

**Trout Unlimited
Griffith Circle
2018 Conservation Report**

*To conserve, protect and restore North America's
Coldwater fisheries and their watersheds.*

*By the next generation, Trout Unlimited will ensure
that robust populations of native and wild coldwater fish
once again thrive within their North American range,
so that our children can enjoy healthy fisheries
in their home waters.*

To achieve our mission and vision, Trout Unlimited members, staff and volunteers work together to:

- * **Protect** the highest quality trout and salmon habitat.
- * **Reconnect** coldwater habitat through dam and culvert removal projects and the improvement of in-stream flows.
- * **Restore** degraded habitat to again support healthy trout and salmon populations.
- * **Sustain** our progress by introducing young people to the joys of fishing while educating and motivating them to become the future generation of environmental stewards, and by supporting our members, volunteers, staff and partners with tools and scientific research needed to pursue our mission nationwide.

This report covers significant developments in the last year. Please read on to learn how your Griffith Circle membership support will enable Trout Unlimited and its partners to work toward our shared mission and goals.

I. PROTECT

Wild Steelhead (AK, CA, ID, OR, WA)

Wild steelhead are the most revered sport fish on the West Coast and for good reason. They are strong, beautiful and elusive, and on the end of a line they test the skills of the most seasoned anglers. Since launching our Wild Steelhead Initiative in 2014, TU has worked on all aspects of wild steelhead conservation from habitat protection and restoration to fishery management to building a community of steelhead angler advocates. In the past year, we deployed a SONAR unit on Oregon's Smith River to pilot a promising approach to counting returning adult steelhead that could improve steelhead management range-wide. It has convinced fishery managers to open a wild steelhead catch-and-release season on Washington's legendary Skagit and Sauk rivers and helped secure a state Wild and Heritage Trout Water designation for the South Fork Smith River in California, which means that the river will remain hatchery-free and managed for wild steelhead.

Bristol Bay (AK)

In Bristol Bay, Alaska, the proposed Pebble Mine remains a massive threat to what may be the most important salmon ecosystem on Earth. The enormous gold and copper mine would be developed in the middle of salmon spawning habitat in the headwaters of Bristol Bay. Bristol Bay is the most prolific sockeye salmon-producing system in the world and is also home to large, healthy runs of Chinook and coho salmon as well as world-famous rainbow trout. In 2017, TU played a lead role in generating more than one million comments opposing the EPA's proposal to withdraw its prior evaluation finding that the area should be off-limits to industrial scale mining. We also helped persuade Governor Walker to take a public stand in opposition to Pebble and we are supporting a state ballot initiative that would greatly improve fish habitat regulations, which would make Pebble much more difficult to develop. In short, TU is leading sportsmen and women in this high-profile battle to protect the heart of Bristol Bay's salmon ecosystem.

Umpqua and Smith Rivers (OR)

Southwest Oregon is rich in coldwater fish watersheds, which are threatened by clear-cut logging, mining and poorly planned development. TU rose to the challenges and achieved two recent victories. In May, due to an intensive advocacy effort including TU's mobilization of anglers and hunters, the state of Oregon decided not to follow through with a proposed sale to a timber company of the 82,000-acre Elliot State Forest. The Elliot State Forest is in the Umpqua River Basin and has important steelhead and salmon habitat. TU staff and grassroots volunteer leaders teamed up to make sure that the Elliot stays in public hands. Just to the north of the Elliot, TU played a big role in securing an Outstanding Resource Waters designation for the

North Fork of the Smith River. The Smith is a great wild steelhead conservation success story. Major restoration efforts and closure of a steelhead hatchery have resulted in a resurgence of wild steelhead. The Outstanding Resource Waters designation protects 98 river miles and 100,000 acres by prohibiting degradation of the river's exceptional water quality.

Smith River (MT)

Montana is a state of famous rivers and the Smith is one of the Gem State's most spectacular. The Smith is a blue-ribbon trout fishery for brown and rainbow trout. A Canadian mining company is seeking to mine an estimated \$2 billion in copper located near Sheep Creek, one of the Smith's most important tributaries and the nursery of the majority of the river's trout. The proposed Black Butte Copper Mine, which would be located on private land, threatens Sheep Creek and the Smith River through dewatering and acid mine drainage. TU has worked hard to organize and mobilize a large and diverse coalition of sportsmen and women, conservation organizations, local businesses, communities and landowners to oppose the proposed mine. Montana has weak mining laws that need to be changed if mines like Black Butte -- that pose extraordinary threats to water quality and fisheries -- are going to be stopped. TU and our coalition partners are diligently working to reform Montana's mining laws through new legislation and a ballot initiative that would markedly improve the state's mining laws while also challenging the mining company's permit application currently pending before the Montana Department of Environmental Quality.

