

# Freshwater Public Waters Sport Fisheries Surveys and Monitoring

## Disclaimer

This project statement is meant to be used as a training aid. While some of the information provided in the project statement is based upon factual data, the entire project statement is not meant to represent an actual project statement drafted by the Alabama Department of Conservation and Natural Resources.

## AL – Freshwater Public Waters Sport Fisheries Surveys and Monitoring

### Need

There is a need for the Alabama Department of Conservation and Natural Resources (ADCNR) to collect fisheries population information in order to effectively manage and conserve its public waters sport fisheries. In 2011, data from the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation indicated over 683,000 anglers fished (freshwater and saltwater) in Alabama for a total of 10.9 million angler-days. These anglers expended over \$456 million per year in trip and equipment related expenditures.

The proposed fishery surveys are able to document changes in fish species in Alabama's freshwater habitats, so that proactive management strategies may be implemented to mitigate potential declines in angler catch and harvest. Declines in sport fish populations can occur from a variety of reasons including poor year-class production, failed recruitment, lack of forage, introduction of non-native invasive species, loss of habitat, water-level fluctuations, intense angler harvest, and various forms of environmental perturbations. The ADCNR is the state agency with statutory responsibility to manage the state's recreational freshwater sport fisheries for all types of anglers. Without annual surveying and monitoring, the ADCNR would not be able to offset these declines, which would ultimately manifest in decreased viability of sport fish populations, reduced angler catch rates, lower angler harvest, and unacceptable angler satisfaction rates.

### Purpose

The purpose of this grant is to survey Alabama's sport fish populations in public waters in order to document changes in fish populations and adjust management actions to promote sustainable fisheries.

### Objective

The objective of this grant is to:

- (1) Conduct 240 surveys by June 30, 2017. (*NOTE: TRACS strategy - Data Collection & Analysis*)

### Results and Benefits Expected

This grant will benefit the sport fishery resources of Alabama by providing fisheries staff with science-based, quantitative data to ensure sound and responsible management of its various sport fish populations.

This grant will also provide benefit to recreational anglers. Enhanced management of Alabama's sport fish populations in public waters should result in catch rates that meet or exceed the public's expectations. In addition, catch rates of quality and trophy sized species should also meet or exceed the public's expectations.

This grant will also benefit local economies as anglers are willing to travel considerable distances to enjoy their passions. Local economies will derive benefits from increased sales of gasoline, food, supplies, lodging, and fishing equipment. Society will benefit from a healthy environment and increased outdoor recreation participation.

### Approach

*Objective 1 – Conduct 240 surveys by June 30, 2017.*

The state of Alabama is comprised of four separate regional fisheries units (Northwest, Northeast, Southwest, and Southeast). Each regional fisheries office is charged with overseeing, surveying, monitoring, and managing the public waters sport fisheries that occur within its region. Each regional office is comprised of a regional fisheries biologist, assistant regional fisheries biologist, fisheries biologist, and a fisheries technician.

Sport fish populations in public waters will be surveyed and monitored annually at the locations listed in [Table 1](#). The ADCNR has developed lake specific fisheries management plans that govern the agencies management strategies for each target sport fish species. Population metrics that will be calculated include, but are not limited to: (1) growth; (2) mortality; (3) recruitment; (4) abundance (i.e. CPUE); (5) weight-length relationships (i.e.  $W_r$ ); (6) stock density relationships (i.e. PSD/RSD). All data will be analyzed using the appropriate statistical tests. Sport fish species will be sampled as follows:

Black bass (largemouth, smallmouth, and spotted bass) are sampled twice annually. During spring (water temperatures = 55-65°F), black bass are sampled using either daytime or nighttime shoreline boat electrofishing. Each shoreline electrofishing sample is comprised of a continuous 30-minute sample, during which only black bass are collected. All sizes of black bass are collected during each sample. Fish are held in large aerated livewells and fresh lake water is constantly pumped into the livewell during the entire 30 minute period. At completion of each sample, all fish are identified to species and measured for total length (TL, mm). All fish are then released, unless a subsample of fish is desired to be

retained for age-and-growth analysis. The total number of electrofishing samples will be up to the biologist's discretion and is based upon the size of waterbody. When conducting age-and-growth analysis, a total of ten fish per inch-class are retained and returned to the district office where otoliths (inner ear bones) are removed in order to determine age. During fall, (water temperatures = 60-75°F) black bass are sampled using daytime or nighttime shoreline electrofishing. Each shoreline electrofishing sample is comprised of a continuous 30-minute sample, during which only black bass are collected. All sizes of black bass are collected during each sample. At completion of each sample, all fish are identified to species and measured for TL (mm) and weighed (g). All fish are released following measurement. A total of 64 black bass surveys are to be completed during the period of performance (Table 1).

