Poteau River Watershed Stream Fish Community Monitoring Survey

Oklahoma Department of Wildlife Conservation, Stream Program

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Executive Summary

In 2016, stream fish community monitoring protocols were implemented to meet new Stream Program goals and objectives. Stream fish surveys were designed to generate data to update information on contemporary species distributions in the state of Oklahoma and evaluate and draw inferences on potential changes in those distributions over time. The chosen study design works within an occupancy modeling framework that makes it possible to tease apart the complex relationship between species' occupancy and detection probabilities. Sites were sampled three times within the summer season to generate replicate survey data. Stream fish community surveys took place from June to August at a total of thirty-eight sites in thirty streams within the Poteau River drainage. Surveys yielded a total of seventy-two species, which included one invasive, five species of greatest conservation need, and fourteen species of recreational importance. This report presents a short description and summary of sampling sites and species collected throughout the Poteau River watershed in 2025.

Introduction

The Oklahoma Department of Wildlife Conservation (ODWC) Streams Program was founded in 1998 with the initial goals of improving water quality and fish habitat in lotic waters of the state. The main priority of the original program was site-scale stream habitat restoration projects in eastern Oklahoma. Consequently, historical ODWC river and stream fish surveys are lacking, and are largely represented by opportunistic point samples, periodic targeted sampling of state species of greatest conservation need (SGCN) and sport fishes, or surveys for federally listed or candidate species in conjunction with the U.S. Fish and Wildlife Service. This is a mismatch between effort and resources as Oklahoma is home to approximately 175 species of freshwater fishes. Standardized, routine monitoring of stream fish communities is necessary to identify temporal shifts in community structure. Therefore, in 2016, the Stream Program shifted focus towards ecologically based fisheries management and large-scale, long-term monitoring of stream fish communities. The goal of the stream fish community monitoring effort is to document and conserve Oklahoma's native fish biodiversity for future generations. Objectives for stream fish community monitoring include (1) updating current understanding of species distributions within Oklahoma by documenting contemporary stream fish communities on a statewide scale (2) utilize contemporary data collected by the stream program, historical data (when available), and future survey efforts to identify potential shifts in stream fish community structure (3) identify mechanisms contributing to changes in species' distributions (4) evaluate current Oklahoma fish SGCN listings with empirical data and inform future decisions related to conservation priorities within Oklahoma and (5) identify and promote public river and stream access and fishing opportunities for citizens of Oklahoma.

The state of Oklahoma has approximately 167,600 miles of rivers and stream winding through its two main river basins. Running waters in the northern part of the state drain into the Arkansas River while rivers and streams in the southern portion of the state drain into the Red River. Annual sampling of stream fish communities at this basin scale is impractical for numerous reasons. Thus, the Stream Program divided the two main river basins into 17 distinct watersheds for sampling purposes. Here, a watershed is defined as the land area encompassing a collective group of streams that drain into a common, major lotic system (e.g., upper Red River, Grand River, Kiamichi River, Illinois River, etc.). Annually, one to three watersheds will be

sampled by Stream Program staff with the current watershed monitoring schedule set to take 12-years to complete one full statewide rotation.

Large-scale stream fish community monitoring poses numerous unique challenges. Logistical constraints include the time and manpower required to survey many sites spread over a substantial geographic area. Fish community surveys also necessitate the use of numerous fisheries survey gears to adequately sample the entire fish community. Sampling fewer sites in each watershed would reduce the time needed to complete a statewide rotation. However, prioritizing maximum feasible effort, in terms of additional sampling sites, not only improves geographic coverage within a watershed, but also leads to increased sample size and greater statistical power for analyses. Additionally, lotic fish communities in Oklahoma have been shown to be largely resistant to changes in community structure over short time frames. The "loose equilibrium concept" described by Matthews et al. (1988) is based on long-term studies of stream fish communities in Oklahoma, and states that interannual species abundances are highly variable; however, stream fish communities are "loosely stable" (i.e., communities return to an average condition over time (Matthews et al. 2013; Matthews and Marsh-Matthews 2016). The data collected by this effort will be used to analyze long-term trends in stream fish community structure, species' distributions, and assess potential deviations from a loose equilibrium. Therefore, a 12-year rotation is suitable for addressing the Stream Program's goals. Furthermore, a 12-year rotation aligns closely with past recommendations for decadal monitoring of stream fish communities in Oklahoma (Matthews et al. 2016).

Efforts to understand the current status of freshwater fish communities are especially critical as increases in imperilment for many species throughout North America have occurred over the last few decades (Jelks et al. 2008). In particular, fish communities in the Midwest and Interior Plains portion of the United States have drastically changed as a result of anthropogenic modifications to landscapes such as: conversion of prairie for agricultural uses, increased water withdrawals, and fragmentation of river systems as a result of reservoir construction (Anderson et al. 1995; Dodds et al. 2004; Hoagstrom et al. 2007; Gido et al. 2010). These modifications are usually associated with increases in nonnative and generalist species coupled with decreases in specialist species and ultimately homogenization of the fish community as a whole (Rahel 2002; Smith et al. 2014; Matthews & Marsh-Matthews 2015). All the aforementioned studies (and others with analogous objectives) were made possible because of quality baseline datasets with which robust statistical comparisons could be made. Therefore, sound stream fish monitoring protocols are needed to develop quality contemporary datasets essential for the maintenance and monitoring of freshwater fish biodiversity (Magurran et al. 2010).

Study Area

The Poteau River drainage is in central Oklahoma on the Arkansas border. The Poteau River enters Oklahoma near Forrester, travels west to Wister, and then Northeast to Arkoma, where the Arkansas River confluence is located. Tributaries such as the Fourche Maline and Brazil Creek arise near Wilburton, giving this drainage a triangular shape as seen in Figure 2. The Poteau River flows approximately 150 kilometers within Oklahoma and is the only river in the state that runs from South to North. Lake Wister is the only major impoundment on the Poteau River, with its dam located near the town of Wister. Its main sources of water inflow are the Poteau River and Fourche Maline, which is French for "bad creek".

The Poteau River and its tributaries occupy two major ecoregions, the Ouachita Mountains and the Arkansas Valley. Tributaries south of the Poteau River and the Fourche

Maline are in the Ouachita Mountain ecoregion, more specifically the Fourche Mountains. Here, the creeks are predominantly rocky, high in dissolved oxygen, and low in turbidity and total dissolved solids. The fish communities in the transitional zone of these two ecoregions are an uncommon mixture of lowland and highland species. For example, in Long Creek, Fourche Maline, and the Black Fork, there were lowland species such as Bowfin, Harlequin Darters, and Slough Darters occupying the same sites as highland species like Greenside, Banded, and Fantail Darters.

In the Arkansas Valley ecoregion, there are two important sub-ecoregions. The Arkansas Valley Plains and the Scattered High Ridges and Mountains. Within the plains, large woody debris was abundant, and substrate was predominantly silt, sand, and gravel. Common species in these areas were Dusky, Harlequin, and Cypress Darters. Within the ridges and mountain uplifts, substrate consisted mainly of bedrock, cobble, and gravel, and streams had a steeper gradient. Abundant species here were Slender madtoms, Stonerollers, and Redfin Darters.

The Poteau River is a sluggish river dominated by large woody debris and fine substrate. Above Lake Wister, this river has many deep pools and riffles that are full of gravel, cobble, and emergent water willow. By the time it reaches the city of Poteau, however, the Poteau River becomes a deep, slow river with steep banks and little variety in substrate.

