



Diascund Reservoir 2013 Fisheries Management Report Virginia Department of Game and Inland Fisheries

Diascund Reservoir is owned by the City of Newport News and borders both James City County and New Kent County. The Virginia Department of Game and Inland Fisheries, with agreement from the City of Newport News and James City County, built 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 extreme 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. 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.

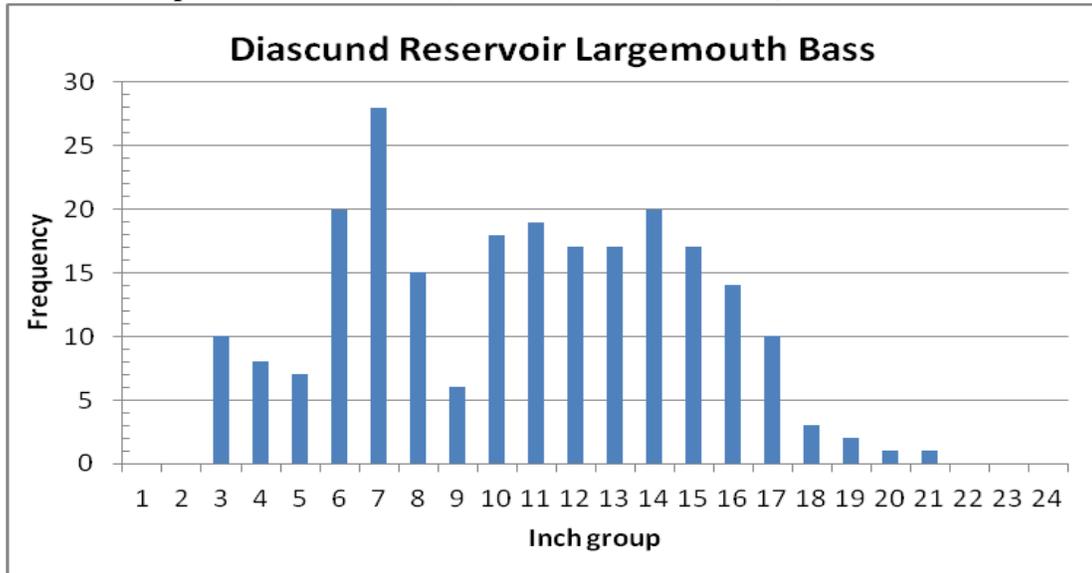
The Virginia Department of Game and Inland Fisheries conducted electrofishing surveys of Diascund Reservoir on April 5th and 9th, 2012. The 2012 surveys allowed for the sampling of 7 different regions of the reservoir to get a broad spectrum of the fish assemblage present. Electrofishing efforts consisted 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 2.33 hours of electrofishing yielded the collection of 19 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.

Four survey runs were conducted on April 5, 2012. These survey runs covered the main basin of the reservoir near the boat ramp and up into the Wahrani Creek arm. Three additional survey runs were conducted on April 9th, 2011. These survey runs allowed for the sampling of the middle basin in between the bridges. Five of the seven runs were predator species runs. Two survey runs were full community to collect data on the abundant of bluegills and redear sunfish populations.

Largemouth Bass

The largemouth bass population within Diascund Reservoir appears to be in decent shape. A total of 233 largemouth bass were collected for a CPUE (Catch Per Unit of Effort) of 95.85 bass/hr. This catch rate showed an increase from 2011 (CPUE: 87.43 bass/hr). The size distribution of the collected bass can be seen on the enclosed length frequency graph. Bass ranged in size from 3 to 21 inches. The average total length of the collected bass was 11.06 inches. The abundance of bass within the 6 to 11 inch range was the driving force that lowered the mean total length.

