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## Philpott Reservoir 2018 Management Report

Philpott Reservoir is a 2,880-acre impoundment located near Martinsville, Virginia. This reservoir is situated in the mountains of Patrick and Henry counties, making it a picturesque setting for outdoor enthusiasts. Philpott Reservoir is owned by the U.S. Army Corps of Engineers who manage it primarily for flood control and hydroelectric power generation. There is no residential development along its shoreline but there are numerous boat landings, picnic areas, campgrounds, and hiking trails scattered throughout the reservoir.

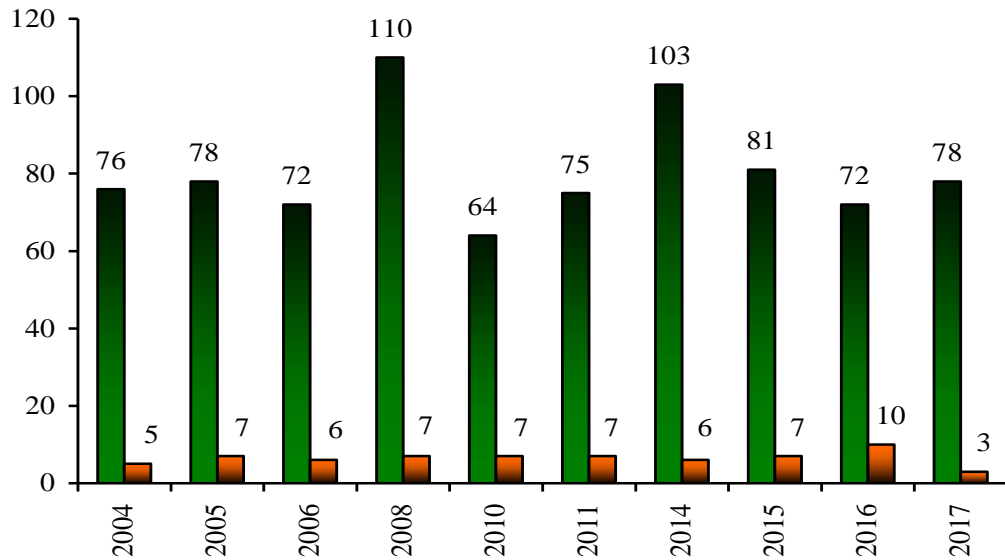
Fisheries resources are managed by the Virginia Department of Game and Inland Fisheries (VDGIF). The reservoir supports a variety of sport fish and forage fish species. Historically, the most popular sport fishes have been smallmouth bass, largemouth bass, crappie, walleye and various species of sunfish. Channel catfish, flathead catfish, and common carp provide additional angling opportunities. Gizzard shad and alewives are the primary forage fishes. Most of these species have established self-sustaining populations; however, annual stockings maintain the walleye population. VDGIF monitors the status of fish populations through routine sampling.

The overall fisheries management goal for Philpott Reservoir is to provide quality angling opportunities for a diverse number of fish species. In order to provide quality fishing opportunities, populations need to be both abundant and of good size structure. Fish abundance is measured by how many fish are collected per hour of electrofishing or per night of net sampling. Size structure is measured by looking at the proportion of adult fish in the sample that are larger than a given size. For example, we consider the proportion of adult largemouth bass larger than 15 inches or the proportion of adult black crappie that are over 10 inches. Catch rates and size structure data provide a standardized means of comparing this year's fish sample to previous years' catch, as well as to the samples collected at other lakes. However, they do not represent the number of fish you might catch while fishing, because you may be more or less effective than the sampling gear. Size structure measures give information about the different sizes of fish available in the population. Again, this may not match what you see while fishing, as you might be using gear or techniques that target a particular size range. Sampling gear tends to collect small and average-sized fish, so it is likely that you will catch fish larger than those collected by sampling. The data we collect is best used to track overall trends in fish populations through time. What follows are the results of 2017 sampling efforts and a comparison to previous years.