Methods

Selection of sample locations

Potential access points were first assessed by satellite imagery. All potential access points on lotic waters within the watershed were marked and given a coarse classification based on ecoregion, stream size (small, medium, or large) and stream type (low gradient, high gradient, or braided). Mean wetted widths of small, medium, and large streams were classified as < 7.5 m, > 7.5 m and < 30 m, and > 30 m, respectively. Potential sites were then visited to obtain landowner permission, when necessary, and to assess sampling feasibility and gear types required at each site based on water depth, water conductivity, and habitat complexity. To ensure each potential unique stream fish assemblage within a watershed is sampled, final sites were selected in a stratified random fashion so that a representative number of samples were collected from each ecoregion and stream type.

Study design

Stream fish community data was collected within an occupancy modeling framework, which permits the estimation of species' occupancy and detection probabilities by utilizing replicate surveys that generate detection histories (i.e., binary data; 0 for non-detections and 1 for detections) at each site for each species. To guide occupancy modeling field efforts, MacKenzie and Royle (2005) provide recommendations and formulas to determine the optimum number of replicate surveys and the target number of sampling sites. Based on an "average" species with theoretical occupancy and detection probabilities of 50%, with a desired standard error level of 10%, a guideline of ~38 sites per watershed with three replicate surveys was established. Theoretically, this sampling design ensures that the "average" species has an 87.5% chance of being detected if present at a site. However, flexibility within an occupancy modeling framework permits uneven replicate survey effort across sites. Ultimately, the total number of survey sites per watershed will vary based on access, geographic area, and length of perennial streams, but a minimum of 38 sites are sampled when feasible.

Fisheries surveys

For occupancy modeling, MacKenzie et al. (2006) recommend site lengths be large enough to provide reasonable probability that a species is present yet remain small enough to survey with reasonable effort. Thus, sites for community monitoring are defined as follows: non-wadeable sites are standardized to 750 m and wadeable sites are standardized to 20x the mean wetted channel width (MWCW) with a maximum site length of 500 m. A minimum site length of 150 m is sampled for streams with MWCW < 7.5 m. Fish assemblages were sampled using multiple gears that targeted all potential members of the fish community at each site. Site-specific gear use was dictated by physical site variables (Figure 1) and the amount of effort differed by gear type (Table 1). Most fishes were identified in the field and released. Voucher specimens, as well as unidentified specimens, were preserved in 10% formalin and returned to the laboratory for identification using keys developed by Pflieger (1997) and Miller and Robison (2004).

A suite of abiotic data was collected at each site on each visit. Water temperature and conductivity were measured using a portable water-quality meter (Gain Express, Hong Kong, China, model 99720) once on each site visit. Additional site-level data recorded on each trip included: MWCW (m), bankfull width (m), sechii depth (cm), and number of large woody debris complexes >0.5 m^2 within the sampled area. Furthermore, point estimates of velocity, depth, and dominant substrate type were made at equally spaced intervals across three transects at each site. Points within each transect were spaced 3 m apart, unless the MWCW was < 15 m, in which case a minimum of five equally spaced points were used. Velocity was measured using a portable flow meter (Hach, Loveland, CO, USA, model FH950). Depth was recorded using a wading rod. In the event equipment was damaged or out of commission, habitat variables were taken from the nearest site on the same waterbody. The substrate at each point was classified as clay, silt, sand, gravel, cobble, boulder, or bedrock according to characteristics listed in Barbour et al. (1999). The point measurements of substrate type were summed to calculate proportions of the various substrate types at each site. Discharge was recorded using U.S. Geological Survey (USGS) stream gauge data when available. If stream gauge data was not available, discharge calculations were made at each transect using the modified "Midsection Method" (Gore 2007).

Site descriptions

Each site number is listed along with waterbody name, location, gear deployed, and abiotic data collected at each site. Habitat measures are presented as an average (range in parentheses) of replicate surveys at that site. For the location of each site, see figure 2.

Site 478 **Fourche Maline**, 35.0087, -95.3276, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 22.3 °C (21.5-23.7), **secchi depth** 83.3 cm (70-105), **conductivity** 66 µS/cm (64-68), **wetted width** 7.1 m (3.7-12.4), **bankfull width** 8.0 m (6-12), **depth** 29 cm (0-120), **discharge** 1.26 cfs (0.9-1.9), **substrate** 47% gravel, 29% boulder, 18% cobble, and 7% sand.

Site 479 **Unnamed Creek**, 34.8970, -95.3180, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 24.3 °C (23.3-25.1), **secchi depth** 76.7 cm (55-110), **conductivity** 81.9 µS/cm (68.2-93.1), **wetted width** 6.6 m (5.2-8.8), **bankfull width** 8.4 m (6.3-9.3), **depth** 28 cm (0-180), **discharge** 8.9 cfs (6-12.1), **substrate** 31% gravel, 27% cobble, 18% clay, 16% bedrock, 7% boulder, and 2% sand.

Site 480 **Red Oak Creek**, 34.9464, -95.0808, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 25.3 °C (24-27.3), **secchi depth** 40 cm (35-50), **conductivity** 206 µS/cm (11-554), **wetted width** 4.9 m (2.5-13.4), **bankfull width** 6.7 m (4-14), **depth** 24 cm (1-82), **discharge** 1.03 cfs (0.6-1.6), **substrate** 53% gravel, 16% boulder, 13% cobble, 9% clay, 4% silt, and 4% sand.

Site 481 **Turkey Creek**, 34.9393, -94.9817, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 23.9 °C (23.1-25.1), **secchi depth** 75 cm (65-80), **conductivity** 95.5 µS/cm (88-101), **wetted width** 5.6 m (3.5-8), **bankfull width** 6.8 m (4.6-9), **depth** 20 cm (2-82), **discharge** 4.9 cfs (1.5-9.3), **substrate** 33% gravel, 20% sand, 18% cobble, 9% clay, 7% silt, 4% organic matter, 4% woody debris, and 2% boulder.

Site 482 **Oil Branch**, 34.8637, -94.5788, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 25.2 °C (24.5-26.3), **secchi depth** 73.3 cm (65-85), **conductivity** 828 µS/cm (440-1049), **wetted width** 6.4 m (5-9), **bankfull width** 7.1 m (5.2-9), **depth** 21 cm (0-91), **discharge** 5.56 cfs (4.4-6.8), **substrate** 44% gravel, 29% cobble, 11% boulder, 9% bedrock, 4% trash, and 2% silt.

Site 483 **Conser Creek**, 34.8450, -94.6925, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 22.8 °C (20.5-26), **secchi depth** 87 cm (75-95), **conductivity** 49 µS/cm (43-58), **wetted width** 12.7 m (7-18), **bankfull width** 14.5 m (8-19), **depth** 26 cm (0-135), **discharge** 11.3 cfs (4.7-15), **substrate** 38% gravel, 27% cobble, 27% bedrock, 4% sand, and 4% boulder.

Site 484 **Shawnee Creek**, 34.7601, -94.6214, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 21.9 °C (19.9-24.2), **secchi depth** 76.7 cm (75-80), **conductivity** 61 µS/cm (56-71), **wetted width** 7.2 m (5-10), **bankfull width** 7.8 m (5.2-11), **depth** 27 cm (0-150), **discharge** 14.8 cfs (8.3-22.3), **substrate** 38% gravel, 29% boulder, 22% cobble, 7% sand, 2% clay, and 2% silt.

