

# **Fort Leonard Wood**

Directorate of Public Works (DPW)

Environmental Division

Natural Resources Branch (NRB)

## **Fisheries Management**

### **Summary 2021**



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## **Abstract:**

Fort Leonard Wood Military Installation provides angling opportunities in 17 fisheries managed impoundments, two streams: Big Piney River and Roubidoux Creek, and Stone Mill Spring Branch. In 2021, 3,838 angling trips were recorded in the iSportsman Portal, but more trips likely took place that were not reported. A total of 500 fish of four species groups were reported as harvested including sunfish, channel catfish, black bass, and crappie. Fisheries outreach of 2021 included the annual Youth Catfish Derby with 42 youth participants at TA 228 Pond. Priority impoundments were sampled to collect management data, and two specific management project reports were completed including centrarchid fishes age and length relationships, and channel catfish growth assessment. Fisheries management goals for 2022 include completing ongoing projects, improving access for anglers and creating outreach events within COVID-19 guidelines.

## **Introduction:**

Natural resources on Fort Leonard Wood (FLW) support the military mission by providing quality training grounds in which the mission is critically dependent. Recreational fisheries “improves the quality of life” for military personnel and families under the *Department of Defense (DoD) Biodiversity Management Strategy* (DoD 1996) to support the military mission, and here at Fort Leonard Wood, this is our ultimate goal for recreational fisheries. Specific goals and objectives for recreational angling on FLW can be viewed in the Integrated Natural Resources Management Plan (INRMP) that is updated annually by natural resources personnel.

It is likely that the number of fishing trips and fish harvested are low estimates because iSportsman was not required to be used by anglers until the fall of 2019, but we did see an increase in 2021. Although the numbers are likely to not be perfect, they were used to compare relative use of impoundments and relative harvest.

## **Angling:**

From January through November 2021, a total of 4,144 fishing trips were recorded in iSportsman recreation portal (Table 1), and 500 fish were reported as harvested (Figure 1). The top five visited impoundments were prioritized for management efforts, and in 2021 these included Bloodland Lake, Training Area (TA) 250 Lake, Penn’s Pond, Indiana Avenue Ponds, Bloodland Pond, and TA 228 Pond (Table 1). Harvest of sunfish and channel catfish harvest numbers were down from 2020 (Figure 1), but an increase was seen in the harvest of black bass and crappie (Figure 1). It is uncertain if the difference is due to harvest, or angler use of the iSportsman portal. Stocking for 2021 consisted of 425 channel catfish (sizes 12-18 inches) in fisheries managed impoundments, 80 grass carp, and 6475 catchable size rainbow trout stocked in Stone Mill Spring Branch.

### **Outreach:**

Two youth fish derbies are hosted by FLW fisheries in most years: a trout derby at Stone Mill Spring Branch and a catfish derby at TA 228 Pond. The trout derby was not held in February 2021 due to COVID-19 guidelines.

The youth catfish derby was hosted on Saturday June 12, 2021 by the FLW NRB and MWR Outdoor Adventure Center (OAC) at TA 288 Pond. We had 42 youth attend from ages 1 to 14, and 19 attendees were fishing for the first time. Four volunteers from the FLW BOSS (Better Opportunities for Single Service-members) organization provided assistance. Fish stocked included 350 Channel Catfish 12" – 16" and 50 Channel Catfish at 18".

### **Sport Fish Sampling and Management Projects:**

Spring sampling for black bass and sunfish was conducted with boat electrofishing in April and May of 2021 on Bloodland Lake, Lower (New) Indiana Avenue Pond, Penn's Pond, Bloodland Pond, Gravel Pit Pond, Breeden Spring Pond, Upper (Old) Indiana Pond, and TA 250 Lake. Fish species commonly encountered included Largemouth Bass, Bluegill, and Redear Sunfish. Other species encountered included Black Crappie, Channel Catfish, Grass Carp, Common Carp, species of suckers, minnows, darters, and silversides. Catch per unit effort and Proportional Size Distribution (PSD) values were calculated for species in sampled impoundments and can be viewed in the detailed FLW annual fisheries report.

