water Districts, and private landowners, NH Fish & Game Department, private foundations, local TU chapters, National Fish and Wildlife Foundation, Wisconsin Department of Agriculture, Trade and Consumer Protection, County Land and Water Conservation Departments, and Town Governments, Poultney-Mettowee Natural Resource Conservation District, Town of Dorset, US Fish and Wildlife Service, USDA Natural Resource Conservation Service, Vermont Fish and Wildlife Department, Vermont Division of Environmental Conservation, White River Partnership, USDA Forest Service, continued on next page...

National Forests

Huron-Manistee National Forest

4 Trout Unlimited and the US Forest Service (USFS) are dedicated to the conservation and restoration of Michigan's natural plant and animal habitats, and both organizations have recognized the value of coldwater habitat in Michigan for native freshwater species. In the formation of the Huron-Manistee National Forest (HMNF) Aquatic Habitat Partnership, the USFS (Manistee-Cadillac and Baldwin-White Cloud Ranger Districts) and TU are combining efforts to address a broad spectrum of environmental challenges and project opportunities. TU and USFS continue to work together to benefit aquatic species and their habitats through project planning, design and implementation, monitoring and research, public engagement and education. Collectively, these efforts result in improved habitat for coldwater species, and increased ecosystem resistance and resiliency to current and future threats. During the past years, TU and HMNF staff have been collaboratively working to prioritize restoration efforts in the HMNF through field assessments, data collection and site reviews. As a result, TU and USFS have reconnected and restored over 60 miles of high-quality cold-water habitat in priority watersheds. Projects include road-stream culvert replacements, dam removals, habitat restoration through wood addition, bank stabilization and riparian plantings.

Ottawa National Forest

5 Water quality on the Ottawa is high, and streams provide cold water and good spawning riffles for sustained coaster brook trout, steelhead, brook trout and brown trout reproduction. However, due to obsolete dams and impassible culverts, not all the high-quality tributaries are accessible. Trout Unlimited and the Forest Service have recently partnered to establish a program to restore priority high-quality aquatic habitat and connectivity in the rivers and streams of the Ottawa National Forest. Trout Unlimited and Ottawa National Forest staff are in the process of planning and implementing priority projects to protect high-quality cold-water habitat. Several aquatic organism passage projects and habitat restoration through wood additions are on-deck for implementation during the next coming years. Among them, is a priority dam removal on the East Branch Ontonagon River. To date, the Ottawa National Forest has drawn down the former impoundment and the stream has naturally rehabilitated. Trout Unlimited and Ottawa National Forest staff are pursuing funding for complete dam removal and continued stream restoration.

Allegheny National Forest

6 Beginning in October 2017, five watershed snapshots were completed through the efforts of more than 180 volunteers. They collected baseline data throughout the national forest to help determine if waters are meeting the state water quality standards, assess the impacts of management activities, track pH issues related to acid deposition, and document impacts of legacy oil and gas infrastructure. A total of 175 sites on 118 streams were sampled up to five times each. TU also designed and coordinated the construction of a bank stabilization and habitat improvement project on Kinzua Creek adjacent to the popular Kinzua Valley Trail. The project consisted of a combination of large wood addition and six fish habitat structures such as multi-log vanes and modified muddills. TU also replaced a double pipe road-stream crossing on Straight Run, which was a complete fish passage barrier, with a bottomless arch culvert to reconnect 1.7 miles of brook trout habitat. TU and the ANF plan to continue the watershed snapshots and are currently discussing the next priority culvert replacement project.



Partners

Private foundations, TU chapters, individual donors, Michigan Department of Natural Resources and Department of Environment, Great Lakes and Energy; NRCS, local tribes, Allegheny National Forest, Trout Unlimited and multiple TU chapters, Elk/McKean/Warren County Conservation Districts, Penn State University, Clarion University, Western PA Conservancy, Conewago Creek Watershed Association, Jenks Township, Wisconsin Department of Natural Resources, private foundations, TU chapters, National Fish and Wildlife Foundation, Forest County Potawatomi Community, Wisconsin Department of Agriculture, Trade and Consumer Protection, County Land and Water Conservation Departments, and Town Governments

REGION 9

Chequeamegon-Nicolet National Forest

7 The Peshtigo and Oconto watersheds present rare conservation opportunities to create large, interconnected brook trout populations that can grow big in the mainstem rivers and retreat to cold tributaries when water warms in the summer. For this migratory "life history" to succeed, however, the tributaries must be accessible. Due to obsolete dams and impassible culverts, many are not. In 2017 TU started a new program to reconnect fragmented habitat. TU brought on a project manager and an engineer who could produce project designs. In the program's first full field season we completed 11 habitat reconnection projects that opened up 42 miles of habitat, a huge jump from prior years in which just a few projects were taking place. Today the total reconnected miles exceed 83.

Monongahela National Forest

8 Our work on the Monongahela National Forest was primarily focused in the headwaters of the East and West Fork of the Greenbrier River. After completing most of the work we have crossed the mountain into the headwaters of the Potomac River. These focused areas are an important strong hold for native brook trout and many other sensitive coldwater species that call them home. Together, our partnership is working to restore, reconnect, and sustain cold-water resources in both drainages. With the help of Forest Service funds, TU has hired several crews over the last 7 years to complete several projects. 10 AOP projects reconnecting 36 miles of trout stream, 101 miles of both wood and headwater wood loading, 198 stream surveys with 53 miles of stream habitats assessed and 184 miles of road assessed for erosion, 102 miles roads removed, 40 miles of stream plantings and 3,780 hemlock trees treated.





**TROUT
UNLIMITED**