Lake Chesdin 2016 Fisheries Management Report

Virginia Department of Game and Inland Fisheries

Lake Chesdin is a 3,100-acre water supply reservoir on the Chesterfield-Dinwiddie County line administered by the Appomattox River Water Authority. Chesdin is a productive lake that, for many years, has offered excellent largemouth bass fishing, good crappie fishing in spring and fall, and a great channel catfish fishery. It contains a diverse community of fish species that can provide plenty of excitement for anglers over the course of the various fishing seasons.

The Virginia Department of Game and Inland Fisheries conducted an electrofishing survey of Lake Chesdin on May 7th and 8th, 2015. The 2014 electrofishing survey consisted of covering six shoreline sites. The 2015 survey consisted of a large increase in effort with 14 shoreline sites covered for an effort time of 3.5 hours. Each survey run consists of 15 minutes of electrofishing effort. The combination of the runs provides a picture of the present fish assemblage. Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 4 foot depth range. Lake Chesdin has a thick coverage of water willow that lines the shoreline in most areas. This aquatic vegetation provides plenty of protective cover for various fish species that inhabit the shoreline regions of the lake. The 2015 survey consisted of 4 full community survey runs and 10 predator species only runs. This report will concentrate on the various gamefish species that anglers will target while out on Lake Chesdin.

Largemouth Bass

The largemouth bass population within Lake Chesdin continues to be in great shape. The overall size structure showed an abundance of fish in the 38 to 52 centimeter range (15 – 20 inch range). A total of 438 largemouth bass were collected for a CPUE (Catch Per Unit of Effort) of 125 fish/hr). The catch rate showed an increase when compared to the 2014 survey (CPUE = 96 fish/hr). The CPUE of Preferred-size bass in 2015 (48.3 fish/hr) showed a decline when compared to the record year of 2014 (CPUE = 58.7 fish/hr). The catch rate of preferred-sized bass (fish ≥ 15 inches in total length) can vary from year to year based on whether or not a large proportion of the female bass are encountered during the survey. The female bass will usually be your larger fish that are staging in and around the spawning grounds. The 2015 survey encountered a fair number of female bass near the water willow edge, but also found a high proportion of the collection to include some large male bass. The survey found the majority of the bass population to be in a post-spawn pattern. A survey a week earlier would have yielded a high abundance of female bass in a pre-spawn pattern.

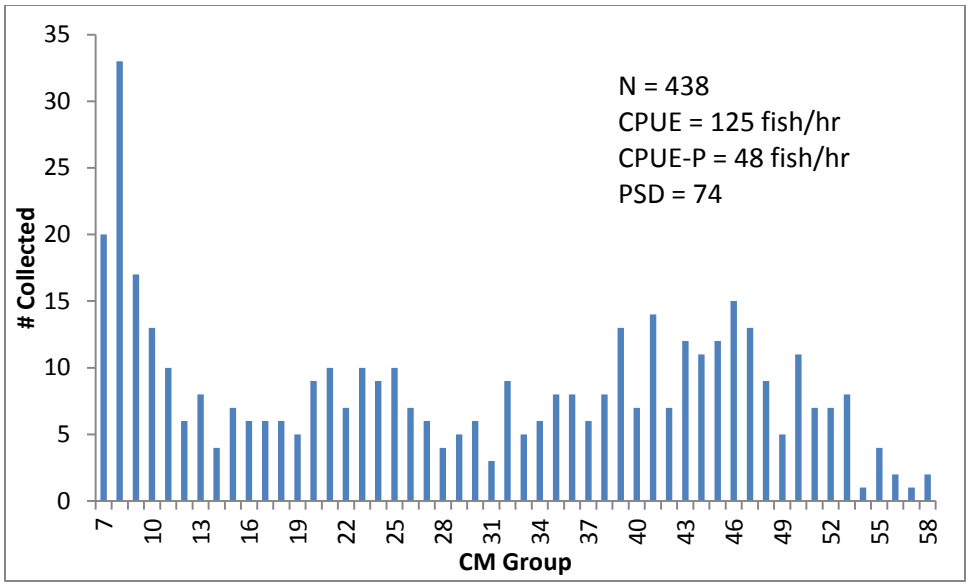

Figure 1. Length frequency distribution of largemouth bass collected from Lake Chesdin on May 7th and 8th, 2015.

