CATT

Fiscal Year 2017 Report

USDA Forest Service
Southern Research Station
Center for Aquatic Technology Transfer (CATT)

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Frequently Asked Questions

What is CATT?

The Center for Aquatic Technology Transfer (CATT) is a science delivery program. CATT biologists and technicians are Southern Research Station (SRS) employees funded by the National Forest System (NFS) and other partners. Guided by core values of communication, partnership, inclusion, accountability, and safety, we collaborate with the Forest Service science community and others to develop custom solutions for our project partners.

When was CATT created, and why?

The CATT was created in 1995 in response to the growing need for research technologies to be applied directly to management challenges. The number of research personnel was, and still is, too small relative to the number of fisheries and aquatics resource managers to satisfy specific needs. Our mission is to increase the capacity of our partners through delivery of science-based support.

Where does CATT work?

Full-time CATT personnel are stationed in Blacksburg, VA and we provide services to partners throughout the eastern U.S.

What services does CATT provide?

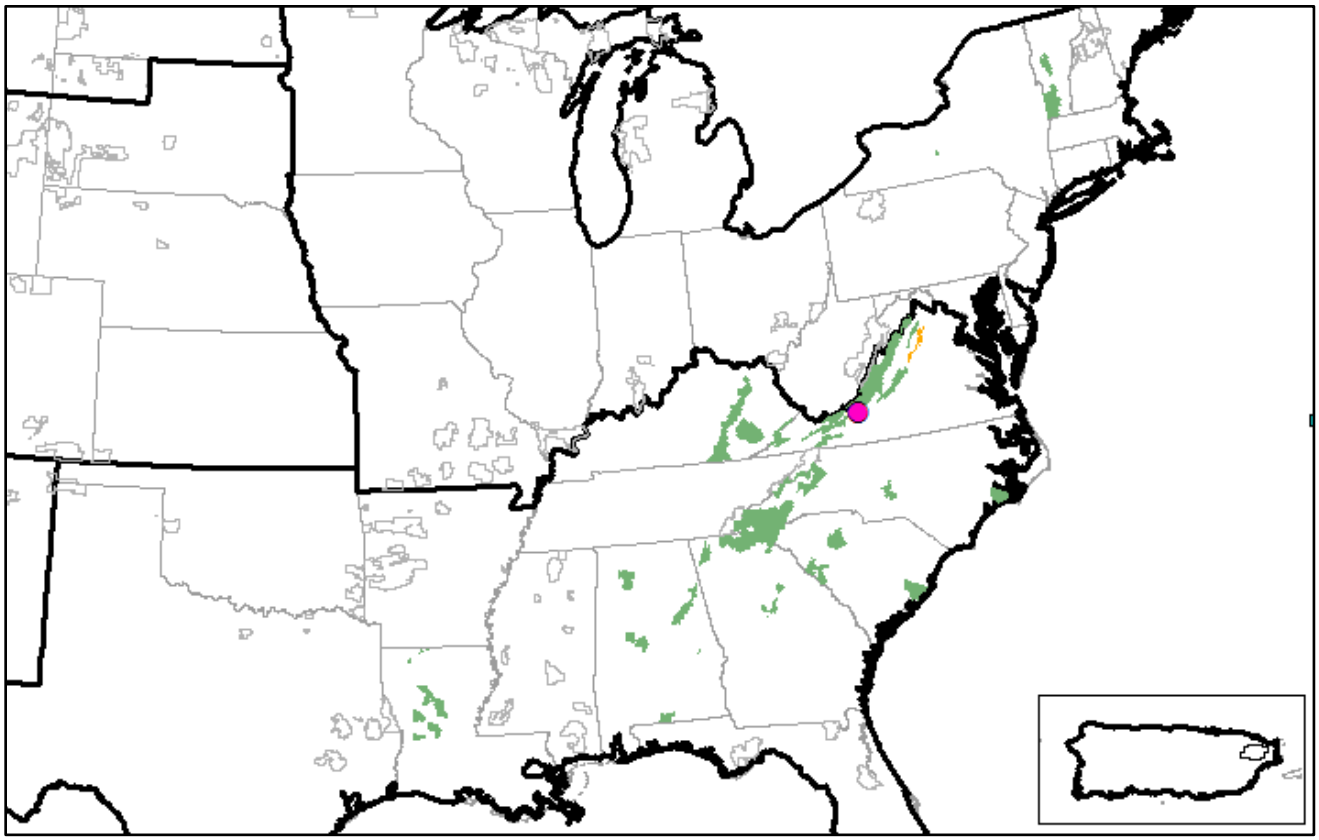
Our focus is on aquatics related management challenges. Our flexible organizational structure allows us to rapidly develop and apply custom solutions to both short and long term projects. Past projects range from providing a field technician for an afternoon of fish sampling, to region-wide, multi-year efforts, including sampling design, personnel management, data analysis, and reporting.