General electrofishing sampling has been conducted annually for prioritized impoundments (Bloodland Pond, Penn's Pond, Lower Indiana Pond, and Bloodland Pond), and a three year rotational sampling plan was created for all other impoundments. Sampling for Channel Catfish was conducted using baited hoop sets (group of three hoop nets in a wheel spindle shape) in May for Bloodland Lake and Penn's Pond.

Specific management projects are conducted as seen necessary, and projects in 2021 included:

- Centrarchid (black bass and sunfish) age-length report
- Largemouth Bass population estimates in New Indiana Pond (Mark/recapture)
- Channel catfish stock assessment report

### **Centrarchid Fish Aging**

A report was completed for the relationship between age and length of Largemouth Bass and sunfish in Bloodland Lake, Upper (New) Indiana Pond, and Penn's Pond in comparison to the Proportional Size Distribution (PSD). This project was conducted in collaboration with Drew Collett, an undergraduate student at the University of Missouri Science and Technology, and he presented the project with a poster at the Missouri Natural Resources Conference (MNRC) in February 2021. Largemouth Bass in Bloodland Lake were found to achieve greater sizes at younger ages in comparison to Upper Indiana Pond, but a similar project should be conducted in five years as Upper Indiana Pond continues to balance the fish community.

### Largemouth Bass Population New Indiana Pond

It was observed in sampling events that Largemouth Bass (LMBS) in New Indiana Pond were smaller than anticipated, and the largest LMBS sampled in spring 2020 was 29.5 cm (11.6 inches). Due to sampling results, it was decided to conduct mark and recapture sampling events to calculate population estimates. Mark and recapture sampling events took place in April and September 2020, and results were  $381 \pm 301$  ( $n \pm 95\%$  CI) and  $218 \pm 67$  LMBS, respectively (Figure 2). Fall sampling occurred during dark hours (night time) leading to increased capture rate and decreased error range. Spring Centrarchid sampling 2021 occurred during dark hours, and the population estimate was  $170 \pm 52$  ( $n \pm 95\%$  CI) (Figure 2).

### Channel Catfish Stock Assessment

Channel Catfish are annually stocked in most FLW fisheries impoundments at an initial length of 12–18 inches. Channel catfish rarely maintain sustainable fisheries in small impoundments without stocking fish in length of 8 inches or greater. Our assessment discovered that growth rates of the stocked channel catfish in Bloodland Lake and Penn's Pond are close to the average growth rate for the state of Missouri. Our conclusion was that the stocking rates will have minimal adjustments in Bloodland Lake, Penn's Pond, and TA 250 Lake, but the stocked size will be reduced to 8 inches to reduce expenses.

### Goals for 2022

Below are general goals for the FLW Fisheries Management program 2022. Specific impoundment or project goals can be found in the 2021 FLW fisheries management detailed report.

- Goals for 2022:
  - Complete current management projects
  - Improve angler access by reducing nuisance vegetation
  - Stock additional Grass Carp to reduce submerged vegetation
  - Host youth outreach activities within COVID-19 guidelines
  - Propose dual purpose projects to increase littoral zone and angler access

Table 1. The number of recreational angling trips made to fish managed impoundments on Fort Leonard Wood from January through November 2021, Fort Leonard Wood Missouri.