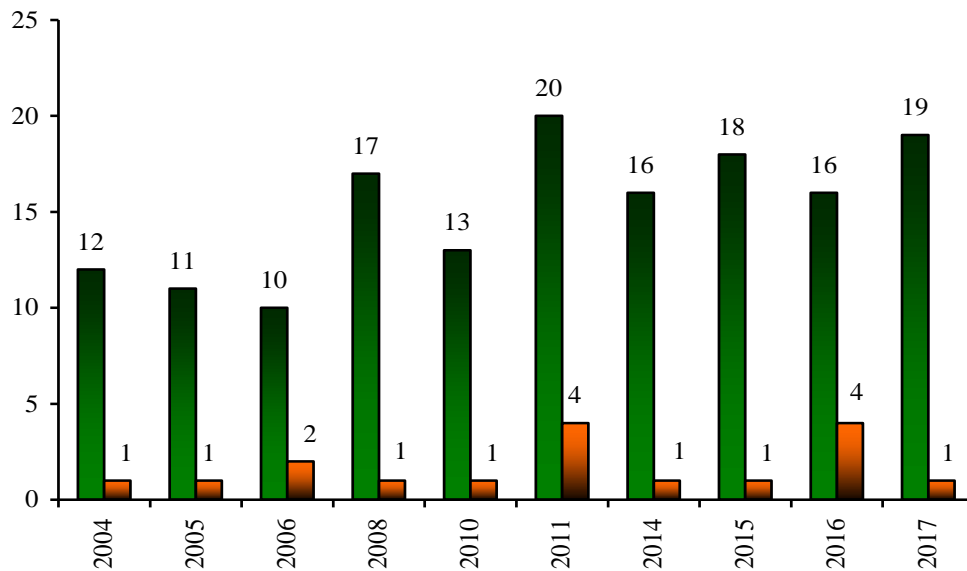
### Bass

Black bass (largemouth and smallmouth bass) are the most sought-after species by anglers at Philpott Reservoir. Electrofishing samples and angler surveys indicate

largemouth bass comprise the bulk of this fishery and account for 87% of angler catch of black bass, while smallmouth bass are a popular portion of the fishery in the spring and fall. Quality fish production for both black bass species has remained stable in recent years, with good numbers of bass in the 2-3 pound range. Relative abundance (number collected per hour), varies from year to year (Figure 1 & 2). The 2017 catch rates were 78 largemouth bass and 3 smallmouth bass per hour of sampling. Largemouth bass catch rates were average compared to those recorded since 2004, while smallmouth bass catch rates remained low. Historically, the overall smallmouth bass abundance is much less than largemouth bass abundance.



**Figure 1.** Electrofishing catch rates, fish per hour (all sizes), for largemouth bass (green columns) and smallmouth bass (orange columns) in Philpott Reservoir 2004-2017.



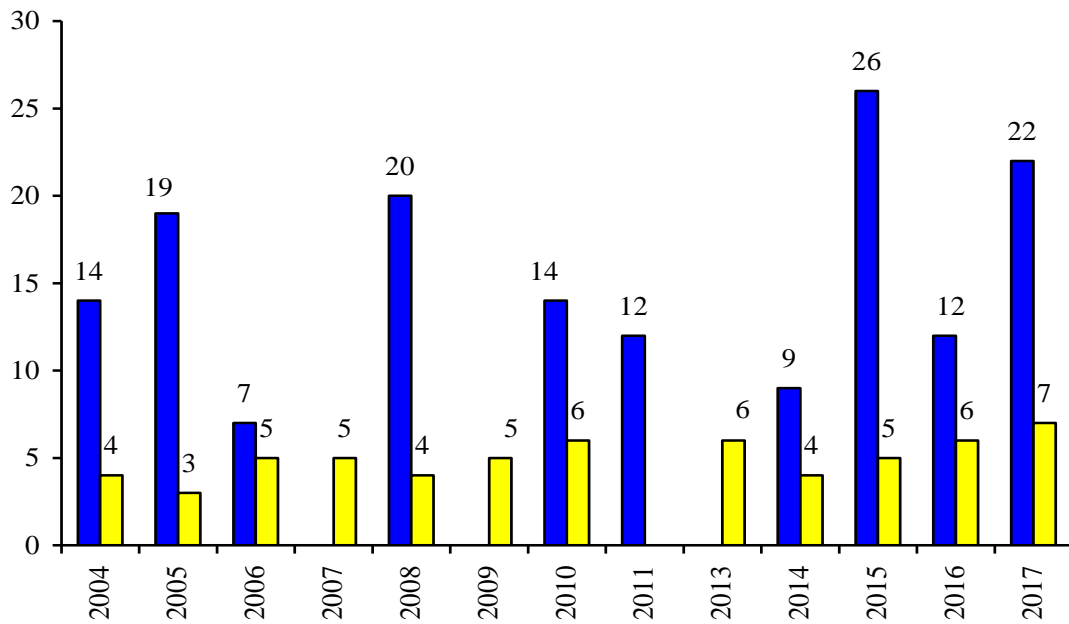
**Figure 2.** Number of preferred size largemouth bass (green columns) and smallmouth bass (orange columns) collected per hour of electrofishing at Philpott Reservoir 2004-2017. Preferred size is  $\geq 15$  inches for largemouth bass and  $\geq 14$  inches for smallmouth bass.

