



## 2022 Hidden Valley Lake Fisheries Management Report

Hidden Valley Lake is a 61-acre impoundment owned by the Virginia Department of Wildlife Resources (DWR) and is located on the Hidden Valley Wildlife Management Area (WMA) in Washington County, Virginia. At normal pool elevation (3,600 feet MSL), the reservoir has a maximum depth of 24 feet and a mean depth of 14 feet. Hidden Valley Lake was formed in 1963 when a smaller dam was renovated and upgraded by DWR. From 1963 to 1979 the reservoir was managed as a put-grow-and take fishery for Brook Trout. During the mid-1970's, unauthorized stockings of Rock Bass and Golden Shiners altered the fishery, and Brook Trout stockings were soon discontinued. Adult Smallmouth Bass were stocked in 1979 and 1980 to control the Rock Bass and shiner populations. From 1984 to 1988 balanced populations of Rock Bass, Redbreast Sunfish (unknown source), and Smallmouth Bass provided quality fishing opportunities.

The lake was completely drained in November 1988 to facilitate repairs to the primary spillway structure and the emergency spillway. Repairs were completed the following spring, and the lake began filling on July 17, 1989. Efforts to re-establish the fishery began in July 1989. The fish community that became established in the 1990's did not provide very good fishing opportunities. Smallmouth Bass were scarce, less than five per hour when sampling and Redbreast Sunfish were over-abundant and stunted at a small size.

More recently, biologists have attempted to restructure the lake's fish community by stocking Largemouth Bass and Bluegill. Both of these species reproduce naturally in the lake and have established self-sustaining populations. Following the establishment of these populations, Black Crappie were illegally introduced into the lake. The crappie population quickly expanded and became stunted with large numbers of small fish. In an effort to control the crappie population, Northern Pike were stocked into Hidden Valley Lake by DWR.

In recent years biologists have had a difficult time getting an accurate sample of the fishery. This is largely due to low conductivity of the water. When a body of water has low conductivity fish are able to avoid the electricity used to sample the fish.

## Regulations

The fish populations in Hidden Valley Lake are currently managed under the following regulations:

Species	Length Limit	Creel Limit
Largemouth Bass	18-inch minimum	1 per day
Channel Catfish	18-inch minimum	5 per day
Northern Pike	30-inch minimum	1 per day

Species not specifically listed in the table above are managed under statewide regulations. The lake is open to fishing 24 hours a day, but DWR requires an Access Permit for visitors to department-owned WMAs and public fishing lakes, who are age 17 and older, unless they possess a valid Virginia hunting, freshwater fishing, or trapping license, or a current Virginia boat registration. The use of gasoline motors is prohibited on Hidden Valley Lake.

## Stocking

Approximately 850 catchable-size Channel Catfish (average length = 11 inches) were stocked into Hidden Valley Lake in fall 2021. Grass Carp are also stocked as needed to control aquatic vegetation.

## Population Sampling

Fish populations at Hidden Valley Lake are sampled each year in May using boat mounted electrofishing gear. Fish collected during these population surveys are measured, weighed and released back into the lake. Sampling time is recorded so that the relative abundance (number of fish collected per hour of electrofishing) can be determined. Biologists get important information about the size structure of the population by looking at the length data. The abundance and size structure data allow biologists to compare the current sample collection to past results and to the results of samples collected at other lakes.

Largemouth Bass – Largemouth Bass was the most abundant fish species observed on Hidden Valley Lake in 2021. The relative abundance (number collected per hour of sampling) of Largemouth Bass during the 2021 sample was approximately 22 fish/h, which was below the long-term average abundance for this lake (49 fish/h).

Largemouth Bass observed in the 2021 sample ranged in length from 3 – 16 inches with an average length of 10 inches (Figure 1). Length indices such as PSD (proportional size distribution) are used to evaluate population size structure. This index is commonly used to

describe the size structure of a population and may be used to describe bass of predator/prey population within a system. Basically, the larger the number the larger the proportion of big fish in a population. PSD is calculated by determining the ratio of adult ( $\geq 8$  inches) Largemouth Bass that are also greater than 12 inches. Additionally, PSD-P is the ratio of the number of adult bass that are greater than 15 inches. The PSD for the Hidden Valley Lake Largemouth Bass population in 2021 was 63 and the PSD-P was 13. The generally accepted PSD value for Largemouth Bass in a balanced fish population ranges from 40-70 and the PSD value for Hidden Valley falls well within that range. Currently, the 18-inch minimum length limit is protecting about 100% of the Largemouth Bass population that was sampled.

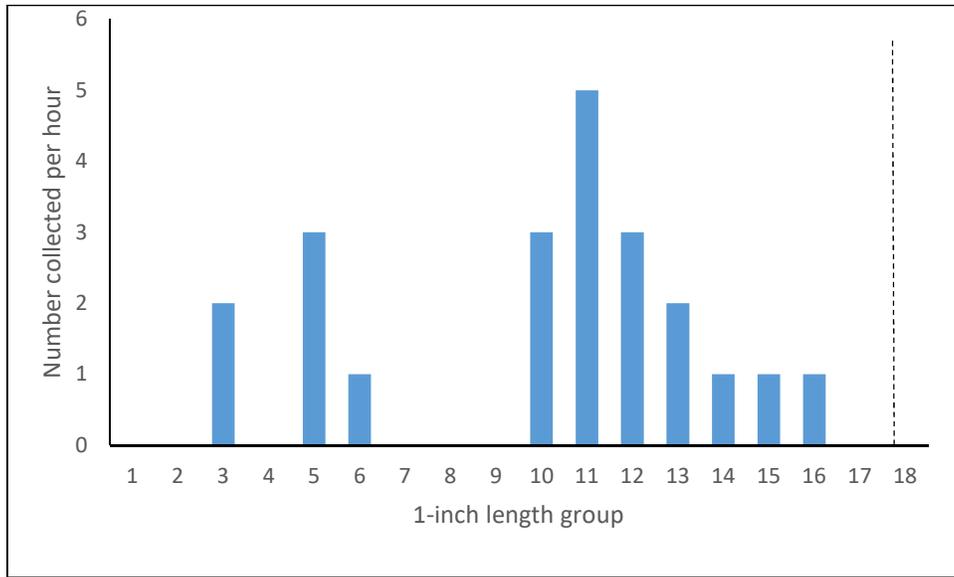


Figure 1. Length frequency distributions of Largemouth Bass collected during electrofishing samples on Hidden Valley Lake in spring 2021. Dashed, vertical line represents the 18-inch minimum length limit for this species.

Sunfish – Only a few Bluegill were observed in the 2021 sample.

Other Species – No Northern Pike or Channel Catfish were observed in the 2021 sample.

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