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Diascund Reservoir 2020 Fisheries Management Report
Virginia Department of Wildlife Resources

Diascund Reservoir is owned by the City of Newport News and borders both James City County and New Kent County. The Virginia Department of Wildlife Resources, with agreement from the City of Newport News and James City County, maintains a public boat ramp, courtesy pier, and parking lot located off of Route 603 near the town of Lanexa. The reservoir is 1,110 acres in size and has a number of large creek arms. The reservoir has plenty of interesting contour and structure. Several small islands, numerous large points, and bridge crossings all add to the variability of the topography. Submerged aquatic vegetation in the form of hydrilla has recently been able to spread in several shallow areas of the reservoir. The use of outboard engines is prohibited on Diascund Reservoir but the use of trolling motors is permitted. Anglers might want to make sure that they have a few fully charged batteries if they plan on making long trips toward the upper reaches of the creek arms.

The Virginia Department of Wildlife Resources conducted electrofishing surveys of Diascund Reservoir on April 22nd, July 7th, and September 24th, 2020. The surveys allowed for the quality assessment of the current fish assemblage. The majority of this report will focus on what was encountered during the April survey as the spring survey typically provides the best data on a variety of fish species. 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**.** A total effort of 2 hours of electrofishing yielded the collection of 15 fish species. This report will concentrate primarily upon the seven major fish species: largemouth bass, bluegill, black crappie, chain pickerel, bowfin, yellow perch, and redear sunfish.

Six survey runs were conducted on April 22nd to cover the main basin of the reservoir into the Wahrani Creek arm along with survey runs in between the bridges to cover that portion of the reservoir. The survey was broken up to include three full community runs in which every fish species was collected, as well three predator species-only runs.

Largemouth Bass

The largemouth bass population within Diascund Reservoir appears to be in decent shape. A total of 134 largemouth bass were collected for a CPUE (Catch Per Unit of Effort) of 67 fish/hr. This catch rate revealed a favorable increase from 2018 (CPUE = 38 bass/hr). The average CPUE of electrofishing surveys (1998 – 2018) is 72 fish/hr. The size distribution of the collected bass can be seen on the enclosed length frequency graph. Bass ranged in size from 3 to 20 inches, with a large assemblage of fish holding tight in

the 13 to 17 inch range. The average total length of the collected bass was a decent 13.1 inches. The abundance of bass within the 15 to 17 inch range was able to offset the presence of fish in the 5 to 11 inch range. The collection of bass greater than 18 inches in total length leaves something to be desired.

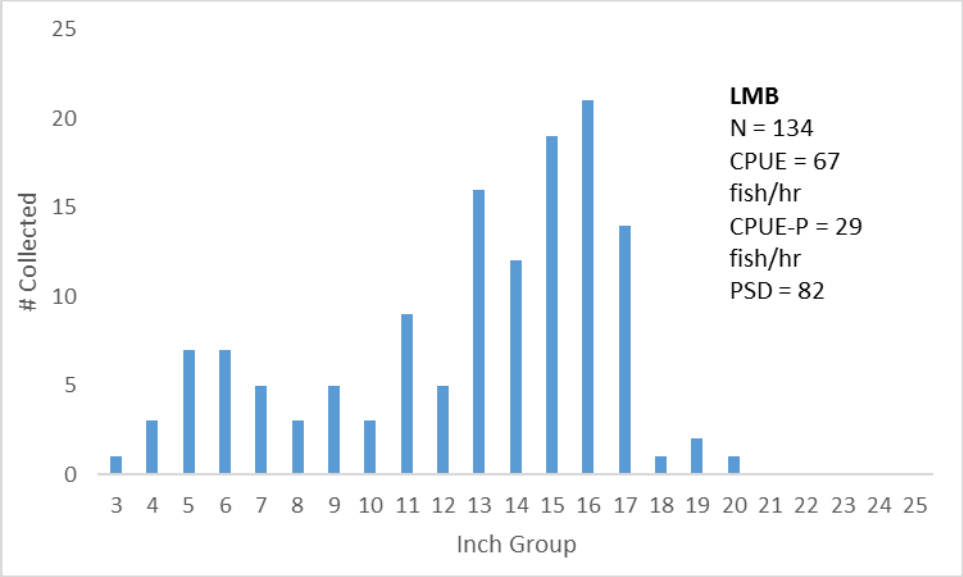

Figure 1. Length frequency distribution of largemouth bass collected during the electrofishing of Diascund Reservoir on April 22nd, 2020