Panfish (bluegill and redear sunfish) are sampled annually during the spring (water temperatures = 65-75°F) using daytime shoreline electrofishing. Each shoreline sample is comprised of a continuous 10-minute sample, during which only panfish are collected. All sizes of panfish are collected during each sample. Fish are held in large, aerated livewells and fresh lake water is constantly pumped into the livewell during the entire 10 minute period. At completion of each sample, all fish are identified to species and measured for TL (mm) and weighed (g). All fish are then released, unless a subsample of fish is desired to be retained and returned to the district office where otoliths are removed in order to determine age. A total of ten fish per inch-class are retained for age-and-growth analysis. Similar to black bass, the total number of electrofishing samples will be up to the biologist's discretion. A total of 33 panfish surveys are to be completed during the period of performance (Table 1).

Crappie (white and black crappie combined) are sampled annually during the fall (water temperatures = 50-65°F) using trapnets. The lead on each trapnet is 30 m long x 1.3 m deep. The mesh is ½" bar mesh. Trapnets are fished for 24-hrs consecutively before being checked for fish. Trapnets are fished perpendicular to the shoreline with the pot end resting in water no shallower than 6 feet. All sizes of crappie are collected during each sample and fish are held in large, aerated livewells. At the completion of each sample, all fish are identified to species and measured for TL (mm) and weighed (g). All fish are released, unless a subsample of fish is desired to be retained for age-and-growth analysis. The total number of trapnets fished will be up to the biologist's discretion. When conducting age-and-growth analysis, a total of ten fish per inch-class are retained and returned to the district office where otoliths are removed in order to determine age. A total of 40 crappie surveys are to be completed during the period of performance (Table 1).

*Morone* (striped bass, white bass, and hybrid striped bass) are sampled annually during the fall (water temperatures = 50-65°F) using gillnets. White bass and hybrid striped bass will be sampled using experimental 300 foot x 8 foot gillnets (each 50 foot panel; bar mesh size ½", ¾", 1", 1-1/2", 2", and 2-1/2"). Striped bass will be sampled also using experimental 300 foot x 8 foot gillnets (each 50 foot panel; bar mesh size 1", 1-1/2", 2", 2-1/2", 3", and 3-1/2"). Gillnets will be fished for 24-hrs consecutively before being checked for fish. Gillnets will be fished on flats adjacent to river channels. All sizes of *Morone* are collected during each sample. Fish are identified to species and measured for TL (mm) and weighed (g). All live fish are then released, unless a subsample of fish is desired to be retained for age-and-growth analysis. A total of ten fish per inch-class are retained for age-and-growth analysis. The total number of gillnets fished will be up to the biologist's discretion. A total of 23 *Morone* surveys are to be completed during the period of performance (Table 1).

*Sander* (walleye and sauger) are sampled annually during the fall (water temperatures = 45-60°F). *Sander* will be collected using either gillnet or nighttime electrofishing, depending upon the biologist's discretion. Gillnets will be similar to those used to sample white bass and electrofishing will follow protocols similar to black bass. All sizes of *Sander* are collected during each sample. Fish are identified to species and measured for TL (mm) and weighed (g). All live fish are then released, unless a subsample of fish is desired to be retained for age-and-growth. A total of ten fish per inch-class are retained for age-and-growth analysis. The total number of gillnets/electrofishing will be up to the biologist's discretion. A total of 10 *Sander* surveys are to be completed during the period of performance (Table 1).

Catfish (channel and blue catfish) are sampled annually during summer/early fall (water temperatures = 70-80°F). Channel catfish will be collected using tandem hoopnets baited with commercially prepared cheese bait. Tandem hoopnets are a series of three hoopnets tied together in parallel. Hoopnets are fished for three consecutive days before fish are collected. Blue catfish will be collected using either low-pulse electrofishing or trot lines. All sizes of catfish are collected during each sample. Fish are identified to species and measured for TL (mm) and weighed (g). All live fish are then released, unless a subsample of fish is desired to be retained for age-and-growth. A total of ten fish per inch-class are retained for age-and-growth analysis. The total number of hoopnets, trot lines, or electrofishing will be up to the biologist's discretion. A total of 51 catfish surveys are to be completed during the period of performance (Table 1).