How is CATT supporting Forest Service strategic goals and objectives?

The CATT leverages resources and personnel from both the National Forest System and Forest Service Research & Development to address objectives within each of the four strategic and management goals outlined in the 2015-2020 USDA Forest Service strategic plan. Each project page in this report highlights the two most relevant strategic or management objectives addressed by an individual project. For the full Forest Service strategic plan, please visit: https://www.fs.fed.us/strategicplan

How can I learn more about CATT?

Contact Craig Roghair 540 230-8126 (croghair@fs.fed.us), or visit our website: http://www.srs.fs.usda.gov/catt.



Several National Forests (green) and a National Park (orange) partnered with the CATT in fiscal year 2017. The USDA Forest Service, Southern Research Station, CATT is headquartered in Blacksburg, VA (pink circle).

CATT partners and projects in fiscal year 2017:

Partner	Project Type
Chattahoochee-Oconee National Forest	Stream habitat inventory
Daniel Boone National Forest	Forest-wide stream monitoring
Francis Marion & Sumter National Forests	Stream fish and habitat inventory
George Washington & Jefferson National Forests	Road-stream crossing inventory
George Washington & Jefferson National Forests	Fish conservation
George Washington & Jefferson National Forests	Stream channel classification
Kisatchie National Forest	Forest-wide stream monitoring
National Forests in North Carolina	Stream habitat monitoring
National Forests in North Carolina	Legacy mine impacts
National Forests in North Carolina	Wildfire effects on streams
National Genomics Center for Wildlife & Fish Conservation	Environmental DNA (eDNA) sampling
Shenandoah National Park	Brook Trout population monitoring
Southern Region (R8) Regional Office	Provide base funding and support for the CATT
Southern Research Station	American Eel growth and movement
Southern Research Station	Movement of wood in streams
Washington Office, R8 Regional Office	Freshwater snorkeling education program

Chattahoochee-Oconee National Forest
Blue Ridge, Chattooga River, and Conasauga Ranger Districts

Project Type
Stream habitat inventory

Goal
Provide information needed to identify and prioritize trout stream remediation projects

Objective
Complete reach-level stream habitat inventories on priority stream reaches in spring 2017

Approach
Forest identifies priority stream reaches
CATT trains and deploys field teams to complete habitat inventories
CATT provides data summary and report

Accomplishments
Completed 35.5 miles of inventory on 19 stream reaches on 3 ranger districts
Entered field data into project database
Project report in progress

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service works to restore impaired natural functions of watersheds so they may remain healthy and resilient, despite stresses and disturbances. This project helps the forest and its partners identify and prioritize opportunities for restoring habitat and trout populations in cold water mountain streams.

Strategic Objective D – Provide abundant clean water
Restoring trout habitat requires the Forest Service to maintain healthy watersheds and abundant flows of clean, cold water. This project identifies areas where the forest is meeting all of the requirements for healthy trout habitat, and areas where changes in management approaches or remediation projects could result in improved conditions for trout.