The length distribution showed a high proportion of collected bass to be greater than 28 centimeters (11 inches) in length. Recruitment of juvenile bass over the last few years has been an area of concern, but from all indications the 2014 year class appears to be pushing a large number of bass through the system. The great number of collected bass at 438 provided a blended length frequency histogram with no isolated groups of fish easily detected. This blended distribution occurs when you have a mixture of fast growing fish and slower growing fish from various year classes. The largest bass measured 22.9 inches and weighed 7.8 pounds. Lake Chesdin is one of those rare fisheries in which there appears to be more 3 to 5 pound bass than 1 to 2 pound fish. Strong year class recruitment and the abundance of gizzard shad have allowed the bass population to produce some quality fish over the last few years.

Fisheries biologists of the past established certain size classifications to describe the fish they collected. It is through these size classifications that population dynamics are analyzed. The size designations are stock, quality, preferred, memorable, and trophy. The PSD (Proportional Stock Density) is the proportion of stock-sized bass (8 inches or larger) that are also equal to or greater than 12 inches (quality size). A balanced bass/bluegill fishery has a bass PSD value within the 40 – 60 range.

With largemouth bass being the most popular game fish in this country, it has been considered that a “preferred” bass is one that is over 15 inches in length. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of stock-sized bass that are also equal to or greater than 15 inches in length. The PSD and RSD-P values represent the distribution of collected fish, but one must take into account the total number of bass collected along with the total of stock-sized bass in the sample. The sample showed a PSD value of 74, which is a direct

reflection of the 220 quality-sized bass. The sample had a total of 297 bass that were stock size or larger. The RSD-P value of 57 is a direct reflection of the 169 preferred-sized bass collected. The 2015 PSD and RSD-P values were less than the 2014 values (PSD = 88, RSD-P = 70), which is actually a good thing as it shows the bass population is gaining some sort of better balance. The collection of 32 memorable-sized bass yielded a RSD-M value of 11 which was slightly greater than the 2014 survey (RSD-M = 10). A memorable-sized bass is a fish that measured in the 51 to 62 cm range (20 to 24 inches).

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. The higher the value, the better the condition of the fish in terms of overall body mass. Weights were taken on all collected bass. The relative weight values for stock, quality, preferred and memorable bass (≥8", ≥12", ≥15", ≥20") were 101, 103, 103 and 108. The 2015 relative weight values were above the desired range, but showed an increase from 2014 (stock = 98, quality = 100, preferred = 101, memorable = 102). An increase in relative weight values is most likely a reflection of the lake's forage base having good recruitment to allow the bass population to put on an increase of muscle mass and body fat reserve.

The gill net survey of Lake Chesdin collected some very respectable largemouth bass in the 5 to 7.5 pound range. The survey collected a total of 33 bass (CPUE = 1.67 fish/100 m^2). The collected bass revealed high relative weight values (stock = 113, quality = 115, preferred = 118, memorable = 113) that reflect the ease at which the adult bass are able to consume the abundant gizzard shad forage base. These large bass could be described as football shaped due to their massive girth from years of consuming gizzard shad.

Bluegill and Redear Sunfish

The electrofishing surveys concentrated on collecting bluegill, redear sunfish and various other sunfish species during 4 of the sample runs. The spring survey yielded a total of 766 bluegill (CPUE = 766 fish/hr). This catch rate was less than the 2013 survey (CPUE = 1,181 fish/hr). The bluegill length distribution ranged from 1 to 7 inches, with the majority of fish in the 4 to 5.5 inch range. The past stock-pile of bluegill in the 4 to 5 inch range appears to still be present. No bluegill greater than 7.5 inches were collected. Anglers should not expect to catch too many large bluegill from Lake Chesdin. The majority of collected bluegill were found along the outside edge of the water willow that grows extremely tight to the shoreline.