The survey was similar to past surveys in revealing an abundance of bass in the 15 to 17 inch range, followed by a steep drop off in bass abundance when you reach the 18-inch and larger size groups. The survey most likely encountered a high proportion of male bass in the 1.5 to 2 pound range that were in the process of selecting sites for the upcoming spawn. The colder than normal weather of April 2020 shifted the spawn back almost a month on the majority of the local reservoirs. March was warmer than April was, so there is an outside chance that the larger females may have spawned toward the tail end of March. The largest collected bass measured 20.12 inches with a weight of 4.92 pounds. The overall abundance of largemouth bass greater than 5 pounds in weight has shown a large decline in our electrofishing surveys. Anglers may still be able to find a few larger bass, but from all indications, the density of bass greater than 4 pounds is not very great.

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. It is through this size classification that population dynamics are analyzed. 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). The sample showed a PSD value of 82, which is a direct reflection of the 92 quality-sized bass. The sample had 112 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40–60 range. The 2020 PSD value showed a similarity to the 2018 survey (PSD = 81). 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 2020 RSD-P value of 52 is a direct reflection of the 58 preferred fish being collected. This value

showed a marked increase from the 2018 survey (RSD-P = 26) and shift toward a larger proportion of preferred-sized fish.

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. A higher relative weight value indicates fish with a better body condition. The 2020 relative weight values for stock, quality, and preferred bass (≥8", ≥12", ≥15") were 104, 105 and 103 respectively. These relative weight values showed a wholesale improvement across the board when compared to the 2018 relative weight values (stock = 91, quality = 90, and preferred = 87). The abundant forage base of juvenile gizzard shad and blueback herring has created ideal growth potential for the largemouth bass population as well as the other predator fish species that are present.

Bluegill and Redear Sunfish

The survey was similar to past years with the bluegill population dominated by fish less than 6 inches in length. The survey reflected a weak assemblage of fish in the shallows after a recent cold snap or the changing dynamics of the population. The survey collected 83 bluegill for a CPUE of 83 fish/hr. This catch rate showed a large decline from 2018 (CPUE = 255 fish/hr) along with an even larger difference from the historic mean CPUE of 608 fish/hr. The collected bluegill ranged in size 1 to 8 inches. The largest bluegill, an 8.86-inch trophy, was one of the largest bluegill DWR has ever collected from Diascund Reservoir. Past electrofishing surveys, along with trap net surveys, have typically shown an abundance of juvenile bluegill in the 2 to 4 inch range, with very fish ever making it past the 6-inch mark. The majority of the collected bluegill were found along the shoreline where zooplankton and various other food items had been pushed into the shallows. The average total length of collected bluegill was 3.94 inches.