Partner
Taylor Beard, Forest Hydrologist


Measuring water depth on Turninglathe Branch


Counting large wood on Emery Creek

Daniel Boone National Forest
Cumberland Ranger District

Project Type
Annual Forest-wide stream monitoring

Goal
Provide information needed for project-level and forest-level planning

Objective
Complete stream fish and habitat samples following established monitoring protocols in summer 2017

Approach
Forest staff, CATT and R&D personnel established sampling design and methods in 2005
Forest selects sample sites annually
CATT trains and deploys field teams to complete annual sampling
CATT provides data summary and report

Accomplishments
Completed sampling at 9 sites
Entered data into project database
Project report in progress

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service uses monitoring to identify areas of altered ecological conditions in need of more land management attention. This long-term, forest-wide monitoring project helps the forest and its partners identify areas where changes in management approach or application of restoration projects are needed to maintain or restore healthy watersheds.

Strategic Objective D – Provide abundant clean water
Healthy forests provide a host of watershed benefits, such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project allows the forest and its partners to find areas where the full suite of watershed benefits is not being realized, and to identify and apply appropriate remedies.

Partners
Jon Walker, Forest Hydrologist
Pam Martin, Forest Fish Biologist


Measuring pool depth on Caney Creek


Aquatic insect collection on Upper Lick Fork

Francis Marion & Sumter National Forests
Long Cane Ranger District

Project Type
Stream fish and habitat inventory

Goal
Provide information needed for project-level and forest-level planning

Objective
Complete stream fish and habitat inventory in summer 2017

Approach
Forest identifies streams with lack of recent fish or habitat information
CATT trains and deploys field teams to complete inventories
CATT provides project database for incorporation into forest datasets

Accomplishments
Completed 18.9 miles of inventory on 15 streams
Sampled fish in 9 streams
Project database under development

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service works to restore impaired natural functions of watersheds so they may remain healthy and resilient, despite stresses and disturbances. This project will help the forest and its partners identify and prioritize opportunities for restoring habitat and fish populations in warm water piedmont streams.

Strategic Objective D – Provide abundant clean water
Healthy forests provide a host of watershed benefits, such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project allows the forest and its partners to find areas where the full suite of watershed benefits is not being realized, and to identify and apply appropriate remedies.

Partners
Keith Whalen, Forest Fish Biologist


Measuring pool depth on Rock Creek


Estimating stream width on Cedar Creek

George Washington & Jefferson National Forests
North River Ranger District

Project Type
Road-stream crossing inventory

Goal
Provide information needed for prioritization of road-stream crossing improvement projects in the North Shenandoah Mountain Restoration and Management Project

Objective
Complete road-stream crossing inventory in high-priority watersheds in fall 2016
Assist forest and partners with prioritization assessment in winter 2016

Approach
Forest selects high-priority watersheds within project area
CATT works with external partners to learn and apply new crossing assessment methods
Forest, partners and CATT collaborate on a tool to prioritize crossing improvement projects

Accomplishments
Assessed 695 crossings in 10 watersheds
Entered field data into project database
Supported decision support tool development by project partner

Alignment with Forest Service Strategic Plan
Strategic Objective E – Strengthen communities
When watersheds are in multiple ownerships, working across ownership boundaries is an effective way to sustain benefits that communities receive from healthy watersheds. This project provides a comprehensive inventory of crossings across all ownerships within priority watersheds, allowing the project partners to find the crossing improvement projects that benefit water quality, fish and wildlife habitat and erosion control across the project area.

Strategic Objective H – Transfer technology and applications
The Forest Service works cooperatively to develop and deploy new technologies, tools, and applications. This project applied a new crossing survey methodology and led to the development of a decision support tool and electronic datasheet for portable devices.