Impoundment	2019	2020	2021
Bloodland Lake	1097	1304	1298
TA250 Lake	375	619	588
Penn's Pond	195	441	440
Indiana Avenue Pond	197	290	294
TA228 Pond	189	272	194
Bloodland Pond	141	243	247
Range 27A Pond	100	176	138
Range 25 Pond	70	159	95
Gravel Pit Pond	137	135	107
Decker Ridge Pond	83	115	103
Route 20 Pond	68	110	97
Babb Pond	47	100	53
Breeden Spring Pond	81	91	81
Littlewood Pond	45	28	49
Knights Pond	7	25	16
Macedonia Pond	18	20	21
Cook Pond	2	16	17
Total	2852	4144	3838

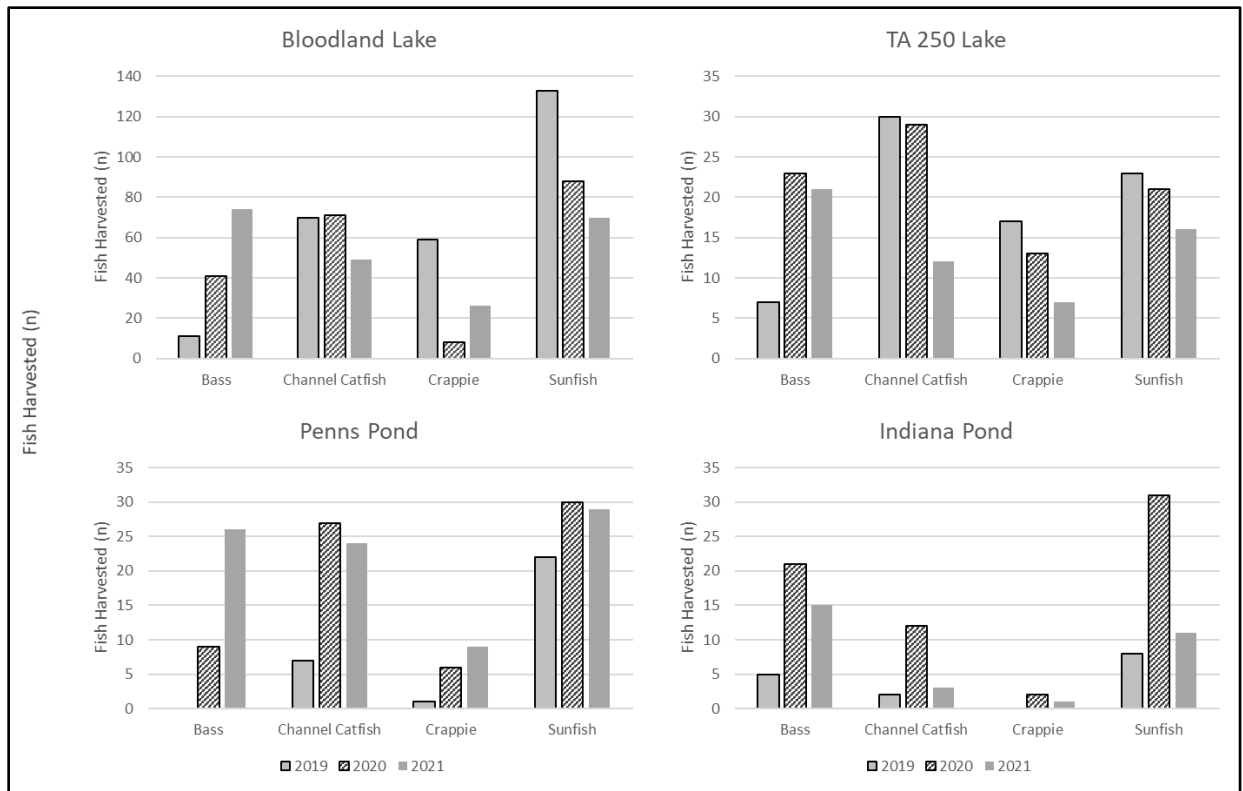


Figure 1. Fish harvested for year 2021 totaled to 500 including black bass species, Channel Catfish, crappie species, and sunfish species. Data was collected from the iSportsman portal which is required for anglers to use.