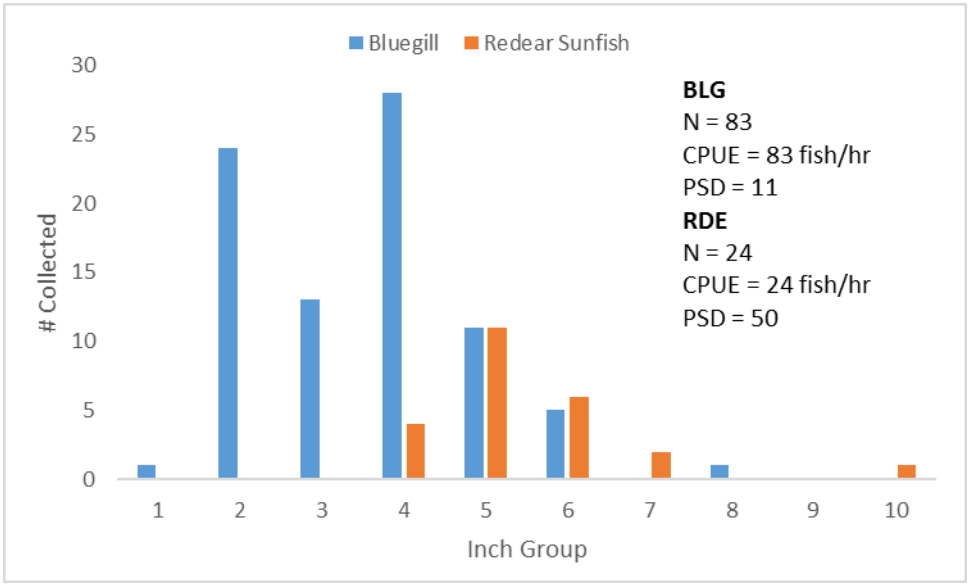

Figure 2. Length frequency distribution of bluegill and redear sunfish collected during the electrofishing of Diascund Reservoir on April 22nd, 2020

The redear sunfish population appears to be limited and suffering from weak year classes of recruitment. The spring survey revealed 24 redear sunfish (CPUE = 24 fish/hr), which surprisingly was just a minor decline from 2018 (CPUE = 25.5 fish/hr). Collected fish ranged in size from 4 to 10 inches, with the vast majority in the 5 to 6 inch range. Past surveys have shown a limited presence of young redear sunfish less than 3 inches in total length. The limitations on overall population density along with poor recruitment of juvenile fish has continued the downward spiral of the redear sunfish population. Anglers should limit the number of redear sunfish that they harvest if they want to protect the struggling population. The fall electrofishing survey revealed 34 additional redear sunfish over the first two survey runs (CPUE = 20.4 fish/hr). This survey produced a few larger sized redear sunfish in the 8 to 10 inch range along with a whopper that measured 11.29 inches and weighed just shy of a pound (0.93 lb).

Black Crappie

The 2020 spring electrofishing survey failed to produce much in the way of black crappie with only one crappie collected. Black crappie tend to school in waters deeper than bass and bluegill, especially in a post spawn pattern. Considering this, the typical shoreline sample can be very random as to whether or not a school is encountered during a sample run. The extremely warm winter and the spring of 2020 most likely allowed the black crappie population to spawn much earlier than normal. It is quite possible that a large percentage of the crappie spawn occurred toward the middle of March. The September electrofishing survey collected 46 black crappie for a CPUE of 17.3 fish/hr. The black crappie population appears to be in fair shape with majority of the sample consisting of crappie in the 5 to 8 inch range. This assortment of fish are most likely from the 2019-year class. The largest black crappie measured 11.22 inches. Anglers that fish the reservoir on a regular basis are more prone to finding the larger crappie stacked up in various locations. The citation-sized crappie that reach the 2-pound mark and larger have most likely been taking advantage of the abundance of blueback herring and juvenile gizzard shad. The 2019 trap net survey of Diascund Reservoir was uneventful when it came to the overall abundance of black crappie. Some larger sized crappie were found. The warm winter weather leading into that March survey changed up the typical schooling patterns and migrations to the shallow flats.