Partners
Dawn Kirk, Forest Fish Biologist; Pauline Adams, Forest Hydrologist; Kat Hoenke, Leigh McDougal R8 Regional Office; Southeast Aquatic Resources Partnership; Callie McMunigal, U.S. Fish & Wildlife Service


Assessing a crossing with multiple pipes


Measuring bridge height

George Washington & Jefferson National Forests
Eastern Divide Ranger District

Project Type
Fish conservation

Goal
Determine distribution, abundance, and genetic status of a rare fish to inform conservation decisions

Objective
Collect Candy Darters, tissue samples and habitat use information in spring 2017

Approach
Virginia Cooperative Fish and Wildlife Research Unit selects sample locations
CATT provides field team to assist with field work

Accomplishments
Provided field teams to assist with fish collection and habitat assessment on 3 streams

Alignment with Forest Service Strategic Plan
Strategic Objective G – Advance knowledge
The Forest Service seeks to fill information gaps when information needed to make sound management decisions is lacking. Basic life history and demographic information is not available for many non-game fishes. This project will provide demographic and genetic information needed to guide Candy Darter management and conservation.

Strategic Objective I – Exchange natural resource expertise
Experts outside the Forest Service develop vital information relevant to land and resource management. This project provided the opportunity for state and federal agency collaborators to use their combined expertise in collecting information about Candy Darters that can be used to further conservation efforts and to inform pending decisions on the conservation status of a species under consideration for federal listing.

Partners
Dawn Kirk, Forest Fish Biologist
Paul Angermeier, Virginia Cooperative Fish and Wildlife Research Unit
Katherine McBaine, Virginia Cooperative Fish and Wildlife Research Unit
Mike Pinder, Virginia Department of Game and Inland Fisheries


Candy Darter


Preparing to collect Candy Darters

George Washington & Jefferson National Forests
Eastern Divide and Clinch Ranger Districts

Project Type
Stream channel classification

Goal
Provide information needed to properly assign stream channel buffers as prescribed in the forest plan

Objective
Classify stream channels in timber sale units in summer and fall 2017

Approach
Forest provides list of timber sale units with pending harvest
CATT works with forest and districts staffs to develop standardized classification system
CATT deploys field teams to classify stream channel
CATT supplies project GIS to forest

Accomplishments
Classified 50 miles of stream channel in 64 timber stand units across 2 districts
Submitted maps of classifications to district and forest personnel

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
Many land areas are particularly susceptible to insects, disease, and wildfire. Such areas might need more land management attention to address altered ecological conditions. This project provides information needed to make land management decisions that restore healthy forests and protect aquatic resources.

Strategic Objective D – Provide abundant clean water
Healthy forests provide a host of watershed benefits, such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project provides information needed to ensure the flow of abundant clean water from all sources on forests, including wetland, ephemeral, intermittent and perineal streams.

Partners
Dawn Kirk, Forest Fish Biologist
Pauline Adams, Forest Hydrologist
Jesse Overcash, District Biologist
Chuck Lane, District Biologist


Classifying an intermittent channel


Recording wetland location

Kisatchie National Forest
Catahoula, Calcasieu, Kisatchie, and Winn Ranger Districts

Project Type
Forest-wide stream monitoring

Goal
Provide information needed for project-level and forest-level planning

Objective
Complete stream fish and habitat samples following established monitoring protocols in spring 2017

Approach
Forest, CATT, and partners document standardized methods for collecting monitoring data
Forest selects monitoring locations distributed across entire forest
CATT deploys field teams to collect fish and habitat data
CATT supplies project database to partner at Louisiana State University (LSU) for data analysis

Accomplishments
Produced a document detailing monitoring methods
Collected monitoring data at 23 sites across 5 districts
Sent project database to LSU for data analysis

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service uses monitoring to identify areas of altered ecological conditions in need of more land management attention. This long-term, forest-wide monitoring project helps the forest and its partners identify areas where changes in management approach or application of restoration projects are needed to maintain or restore healthy watersheds.