Thompson Divide (CO), Roan Plateau (CO) and Wyoming Range (WY)

Oil and gas extraction threaten many of our best western trout waters. TU works diligently to protect high quality habitat from harmful energy development and in 2017 we protected more than 85,000 acres in several exceptional landscapes. The Thompson Divide is in a wild and unspoiled corner of the White River National Forest. It is the headwaters for iconic trout streams like the Crystal, Roaring Fork and North Fork of the Gunnison. In collaboration with the Thompson Divide Coalition, TU played a lead role in persuading the Bureau of Land Management to cancel 25 federal oil and gas leases covering 33,000 acres. We achieved a similar result on the Roan Plateau, where TU negotiated a deal with an oil and gas company to protect 35,000 acres of this majestic landscape, which is home to Colorado River cutthroat trout. Strong coordination between TU staff, Colorado TU and the TU Grand Valley chapter resulted in this victory. Last, TU worked with the U.S. Department of Agriculture to cancel contested leases on 40,000 acres in the Wyoming Range, which is home to three species of cutthroat trout (Colorado River, Bonneville and Yellowstone).

Great Lakes (WI, MI)

The Great Lakes are threatened by invasive species, pollution and commercial aquaculture

proposals, creating a need for state and federal policies that protect the lakes and for sustained public funding for Great Lakes restoration efforts. To address these challenges, a powerful constituency of recreational anglers must mobilize. Recreational fishing in the Great Lakes is a major economic contributor to local economies and fishing is an important part of the lives of the 1.6 million anglers who fish in the Great Lakes region and the millions more who visit and enjoy the region. TU helped pass federal legislation to reauthorize the Great Lakes Restoration Initiative, the primary funding program for conservation efforts in the Great Lakes basin. We are now working to prevent the invasion of harmful non-native species like Asian carp, protecting and increasing funding for the Great Lakes Restoration Initiative and cultivating stronger, more engaged TU chapters in the region.

Pennsylvania Unassessed Waters (PA)

In Pennsylvania, we are racing to secure protective designations for trout streams before pipeline construction and other forms of development occur. Since 2011, TU specially-trained field crews have sampled roughly 750 streams. In most years, approximately 40 percent of surveyed streams have held wild trout. Trout Unlimited passes that information along to the Pennsylvania Fish and Boat Commission, which then considers the streams for formal listing as “Wild Trout” streams. Over the past year, we have gained Wild Trout Stream designation for 503 new waters totaling an estimated 1,500 miles. Classification as “Cold Water Fisheries” under the state’s water quality regulations triggers more stringent environmental protections when the Department of Environmental Protection reviews permits for development activities within that watershed. A Wild Trout Stream designation also ensures that wetlands adjacent and contiguous to that stream are protected.

Maine Brook Trout (ME)

Maine is the last great native brook trout stronghold in the United States; indeed, Maine brook trout are arguably the most intact population of native trout remaining anywhere in the lower 48 states. To protect these fish, TU is using our Eastern Brook Trout Conservation Portfolio Analysis to identify key parcels for protection through purchase or conservation easements. TU is a leader in the statewide volunteer effort to sample and identify previously undocumented native brook trout ponds, a huge undertaking that since its inception has resulted in increased protections for dozens of these precious wilderness waters. TU continues to expand the volunteer survey program to identify sea-run brook trout populations on Maine’s coast, completing 170 surveys over the past few years.

Public Lands Renewable Energy Development

A landscape vision for renewable (wind and solar) energy development is needed to ensure responsible development that protects ecologically-significant natural landscapes. Development

of renewable resources on our federal public lands must be a deliberate process that seeks to minimize impacts on the nation's land, water, fish and wildlife resources. Focusing energy development on degraded lands that provide minimal ecological, fish and wildlife values and that have high renewable energy potential should be a priority. TU is a longstanding leader in the effort to pass the Public Lands Renewable Energy Development Act. This legislation would enable smart-from-the-start energy development and create a dedicated funding source to offset impacts on fish, wildlife, hunting and fishing. We made great progress advancing this bill in 2017. It has been reintroduced in both the House and the Senate, advanced through committee and markup and, at writing, awaits floor action in the House.