Site 485 **Rock Creek**, 35.1183, -94.6534, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 23.8 °C (22.7-24.4), **secchi depth** 13.7 cm (13-15), **conductivity** 69 µS/cm (66-73), **wetted width** 6.7 m (4.2-9.5), **bankfull width** 8.9 m (6-13.2), **depth** 21 cm (1-85), **discharge** 10.1 cfs (5.7-16.4), **substrate** 44% cobble, 36% gravel, 9% clay, 4% boulder, 4% sand, and 2% bedrock.

Site 486 **McMurtrey Creek**, 35.0347, -94.6298, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 23.3 °C (22.8-24.1), **secchi depth** 90 cm (80-110), **conductivity** 166 µS/cm (161-171), **wetted width** 7.7 m (3.8-10.5), **bankfull width** 8.3 m (4.1-12), **depth** 23 cm (1-94), **discharge** 4.8 cfs (3.1-5.8), **substrate** 44% gravel, 18% bedrock, 16% sand, 16% cobble, and 7% boulder.

Site 487 **Town Branch**, 35.0635, -94.629, backpack electrofisher/seine, **surface water temp** 24.6 °C (23.4-25.7), **secchi depth** 83 cm (75-90), **conductivity** 187 µS/cm (174-196), **wetted width** 4.3 m (3.7-5), **bankfull width** 5.6 m (4-8.3), **depth** 18 cm (0-117), **discharge** 1.15 cfs (0.65-1.4), **substrate** 31% cobble, 27% gravel, 20% bedrock, 18% boulder, 2% clay, and 2% sand.

Site 488 **Double Branch Creek**, 35.0147, -94.5640, backpack electrofisher/seine, **surface water temp** 25.5 °C (23.2-29.4), **secchi depth** 13.5 cm (3.5-24), **conductivity** 126 µS/cm (114-139), **wetted width** 6.8 m (5-8.1), **bankfull width** 8.4 m (7.6-9.2), **depth** 27 cm (4-117), **discharge** 2.16 cfs (1.04-4.04), **substrate** 38% gravel, 33% bedrock, 20% clay, silt 7%, and 2% cobble.

Site 504 **Poteau River**, 34.8703, -94.7014, boat electrofisher/seine/buffalo net/hoop net/mini-fyke net, **surface water temp** 27.2 °C (25.9-28.7), **secchi depth** 35 cm (30-40), **conductivity** 63 µS/cm (47-75), **wetted width** 68.1 m (54-81), **bankfull width** 75.7 m (62-91), **depth** 327 cm (45-616), **discharge** 11.8 cfs (7.5-15), **substrate** 94% sand, 4% boulder, and 2% cobble.

Site 505 **Long Creek**, 34.8984, -94.9945, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 32.7 °C (32.6-32.8), **secchi depth** 83 cm (70-95), **conductivity** 79 µS/cm (77-81), **wetted width** 12.8 m (5.8-18), **bankfull width** 17.1 m (8-28), **depth** 48 cm (5-200), **discharge** 2 cfs (1.9-2.2), **substrate** 40% cobble, 20% gravel, 16% boulder, 9% sand, 9% bedrock, 4% silt, and 2% woody debris.

Site 506 **Big Creek**, 34.706, -94.5056, backpack electrofisher/seine/mini-fyke net, **surface water temp** 29.2 °C, **secchi depth** 120 cm, **conductivity** 31 µS/cm, **wetted width** 7.2 m (4.5-11.2), **bankfull width** 13.2 m (11-16), **depth** 21 cm (0-75), **discharge** 0.9 cfs, **substrate** 49% cobble, 31% boulder, 9% gravel, 4% silt, 4% sand, and 2% organic matter.

Site 507 **Black Fork**, 34.7606, -94.4669, backpack electrofisher/seine/mini-fyke net, **surface water temp** 30.9 °C (30.1-31.7), **secchi depth** 55 cm (50-60), **conductivity** 40.5 µS/cm (40-41), **wetted width** 10.4 m (4.5-14.2), **bankfull width** 16.4 m (12-20.7), **depth** 19 cm (2-70), **discharge** 1 cfs (0.85-1.13), **substrate** 71% bedrock, 20% cobble, 7% gravel, and 2% sand.

Site 508 **Hontubby Creek**, 34.8534, -94.5662, backpack electrofisher/seine/mini-fyke net, **surface water temp** 26.8 °C (25-28.9), **secchi depth** 88 cm (30-155), **conductivity** 110 µS/cm (97-130), **wetted width** 6.2 m (5-8), **bankfull width** 7 m (5-8.6), **depth** 20 cm (2-75), **discharge** 0.62 cfs (0.47-0.85), **substrate** 49% gravel, 33% cobble, 9% bedrock, 7% sand, and 2% silt.

Site 509 **Cedar Creek**, 34.7726, -94.6944, backpack electrofisher/seine, **surface water temp** 27.1 °C (27-27.2), **secchi depth** 40 cm (35-50), **conductivity** 45 µS/cm (44-45), **wetted width** 6.8 m (4-11), **bankfull width** 8.1 m (6-12.2), **depth** 22 cm (1-115), **discharge** 1.77 cfs (1.38-1.96), **substrate** 36% gravel, 36% cobble, 13% sand, 11% boulder, and 4% organic matter.

Site 510 **Coal Creek**, 35.1855, -94.6739, backpack electrofisher/seine/mini-fyke net, **surface water temp** 28.4 °C (28-29), **secchi depth** 26.7 cm (20-30), **conductivity** 76.8 µS/cm (70-84), **wetted width** 5.3 m (2.5-7), **bankfull width** 6.4 m (5.5-7.5), **depth** 19 cm (5-61), **discharge** 2.2 cfs (0.65-3.9), **substrate** 51% gravel, 27% cobble, 9% clay, 9% boulder, and 4% sand.

Site 511 **Coal Creek**, 34.9389, -94.8762, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 29.6 °C (28-31.1), **secchi depth** 27 cm (20-37), **conductivity** 124 µS/cm (123-126), **wetted width** 8.8 m (4.3-14), **bankfull width** 10.4 m (6-16), **depth** 38 cm (2-105), **discharge** 5.57 cfs (3.1-9.2), **substrate** 30% gravel, 24% clay, 20% sand, 10% organic matter, 7% cobble, 4% silt, and 4% bedrock.

Site 512 **Cedar Creek**, 34.8648, -94.9091, backpack electrofisher/seine/mini-fyke net, **surface water temp** 28.1 °C (28-28.1), **secchi depth** 52 cm (45-60), **conductivity** 65 µS/cm (64-66), **wetted width** 7.1 m (2.8-10.3), **bankfull width** 8.3 m (3.5-10.4), **depth** 24 cm (2-85), **discharge** 0.23 cfs (0.22-0.24), **substrate** 49% cobble, 29% gravel, 9% bedrock, 7% boulder, 4% sand, and 2% silt.

Site 513 **Buck Creek**, 35.1622, -94.7112, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 27.7 °C (27.6-27.8), **secchi depth** 58 cm (38-80), **conductivity** 425 µS/cm (378-472), **wetted width** 6.7 m (4.2-8.3), **bankfull width** 8.3 m (4.6-12), **depth** 32 cm (5-93), **discharge** 5.35 cfs (4.2-6.5), **substrate** 49% gravel, 20% sand, 13% clay, 9% bedrock, 4% cobble, and 4% silt.