Strategic Objective D – Provide abundant clean water
Healthy forests provide a host of watershed benefits, such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project allows the forest and its partners to find areas where the full suite of watershed benefits is not being realized, and to identify and apply appropriate remedies.

Partners
Ted Soileau, Natural Resource Specialist
David Byrd, Staff Officer
Michael Kaller, Louisiana State University


Recording stream data on Whiskey Chitto


Collecting a fish sample

National Forests in North Carolina
Pisgah Ranger District

Project Type
Stream habitat monitoring

Goal
Compare stream habitat conditions in the Davidson River in 2003 and 2017

Objective
Complete stream-wide habitat assessment in summer 2017
Compare 2017 results with similar survey completed in 2003

Approach
Forest provides data and methods from 2003 inventory
CATT deploys field teams to collect habitat data using same methods as in 2003
CATT analyses data and prepares project report

Accomplishments
Completed 10.8 miles of stream habitat assessment
Entered paper data from 2003 survey into project database
Data analysis and project report are in progress

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service uses monitoring to identify areas of altered ecological conditions in need of more land management attention. This stream-wide monitoring project helps the forest and its partners identify areas where changes in management approach or application of restoration projects are needed to maintain or restore this stream, which supports a population of Eastern Hellbender.

Strategic Objective D – Provide abundant clean water
Healthy forests provide a host of watershed benefits, such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project allows the forest and its partners to find areas where the full suite of watershed benefits is not being realized, and to identify and apply appropriate remedies.

Partners
Lorie Stroup, Zone Fish Biologist
Sheryl Bryan, Forest Fish Biologist
John Rich, Trout Unlimited


Counting large wood on Davidson River


Measuring a riffle on Davidson River

National Forests in North Carolina
Uwharrie Ranger District

Project Type
Legacy mine impacts

Goal
Assess water quality in a stream flowing through a legacy gold mine

Objective
Complete fish and insect collections at sites up- and downstream of the gold mine site in spring 2017

Approach
Forest and Regional Office identify need for biological assessment at mine site
CATT deploys field teams to collect fish and insect samples
CATT submits samples to North Carolina Department of Environmental Quality
NC DEQ analyzes samples and submits biological assessment to CATT
CATT prepares project report

Accomplishments
Completed fish and insect samples at 6 sites
Received NC DEQ analysis results
Project report is in progress

Alignment with Forest Service Strategic Plan
Strategic Objective A – Foster resilient, adaptive ecosystems to mitigate climate change
The Forest Service works to restore impaired natural functions of watersheds so they may remain healthy and resilient, despite stresses and disturbances. This project assesses the impacts of a legacy gold mine on the water quality in a piedmont stream, and ultimately informs watershed remediation efforts.

Strategic Objective D – Provide abundant clean water
The Forest Service works to restore degraded and at-risk watersheds so they may provide benefits such as purifying water, sustaining surface water and ground water flow, maintaining fish and wildlife habitat, controlling erosion, and stabilizing streambanks. This project provides information needed to guide restoration efforts in a mining impacted watershed.

Partners
Sheryl Bryan, Forest Fish Biologist
Brady Dodd, Forest Hydrologist
Margueritte Wilson, Remedial Project Manager, Regional Office
Eric Fleek, North Carolina Department of Environmental Quality
Kiley Coates, Forest Service Southern Research Station / Princeton University


Collecting fish on Big Creek


Sorting aquatic insects

National Forests in North Carolina
Cheoah Ranger District

Project Type
Wildfire effects on streams

Goal
Assess impacts of fire on habitat in and near a trout stream following a fall 2016 wildfire

Objective
Inventory fire damage to large wood and streamside trees in Little Santeetlah Creek in spring 2017

Approach
Forest identifies areas within or bordering the fire perimeter
CATT deploys field team to inventory large wood and assess streamside damage
CATT produces project report

Accomplishments
Completed inventory on 3.7 miles of Little Santeetlah Creek
Project report in progress

Alignment with Forest Service Strategic Plan
Strategic Objective B – Mitigate wildfire risk
The Forest Service works to control fires in a manner that is safe, efficient, and cost effective in order to retain healthy, resilient forests. This project will inform watershed management and fire suppression decisions that will allow streams to remain healthy and resilient in the wake of wildfires.