Headwater Streams and the Clean Water Act

The Environmental Protection Agency and Army Corps of Engineers finalized their rule to clarify the jurisdiction of the Clean Water Act in 2016. In so doing, they reinstated protections for millions of small and intermittently-flowing streams and many wetlands that had been in limbo for more than a decade because of a pair of Supreme Court cases and the policies put into place to implement those court rulings. Those policy changes had stripped 20 million acres of wetlands of the law's protections and placed "at risk" 59 percent of U.S. stream miles. The new rule restored protections from pollution, dredging, and filling to headwaters and seasonally-flowing streams. TU was instrumental in working with the EPA to help clarify how and where the rule will be applied and to get it adopted. Following the change of administrations in 2017, the new EPA immediately initiated a process to repeal and replace the Clean Water Rule. Similarly, the rule has been the subject of several attacks by the 115th Congress. TU members and staff across the nation have invested hundreds of hours into building support for the Clean Water Rule and to support our efforts to defend the rule and to advocate in Congress to prevent the roll-back of its critical protections for our headwater streams.

2. RECONNECT

California's North Coast (CA)

California's Lost Coast, where fabled rivers form the heart of what Russell Chatham called the "Angler's Coast," is the birthplace of fly fishing for steelhead. In the late 20th century, fisheries collapsed after decades of irresponsible clear-cutting and over-fishing. Today, with TU's help, the Lost Coast is recovering. TU is averaging about 10 large habitat reconnection/restoration projects each year. In 2017, for example, TU and partners finished a long and challenging effort to improve fish access to 11 miles of prime habitat in Mill Creek, part of the Russian River watershed. This winter, as rains raised stream flows, fish immediately moved past the old dam site. We are currently carrying out fish passage, streamflow restoration, and other projects on other fabled rivers such as the Eel, Van Duzen, Big, Ten Mile, Garcia, Gualala, and Navarro.

Upper Colorado River (WY, UT, CO)

TU is leading the way on water market creation in the Upper Colorado River Basin. In 2014, the System Conservation Pilot Program was created to help reduce water demand in the Colorado River Basin with the overarching goal to maintain higher reservoir levels in Lake Powell (Upper Basin) and Lake Mead (Lower Basin). The pilot program created a way for ranchers and farmers to take some lands out of production, thereby leaving water instream, without putting their water right at risk of forfeiture. With our unique place-based business model and ground game centered on staff and grassroots presence in rural communities, TU was able to pounce on the new tool and help enroll landowners in the new program. The number of landowner participants has increased every year since the 2014 program inception, culminating during the final year of the pilot program with almost 50 TU-recruited landowners in Wyoming, Utah, and Colorado participating in 2018. The water gains are significant with thirty Upper Green River landowners in Wyoming participating in 2018 to ensure late-season streamflow gains of over 10,000 acre/feet of water spread over five different tributaries. Further, TU is working with legislators, federal agencies, and municipal and private funders to address a variety of legal, policy, and funding issues to extend and fully pay for the program.

Klamath River (OR)

In the upper Klamath Basin of Oregon, TU continues to prepare the watershed for salmon and steelhead that will return after the scheduled removal of four mainstem dams in 2020. We recently secured over \$3 million to fund the largest irrigation piping and water conservation project undertaken so far in the basin, which will keep adequate stream flows in a major tributary, the Sprague River. TU also made progress removing fish passage barriers in Annie Creek and the Wood River, two of the first watersheds salmon are expected to re-occupy in the basin.

Clark Fork River (MT)

Montana is blessed with outstanding trout rivers, but many could be even more productive if fish were able to move freely between tributaries and mainstem rivers. The Clark Fork River Basin provides a striking illustration of this, with fish populations in the upper basin hovering around 20 percent of what they should be based on comparable rivers across the state. These anemic numbers are due largely to the fact that many important spawning and rearing tributaries were disconnected by logging and mining that occurred earlier in the 20th century. TU has been working for over a decade to repair this damage and, in 2017, we removed fish passage barriers, restored stream habitat and improved water quality and instream flows to reconnect nineteen miles of spawning habitat for the Clark Fork's native westslope cutthroat trout and bull trout populations. We also filed water right change applications to protect

instream flows in two of the Clark Fork's most treasured angling streams, Rock Creek and the Blackfoot River.

Yellowstone River (MT)

Montana's Yellowstone River is considered one of the Lower 48's "last great wild rivers." TU has a long, proud history of conservation work in the Yellowstone Basin and we added another chapter in 2017. Thanks to an agreement between Trout Unlimited and Kinross, a mining company out of Toronto, at least 3 billion gallons of water per year will remain instream in critical tributaries of the Yellowstone. This is a first-of-its-kind agreement with a mining company and one of the largest and most ecologically significant water rights donations in history. This is a vivid example of how TU is building bridges to industries that can make dramatic and immediate positive impacts on our nation's trout waters.