Muskellunge are sampled annually in the spring (water temperatures = 40-55°F) using daytime, shoreline electrofishing. Each shoreline sample is comprised of a continuous 30-minute sample, during which only muskellunge are collected. All sizes of muskellunge are collected during each sample. Fish are held in large, aerated livewells and fresh lake water is constantly pumped into the livewell during the entire 30-minute period. At the completion of each sample, all fish are identified to species and measured for TL (mm) and weighed (g). All fish are released, unless a subsample of fish is desired to be retained and returned to the district office where cleithrum (jaw bones) are removed in order to determine age. The total number of fish retained for age-and-growth analysis, as well as the total number of electrofishing samples will be up to the biologist's discretion. A total of 11 muskellunge surveys are to be completed during the period of performance (Table 1).

Creel surveys are also implemented annually in order to gather data concerning angler catch rates, satisfaction, harvest, and fishing pressure. The proposed creel surveys are roving type creel surveys and are implemented beginning in March through October. Two lakes from each region receive a creel survey annually. Each month, the creel clerk will work a total of 13 week-days and 5 weekend-days. Anglers are interviewed on the water (incomplete trips) and at the boat ramp (completed trips). Each daily creel will last six hours. During interviews, the creel clerk will ask each angler a series of questions and obtain TL (mm) of all fish held in the angler's creel. A total of 8 creel surveys are to be completed during the period of performance (Table 1).

(NOTE: TRACS activity tags for reporting purposes.)

TRACS Activity Tag 1: Fish and wildlife population analysis

TRACS Activity Tag 2 (optional): Abundance determination

TRACS Activity Tag 2 (optional): Age, size and sex structure

TRACS Activity Tag 2 (optional): Population assessment

TRACS Activity Tag 1: Utilization analysis

TRACS Activity Tag 2 (optional): Harvest

TRACS Activity Tag 2 (optional): Human dimensions

Additional activities that will be funded under this grant include:

- Attending public meetings/workshops in order to disseminate the results of funded sport fisheries surveys.
- Answer telephone/email requests from the public concerning survey data and management of public water sport fish populations.
- General administrative functions (timesheets, developing reports, employee evaluations, record retention).
- Acquisition and maintenance of survey equipment and gear.

#### Useful Life

No capital improvements over \$10,000 will be made with this project proposal.

#### Geographic Location

This project will occur statewide. Please see [Table 1](#) for a list of lakes, rivers, and reservoirs that will be sampled.

#### Principal Investigator(s), for Research Projects

Not applicable.

#### Program Income

None.

#### Budget Narrative

Federal Share: \$ 825,000 (75%) – Sport Fish Restoration subprogram (9514)

State Share: \$ 275,000 (25%) – ADCNR restricted Fish and Game Fund

**Total Project: \$ 1,100,000**

**NOTE:** Applicants may provide the budget information using the SF 424A (Budget Information for Non-Construction Programs), SF 424C (Budget Information for Construction Programs), or using the applicant's created budget displaying an equivalent or greater level of detail.

<u>Budget Class Category</u>	<u>Cost</u>
Personnel (salaries)	\$475,000
Fringe Benefits	\$257,500
Travel	\$35,000
Equipment	\$118,700
Supplies	\$46,600
Contractual	\$0
Construction	\$0
Other	\$50,000
Total Direct Costs	\$982,800
Indirect Costs	\$117,200
<b>TOTAL</b>	<b>\$1,100,000</b>

Personnel - budget estimate comprised of staff (16-20) in the following classifications: (1) Regional Fisheries Biologist; (2) Assistant Regional Fisheries Biologist; (3) Fisheries Biologist; and (4) Fisheries Technician.

Fringe benefits - consists of the required employer contribution of Social Security, Medicare, unemployment tax, retirement, and employee health insurance, and is estimated at 54.21% of salaries.

Travel - staff will attend in-state meetings related to sport fish management issues/concerns. Staff may also attend regional/national meetings such as AFS and SDAFS (including the various committees and sections), as well as SEAFWA. Travel costs will include lodging, transportation, and per diem following state policies and procedures.

Equipment - the following equipment is necessary and reasonable for the accomplishment of grant objectives.

- Northwest Fisheries Regional Office
1. One Ford F-150 Supercab ¾ ton truck - \$25,000. Useful life = 6 years.
  2. One 150-HP Mercury Outboard engine - \$6,500. Useful life = 5 years.