Strategic Objective G – Advance knowledge
The Forest Service seeks to fill information gaps when information needed to make sound management decisions is lacking. Little is known regarding the impact of wildfire on instream and streamside habitats in the east. This project will provide information needed to adapt large wood management approaches in the face of changing fire regimes.

Partners
Jason Farmer, Zone Fish Biologist
Sheryl Bryan, Forest Fish Biologist


Looking for fire impacts on Little Santeetlah Creek


Charred wood near the stream channel

National Genomics Center for Wildlife and Fish Conservation
Rocky Mountain Research Station

Project Type
Environmental DNA (eDNA)

Goal
Compare traditional backback electrofishing and eDNA approaches for determining trout distributions

Objective
Collect eDNA samples in spring 2017 from a trout stream sampled by backpack electrofishing in fall 2016

Approach
Forest and State identify sampling locations
National Genomics Center provides sampling equipment and field methods
CATT provides field team to collect eDNA samples, sends samples to Genomics Center for analysis
CATT compares eDNA to backpack electrofishing results and produces report

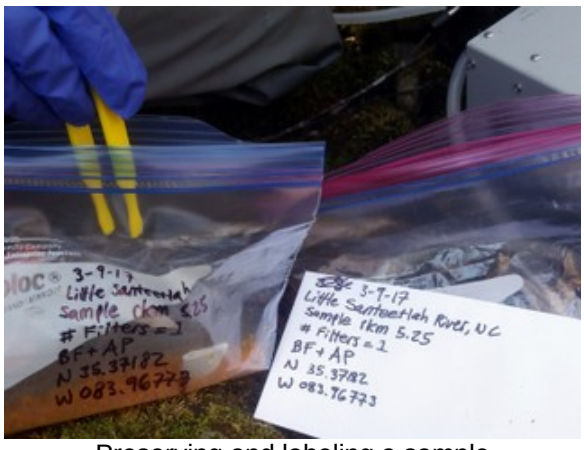
Accomplishments
Collected eDNA samples from 11 sites previously sampled by backpack electrofishing
Received eDNA results from National Genomics Center
Report is in progress

Alignment with Forest Service Strategic Plan
Strategic Objective G – Advance knowledge
The Forest Service applies cutting-edge research, monitoring, and assessment activities and translates results into practical knowledge. This project applies emerging eDNA tools and resources to assess distribution of trout in headwater mountain streams. Results will be used to determine if these new approaches are effective and efficient relative to traditional fish sampling approaches.

Strategic Objective H – Transfer technology and applications
The Forest Service works cooperatively with a variety of partners to develop and apply new tools that fulfill important needs. This project applies an eDNA approach and field methods developed at the National Genomics Center to determine the distribution of native and introduced trout in a watershed.

Partners
Jason Farmer, Zone Fish Biologist
Jake Rash, North Carolina Wildlife Resources Commission
Mike Schwartz, National Genomics Center
Thomas Franklin, National Genomics Center


Collecting an eDNA sample



Preserving and labeling a sample

Shenandoah National Park
National Park Service

Project Type
Brook Trout population monitoring

Goal
Use long-term population monitoring to better inform Brook Trout management

Objective
Complete annual population estimates on 2 long-term study streams in 2017
Monitor annual growth and movement on 1 long-term study stream in 2017
Incorporate results into 24-year dataset

Approach
Southern Research Station establishes long-term monitoring study in 1993
Shenandoah National Park supplies research and sampling permits
CATT provides personnel and organizes volunteers to support annual sampling efforts
Southern Research Station produces presentations, reports, papers based on results