Peshtigo River (WI)

In 2017, Trout Unlimited staff and volunteers helped to reconnect 42 miles of coldwater habitat within the Peshtigo River watershed in Northern Wisconsin. Ten inadequate culverts were replaced with fish-friendly structures, a road crossing located on private forest land was removed, 11 passage barriers were eliminated and instream habitat was improved. As a result, brook trout once again migrate between critical spawning and rearing habitat and deeper, forage-rich winter habitat. This year, we intend to reconnect an additional 25 miles within the Peshtigo system through the replacement of five more culverts. Additionally, we will assist in the restoration of 2.6 miles of wild brook trout habitat through the heart of Wabeno, removing mill dams, replacing a culvert and improving instream habitat.

Lake Michigan Tributaries (MI)

Over the past year, TU completed four habitat restoration projects on Michigan tributaries to Lake Michigan. Using wood additions, removing one small dam and a pond, and improving five road culverts, TU reconnected and restored over 31 miles of coldwater stream habitat. TU's work took place in some of the most productive trout waters in the state including the Big and Little Manistee Rivers, the Pine River and Bigelow Creek watersheds. To complement the instream restoration work, TU staff and volunteers planted more than 1,000 native trees and shrubs in riparian areas in the Pine and Big Manistee River watersheds. The native plants will provide stream bank stability and shade and will help ensure coldwater habitat for resident brook trout. TU also worked with citizen scientists from local TU chapters to conduct habitat surveys and temperature monitoring in the Pere Marquette River at more than a dozen locations. These citizen science efforts will help direct and prioritize future restoration work in the area.

New England Culverts (VT, NH, MA)

By removing, replacing, or retrofitting currently impassable stream crossings, TU aims to reconnect eastern brook trout habitat across the northeast. The New England Culvert Project had a very successful 2017 field season, completing several projects across Massachusetts, New Hampshire and Vermont. On the Mettawee River near Dorset, Vermont, TU is addressing a total of six barriers to reconnect six miles between the headwaters in the Green Mountain National Forest and the main stem of the Mettawee. In 2017, TU replaced the uppermost, elevated culvert with a 30-foot bridge and replaced another perched culvert with a 60-foot bridge. Additionally, the stream bed underneath was restored while the deep scour pool was retained for habitat. In New Hampshire, among other projects, TU oversaw an ambitious reconnection project in the Beebe River watershed. TU prepared the design plans to construct five bridges at sites where tributary streams were disconnected from the mainstem river. All of the tributaries support native brook trout populations and the work reconnected approximately seven miles of headwaters that provide trout spawning habitat as well as cold water refugia during the warmer months.

Pennsylvania Coldwater Streams (PA)

Throughout Pennsylvania, native brook trout are at risk. Pressures from poor land management, natural resource development and other problems have harmed fish populations and reduced fishing opportunities. In addition to improving instream habitat, a major emphasis of TU's Pennsylvania Coldwater Habitat Restoration Program is to identify and address stream crossings (such as road culverts) that act as barriers for fish passage. TU got its start planning and implementing fish habitat improvement projects in 1998 in the Kettle Creek watershed and subsequently has expanded its reach to other high priority coldwater streams in central and northcentral Pennsylvania. To date, hundreds of culvert surveys have been completed and the work of designing and implementing restoration projects based on those surveys continues.

Upper Delaware River (NY, PA, NJ)

TU is reconnecting habitat in the Beaverkill and Willowemoc watersheds through the replacement of impassible culverts, highlighted by the removal of a culvert on Horse Brook that was blocking spawning migrations for trout coming up from the Beaverkill. TU is also completing instream and riparian restoration projects throughout the Catskills (with the help of the Millennium Stream Improvement Fund), including floodplain restoration on The Nature Conservancy's Neversink Preserve. In New Jersey, TU has expanded its Musconetcong River program to encompass additional coldwater tributaries to the Delaware River; recent projects there have included major dam removals on the Musconetcong and instream restoration

projects on smaller tributaries that hold native brook trout. TU is advocating for strong protections for gas drilling and pipeline-related development in the Delaware River watershed as a whole and for instream flows that meet the needs of both coldwater fish and citizens in New York City. Additionally, TU helped pass the Delaware River Basin Conservation Act, federal legislation that will help spur additional conservation work in the Delaware watershed.

Southern Appalachian Brook Trout (NC, TN, SC, GA)

TU's efforts in the southern Appalachians stretch from Mount Rogers in southwest Virginia to upstate South Carolina and north Georgia including the mountains of North Carolina and Tennessee in between. In 2017, TU reconnected native and wild trout with an additional 12 miles of habitat by replacing culverts that were barriers to fish passage with fish-friendly stream crossings. In 2018, we are engaging TU members and other interested persons in an angler science program to help fill knowledge gaps essential to the management and conservation of the region's coldwater fisheries. In addition to blitzing the area with our angler scientists, we have on the 2018 docket the remediation of two roads that are significant sediment contributors to this watershed with more habitat and water quality improvement projects to come.

