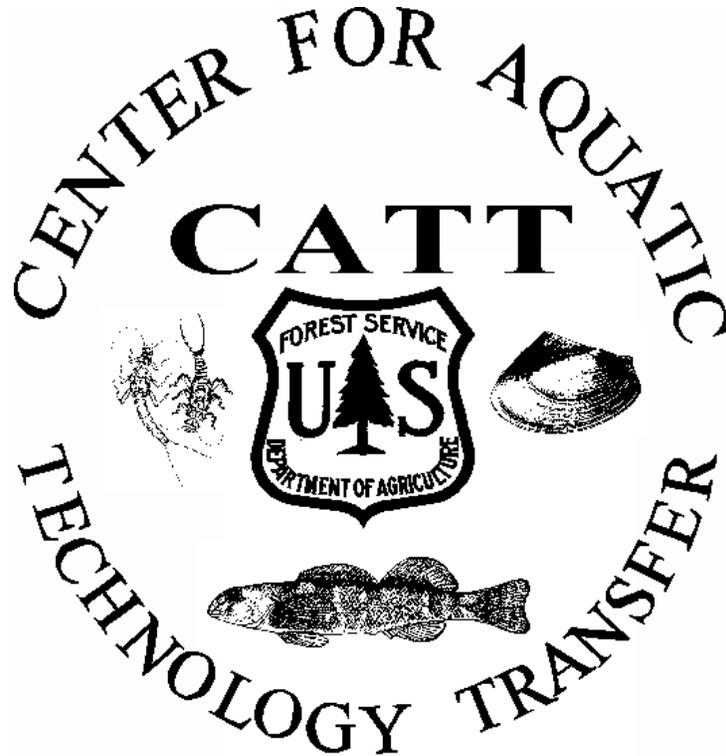


**Summary of Alabama Stream Habitat and Fish Inventories  
on the Bankhead, Conecuh, and Talledega National Forests, 2008**



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## **Introduction**

In February 2007 the National Forests in Alabama (NFA) requested assistance from the USDA Forest Service, Southern Research Station, Center for Aquatic Technology Transfer (CATT) in development of a Forest-level stream monitoring program. Biologists and hydrologists from the CATT, NFA, Daniel Boone National Forest, and Regional Office met following the Southern Region Fish meeting in Asheville, NC in April 2007 to discuss the monitoring framework and sample design. The CATT and NFA produced a manual based on these discussions (Roghair et. al. 2007). CATT field crews then performed inventories at ten stream sites on the NFA in summer 2007 (Roghair et. al. 2007). In 2008, the NFA once again requested assistance with implementation of their stream monitoring program. The CATT deployed 1 biologist and 5 technicians to the Bankhead and Conecuh National Forest and the Oakmulgee, Shoal Creek, and Talledega Ranger Districts on the Talledega National Forest from July 23 to 29, 2008 to quantify stream habitat conditions and provide associated fish assemblage information.

## **Methods**

### **Site Selection**

Sites were selected in accordance with a stratified random sampling design. Personnel from the NFA randomly selected ten 6<sup>th</sup> level Hydrologic Unit Codes (HUC) from a set of all HUCs containing National Forest System (NFS) property. Next, a single National Hydrography Dataset (NHD) stream reach was randomly selected from each of the 10 HUCs (Roghair et. al. 2007). The NHD is a digital spatial dataset of water surface features, such as streams, that uniquely identifies stream segments or “reaches”. The reach identification number changes are based on three rules (USGS 2000): 1) the underlying feature rule breaks reaches between these feature types: stream/river, artificial path, canal/ditch, and pipeline; 2) the confluence-to-confluence rule breaks reaches based on confluences, heads (stream source), and mouths (stream enters large water body); and 3) the branched path rule breaks reaches at areal features (e.g. lake, pond, swamp, marsh) thus avoiding the need to define flow channels within the areal feature. NFA stream reaches had to meet the following criteria: 1) drains an area 13-26 km<sup>2</sup>; 2) was at least partially on NFS managed lands; 3) suitable for sampling (i.e. accessible, perennial, wadable). Habitat attributes were recorded throughout the length of the reach (or that portion managed by NFS); sites for fish sampling were centered in the reach.