The redear sunfish population appears to be in decent shape even though their abundance is not as great as the bluegill. The redear sunfish have a better size potential than the bluegill population, with redear sunfish growing up to 10 inches in total length. The survey collected a total of 62 redear sunfish (CPUE = 62 fish/hr). This catch rate showed an improvement from 2013 (CPUE = 26 fish/hr). The majority of collected redear sunfish were in the 6 to 9 inch range.

Anglers looking to catch some decent redear sunfish can target the sandy points and some of the pocket coves inside of the water willow where redear sunfish will build their spawning nests.

Black Crappie and White Crappie

The electrofishing survey of Lake Chesdin produced a total of 57 black crappie (CPUE = 16 fish/hr), which showed an increase when compared to 2014 (CPUE = 3 fish/hr). The collection of black crappie depends on whether or not a school of fish is encountered during the shoreline survey. Crappie will typically school in deeper water during the day if they are not holding tight to a massive amount of shoreline brush in the form of a beaver hut or a fallen tree. The collected fish ranged in size from 4 to 12 inches, with the majority of fish in the 7 to 8 inch range. The electrofishing survey yielded a low abundance of white crappie with only 8 collected. These fish were of great size from 11 to 15 inches. White crappie of this size range will typically school up and forage upon the schools of juvenile gizzard shad in the 1 to 3 inch range.

To attain a better idea of the strength of the crappie population within Lake Chesdin, a trap net survey was conducted from March 30th – April 1st, 2015. The trap net survey was able to produce a total of 109 black crappie (CPUE = 5.74 fish/net night). This catch total was less than 223 black crappie (CPUE = 11.2 fish/net night) collected during the 2014 trap net survey. The majority of the collected black crappie were in the 17 to 21 centimeter range (6 to 8 inches). The largest black crappie measured only 9.8 inches. A limited abundance of juvenile black crappie were collected, with very few fish less than 17 centimeters in length. Relative weight data of collected crappie (stock = 92, quality = 90) revealed some improvement from 2014 (stock = 87, quality = 83). The competition for small forage fish is high due to the abundance of predator fish in the system. Black crappie are most likely in direct competition with the white and yellow perch population for any small forage items they can find. The trap net survey produced a limited abundance of white crappie with only 12 fish collected. Collected white crappie ranged in size from 6 to 13 inches. Lake Chesdin is one of the few impoundments in Virginia that have populations of both black and white crappies. The DGIF Trophy Fish Award program recognized the catch of 12 citation crappie from Lake Chesdin during 2015. Lake Chesdin ranked in 5th place state-wide with this total of 12 citation crappie. There are numerous smaller crappie in Lake Chesdin, but there are enough larger fish out there to make things interesting.