3. RESTORE

Central Valley Rivers (CA)

The steelhead, salmon and trout of California's Central Valley are beleaguered by a host of problems that require a major collective effort to remedy. The fish received good news in August 2017 when two efforts were birthed that have potential to restore fish habitat at the landscape scale. First, the state adopted a new Central Valley Flood Protection Plan that integrates a dramatically different approach called "multi-benefit" flood management. This approach recognizes that by strategically expanding floodplains, floodways and flood bypasses, we can reduce flood risk to people and property while providing myriad additional benefits including for fisheries. The plan will direct tens of billions (and eventually trillions) of dollars of infrastructure investment in a way that gives rivers "room to breathe" and will provide fish with the mosaic of habitats they need to thrive. Second, we launched the Central Valley Salmon Habitat Partnership with dozens of state, federal and non-profit organizations to prioritize restoration efforts around clearly defined biological goals and objectives. Neither effort would have been possible without TU, whose staff led the Flood Plan Advisory Committee to consensus around the multi-benefit approach and coordinated the partnership.

Big Wood River (ID)

Flooding and wildfires were prominent in the national news during 2017. In Idaho, spring floods in the Big Wood River – exacerbated by both post-fire debris flows and residential development in floodplains – ripped through several neighborhoods, filling streets, yards and some homes with water and mud. While the outcome was hardship for many, it also presented an opportunity to reshape the conversation about river and floodplain management in the Wood River Valley. TU staff, together with the local TU Hemmingway Chapter, convened a panel of scientists to share with the community how restoring the floodplain along the Big Wood would both prevent flood damage and improve fish habitat. TU has several floodplain restoration projects underway, including the ambitious Bridge-to-Bridge project north of Hailey, which will restore channel and floodplain function and reestablish a functional 'riparian sponge' to absorb flood waters.

Driftless Area (WI, MN, IA, IL)

In this lovely and trout-rich area of the upper Mississippi Valley, TU chapters and staff are leading the effort to restore degraded spring creeks and their watersheds to health. This is TU's largest Home Rivers Initiative, encompassing 4,000 miles of coldwater streams spread across 24,000 square miles. The Driftless Area Restoration Effort brings together volunteers from two dozen TU chapters and four state councils to organize and fund projects with natural resource management and agriculture agencies, land trusts and other nonprofit and community groups. During 2017, TU restored an incredible 20 miles of habitat, our most successful year yet (up from just 3-5 miles per year before TU began its work in the area). Our efforts have also provided access easements on 450 stream miles along private land, strengthened relationships across the area with economic development and tourism groups as well as with policy makers, and to date 200-plus projects have restored greater than 100 miles of trout streams. Driftless area restoration projects have led to as much as a tenfold increase in trout populations, from 200-300 to 2,000-3,000 fish per mile.

Rogue River (MI)

TU's first urban Home Rivers Initiative presents a different set of conservation problems from those with which TU typically contends and includes the challenges of concentrated development and storm water management. Project activities include municipality watershed planning, conducting studies and watershed assessments, providing training for new volunteers in collecting flow and temperature data, and hosting volunteer events such as river cleanups. TU has distributed 350 rain barrels to residents in the watershed, installed 20,000 square feet of stream buffers, rain gardens and bio-swales, and worked to establish a regional program that offers incentives to residents and businesses that install green infrastructure practices (all with the help of local high school and college students). New opportunities arose in 2017 to target agricultural areas in the watershed, which make up 50 percent of the land use. Trout Unlimited

is now working with partners like the Natural Resources Conservation Service to help farmers implement best practices to address water quality, fish and wildlife habitat and sedimentation. As a result, we are confident we will see substantially improved habitat and water quality within this important southern Michigan fishery.

Housatonic River Tributaries (MA, CT)

The Housatonic River is a popular trout fishery that flows from northwestern Massachusetts through western Connecticut to the Long Island Sound. Spring-fed tributaries provide trout with critical coldwater refuge during warm water summer months. TU's work removing fish barriers and improving habitat on Salmon Creek, Macedonia Brook and Mill Brook will strengthen this large river trout fishery with a network of interconnected tributaries, thus restoring the Housatonic to its full potential.