## **Habitat Inventory**

A two-person crew performed a customized stream habitat inventory based on the basinwide visual estimation technique (BVET) (Dolloff et al. 1993). Either full length of the NHD reach or that part on NFS lands was inventoried. We measured or estimated the following attributes (Roghair et. al. 2007):

- Type of habitat unit
- Length of habitat unit
- Substrate
- Large wood
- Photographs
- GPS coordinates

In addition, we noted stream features including:

- Waterfalls
- Tributaries
- Side channels
- Braided channels
- Seeps (springs)
- Landslides
- Bridges
- Fords
- Dams
- Culverts

## **Fish Inventory**

A five-person crew using a DC backpack electrofisher collected fish assemblage information. Sample reaches were centered within the NHD reach. If the average wetted width was less than or equal to 3.0 m or greater than or equal to 7.5 m the reach length was 120 m or 300 m, respectively (Roghair et. al. 2007). In all other cases sample reach length was 40 times the average wetted width. Average wetted width was calculated by taking width measurements in representative fast and slow-water habitat units within each reach (in 2007, only fast-water units were measured for average width). We did not move reaches to avoid road or trail crossings. Crews attempted to apply standard effort of approximately 1 sec/m<sup>2</sup> of electrofishing habitat. We recorded the following data (Roghair et. al. 2007):

- Species name
- Counts of adult, age-0, and voucher specimens
- Sample reach length, electrofishing time (sec), and voltage
- GPS coordinates of start and end location

## **Results**

The CATT and Alabama National Forest personnel completed habitat and fish inventories on 10 streams (Table 1). We inventoried habitat on a total of 8.6 km of stream, electrofished a total of 1.8 km of stream, and captured 41 different fish species (Table 2). The data collected by the CATT can be used to describe stream condition on the NFA and serve as a baseline for future comparisons.

### **Data Availability**

Summer 2008 habitat and fish data are ready for migration into the Natural Resource Information System water module (NRIS). We will format the data according to the Regional NRIS Water standards and migrate the data as the new NRIS water module comes online. As data are migrated into NRIS Water the CATT will coordinate development of custom query and reporting tools for the NFA. In the interim, the CATT is available to assist with data analysis and report preparation. John Moran, NFA Fish Biologist, received a copy of all data in electronic format.

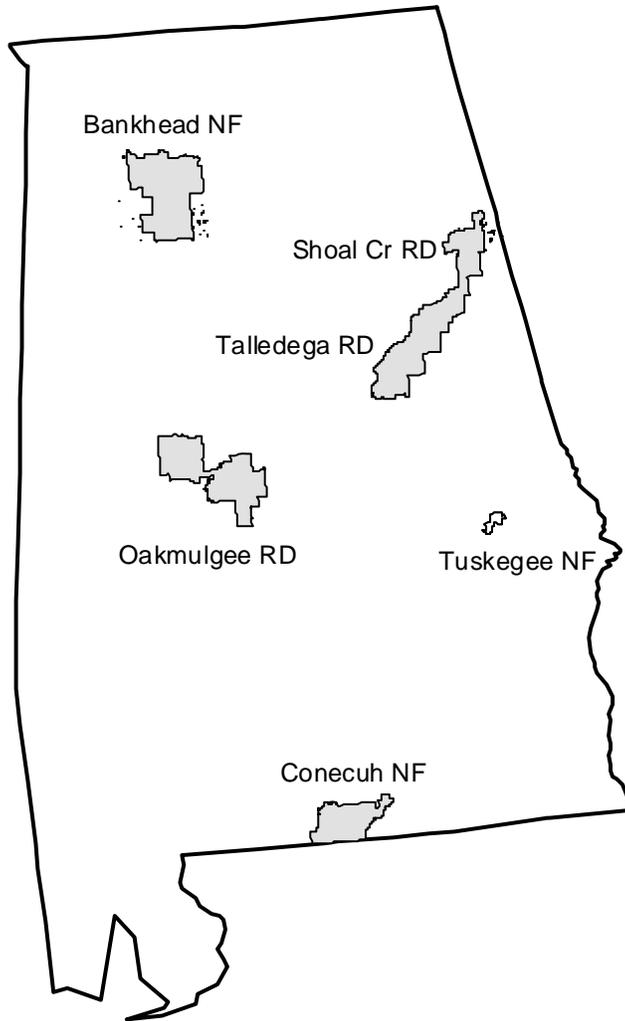


Figure 1. National Forests and Ranger Districts in Alabama. The CATT visited the Bankhead and Conecuh National Forest and the Oakmulgee, Shoal Creek, and Talledega Ranger Districts on the Talledega National Forest (shaded in grey) in summer 2008.

Table 1. Stream distance inventoried for fish and habitat, and the average width of the 10 sample sections, inventoried within NHD reaches on the National Forests in Alabama.