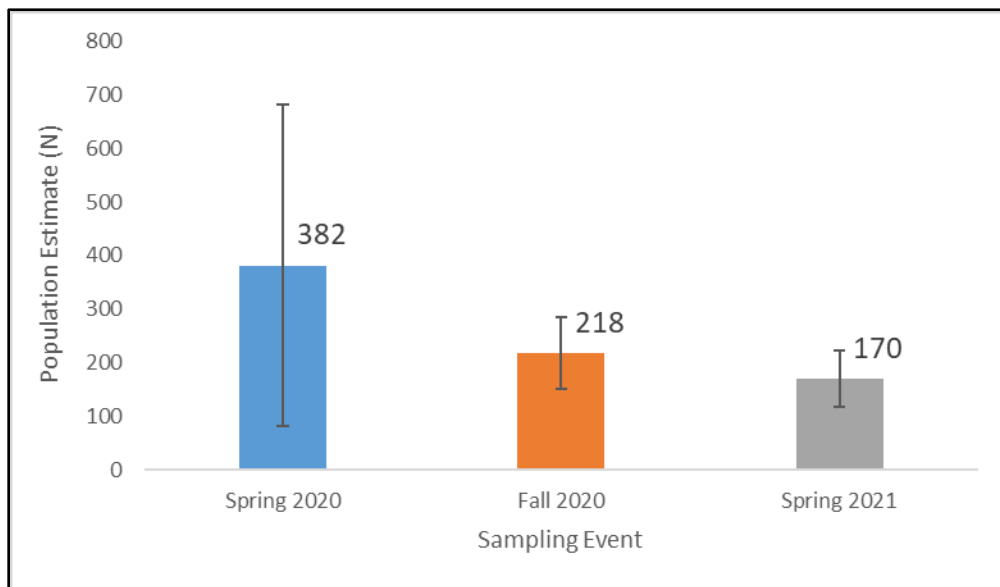


Figure 2. Largemouth Bass population estimates for Lower (New) Indiana pond calculated using the Chapman modification of the Lincoln-Petersen estimator and 95% confidence intervals.



Photo 1: The annual Catfish Youth Fishing Derby held on June 12<sup>th</sup> 2021 and had 42 youth participants.



Photo 2: Thickness of ice Bloodland Lake on February 18, 2021.



Photo 3: Cedar brush piles placed on Bloodland Lake February 2021.

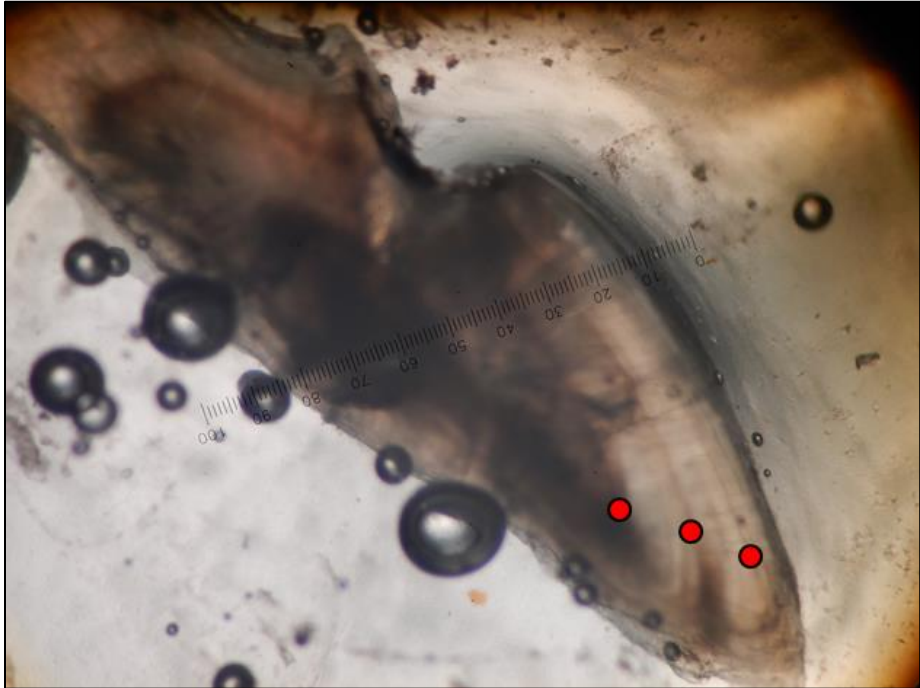


Photo 4: A sectioned otolith bone from a Largemouth Bass that is estimated to be 3 years old.