Delaware River (NJ)

Trout Unlimited is working to reintroduce native brook trout to three New Jersey watersheds, the Paulins Kill, Pequest River and Musconetcong River. All three lack brook trout but have the right water temperature and chemistry to support them once habitat is improved. TU will work to restore waters degraded by past agricultural practices, reconnect flood plains, improve habitat and stabilize streambanks. Once restoration work is complete, we will reintroduce heritage-strain native brook trout from nearby streams and establish a monitoring program to help guide future reintroduction efforts.

Shenandoah Headwaters (VA)

Through collaborative efforts with local farmers to improve water quality, TU is working to bring wild brook trout back to mountain streams and valley spring creeks in the Shenandoah Valley. TU has completed projects on Mossy Creek, including removing a dam and restoring over 2,000 feet of spring creek habitat, as well as habitat improvement projects on Garth Run and Wildcat Hollow, two streams in state wildlife management areas. In Garth Run, adult brook trout appeared in the newly recreated pool habitat just two weeks after completing the work. TU's project on Beaver Creek has resulted in the return of native brook trout to a fishery that previously relied entirely on stocking.

Upper James River (VA)

The Upper James River watershed drains more than 3,000 square miles of western Virginia encompassing 10 counties and hundreds of tributary streams. The majority of these mountain streams and high valley creeks historically sustained abundant populations of native brook trout and provided a steady source of clean water to the communities and urban areas along the

James River and the Chesapeake Bay. Today, however, the remaining intact populations of native brook trout are relegated to isolated mountain headwater streams. To address this, TU and partners have initiated a Home Rivers Initiative in the Upper James River watershed, focused on brook trout. Assessment work on the upper Jackson and Bullpasture rivers has set the stage for project design and implementation work, now underway.

Greenbrier River Watershed (WV)

In West Virginia, Trout Unlimited and partners achieved full-scale watershed restoration during 2017 after three years of work. We upgraded nine miles of road to reduce erosion and sedimentation, added large woody material to 39 miles of trout water to provide habitat, completed 20 miles of riparian restoration, reconnected 36 miles of habitat by removing 12 barriers to fish passage and decommissioned 61 miles of roads that impaired the watershed's hydrology. TU's Greenbrier River Watershed work is a stunning example of the breadth and impact of large-scale restoration efforts.

Potomac Headwaters (WV)

Before it reaches the nation's capital, the Potomac is a native brook trout fishery flowing through farmland and small rural communities. However, brook trout resources in the Potomac headwaters have been fragmented and degraded by timber harvest, development and agriculture. TU and partners are working with private landowners and public land managers to reconnect fragmented populations by restoring riparian and in-stream habitat and by removing barriers to fish passage. Measures of the success of the project (working with our state and federal agency partners as well as landowners) include the installation of 23.5 miles of conservation fencing, planting 300 acres of riparian trees, completing 24 miles of in-stream restoration, reclaiming 22 miles of old unused roads that were eroding into brook trout waters, and improving culverts to open up more than 20 miles of headwater streams for brook trout refuge and spawning, while reducing maintenance costs and flood damages.

Casco Bay Salter Brook Trout (ME)

Anadromous (sea-run) "salter" brook trout are rare, with only six documented populations in the northeast. TU has identified three small spring-fed streams – Mere Brook, Frost Gully Brook and Mill Stream -- all tributaries to Maine's Casco Bay where brook trout have been caught at or below the head of tide. All three streams run through highly developed areas with a mix of residential, downtown and sprawling development, making them vulnerable to degradation. TU is working with partners and volunteers to assess fish passage and evaluate habitat while preparing to put in place what will be the first dedicated salter brook trout conservation plan in the state.

Flood Resiliency (NH)

In 2017, TU expanded its work making communities and rivers resilient to flooding. In New Hampshire, we organized workshops with 24 communities to explore how best to mitigate and prepare for floods in ways that benefit both infrastructure and river health. By shifting the focus from dams and other barriers to instead strategically expanding floodplains, floodways and flood bypasses, it is possible to reduce flood risk to people and property while providing benefits to the natural environment, including important fisheries.

Western Abandoned Mine Restoration

Abandoned hard rock mines and their legacy of toxic waste pose one of the most widespread – and least addressed – threats to rivers and watersheds in the West, where roughly 33,000 orphan mines pollute 40 percent of headwaters. The estimated cost to fix the problem extends well into the billions of dollars, yet – unlike every other resource extraction industry – hard rock mining has no dedicated cleanup fund. Worse, even though abandoned mines pose significant risks to human health and safety, local communities and conservation organizations that try to clean them up are stymied by liability risks associated with both Superfund law and the Clean Water Act. Trout Unlimited has worked since 2004 to pioneer state-of-the-art techniques for cleaning up abandoned mines and innovative policy and legislative solutions to address funding shortfalls and liability issues. We recently completed our 30th successful abandoned mine restoration project in the west. Our projects have spanned six states, restoring habitat and water quality in nearly 200 stream miles and reconnecting 90 miles of tributary streams and floodplains.