Good largemouth bass fishing can be found throughout the reservoir, but smallmouth bass densities appear to be greater in the lower end, particularly along the main lake channel. Clear water, especially in the lower half of the lake, can make fishing a challenge. Anglers should look for bass in deeper water and around fallen trees. Night fishing can also be productive in both deep and shallow water, as bass tend to come up shallower after dark.

### Walleye

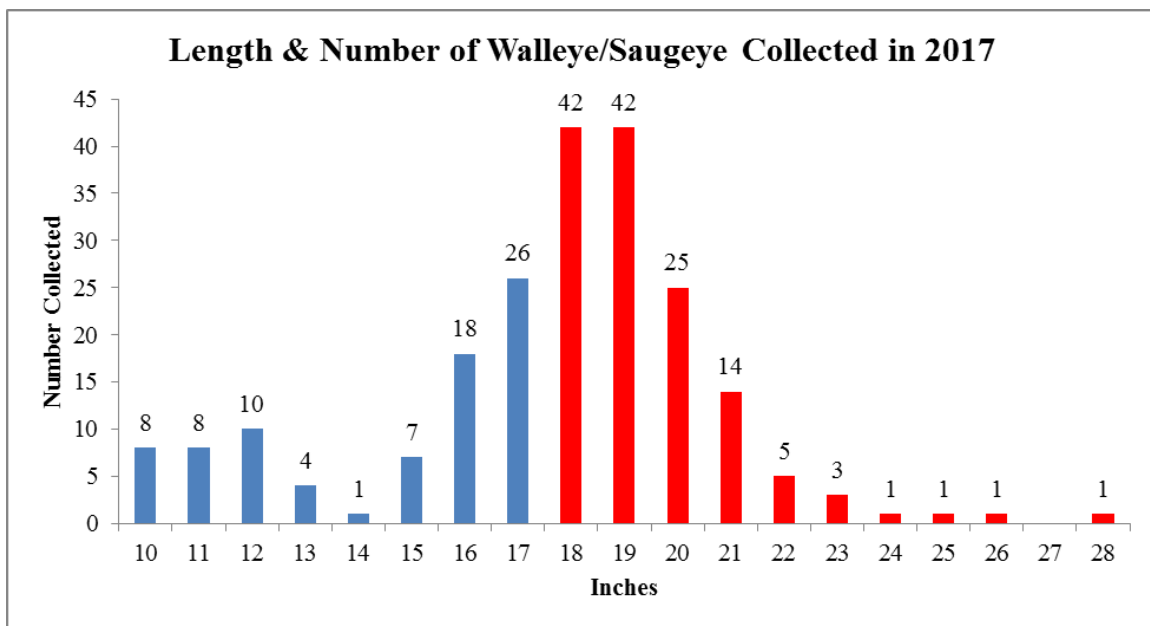
Philpott Reservoir has one of the better walleye populations in Virginia, with 13% of the total angler effort directed at walleye. This fishery does not contain many large fish, but supports excellent numbers, with most adult walleye averaging 16-21 inches. Adequate spawning conditions are not available at Philpott Reservoir so spawning fish are unsuccessful and do not provide any natural reproduction. Consequently, the walleye population is sustained with annually stocked fingerlings.

Walleye population abundance in Philpott Reservoir is measured using two methods: electrofishing in the spring and gillnets in the fall. The reason for using two sampling methods is that when compared to bass, walleyes are less likely to be associated with shoreline habitat during early April. Because these daytime electrofishing catch rates may not always accurately represent the walleye population, gillnets are also used. Electrofishing catch rates vary considerably from year to year (Figure 3). Electrofishing catch rates for the May sample was (22/hr.) and the gillnet catch rates of 7 fish per net in 2017 was average.