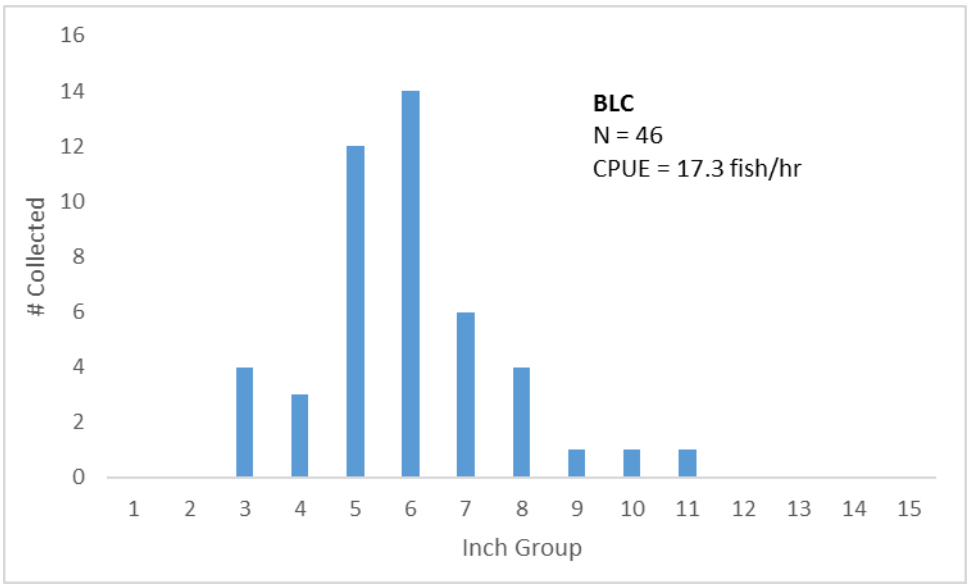

Figure 3. Length frequency distribution of black crappie collected from the electrofishing survey Diascund Reservoir on September 24th, 2020

Chain Pickerel and Bowfin

The 2020 spring survey revealed a limited abundance of chain pickerel with seven collected (CPUE = 3.5 fish/hr). The size distribution ranged from 10.15 to 18.58 inches. The largest chain pickerel (18.58") weighed a meager 1.38 pounds. The average size for the collected pickerel was 15.23 inches. The fall electrofishing survey provided some additional excitement in the collection of 21 chain pickerel (CPUE = 7.9 fish/hr). Collected chain pickerel ranged in size from 6 to 20 inches with the majority of the collection less than 12 inches in length. The chain pickerel population offers some diversity to the fishery and will provide action when the bass are not cooperating. From all indications, the trophy component to the population is just not present. The recent increase of hydrilla growth in certain areas of the reservoir may actually help to provide great spawning habitat for chain pickerel as well as great habitat for juvenile fish. Anglers are reminded that chain pickerel are a natural piece of the fish assemblage in Diascund Reservoir. Adult chain pickerel will actually help the fishery by eating some of the juvenile yellow perch.

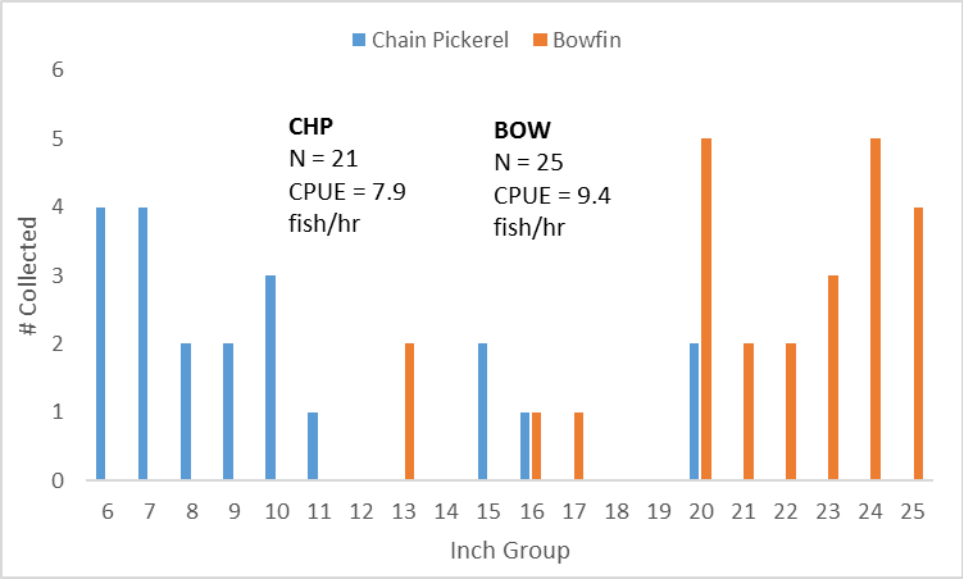

Figure 4. Length frequency distribution of chain pickerel and bowfin collected from the electrofishing survey Diascund Reservoir on September 24th, 2020