Site 514 **Mack Watson Creek**, 35.1054, -94.7386, backpack electrofisher/seine, **surface water temp** 30.8 °C (28.8-32.7), **secchi depth** 147 cm (145-150), **conductivity** 1132 µS/cm (1096-1168), **wetted width** 9.3 m (4-15.6), **bankfull width** 16.2 m (13-20), **depth** 12 cm (0-42), **discharge** 1.33 cfs (0.7-1.97), **substrate** 76% bedrock, 13% gravel, and 11% cobble.

Site 515 **Owl Creek**, 35.1416, -94.954, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 30.0 °C (29-30.9), **secchi depth** 58 cm (50-65), **conductivity** 89 µS/cm (88-89), **wetted width** 6.6 m (3.2-10), **bankfull width** 8.6 m (5-11), **depth** 27 cm (1-110), **discharge** 0.63 cfs (0.5-0.87), **substrate** 38% gravel, 36% cobble, 13% sand, 4% clay, 2% silt, 2% boulder, 2% bedrock, and 2% organic matter.

Site 516 **Brazil Creek**, 34.9781, -95.0538, backpack electrofisher/barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 29.9 °C (29.6-30), **secchi depth** 60 cm (55-65), **conductivity** 191 µS/cm (186-196), **wetted width** 10.4 m (5-16), **bankfull width** 12.4 m (10-16), **depth** 53 cm (3-150), **discharge** 1.71 cfs (1-2.9), **substrate** 33% bedrock, 29% clay, 13% cobble, 13% sand, 7% gravel, 2% boulder, and 2% silt.

Site 517 **Fourche Maline**, 34.912, -95.156, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 29.2 °C (28.6-30), **secchi depth** 53 cm (50-60), **conductivity** 192 µS/cm (189-196), **wetted width** 12.9 m (7-15), **bankfull width** 15.2 m (7.5-17), **depth** 60 cm (0-200), **discharge** 6.0 cfs (5.2-7.5), **substrate** 24% silt, 18% woody debris, 16% gravel, 11% cobble, 11% clay, 9% organic matter, 7% boulder, and 4% sand.

Site 518 **Little Fourche Maline**, 34.9340, -95.2055, backpack electrofisher/seine, **surface water temp** 28.5 °C (25.6-30.6), **secchi depth** 42 cm (25-65), **conductivity** 144 µS/cm (138-155), **wetted width** 9.6 m (3-19), **bankfull width** 13.7 m (5-21), **depth** 10.6 cm (1-70), **discharge** 0.27 cfs (0.2-0.34), **substrate** 38% cobble, 24% gravel, 13% boulder, 9% organic matter, 9% silt, 4% sand, and 2% bedrock.

Site 519 **Fourche Maline**, 34.9418, -95.3416, backpack electrofisher/seine/mini-fyke net, **surface water temp** 31.4 °C (28-33.2), **secchi depth** 84 cm (42-110), **conductivity** 88 µS/cm (85-90), **wetted width** 6.7 m (2.8-7), **bankfull width** 10 m (6.7-14), **depth** 9 cm (0-40), **discharge** 0.7 cfs (0.4-1.1), **substrate** 60% sand, 24% gravel, 7% silt, 4% bedrock, 2% boulder, and 2% cobble.

Site 520 **Fourche Maline**, 34.9289, -94.9811, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 31.2 °C (31.1-31.3), **secchi depth** 43 cm (40-45), **conductivity** 191 µS/cm (190-192), **wetted width** 14.8 m (12-20), **bankfull width** 21.6 m (19-25), **depth** 40 cm (0-185), **discharge** 4.87 cfs (4.7-5.1), **substrate** 27% silt, 22% clay, 20% woody debris, 20% gravel, 9% sand, and 2% cobble.

Site 521 **Brazil Creek**, 35.0925, -94.8829, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 32.2 °C (30.9-34.6), **secchi depth** 62 cm (60-65), **conductivity** 182 µS/cm (178-185), **wetted width** 10.5 m (4.2-18), **bankfull width** 19.4 m (16-24.6), **depth** 35 cm (1-150), **discharge** 2.2 cfs (1.39-3.4), **substrate** 33% gravel, 29% cobble, 13% silt, 10% sand, 9% boulder, 2% organic matter, 2% woody debris, and 2% clay.

Site 522 **James Fork**, 35.1626, -94.5032, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 32.4 °C (31-33.3), **secchi depth** 39 cm (35-42), **conductivity** 273 µS/cm (270-274), **wetted width** 11.3 m (5-18), **bankfull width** 16.5 m (11.6-26.7), **depth** 43.4 cm (0-200), **discharge** 5.8 cfs (4.84-7), **substrate** 33% gravel, 16% cobble, 13% silt, 11% sand, 7% woody debris, 7% organic matter, 7% bedrock, 2% concrete, 2% boulder, and 2% clay.

Site 523 **Sugarloaf Creek**, 34.9977, -94.5031, backpack electrofisher/seine/mini-fyke net, **surface water temp** 32.4 °C (30.5-34.1), **secchi depth** 103 cm (90-110), **conductivity** 105 µS/cm (105), **wetted width** 12 m (1.8-20.3), **bankfull width** 13.8 m (5-22), **depth** 38 cm (2-105), **discharge** 0.24 cfs (0.17-0.36), **substrate** 33% bedrock, 32% gravel, 29% cobble, 4% sand, and 2% silt.

Site 525 **Black Fork**, 34.8240, -94.6431, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 29.0 °C (28.8-29.1), **secchi depth** 80 cm (65-90), **conductivity** 50 µS/cm (49-51), **wetted width** 13.4 m (6.6-19.4), **bankfull width** 22.5 m (15-29.3), **depth** 28.3 cm (2-100), **discharge** 3.94 cfs (2.19-4.81), **substrate** 69% cobble, 22% gravel, 4% boulder, 2% sand, and 2% woody debris.

Site 526 **Morris Creek**, 34.9598, -94.6279, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 30.3 °C (27.7-32.2), **secchi depth** 33 cm (15-50), **conductivity** 813 µS/cm (787-843), **wetted width** 11.3 m (5.5-19.5), **bankfull width** 15.6 m (9.1-21), **depth** 34 cm (2-180), **discharge** 2.65 cfs (2.36-2.91), **substrate** 42% gravel, 16% bedrock, 11% sand, 11% silt, 10% cobble, 4% clay, 4% boulder, and 2% organic matter.

Site 527 **Holson Creek**, 34.874, -94.8559, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 29.2 °C (28.7-30.1), **secchi depth** 67 cm (55-80), **conductivity** 48.7 µS/cm (48-50), **wetted width** 15.1 m (7.2-23.2), **bankfull width** 23.7 m (17.5-31.6), **depth** 43 cm (5-230), **discharge** 3.05 cfs (2.4-3.4), **substrate** 33% bedrock, 24% boulder, 22% cobble, 16% gravel, 2% root mass, and 2% silt.

Site 528 **Holson Creek**, 34.8239, -94.8769, backpack electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 31.4 °C (29.7-33.2), **secchi depth** 95 cm, **conductivity** 53 µS/cm (46-57), **wetted width** 12 m (5.6-19.2), **bankfull width** 17.5 m (11.5-27), **depth** 16 cm (0-98), **discharge** 2.28 cfs (2.06-2.61), **substrate** 49% gravel, 45% cobble, 4% boulder, and 2% organic matter.