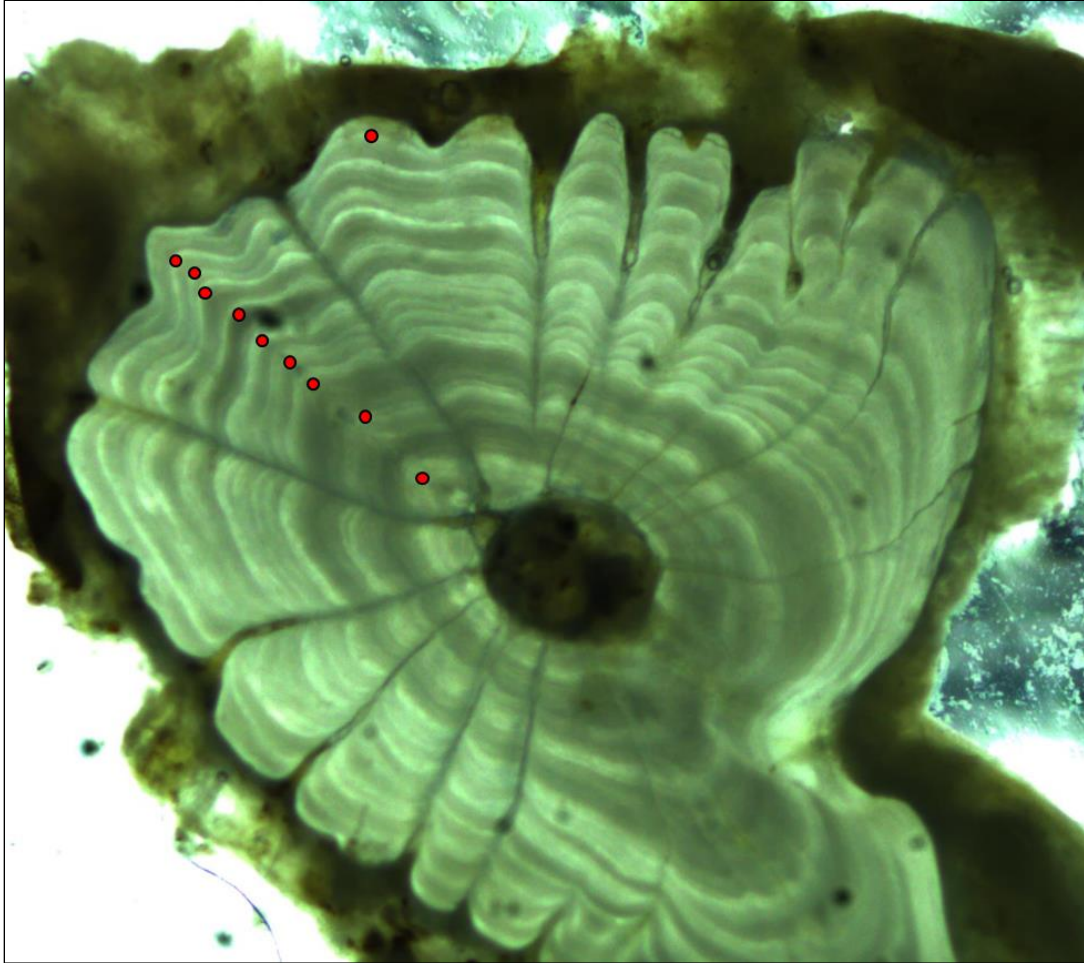


Photo 5: A sectioned spine from a channel catfish that is estimated to be 10 years old.