Eastern Abandoned Mine Restoration

According to the EPA, toxic runoff from abandoned coal mines is the single largest threat to the environment in much of the Appalachian area. Building on our pioneering mine remediation work in Pennsylvania, TU is helping to clean up abandoned mines throughout the region. We have now completed more than 120 projects through our Abandoned Mine Drainage Technical Assistance Program. This program serves to assist chapters and other groups to ameliorate the polluted water flowing from abandoned coal mines. One notable project is the Kettle Creek watershed, where a fish survey by TU biologists confirmed that brook trout have returned to the previously dead, Abandoned Mine Drainage-polluted Twomile Run.

Abandoned Mine Cleanup and Good Samaritan Policy

Advancing legislation to support abandoned mine cleanups by good Samaritans (like TU), is at the top of our Government Affairs priority list for 2018. Passage of this federal legislation will allow organizations like ours to increase our work on abandoned mine cleanup without fear of repercussions. We led a major breakthrough in this effort in late 2017 when the House passed its

“Community Reclaimers” bill to aid abandoned coal mine clean up. This is a high-water mark for Good Samaritan (Good Sam) legislation and we plan to capitalize on it by getting a Senate counterpart moving this year as well as a hardrock bill introduced on a parallel track. A testament to the work and experience of TU and our staff and volunteers, TU was invited to testify before Congress on this topic in both the House and Senate during recent months and we continue to work closely with lawmakers. Good Sam legislation could lead to the reclamation of thousands of more fishable river and stream miles throughout America, increasing and improving the health of native and wild trout populations.

Farm Bill Conservation Programs

The farm bill is a multi-program, multi-year law that governs an array of programs, including agricultural-related land and water conservation programs. America’s hunters, anglers, farmers, and ranchers depend on resources affected by the Farm Bill. Farm bill programs support innovative partnerships among private and public partners that benefit both agricultural producers and the environment. These partnerships allow for positive outcomes and reduced conflict. TU’s field staff, working closely with farmers and ranchers, increasingly make use of Farm Bill Conservation Program funding to accomplish on-the-ground stream restoration goals. Farm Bill programs support and promote the kinds of regional partnerships TU has been leading on the ground in places like the Driftless Area (WI), lower Gunnison (CO), upper Columbia (WA), Bear (UT/WY), and Blackfoot (ID). With that in mind, TU has worked closely with Congress over the past several years to try to re-authorize the Farm Bill, to keep funding flowing through its conservation programs. The Farm Bill must be reauthorized every five years and the current Farm bill will expire in September. TU is working closely with members in Congress to advocate for programs that support our work - including bringing local landowner partners to Washington D.C. to share stories of successful projects.

4. SUSTAIN

Conservation Planning and CSI

TU’s conservation planning tools, such as the Conservation Success Index (CSI) and Conservation Portfolio, are a starting point to help answer “where” questions related to trout and salmon populations to inform, guide, and contextualize TU’s work: Where are the strongest remaining populations for protection focus? Where are the least disturbed habitats for restoration focus? Where are the cold, climate-resilient streams for reconnection focus? Where can TU’s on-the-ground efforts achieve the greatest conservation benefit for the least cost? TU conducts conservation planning analyses using a variety of computer-based GIS (geographic information system) platforms. Our conservation planning products provide context at regional and watershed scales and are an important landscape-scale perspective to complement on-the-ground knowledge. In 2005 TU developed the CSI, our core conservation planning application,

to provide the first range-wide summary of watershed-scale information related to salmonid distribution, population attributes, habitat conditions, and future threats. The CSI served as the base of information for TU's 2015 State of the Trout report, which described the status and vulnerability of native trout across the US. Over time, the CSI approach has evolved into other conservation planning approaches, such as the Conservation Portfolio, which builds on the CSI and further evaluates trout populations based on their resiliency in the face of environmental disturbances, identifying key conservation actions for ensuring their long-term persistence.

Climate Change Adaptation

Increasing water temperatures, changes in stream flows, as well as severe floods, droughts, and wildfires pose major threats to wild and native trout. TU has worked with agency and university partners to help expand and develop tools that help us prioritize where we can work most effectively to build resiliency given climate impacts in aquatic habitats; a few examples include the collaborative extension of NorWeST stream temperature models across the Great Basin and southwest, or development of the Gila Trout Climate Vulnerability Assessment and the Idaho Water Tool (see below) to guide climate-smart restoration. We have also reviewed our restoration and reconnection strategies in light of a warmer and more variable future environment and developed adaptation strategies that feature: 1) watershed-scale restoration, 2) restoration of proper watershed function, 3) improvements in instream flows, 4) cooler water within complex stream channels and 5) more resilient fish populations. Monitoring and adaptive management is encouraged as we continue to learn more about localized climate impacts and population responses.