Diascund Reservoir continues to produce some respectable bowfin. Although no citation-sized bowfin were collected in 2020, the bowfin population still has the ability to produce some trophy fish. The spring survey did not yield much assessment of the bowfin population with only five fish collected (CPUE = 2.5 fish/hr). This limited sample consisted of fish that ranged in size from 17.6 to 26.4 inches. The largest fish weighed 5.9 pounds. The fall survey provided a boost to the action with 25 bowfin collected (CPUE = 9.4 fish/hr). Collected bowfin ranged in size from 13 to 25 inches. The largest bowfin weighed in at 6.3 pounds, much larger than any of the bass collected from the reservoir in 2020. The average size bowfin measured 21.9 inches. Bowfin are a native fish species that serve a purpose in the food chain. **The creel limit for bowfin is 5 fish/day and bow fishing for bowfin on any impoundment is illegal**. Reports from anglers in 2020 revealed decent catches of bowfin stacked up in old creek channels. Bowfin will typically be drawn to protective shoreline cover, but sometimes may be found in surprise locations that are stacked up with forage.

Yellow Perch

The April survey provided 74 yellow perch (CPUE = 37 fish/hr), which was a noticeable decline from the 2018 survey (CPUE = 232 fish/hr). The size distribution ranged from 3.6 to 6.4 inches showing that no mature perch were within close proximity of the shoreline. The average yellow perch measured in at 4.5 inches, prime chain pickerel forage size. The September survey provided a catch of 14 additional yellow perch that measured from a juvenile at 2.63 inches to a solid fish of 11.06 inches. The average length of these perch was 5.7 inches. Anglers targeting the yellow perch population should take into account the abundance of small perch and the limited presence of larger perch. A few larger yellow perch may be found by anglers, but anglers should find more excitement from the white perch fishery.

Alabama Bass

The genetic testing of bass collected from Diascund Reservoir detected that the once believed to be population of Kentucky Spotted Bass (*Micropterus punctulatus)* is actually Alabama Bass (*Micropterus henshalli*). The DNA results of fin clips collected during the July survey provided some additional insight into what has been going on at several reservoirs across Virginia. The deliberate and illegal action of unauthorized stocking attempts into Diascund Reservoir created a reproducing population of Alabama Bass. How many Alabama Bass were originally stocked into the reservoir is unknown. The Alabama Bass population has grown over the years, as the fish have been able to make use of the abundance of juvenile gizzard shad and blueback herring. Alabama Bass have been shown to have negative effects on other fish species in many Southeastern reservoirs.

The spring survey did not yield much in the way of Alabama Bass as only one fish (CPUE = 0.5 fish/hr) was detected during the standardized survey runs. That fish was a better than average fish that weighed in at 4 pounds. The 2018 electrofishing survey yielded a higher catch rate of Alabama Bass (CPUE = 9.5 fish/hr). The July electrofishing survey managed to boat 32 Alabama Bass for the highest recorded CPUE of 14 fish/hr. The majority of the collected bass were stacked up in a feeding pattern along the rip-rap. Collected fish ranged in size from 6 to 19 inches, with a high proportion of fish in the 17 to 19 inch range. The average length of collected bass was 14.2 inches with an average weight of 1.86 pounds. The largest Alabama Bass was 19.37 inches with a weight of 4.03 pounds. Anglers that actively fish in bass tournaments on Diascund Reservoir are allowed to have a live Alabama Bass in possession, but they are not allowed to leave the parking lot with a live fish. Any potential new state record fish must not be taken alive to Adam's Sportsmart for an official weigh-in.