Accomplishments
Completed population estimates on 2 long-term study streams
Completed growth and movement sampling on 1 long-term study stream
Data are incorporated into project database

Alignment with Forest Service Strategic Plan
Strategic Objective G – Advance knowledge
Basic information gathered through long-term monitoring programs enables the Forest Service to provide data, reports, and consultation services to resource managers, landowners, policymakers and other interested parties. This project uses data from a 24 year-long monitoring project to provide context to changes in trout populations affected by stressors such as acid rain, debris flows, and climate change.

Strategic Objective H – Transfer technology and applications
The Forest Service seeks to share the information collected and the knowledge gained during long-term monitoring projects to improve the management of natural resources across all land ownerships. The results of this project have been shared at local, state, and national meetings as well as through peer-reviewed and other publication formats.

Partners
Dave Demarest, Shenandoah National Park
Andy Dolloff, Southern Research Station


Snorkeling to count fish


Brook Trout

USFS Southern Region (R8) Regional Office (RO)

Project Type
Base funding, coordination, and support for the CATT

Goal
Provide science-based support to national forests in the Southern Region to address aquatic-related management challenges

Objective
Support 2 CATT biologists to work on projects throughout R8 in 2017

Approach
Regional Office provides support for 2 full-time CATT biologists
Southern Research Station provides CATT facility and administrative support
National forests, RO, or other partners request CATT services
CATT works with partners to develop and implement custom solutions

Accomplishments
Partnered with 6 national forests on 10 field projects
Partnered with Virginia Tech to hire, train, and deploy 8 field technicians to project locations
Shared project information through reports, webinars and at local, state, and national meetings

Alignment with Forest Service Strategic Plan
Strategic Objective H – Transfer technology and applications
The Forest Service seeks to develop cost-effective methods for transferring scientific information, technologies, and applications. The CATT efficiently develops and applies custom solutions for specific management challenges. Services range from providing technicians for a day of fish sampling, to region-wide, multi-year efforts, including sampling design, personnel management, data analysis, and reporting.

Management Objective C – Attract and retain top employees
The Forest Service needs talented people to manage for abundant clean water and healthy, resilient watersheds, increasingly complex and important goals. Over the past 20 years, CATT has provided opportunities for over 200 young professionals to gain exposure to research and management jobs in the Forest Service. Several CATT alumni now occupy positions in the Forest Service, and with other federal and state agencies, universities, and private employers across the country.

Partners
Leigh McDougal, Regional Fish Program Manager; Kevin Leftwich, Regional Aquatic Ecologist; Robert Trujillo, Director, R8 Biological and Physical Resources; Andy Dolloff, Southern Research Station; Eric Hallerman, Virginia Tech

Planning a stream inventory with NFS personnel

Presenting project results to forest staff

Southern Research Station
Research Work Unit 4353, Blacksburg, VA

Project Type
American Eel growth and movement

Goal
Use long-term monitoring to better inform American Eel conservation and management efforts

Objective
Complete annual eel sample at long-term study site in 2017
Incorporate results into 17-year dataset

Approach
Southern Research Station establishes long-term monitoring study on Tye River in 2000
George Washington and Jefferson National Forest and State supply research and sampling permits
CATT provides personnel and organizes volunteers to support annual sampling efforts
Southern Research Station produces presentation, reports, and papers based on results

Accomplishments
Completed annual eel sampling on 1.2 mile study section of Tye River
Incorporated data into long-term dataset

Alignment with Forest Service Strategic Plan
Strategic Objective G – Advance knowledge
Basic information gathered through long-term monitoring programs enables the Forest Service to provide data, reports, and consultation services to resource managers, landowners, policymakers and other interested parties. This project uses data from a 17 year-long monitoring project to provide basic demographic information on eels occupying headwater mountain streams.