Site 530 **Poteau River**, 34.9382, -94.715, boat electrofisher/seine/buffalo net/hoop net/mini-fyke net, **surface water temp** 29.2 °C (28.1-30.4), **secchi depth** 11 cm (7-15), **conductivity** 81 µS/cm (80-82), **wetted width** 47.8 m (22-117), **bankfull width** 81 m (50-174), **depth** 113 cm (0-300), **discharge** 281.7 cfs (280-285), **substrate** 36% cobble, 27% gravel, 22% boulder, 13% silt, and 2% sand.

Site 531 **Poteau River**, 35.3474, -94.4537, boat electrofisher/seine/buffalo net/hoop net/mini-fyke net, **surface water temp** 31.6 °C (30.2-33), **secchi depth** 15 cm (10-20), **conductivity** 98 µS/cm (90-105), **wetted width** 65 m (60-73), **bankfull width** 68.2 m (62-76), **depth** 436 cm (91-640), **discharge** 291.7 cfs (290-295), **substrate** 99% silt and 1% cobble.

Site 532 **Holi-Tuska Creek**, 35.2167, -94.636, barge electrofisher/seine/hoop net/mini-fyke net, **surface water temp** 27.6 °C (25.8-29.3), **secchi depth** 90 cm (65-115), **conductivity** 167 µS/cm (162-172), **wetted width** 9.2 m (2.3-13), **bankfull width** 14 m (10-18), **depth** 22 cm (0-60), **discharge** 0 cfs, **substrate** 54% bedrock, 18% gravel, 11% sand, 11% silt, 4% cobble, and 2% clay.

Results

In 2025, seventy-two species representing sixteen families were collected from three sites on the Poteau River and thirty-five sites in twenty-nine of its tributaries. This report does not present detailed occupancy and detection probabilities but instead serves to summarize species assemblages at each site in the Poteau River watershed. Therefore, site lists represent the cumulative species pool generated from replicate surveys. Species collected in the watershed are reported below and linked to each site via the site number. Within the mainstem Poteau River, forty-five species were observed with one invasive species (Common Carp), two species of greatest conservation need (Pallid Shiner and Redfin Darter), and twelve species of recreational importance collected. In the twenty-nine tributaries sampled there were sixty-two species collected consisting of one invasive species (Common Carp), three species of conservation need (Harlequin Darter, Blackside Darter, and Redfin Darter), and eleven species of recreational importance. The highest species diversity observed in the entire study area was at site 530 located on the Poteau River below Lake Wister dam with forty-one species collected.

Species collected

C = Species of greatest conservation need, **R** = Species of recreational importance, and **I** =Invasive species.

AMIIDAE – bowfins

(R) Bowfin *Amia calva* (Linnaeus, 1758) – Sites 505, 511, 526, & 532.

ATHERINOPSIDAE – new world silversides

Inland Silverside *Menidia beryllina* (Cope, 1867) – Sites 510 & 530.

Brook Silverside *Labidesthes sicculus* (Cope, 1865) – Sites 479, 480, 481, 482, 483, 488, 504, 505, 507, 509, 510, 511, 512, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 528, 530, & 532.

CATOSTOMIDAE – suckers

River Carpsucker *Carpiodes carpio* (Rafinesque, 1820) – Sites 526, 530, & 531.

Quillback *Carpiodes cyprinus* (Lesueur, 1817) – Site 531.

Creek Chubsucker *Erimyzon claviformes* (Girard, 1856) – Sites 509 & 518.

Smallmouth Buffalo *Ictiobus bubalus* (Rafinesque, 1818) – Sites 504, 526, 530, & 531.

Bigmouth Buffalo *Ictiobus cyprinellus* (Valenciennes, 1844) – Sites 530 & 531.

Spotted Sucker *Minytrema melanops* (Rafinesque, 1820) – Sites 480, 504, 511, 513, 517, & 519.

River Redhorse *Moxostoma carinatum* (Cope, 1870) – Site 525.

CENTRARCHIDAE – sunfishes

(R) Green Sunfish *Lepomis cyanellus* (Rafinesque, 1819) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 221, 222, 523, 525, 526, 527, 528, 530, 531, & 532.

Warmouth *Lepomis gulosus* (Cuvier, 1829) – Sites 478, 479, 480, 481, 483, 485, 488, 504, 505, 508, 509, 511, 513, 516, 517, 519, 520, 521, 522, 523, 530, 531, & 532.

Orangespotted Sunfish *Lepomis humilis* (Girard, 1858) – Sites 479, 480, 483, 488, 504, 505, 507, 508, 511, 517, 520, 521, 523, 527, 530, & 531.

(R) Bluegill *Lepomis macrochirus* (Rafinesque, 1819) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 504, 505, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, 530, 531, & 532.

Longear Sunfish *Lepomis megalotis* (Rafinesque, 1820) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 488, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, 530, 531, & 532.

(R) Redear Sunfish *Lepomis microlophus* (Günther, 1859) – Sites 486, 488, 504, 511, 513, 527, 530, 531, & 532.

(R) Smallmouth Bass *Micropterus dolomieu* (Lacépède, 1802) – Sites 506, 525, & 527.

(R) Spotted Bass *Micropterus punctulatus* (Rafinesque, 1819) – Sites 504, 505, 508, 511, 513, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, 530, 531, & 532.

(R) Largemouth Bass *Micropterus nigricans* (Cuvier, 1828) – Sites 478, 479, 480, 481, 482, 483, 485, 486, 487, 488, 504, 505, 508, 509, 510, 511, 513, 514, 515, 516, 517, 518, 519, 520, 522, 523, 525, 526, 527, 528, 530, 531, & 532.

(R) White Crappie *Pomoxis annularis* (Rafinesque, 1818) – Sites 479, 480, 504, 511, 530, & 531.

(R) Black Crappie *Pomoxis nigromaculatus* (Lasueur, 1829) – Sites 504, 511, 530, & 532.

CYPRINIDAE – carps

(I) Common Carp *Cyprinus carpio* (Linnaeus, 1758) – Sites 504, 511, 530, & 531.

DOROSOMATIDAE – thread herrings

Gizzard Shad *Dorosoma cepedianum* (Lesueur, 1818) – Sites 488, 504, 510, 511, 526, 530, & 531.

Threadfin Shad *Dorosome petense* (Günther, 1867) – Sites 504, 530, & 531.

FUNDULIDAE – topminnows

Blackstripe Topminnow *Fundulus notatus* (Rafinesque, 1820) – Sites 479, 480, 510, 515, 517, 521, 525, & 532.

Blackspotted Topminnow *Fundulus* olivaceus (Storer, 1846) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 488, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, 530, 531, & 532.

ICTALURIDAE – bullhead catfishes

Black Bullhead *Ameiurus melas* (Rafinesque, 1820) – Sites 485 & 532.

Yellow Bullhead *Ameiurus natalis* (Lesueur, 1819) – Sites 480, 482, 483, 484, 485, 486, 508, 510, 511, 513, 516, 517, 518, 519, 521, 525, 528, & 532.

(R) Blue Catfish *Ictalurus furcatus* (Valenciennes, 1840) – Sites 530 & 531.