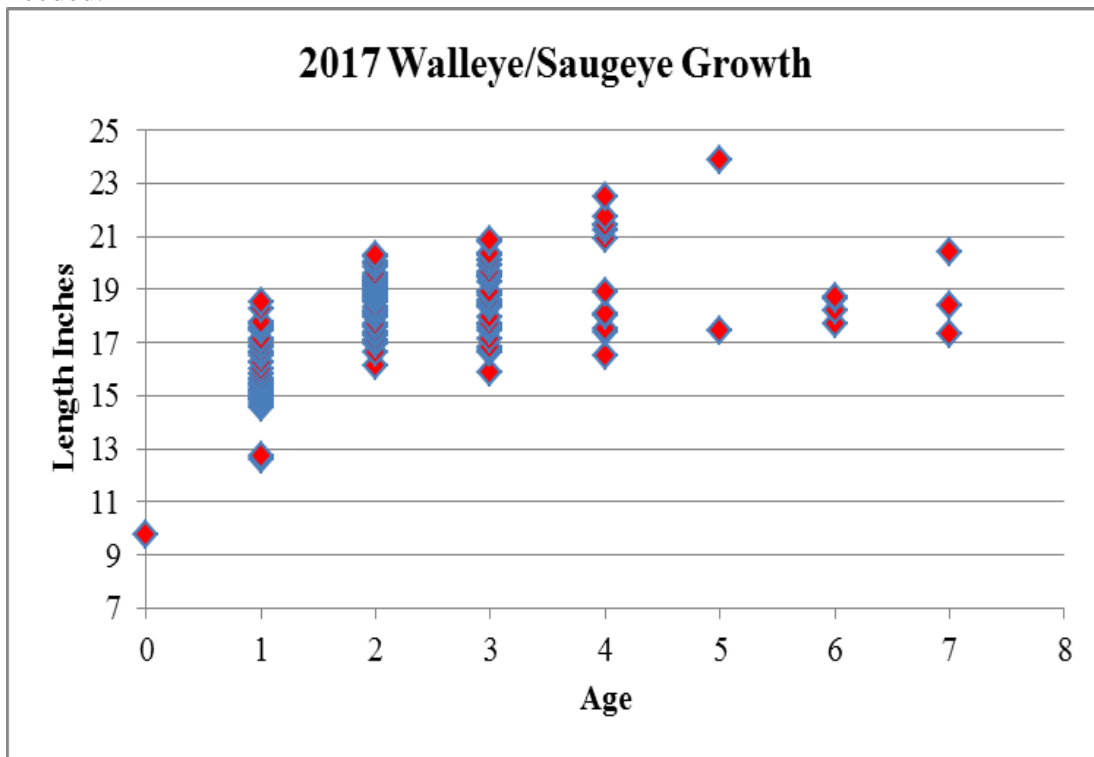
**Figure 3.** Sampling catch rates for walleye in Philpott Reservoir 2004-2017. Blue columns represent spring electrofishing catch rates (fish per hour) and yellow columns represent fall gillnet catch rates (fish per net).

The size structure of the walleye population is good. A total of 217 walleye and saugeye combined were collected in 2017 with an average total length of 17 inches. Sixty-two percent of the walleyes collected in 2017 sampling efforts were 18 inches or longer. However, anglers fishing Philpott in 2017 reported that most of their catch was less than the 18 inch size limit.