District	Stream	NHD Reach	Avg Width (m)	Efish (m)	BVET (m)
Bankhead	East Fork Beech Creek	03160110000544	5.1	203	782
Bankhead	Rock Creek	03160110000704	6.4	257	883
Conecuh	Boggy Hollow Creek	03140104000431	3.9	157	658
Conecuh	Camp Creek	03140103001446	4.0	161	1128
Oakmulgee	Affonee Creek	03150202000527	3.1	124	170
Oakmulgee	Elliotts Creek	03160113000270	2.5	120	825
Shoal Creek	Little Shoal Creek	03150106002219	3.5	150	537
Talladega	Dry Creek	03150106000669	4.0	159	729
Talladega	Emauhee Creek	03150107000453	7.7	300	1625
Talladega	unnamed trib to Tallaseehatchee Creek	03150107001337	5.2	209	1275
Total				1,841	8,612

Table 2. Fish species captured on the National Forests in Alabama, 2008 (see Table 1 for inventoried stream reaches).

Family	Scientific Name	Common Name	District				
			Bankhead	Conecuh	Oakmulgee	Shoal Creek	Talladega
Aphredoderidae	<i>Aphredoderus sayanus</i>	Pirate perch		X	X		
Catostomidae	<i>Erimyzon oblongus</i>	Creek chubsucker	X		X		
Catostomidae	<i>Erimyzon tenuis</i>	Sharpfin chubsucker		X			
Catostomidae	<i>Hypentelium etowanum</i>	Alabama hog sucker	X			X	X
Catostomidae	<i>Moxostoma poecilurum</i>	Blacktail redhorse	X	X			
Centrarchidae	<i>Lepomis cyanellus</i>	Green sunfish			X		X
Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill				X	X
Centrarchidae	<i>Lepomis marginatus</i>	Dollar sunfish			X		
Centrarchidae	<i>Lepomis megalotis</i>	Longear sunfish	X		X	X	X
Centrarchidae	<i>Lepomis miniatus</i>	Redspotted sunfish		X	X		
Centrarchidae	<i>Micropterus coosae</i>	Redeye bass				X	X
Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass				X	
Cottidae	<i>Cottus carolinae</i>	Banded sculpin				X	
Cyprinidae	<i>Campostoma oligolepis</i>	Largescale stoneroller	X			X	X
Cyprinidae	<i>Cyprinella callistia</i>	Alabama shiner				X	X
Cyprinidae	<i>Cyprinella trichroistia</i>	Tricolor shiner				X	X
Cyprinidae	<i>Cyprinella venusta</i>	Blacktail shiner		X			X
Cyprinidae	<i>Luxilus chrysocephalus</i>	Striped shiner	X		X		
Cyprinidae	<i>Lythrurus atrapiculus</i>	Blacktip shiner		X			
Cyprinidae	<i>Lythrurus bellus</i>	Pretty shiner	X		X		
Cyprinidae	<i>Notropis baileyi</i>	Rough shiner			X		
Cyprinidae	<i>Notropis chrosomus</i>	Rainbow shiner				X	
Cyprinidae	<i>Notropis stilbius</i>	Silverstripe shiner	X				X
Cyprinidae	<i>Notropis texanus</i>	Weed shiner			X		
Cyprinidae	<i>Pteronotropis hypselopterus</i>	Sailfin shiner		X			
Cyprinidae	<i>Pteronotropis signipinnis</i>	Flagfin shiner		X			
Cyprinidae	<i>Semotilus atromaculatus</i>	Creek chub	X		X	X	X
Esocidae	<i>Esox americanus</i>	Redfin pickerel		X	X		
Esocidae	<i>Esox niger</i>	Chain pickerel			X		
Fundulidae	<i>Fundulus olivaceus</i>	Blackspotted topminnow	X	X	X		
Fundulidae	<i>Fundulus stellifer</i>	Southern studfish				X	
Ictaluridae	<i>Noturus leptacanthus</i>	Speckled madtom		X	X		
Percidae	<i>Etheostoma colorosum</i>	Coastal darter		X	X		
Percidae	<i>Etheostoma parvipinne</i>	Goldstripe darter			X		
Percidae	<i>Etheostoma stigmaeum</i>	Speckled darter				X	X
Percidae	<i>Etheostoma swaini</i>	Gulf darter			X		
Percidae	<i>Etheostoma whipplei</i>	Redfin darter	X				
Percidae	<i>Percina kathae</i>	Mobile logperch	X				X
Percidae	<i>Percina nigrofasciata</i>	Blackbanded darter			X	X	
Petromyzontidae	<i>Lampetra aepyptera</i>	Least brook lamprey			X		
Poeciliidae	<i>Gambusia affinis</i>	Western mosquitofish	X				

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