Strategic Objective H – Transfer technology and applications
The Forest Service seeks to share the information collected and the knowledge gained during long-term monitoring projects to improve the management of natural resources across all land ownerships. The results of this project have been shared at a variety of local, state, and national meetings and have also been shared with the U.S. Fish & Wildlife Service to inform federal listing decisions.

Partners
Dawn Kirk, Forest Fish Biologist
Scott Smith, Virginia Department of Game and Inland Fisheries
Andy Dolloff, Southern Research Station


Collecting eels on South Fork Tye River


American Eel

Southern Research Station
Research Work Unit 4353, Blacksburg, VA

Project Type
Movement of wood in streams

Goal
Monitor long-term movement of wood in small trout streams to better inform watershed management

Objective
Locate marked logs in 2 long-term study stream reaches
Incorporate location information into long-term dataset

Approach
Southern Research Station designs and implements log movement study in 1993
Jefferson National Forest provides personnel to place logs into streams in 1993
CATT provides personnel annually to document changes in log location
CATT updates long-term dataset

Accomplishments
Located 150 study logs in 2 long-term study stream reaches
Incorporated data into long-term dataset

Alignment with Forest Service Strategic Plan
Strategic Objective G – Advance knowledge
Basic information gathered through long-term monitoring programs enables the Forest Service to provide data, reports, and consultation services to resource managers, landowners, policymakers and other interested parties. This project uses information on log movements over a period of 24 years to help resource managers better understand tradeoffs between improving stream habitat through wood additions and removing wood from streams to protect road crossings or streamside structures.

Strategic Objective H – Transfer technology and applications
The Forest Service seeks to share the information collected and the knowledge gained during long-term monitoring projects to improve the management of natural resources across all land ownerships. The results of this project have been shared at a variety of local, state, and national meetings.

Partners
Dawn Kirk, Forest Fish Biologist
Andy Dolloff, Southern Research Station


Documenting movement of wood


Searching for a marked piece of wood

Washington Office, R8 Regional Office

Project Type
Freshwater snorkeling education program

Goal
Connect youth to nature by immersing them in streams and rivers

Objective
Expand or introduce snorkeling programs to several national forests in the eastern U.S. in 2017
Study effectiveness of snorkeling program in connecting youth to the outdoors

Approach
Washington Office develops program toolkit and curriculum with partners at NorthBay education
CATT obtains grants from Washington Office and R8 Regional Office to support programs
NorthBay and CATT work with interested national forests to implement programs
Virginia Tech and Clemson University study program effectiveness

Accomplishments
Completed 8 days of snorkel education programs for 235 youth on Talladega National Forest
Completed 8 days of snorkel education programs for 242 youth on Green Mountain National Forest
Completed 1 day of snorkel education programs for 9 youth on Jefferson National Forest
Initiated program effectiveness study with Virginia Tech and Clemson University

Alignment with Forest Service Strategic Plan
Strategic Objective E – Strengthen communities
The Forest Service is dedicated to engaging young people in discussions about natural and cultural resources and encouraging them to help us care for the land. Engaging youth in snorkeling education programs grows future stewards and strengths communities by enabling more people to explore and appreciate the outdoors.

Strategic Objective F – Connect people to the outdoors
The Forest Service engages partners and educators to develop, distribute and use high-quality conservation education programs so all people can understand and appreciate our natural and cultural resources and the need to manage them for present and future generations. The snorkeling program provides an opportunity for individuals to directly connect to rivers and the animals that live in them.

Partners
Kim Winter, WO NatureWatch Program Leader; Nat Gillespie, Assistant National Fish Program Leader; Kelly Balcarczyk, R8 Nature-Based Tourism and Economic Development Specialist; Keith Williams, NorthBay Director; Green Mountain National Forest, National Forests in Alabama, George Washington & Jefferson National Forests, National Forests in Florida


Learning to snorkel in Alabama


Viewing fish in Vermont