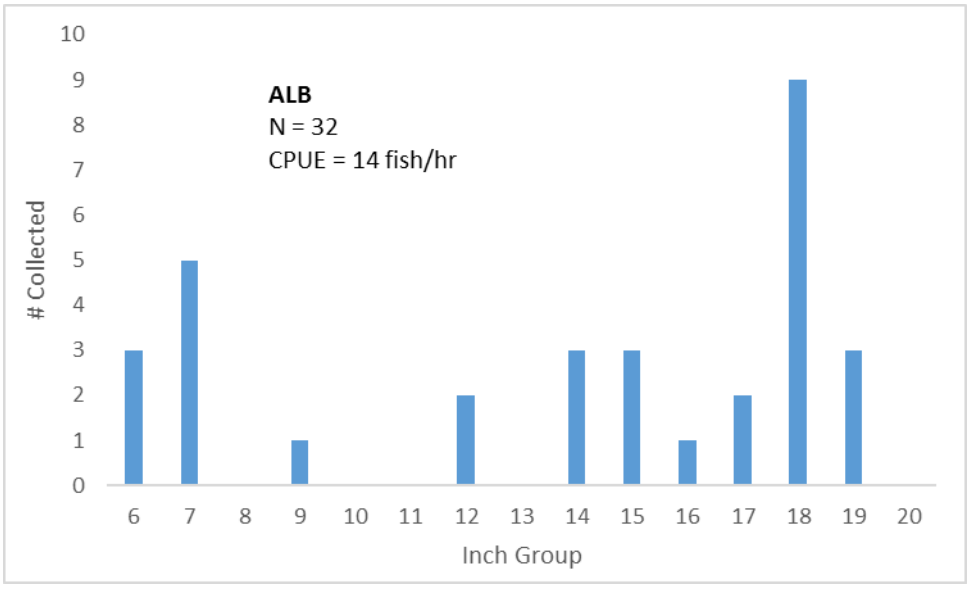

Figure 5. Length frequency distribution of Alabama Bass collected from the electrofishing survey Diascund Reservoir on July 7th, 2020

Additional Species

The remaining fish species collected in limited abundance during the April electrofishing survey were common carp, creek chubsucker, American eel, white perch, golden shiner and warmouth sunfish. These species will provide some diversity to the fishery and the chance to surprise an angler from time to time. Out of all these species, the white perch population will provide the most action for anglers. Most of the schools of white perch will be found by anglers typically fishing for the black crappie.

Sample Summary

The electrofishing surveys of Diascund Reservoir showed a diverse fishery with 14 species collected. The reservoir provides some decent bass fishing and has recently been a popular destination for some of the local bass fishing clubs. The spring electrofishing survey revealed an abundance of bass in the 13 to 17 inch range. The survey was productive in finding a high proportion of bass in the 2 pound range that were most likely male bass that were in a late season spawn pattern due to the colder than average April weather. The overall catch rate of largemouth bass (CPUE = 67 fish/hr) was decent, but the catch rate of preferred-sized bass was solid at 29 fish/hr.

The bluegill and yellow perch fisheries are primarily based on small fish less than 6 inches in length. The bluegill population density, based on the spring survey, showed a large decline when compared to past surveys. The black crappie population did a great job of hiding from the electrofishing boat during the spring survey. The fall survey showed an increased catch rate of black crappie, when compared to the spring survey, with a mix of juvenile fish hanging tight to the sampled shoreline. The fall survey showed a better assortment of bowfin and chain pickerel when compared to the spring survey. The reservoir still provides some action for anglers that enjoy catching chain pickerel and bowfin. The surveys showed less than ideal collections of redear sunfish. The fall survey showed some decent presence of juvenile longnose gar that measured in the 10.6 to 13.1 inches.

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