(R) Channel Catfish *Ictalurus punctatus* (Rafinesque, 1818) – Sites 485, 486, 504, 519, 520, 521, 522, 525, 530, & 531.

Slender Madtom *Noturus exilis* (Nelson, 1876) – Sites 478, 480, 483, 484, 485, 486, 505, 506, 507, 509, 512, 514, 515, 517, 519, 521, 523, 525, 527, & 528.

Brindled Madtom *Noturus miurus* (Jordan, 1877) – Sites 517, 520, & 521.

Freckled Madtom *Noturus nocturnus* (Jordan & Gilbert, 1886) – Sites 511, 517, 520, 521, & 522.

(R) Flathead Catfish *Pylodictis olivaris* (Rafinesque, 1818) – Sites 504, 517, 519, 520, 521, 525, 526, 527, 530, & 531.

LEPISOSTEIDAE – gars

Spotted Gar *Lepisosteus oculatus* (Winchell, 1864) – Sites 479, 504, 505, 507, 513, 516, 517, 520, 521, 522, 523, 525, 526, 527, 530, 531, & 532.

Longnose Gar *Lepisosteus osseus* (Linnaeus, 1758) – Sites 488, 507, 513, 517, 520, 523, 525, 526, 530, & 531.

Shortnose Gar *Lepisosteus platostomus* (Rafinesque, 1820) – Sites 481 & 504.

LEUCISCIDAE – minnows

Central Stoneroller *Campostoma anomalum* (Rafinesque, 1820) – Sites 479, 480, 481, 482, 485, 486, 487, 488, 508, 510, 511, 515, 516, 519, 520, 521, 522, 523, & 526.

Highland Stoneroller *Campostoma spadiceum* (Girard, 1856) – Sites 478, 483, 484, 505, 506, 507, 509, 510, 512, 513, 514, 517, 518, 525, 527, & 528.

Red Shiner *Cyprinella lutrensis* (Baird & Girard, 1853) – Sites 482, 485, 488, 513, 514, 520, 522, 526, & 530.

Steelcolor Shiner *Cyprinella whipplei* (Girard, 1856) – Sites 482, 485, 508, 517, 520, 521, 522, 525, & 527.

(C) Pallid Shiner *Hybopsis amnis* (Hubbs & Greene, 1951) – Sites 504, 530, & 531.

Ribbon Shiner *Lythrurus fumeus* (Evermann, 1892) – Sites 511, 517, 519, 520, & 525.

Redfin Shiner *Lythrurus umbratilis* (Girard, 1856) – Sites 479, 480, 482, 484, 485, 488, 505, 508, 510, 512, 515, 516, 517, 518, 519, 521, 523, 526, & 527.

Bigeye Shiner *Miniellus boops* (Gilbert, 1884) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 488, 505, 506, 507, 511, 512, 513, 514, 515, 516, 517, 521, 522, 523, 525, 526, 527, & 528.

Golden Shiner *Notemigonus crysoleucas* (Mitchill, 1814) – Sites 480 & 532.

Emerald Shiner *Notropis athernoides* (Rafinesque, 1818) – Sites 504, 505, 511, 520, 522, 523, 525, 526, & 530.

Ghost Shiner *Paranotropis buchani* (Meek, 1896) – Sites 504 & 530.

Mimic Shiner *Paranotropis volucellus* (Cope, 1865) – Sites 511, 517, 520, 521, & 530.

Bluntnose Minnow *Pimephales notatus* (Rafinesque, 1820) – Sites 479, 480, 481, 482, 488, 504, 505, 508, 510, 511, 513, 515, 516, 517, 519, 520, 521, 522, 523, 526, & 527.

Fathead Minnow *Pimephales promelas* (Rafinesque, 1820) – Site 485.

Slim Minnow *Pimephales tenellus* (Girard, 1856) – Sites 482 & 521.

Bullhead Minnow *Pimephales vigilax* (Baird & Girard, 1853) – Sites 479, 480, 482, 485, 488, 504, 516, 520, 526, 530, & 531.

MORONIDAE – temperate basses

(R) White Bass *Morone chrysops* (Rafinesque, 1820) – Sites 530 & 531.

PERCIDAE – perches

Greenside Darter *Etheostoma blennioides* (Rafinesque, 1819) – Sites 505, 506, 507, 517, 522, 523, 525, 526, 527, & 528.

Bluntnose Darter *Etheostoma chlorosum* (Hay, 1881) – Sites 504 & 530.

Fantail Darter *Etheostoma flabellare* (Rafinesque, 1819) – Sites 483, 484, 505, 506, 507, 520, 525, 527, & 528.

Slough Darter *Etheostoma gracile* (Girard, 1859) – Sites 480, 481, 488, 505, 508, 511, 513, 515, 517, 520, 521, 522, 526, 530, 531, & 532.

(C) Harlequin Darter *Etheostoma histrio* (Jordan & Gilbert, 1887) – Sites 505, 520, 522, 525, & 527.

Cypress Darter *Etheostoma proeliare* (Hay, 1881) – Sites 479, 485, 488, 505, 508, 511, 512, 516, 517, 518, 519, 520, 521, 522, 523, 526, & 532.

Orangethroat Darter *Etheostoma spectabile* (Agassiz, 1854) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 486, 488, 505, 507, 508, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, & 532.

(C) Redfin Darter *Etheostoma whipplei* (Girard, 1859) – Sites 478, 479, 480, 481, 482, 483, 484, 485, 487, 488, 505, 506, 507, 508, 509, 510, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 525, 526, 527, 528, 530, & 532.

Banded Darter *Etheostoma zonale* (Cope, 1868) – Sites 505, 506, 507, 517, 525, 527, & 528.

Channel Darter *Percina copelandi* (Jordan, 1877) – Sites 521, 522, 523, & 530.

Ozark Logperch *Percina fulvitaenia* (Morris & Page, 1981) – Sites 480, 482, 483, 485, 488, 505, 508, 509, 511, 512, 517, 520, 521, 522, 525, 526, 527, 530, & 532.

Bigscale Logperch *Percina macrolepida* (Stevenson, 1971) – Site 530.

(C) Blackside Darter *Percina maculata* (Girard, 1859) – Sites 517, 519, 520, & 526.

Dusky Darter *Percina sciera* (Swain, 1883) – Sites 504, 511, 516, 517, 519, 520, 521, 522, 525, 526, & 530.

PETROMYZONTIDAE – lampreys

Lamprey Ammocoete *Ichthyomyzon sp.* – Sites 505, 506, 525, 528.

POECILIIDAE – livebearers

Western Mosquitofish *Gambusia affinis* (Baird & Girard, 1853) – Sites 479, 480, 481, 482, 483, 486, 488, 504, 505, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 526, 528, 530, 531, & 532.

POLYODONTIDAE – paddlefishes

(C/R) Paddlefish *Polyodon spathula* (Walbaum, 1792) – Sites 530 & 531.

SCIAENIDAE – drums

Freshwater Drum *Aplodinotus grunniens* (Rafinesque, 1819) – Sites 504, 520, 522, 525, 530, & 531.