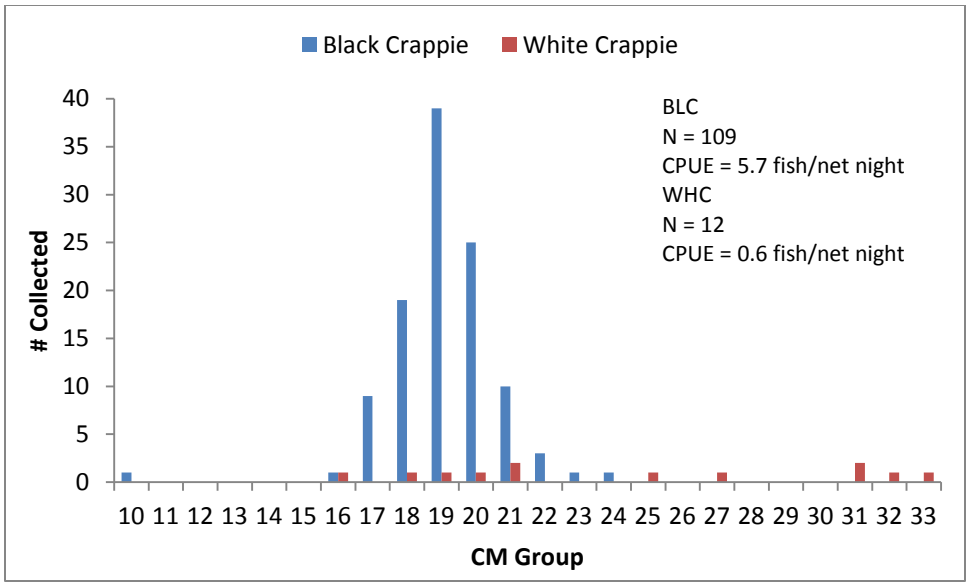

Figure 2. Length frequency distribution of black crappie and white crappie collected during the trap net survey of Lake Chesdin on March 31st – April 2nd, 2014.

The gill net survey revealed a fair abundance of black crappie with the collection of 68 black crappie (CPUE = 3.44 fish/100 m^2). This catch rate showed a decline from the 2014 survey (CPUE = 5.77 fish/100 m^2). The majority of collected crappie were within the stock-piled size range of 18-20 centimeters (7 to 8 inches). Anglers are encouraged to harvest these smaller black crappie in hopes of eventually restoring the population to a state of improved balance. The relative weight values (stock = 95, quality = 92, preferred = 84, memorable = 84, trophy = 86) of the collected crappies in December showed some signs of improvement when compared to the spring trap net survey. It appears that these fish were able to key in on the juvenile bluegill that were produced during the spring and early summer spawns of 2015. The largest crappie collected during the gill net survey was a trophy that was a hybrid black x white crappie cross that measured 16.5 inches and weighed 2.7 pounds.

Walleye and Saugeye

The walleye population within Lake Chesdin has historically been low due to inconsistent stocking as a surplus-only water. The 2013 and 2014 hatchery production was very favorable which allowed for Lake Chesdin to be stocked with walleye and saugeye fingerlings both years. The saugeye appear to be doing extremely well with some of the 2" fish from the 2013 stocking reaching 20+ inches by the fall of 2015. The spring electrofishing survey of 2015 encountered and collected a total of 26 saugeye. This came as quite a surprise as the majority of the saugeye were in the 12 to 17 inch range. Collected saugeye were found in schools along the backs of various coves on the northern shoreline along with schools of gizzard shad in water that was only 2 to 3 feet deep. This goes to show you that you never know when and where certain fish may be

positioned in the water column. Only one walleye of 12 inches was collected during the day electrofishing surveys of May.

The night electrofishing surveys that were conducted on October 28th and November 4th, 2015 revealed a fair abundance of walleye and saugeye. The survey collected 19 walleye and 16 saugeye. The warm water temperatures during the fall of 2015 may have decreased the catch rate of walleye and saugeye as the majority of the populations may have been schooled up in deeper water as they waited for the water temperature to drop below 16°C. The fall gill net survey conducted during the first week of December provided some great excitement in the form of 52 saugeye and 8 walleye. The largest saugeye weighed in at 3 pounds and the largest walleye weighed 6.5 pounds. The walleye and saugeye populations within Lake Chesdin will soon be surprising anglers that are patient enough to target them.

DGIF Fisheries staff started to deploy Floy tags to collected saugeye and walleye during the various surveys on Lake Chesdin in 2015. These tags are located just below the dorsal fin on the fish's left hand side of their body. These reward tags are worth $20. Anglers are encouraged to cut the tag off of the fish if it is under the 18" minimum size limit. Please return the tag to the DGIF office at 3801 John Tyler Memorial Highway, Charles City, VA 23030 (attn. Scott Herrmann). Please include a brief summary of when and where the fish was caught along with the length and weight.