Angler Science

Citizen Science has seen rapid growth in recent years, aided by interconnected mobile technologies that enable the public to collect data from virtually anywhere. Angler Science is defined as anglers collecting scientific information about the streams and fish they love. We believe that TU's Angler Science is a special breed of citizen science because of the passion of our members. TU now provides 10 separate Angler Science programs ranging from basic water quality, habitat, and population monitoring to cutting-edge eDNA and snorkel monitoring programs. We have trained more than 1,000 people and have found new ways to apply citizen science to our conservation work. In Maine, TU-affiliated anglers are surveying wild brook trout ponds for addition to the state's protective Heritage Waters list. We recently adapted that program to search for sea-run or "salter" brook trout in Maine's coastal streams and volunteers have found thriving populations in some unlikely places. In Virginia's Shenandoah Valley, Trout Unlimited volunteers have collected air and water temperature data to input into U.S. Geological Survey climate models to understand how and where groundwater may buffer stream temperatures. The data will be used to prioritize projects for our Shenandoah Homes Rivers Initiative. Additionally, we are training volunteers to complete redd counts to provide

data that helps to prioritize culvert replacement projects and evaluate their results. TU's science team is also helping to develop mobile applications to allow anglers to collect and upload data via smartphone directly to the cloud.

Volunteer Operations

What sets TU apart from other conservation organizations is our tremendous representation on the ground. Since the organization's inception, TU has relied on its volunteer leaders to deliver on the mission at the local level. During 2017, our 300,000 members and supporters:

- Contributed over 734,824 hours volunteering;
- Participated in 1,013 conservation projects;
- Ignited a spark in the next generation with more than 1,682 youth education programs;
- Served those who have served our country, with 672 veterans programs and events; and
- Opened the door to a more inclusive future with 138 events geared specifically towards attracting women or minorities.

Veterans Service Partnership

TU's Veterans Service Partnership serves veterans and active duty military and their families by engaging them through the recreational therapy of angling and the sustaining support of the TU community. Each TU chapter is a ready-made community of passionate conservationists and anglers. TU partners with groups like Project Healing Waters, Tragedy Assistance Program for Survivors, Student Veterans of America and others to increase the range of services provided to meet veterans' needs and to strengthen and expand our programs. More than 200 of TU's nearly 400 chapters now run activities serving our nation's military families, offering fly fishing instruction and trips, fly tying, and rod building instruction, all geared toward engaging veterans in the TU community. Recently, dozens of TU volunteers, many of them veterans themselves, gathered for a training retreat. Topics included how to work with disabilities, understanding military culture, working with the U.S. Department of Veterans Affairs and utilizing adaptive fly fishing equipment. Importantly, participating volunteers were also instructed on how to teach other volunteers the same subject matter. As a result, TU's program reach is stronger and will reach further.

Diversity Initiative

The goal of TU's Diversity Initiative is to create effective strategies and programs to recruit a more diverse TU membership; encourage diversity within leadership at the chapter, state and national levels; and to ensure every chapter creates a welcoming environment for TU members of different genders, ages, ethnicities and cultures to achieve the TU conservation mission. The

primary focus of the Diversity Initiative to date has been encouraging local and state-level women's initiatives to grow and thrive. Today, 36 percent of our chapters are actively hosting events and activities geared at attracting and welcoming women into the chapter. More recently, the Diversity Initiative has broadened its efforts to target other under-represented demographics, including people of color. Significantly, 73 percent of our chapters now have a woman or a person of color serving among their leaders.

Headwaters Youth Education

TU members have long understood the importance of investing in the next generation. Since the organization's inception, our chapters and councils have been teaching kids to fish and explore their natural surroundings in order to make that lasting connection to their water resources. The Headwaters Youth Program is a staffed effort to complement and assist the work of our grassroots volunteers. The Headwaters Program includes the STREAM Girls program, Trout in the Classroom and Adopt-A-Trout school programs, "Summer on the Fly" summer camp programs, TU Youth Camps and the TU Costa 5 Rivers Program, which fosters conservation and fishing clubs at universities and colleges. During 2017, the Costa 5 Rivers Program sent five college students on an epic cross-country conservation and fishing tour. Their goal was to raise awareness about the need to protect wild and native trout. They wrapped up their travels in Washington, DC, where they met with lawmakers and, throughout their travels, they garnered an impressive one million social media impressions.