Discussion

The Poteau River was the fourteenth watershed sampled as part of the stream fish community monitoring effort. The 2025 surveys will serve as contemporary baseline data for the Poteau River going forward. This report presents a summary of the findings as it pertains to site characteristics and species' presence (i.e., naïve occupancy) within the watershed. Results of fisheries surveys covering large geographic areas were routinely published in the past (see Hubbs and Ortenburger 1929; Cross and Moore 1952; Branson 1967; Pigg 1987; Taylor et al. 1991) and serve as valuable resources for contemporary research examining changes in species' distributions, trends in stream fish community structure, and the effects of anthropogenic disturbance on stream fish assemblages (Luttrell et al. 1999; Rahel 2002; Gido et al 2010; Gillette et al. 2012; Smith et al. 2014; Senecal et al. 2015; Perkin et al. 2015). Therefore, the summarized data from fish community surveys in the Poteau River watershed has value in and of itself and is reported for the benefit of researchers working within the watershed. In addition, data from this watershed will be later analyzed in an occupancy modeling framework for the entire state. Within this framework, occupancy models can be summarized for any species of interest at various spatial scales (i.e., watershed, ecoregion, statewide) depending on the research question of interest. Upon completion of the monitoring rotation, watershed data will be combined to allow analyses at the statewide scale with the goal of having more than 500 sites on which to base statewide estimates of species' occupancy and detection probabilities. Thus,

occupancy modeling will provide a powerful tool for accomplishing Stream Program goals and objectives because of its advantages over other methods that do not leverage replicate surveys.

A downfall of traditional fisheries survey methods is ignoring the inherent biases associated with imperfect detection of species. Aside from the error of misidentifying collected species (i.e., false-positive), there are three possible outcomes resulting from traditional fisheries surveys. First, a species is present at a site and is detected by the sampling crew (i.e., true-positive). Secondly, a species is not present and therefore not detected by the sampling crew (i.e., true-negative). Lastly, a species is present at a site but is not detected by the survey crew. This last scenario is referred to as a false-negative, and this source of error will arise whenever the detection probability of a species is less than 100%. In biological surveys, imperfect detection is the rule, not the exception (MacKenzie et al. 2002; MacKenzie et al. 2006). Therefore, ignoring detection probabilities in fisheries studies may lead to biased models of species occurrence, which underestimate the true distribution of the species (MacKenzie et al. 2006). While repeat surveys require more effort than one-time point samples, and occupancy models generally require large datasets, the benefits of teasing apart the complex relationship between occupancy and detection probabilities that confound other methods justify the use of this analysis for deriving accurate assessments of species status (MacKenzie et al. 2002). While occupancy is not a direct measure of species abundance, the underlying principle is that occupancy probabilities are directly related to population densities and thus provide a useful surrogate for examining trends over time. In addition, occupancy is considered the parameter of choice when estimating distributions of species, a primary goal of this effort (MacKenzie et al. 2006). This sampling methodology has other applications that will be beneficial for long-term monitoring programs including: identifying additional populations of at-risk species, highlighting areas of conservation priority, identifying potential repatriation sites for species of concern, and informing SGCN listings in conjunction with the Oklahoma Comprehensive Wildlife Conservation Strategy. Efforts to develop long-term datasets are imperative to achieve the goal of updating our understanding of the status of Oklahoma stream fish communities and providing retrospective analysis and comparisons to historical datasets (Magurran et al. 2010). Therefore, the stream fish monitoring protocols presented within will develop quality datasets necessary for the maintenance and monitoring of fish biodiversity in Oklahoma.

Public Access and Recreational Opportunities

The Poteau River drainage has a slew of public access including Wildlife Management Area's, State Parks, and Army Corp of Engineers property. The smaller tributaries that arise in the mountains are cool and clear, providing excellent swimming and snorkeling conditions. There are multiple lakes in this drainage that provide good fishing, including three lakes within Robbers Cave State Park, Cedar Lake, and Lake Wister. Fishing opportunities within this drainage's streams are abundant and variable, ranging from wade fishing smaller creeks to fishing from the bank or a boat.

There were three sample sites which contained boat ramps. Site 504 is located on the Poteau River and was sampled via boat at "Conser Landing". There were many recreational species captured including Black Crappie, Channel Catfish, Flathead Catfish, Largemouth Bass, Spotted Bass, and White Crappie. There seemed to be an above average crappie, bass, and Flathead Catfish fishery here. The second boat site is 530, which is located right below Wister dam. Recreational species collected were Black Crappie, Blue Catfish, Channel Catfish, Flathead Catfish, Largemouth Bass, Paddlefish, Spotted Bass, White Bass, and White Crappie. A healthy

fishery of crappie, catfish, and bass seemed to occur. There is a gravel boat ramp as well as many places for anglers to fish from the shoreline at this location. Site 531 is located at Arkoma Park near the Arkansas River Confluence. While we launched a boat here, the ramp is not very user friendly and should only be used during high flows. Recreational species captured include Blue Catfish, Channel Catfish, Flathead Catfish, Largemouth Bass, Paddlefish, Spotted Bass, White Bass, and White Crappie. The Blue Catfish fishery seemed to be above average at this location, but unfortunately, angling from the shore is limited due to vegetation on the riverbanks.

There were three sites conducive to fishing from the bank or a kayak. Site 520 is located on Fourche Maline at Wister WMA and had an abundance of large woody debris and deep holes. Recreational species captured here include Channel Catfish, Flathead Catfish, Largemouth Bass, and Spotted Bass. Targeting catfish in this area is recommended. Sites 525 and 527 could be floated in a kayak, waded, or fished from the bank. Site 525 is the Black Fork near Hodgen, and site 527 is Holson Creek just off county road D4598. Recreational species collected at site 525 were Channel Catfish, Flathead Catfish, Largemouth Bass, Spotted Bass, and Smallmouth Bass. Flathead Catfish, Largemouth Bass, Smallmouth Bass, and Spotted Bass were captured at site 527. It is recommended that anglers target bass in these two creeks.

Sites 505 and 506 also had healthy populations of bass but are much smaller streams. Site 505 is located on Long Creek near Leflore and contains Largemouth and Spotted Bass. Site 506 is Big Creek near Page and holds a healthy population of Smallmouth Bass. Both these creeks are best fished by wading.

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Table 1. Gear and gear effort deployed by the Oklahoma Department of Wildlife Conservation Stream Program community sampling protocol.

Gear Type	Gear Description	Minimum Effort
Seine Net	3x1.5m, 6.0mm mesh	Wadeable = 20 hauls Non-Wadeable = 10 hauls
Backpack Electrofisher	ETS Electrofishing Systems ABP-4-MR	150m single pass
Tow-Barge Electrofisher	Midwest Lakes Infinity Control Box	150m single pass
Boat Electrofisher	Midwest Lakes Infinity Control Box	750m single pass, 60 Hz & Low Frequency
Mini-Fyke Net	69x1011 cm, 2 hoops, 4.5m lead (Miller Nets)	One net-night
Hoop Net	3m long, 0.65m diameter, 4cm bar mesh (Miller Nets)	One net-night
Buffalo Net	5m long, 0.65m diameter, 4cm bar mesh (Miller Nets)	One net-night
Benthic Trawl	38mm outer mesh, 12mm inner mesh, Hybrid Siamese trawl (Innovative Net Systems)	MWCW <150 m = 200m Trawl MWCW >150m = 400m Trawl