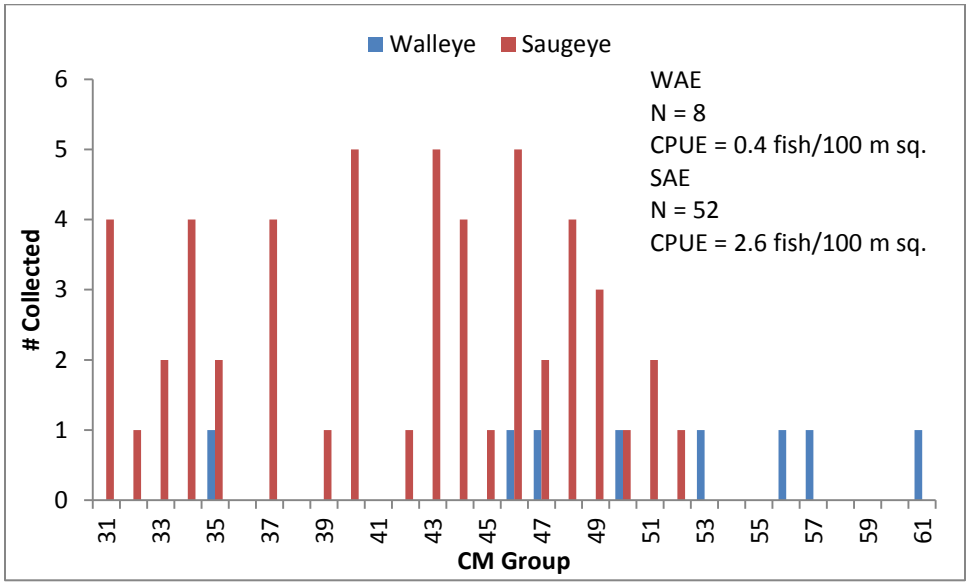

Figure 3. Length frequency distribution of walleye and saugeye collected during the gill netting of Lake Chesdin in December 2015.

Summary

Lake Chesdin provides a variety of fish species for anglers to target. The largemouth bass population is in great shape with plenty of bass in the 3 to 5 pound range, with a good assortment of bass in the 6 to 7 pound range. The 2015 electrofishing survey collected three bass that weighed in the 7.75 to 7.8 pound range. Lake Chesdin had the highest catch rate of preferred-sized bass (>15 inches) of all the public water sampled in Region 1, District 1. Anglers are reminded that the majority of the bass population will be foraging upon the gizzard shad population. The abundance of small bluegill in the 3 to 5 inch range will also provide plenty of forage for the bass. The abundance of forage within the lake can also make fishing for bass a bit difficult as anglers have to find a productive pattern that matches what the fish are feeding upon. The bass will spawn within the protective confines of the water willow beds and then they will migrate to more of an open water pattern and chase down schools of gizzard shad after the spawn is complete. Anglers that put in enough time on the water will start to figure out which fishing patterns are worth trying and which ones should be avoided. Anglers reported the catch of 7 citation largemouth bass during 2015.

The black crappie and white perch populations continue to be based upon small fish in the 6 to 8 inch range. Anglers are encouraged to harvest these smaller fish in hopes of creating a better balance to the fishery at some point in the future. The crappie fishery has a fair number of larger fish that have managed to survive long enough to break away from the stock-pile of smaller fish. The reported catch of 12 crappie citations from Lake Chesdin was a great surprise during 2015. The presence of white crappie most likely added to this citation total. The bluegill population leaves something to be desired, but the redear sunfish population shows some promise with fish in the 8 to 10 inch range. The walleye and saugeye that have been stocked over the last few years appear to be doing rather well with some decent growth rate reported from the various surveys that have been conducted. The fishery provides a good opportunity to catch some quality-sized channel catfish along with an abundance of white catfish and brown bullhead. The gill net survey of 2015 collected a total of 67 channel catfish with a good proportion of fish in the 20 to 25 inch range. Young anglers might want to try fishing for these channel catfish instead of fishing for the stunted bluegill.