- Northeast Fisheries Regional Office

1. One Ford F-150 Supercab ¾ ton truck - \$25,000. Useful life = 6 years.
2. One 90-HP Evinrude Outboard engine - \$5,200. Useful life = 5 years.
3. One Smithroot electrofishing box - \$6,000. Useful life = 10 years.

- Southwest Fisheries Regional Office

1. One Smithroot electrofishing boat fully rigged - \$17,000. Useful life = 10 years.

- Southeast Fisheries Regional Office

1. One Ford F-150 Supercab ¾ ton truck - \$25,000. Useful life = 6 years.
2. One Crestliner (17 foot) creel boat fully rigged - \$9,000. Useful life = 10 years.

Supplies - budget estimate includes general office/lab supplies, field attire (raingear, overalls, rubber boots), sampling gear (gill nets, trap nets, hoop nets), nets, tubs, jars, vials, containers, tools, and electrical items.

Other: budget category estimates include bottled gas and motor fuels/lubricants.

Indirect Costs: The ADCNR's approved NICRA is 16.00% charged to the base of salaries and fringe. A copy of the NICRA is on file in the WSFR Region 4 Office.

In-Kind Match: No in-kind match will be utilized for this grant.

Pre-Award Costs: No pre-award costs are requested for this grant.

Indirect Cost Statement: "We are (1) a U.S. state government entity receiving more than \$35 million in direct Federal funding each year with an indirect cost rate of 16.00%. We submit our indirect cost rate proposals to our cognizant agency. A copy of our most recently approved rate agreement/certification is attached."

Single Audit Reporting Statement: The State of Alabama was required to submit a Statewide Single Audit report for its most recently closed fiscal year and that report is available on the Federal Audit Clearinghouse Single Audit Database website. The report is filed under the State of Alabama's EIN (99-9999999).

Conflict of Interest Statement: ADCNR, at the time of this application, is not aware of any actual or potential conflicts of interest that may arise during the life of this award which may affect the ADCNR, its employees, or its subrecipients. Should an actual or potential conflict of interest arise during the period of performance, the ADCNR will notify the WSFR Regional Office.

### **Multipurpose Projects**

None.

### **Relationship with other Grants**

None.

### **Timeline**

*January 1, 2017 – March 31, 2017:*

- Acquire any needed sampling gear and supplies.
- Coordinate spring sampling schedules (locations, dates, crews).
- Survey public water "cool-water" (walleye, sauger, and musky) species.
- Analyze survey data (abundance, age/growth, recruitment, and mortality) and compile into fisheries management reports.

*April 1, 2017 – June 30, 2017:*

- Survey public water "warm-water" (black bass, panfish, crappie, catfish, white bass, hybrid striped bass, and striped bass) species.
- Analyze survey data (abundance, age/growth, recruitment, and mortality) and compile into fisheries management reports.
- Attend meetings concerning public water sport fisheries.

*July 1, 2017 – September 30, 2017:*

- Coordinate fall sampling schedules (locations, dates, crews).
- Survey public water "warm-water" (catfish) species.
- Analyze survey data (abundance, age/growth, recruitment, and mortality) and compile into fisheries management reports.

*October 1, 2017 – December 31, 2017:*

- Survey public water "warm-water" (black bass, crappie, catfish, white bass, hybrid striped bass, and striped bass) species.
- Survey public water "cool-water" (walleye, sauger, and musky) species.
- Analyze survey data (abundance, age/growth, recruitment, and mortality) and compile into fisheries management reports.

- Complete annual performance reports.

## General

NOTE: 50 CFR 80.82 (c) requires that a project statement must include information pertaining to 13 data elements. Element 13 requires that information be included in the project statement that (a) shows that the proposed activities are eligible for funding and substantial in character and design and (b) enables the Service to comply with applicable requirements under NEPA, ESA, and NHPA, and other laws, regulations, and policies. If information is not provided in the project statement, please attach additional documentation regarding NEPA, ESA, and NHPA compliance.

---

## Related Pages

[Sport Fish Restoration Eligible Activities - WSFR](#)

[Sport Fish Restoration Program Apportionments- WSFR](#)

---

## Resources

[Project Statement - Statewide Fish Surveys](#)

[WSFR\\_Quick Reference\\_SFR](#)

[Sport Fish Restoration Funding diagram](#)

---

## References

[§ 50 CFR 80.51 What activities are eligible for funding under the Dingell-Johnson Sport Fish Restoration Act?](#)

[§ 50 CFR 80.82 What must an agency submit when applying for a project-by-project grant?](#)

---