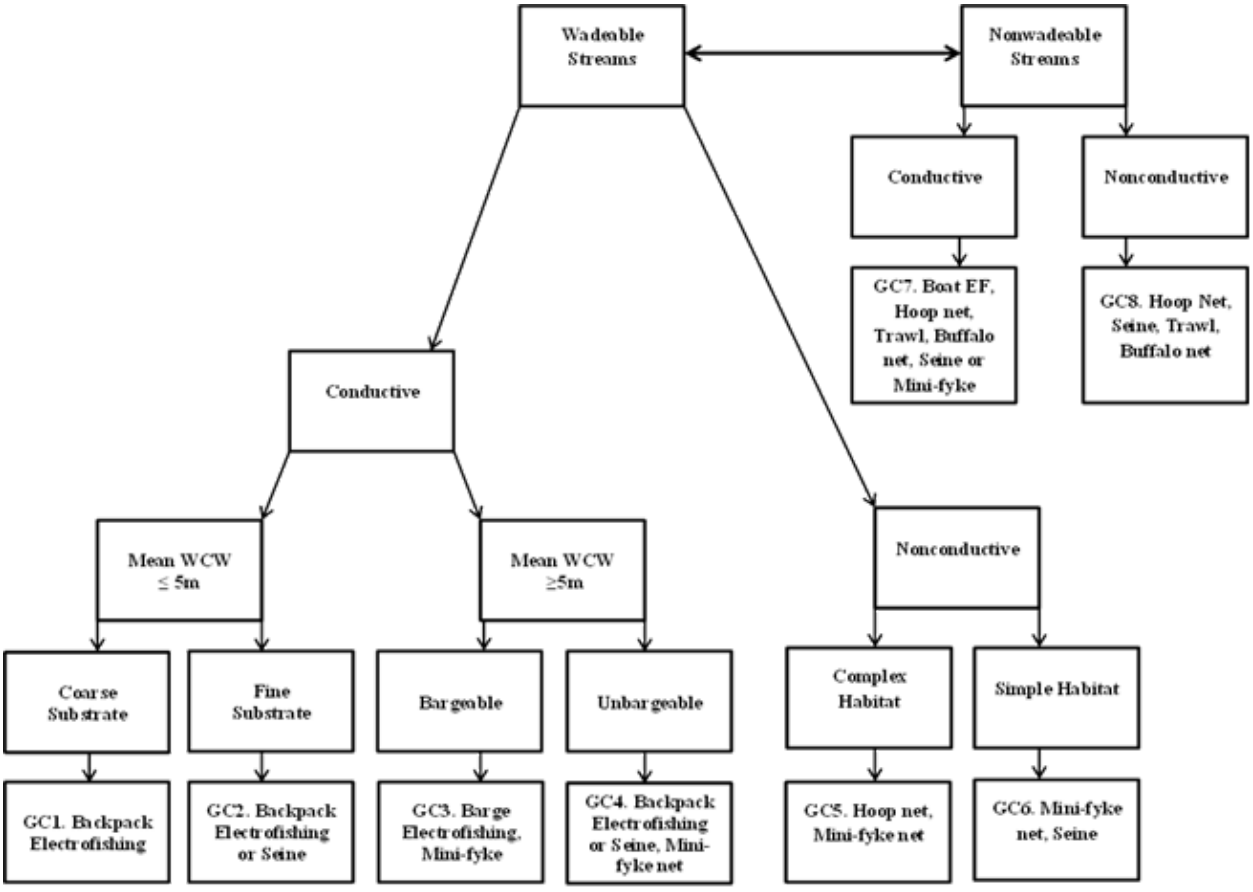

Figure 1. Gear flowchart for Oklahoma Department of Wildlife Stream Program Community Sampling Protocol

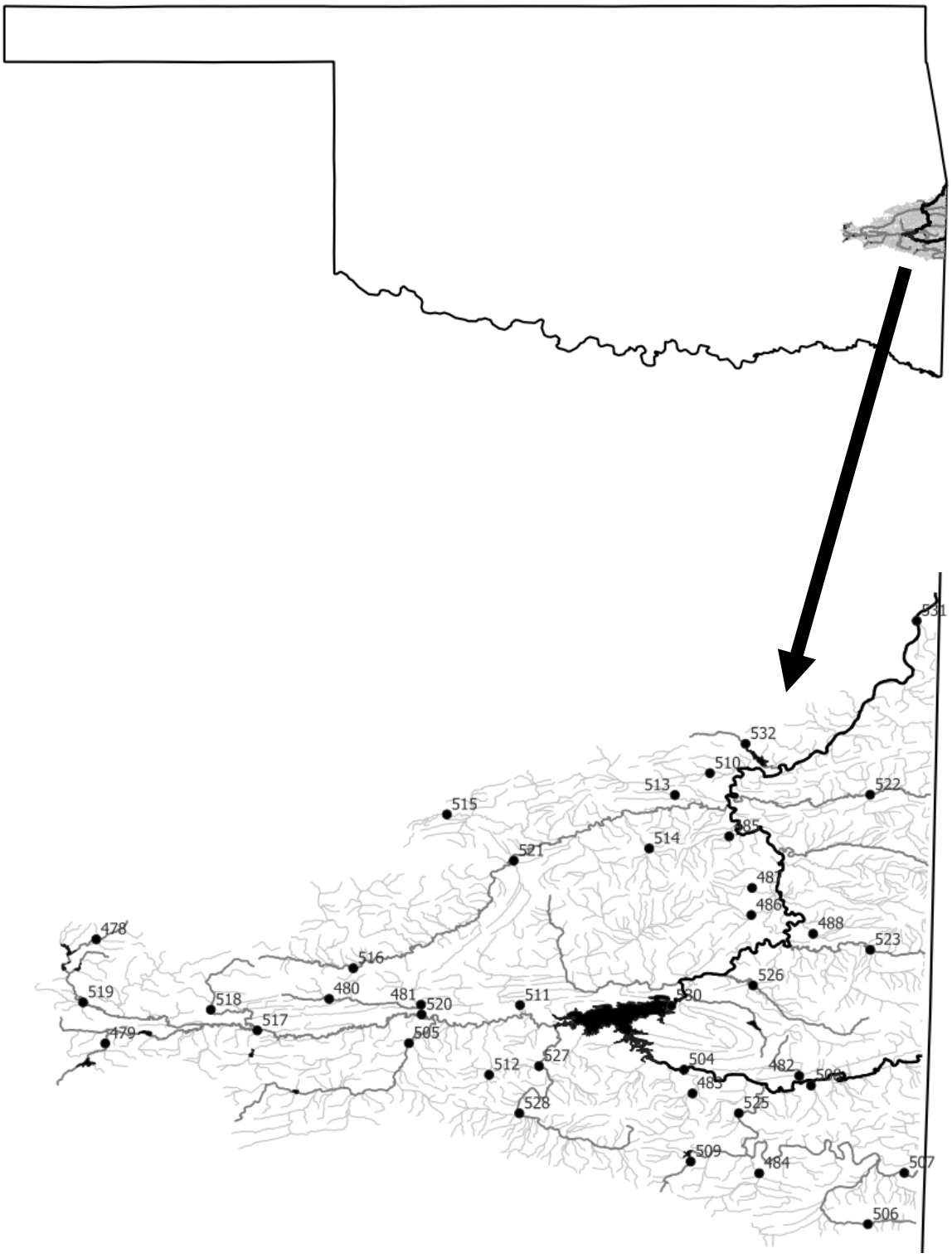

Figure 2. Fish community sites in the Poteau River watershed sampled by the ODWC stream program in the summer of 2025.