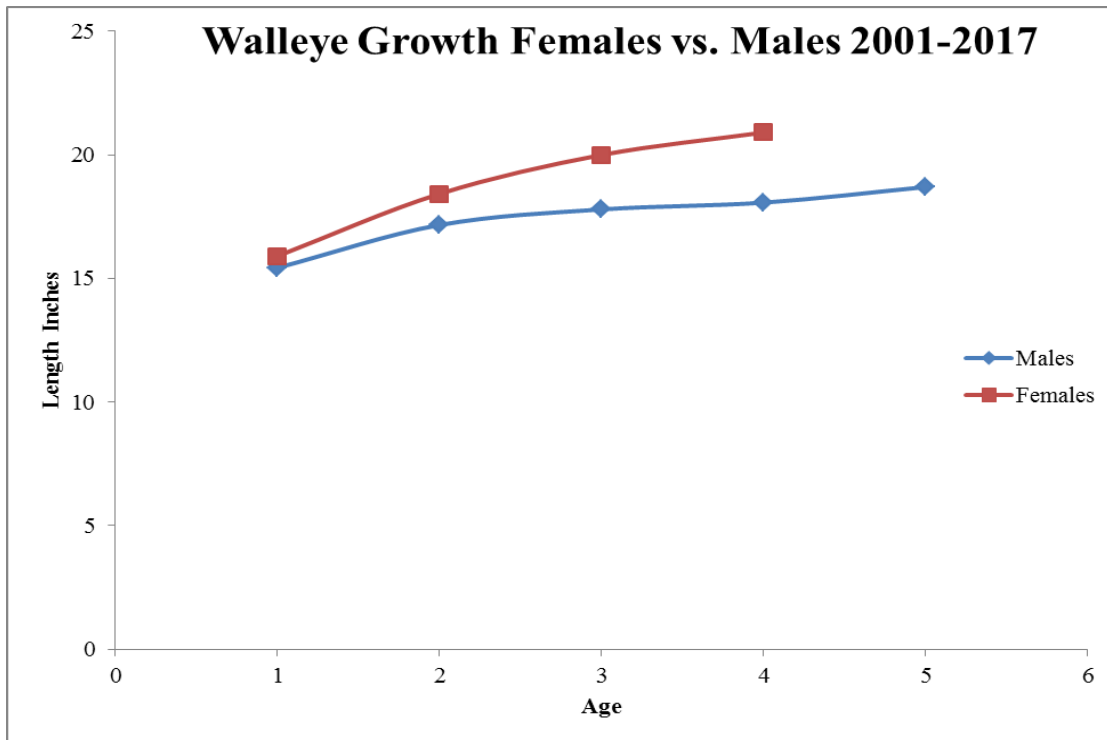


**Figure 4.** Walleye/Saugeye size and number collected from electrofishing and gillnetting in Philpott Reservoir 2017. Blue columns represent sub-legal fish (<18 inches) and red columns represent legal sized fish (>18 inches).

Growth of stocked walleyes continues to be slow in Philpott Reservoir. Analysis of 2017 growth data shows most walleyes reaching 15 inches by 1.5 years old and measuring 16 to 18 inches between 2.5-4.5 years old (Figure 5). Walleye growth rates decline sharply after age three or four. To complicate matters, male walleyes are slow-growing and seldom exceed 21 inches in length, while female walleyes may reach lengths of 25 inches in Philpott. The growth rate difference between male and female walleye is graphically displayed in Figure 6. Male walleyes are shown to grow slower and have a smaller maximum total length. The differences in growth rates are most apparent for walleyes over three years old, with female walleyes being several inches longer than males of the same age. In an attempt to improve walleye growth rates the number stocked into Philpott Reservoir was reduced in 2016 and 2017 from 144,000 to 75,000. Growth will continue to be monitored and stocking allocations will be adjusted as needed.



**Figure 5.** Walleye/saugeye length and age collected from gillnetting in Philpott Reservoir 2017.



**Figure 6.** Walleye length and age collected from 2001-2017. Males are represented by the (blue diamonds) and females by the (red boxes).

Beginning in March, walleye begin to migrate from deep winter haunts into shallower water for the purpose of spawning. They are typically found at depths of 15-20 feet during the daytime but may be found at depths less than five feet in the upper ends of the reservoir if the water is turbid. Spawning typically occurs between late March and the first week of April at night time with the fish coming into very shallow water after dark and returning to deeper waters after daybreak. During spawning, walleyes congregate at the headwaters of the reservoir above mile marker 12, near the first shallow riffles of the Smith River, Runnett Bag Creek arm, and from the dam to mile marker 3. After spawning, walleye redistribute throughout the lower nine miles of the reservoir, with the highest concentrations typically within four miles of the dam. Anglers will have moderate success at catching walleye in April and May. Sunfish species make up a portion of walleye diet, but alewives are likely the most important part of the walleye diet. Alewives spawn at night in May and June along the shoreline at the water's surface. The erratic spawning behavior of the alewife makes them easy targets for the hungry walleye. Walleye are sensitive to light and remain in deeper water during the day, but make their way to very shallow water at night to capitalize on the forage. Night fishing with floating or shallow running plugs cast to the shoreline can provide some great walleye action when alewives are spawning, as walleye often frequent water less than 2 feet deep during these dark hours.

Another productive walleye fishing times is in the months of June through August. During daylight hours, fish the shoreline contour but in deeper water (15-20 ft). As water temperatures increase in late spring and throughout the summer, walleye continually move deeper, seeking cooler water. Anglers must fish deeper throughout the

summer to capitalize on this fishery. However, in the upper half of the lake, walleye will hold on the thermocline and fishing below the thermocline will not be productive since there is usually no oxygen present after mid July.

### Crappie

Black crappie are present in Philpott Reservoir, however this lake does not have a high density of crappie. Crappie recruitment has been consistently low for many years. This reservoir does not contain adequate habitat for producing high numbers of crappie, but it does provide excellent sizes, with most fish in the 9-13 inch classes.

Additional information on Philpott Reservoir facilities can be obtained by contacting the U.S. Army Corps of Engineers at 276-629-2703.

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