Figure 1. Length frequency distribution of largemouth bass collected from Diascund Reservoir on April 5th and 9th, 2012 (N: 233, CPUE: 95.85 f/hr)



The large grouping of bass in the 6 to 8 inch range most likely represents the collection of fish from the 2010 year class. The 2012 survey yielded a total of 131 bass less than 12 inches in length. This total represents 56% of the 233 collected bass. It appears that the 2011 year class is not nearly as strong as the 2010 year class recruitment. The survey revealed a decent abundance of bass in the 15 to 17 inch range, but there is a steep drop off in bass abundance when you reach the 18 inch and larger size groups. The bass within the 12 to 17 inch range will provide a great deal of the fishing excitement for anglers that try their luck on Diascund Reservoir. The largest bass measured only 21.26 inches and weighed 6.25 pounds.

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 66, which is a direct reflection of the 109 quality-sized bass. The sample had a total of 166 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40–60 range. The 2012 PSD value (66) showed an increase when compared to the 2011 survey (PSD: 58). 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 2012 RSD-P value of 29 is a direct reflection of the 48 preferred fish being collected. This value showed a decline from the 2011 survey (RSD-P: 33).

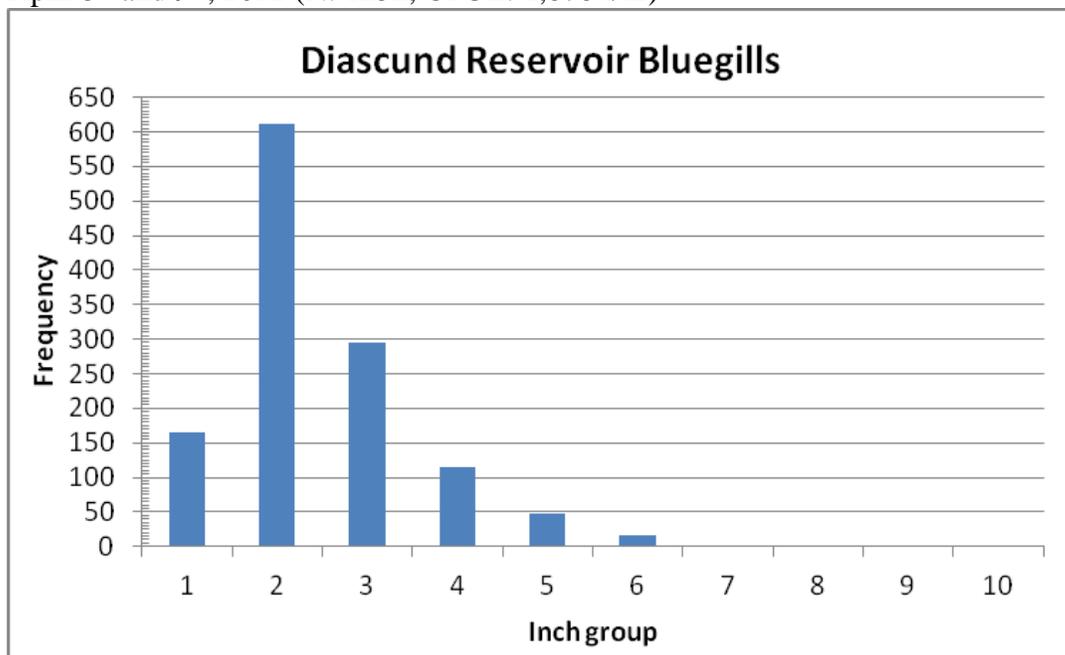
Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. A higher relative weight value indicates fish with a better body condition. The 2012 relative weight values for stock, quality, and preferred bass (>8”, >12”, >15”) were 98, 98 and 97

respectfully. These relative weight values showed some improvements when compared to the 2011 relative weight values (94, 97 and 98).

Bluegills

The survey was similar to past years with the bluegill population dominated by fish less than 6 inches in length. A total of 1252 bluegills were collected over the course of two sample runs. The expanded CPUE of 1,878 bluegills/hr showed a massive increase from the 2011 sample (CPUE: 895.5 bluegills/hr). The collected bluegills ranged in size 1 to 8 inches. The largest bluegill, an 8.15 inch trophy, cannot be seen on the graph, due to the extreme number of juvenile fish that have created a large scale requirement on the axis. A total of 612 bluegills fell within the 2-inch group.

Figure 2. Length frequency distribution of bluegills collected from Diascund Reservoir on April 5th and 9th, 2012 (N: 1252, CPUE: 1,878 f/hr)

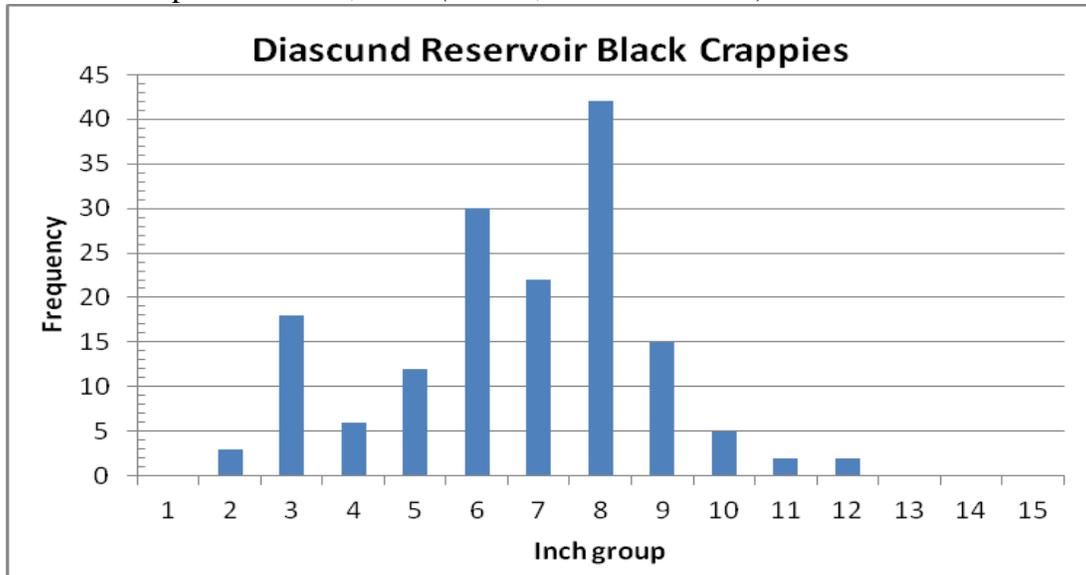


The PSD for bluegill is the proportion of bluegills over 3.15 inches (stock size) that are also at least 5.9 inches (quality size). The 2012 bluegill PSD value of 5 showed a decline when compared to the 2011 survey (PSD: 7). The 2012 collection consisted of only 20 quality-sized bluegills from the total of 435 stock-sized fish. Both PSD values are below the desired 20-40 range that would represent a balanced bluegill population. There was an increase in the abundance of juvenile-sized bluegills with 817 young fish less than stock size. The majority of the collected bluegills were found along the shoreline of a windswept cove where zooplankton and various other food items had been pushed into the shallows. Due to the abundance of juvenile bluegills encountered during the electrofishing run, the average total length of collected bluegills was only 2.89 inches. The abundant bluegill population will provide plenty of forage for a variety of predator fish species.

Black Crappie

The black crappie population appears to be in fair shape with majority of the sample consisting of crappies in the 6 to 9 inch range. The electrofishing sample collected 157 black crappies for a CPUE of 64.59/hr. This catch rate showed a decline from the 2011 sample (CPUE: 79.7/hr). Black crappies tend to school in waters deeper than bass and bluegills. Taking this into account, 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 spring of 2012 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 end of March. The largest black crappie measured 12.64 inches. The relative weight data for the collected crappies was less than ideal. Relative weight values were: stock (87), quality (85), preferred (84) and memorable (85). These values were far from the desired range of 95 to 100 and show that the crappies were having difficulties finding adequate forage at the time of the sample. The trap net survey of Diascund Reservoir was not conducted due to the warm water temperatures and the earlier than normal movements of the crappie population.

Figure 3. Length frequency distribution of black crappies collected from Diascund Reservoir on April 5th and 9th, 2012 (N: 157, CPUE: 64.59/hr)

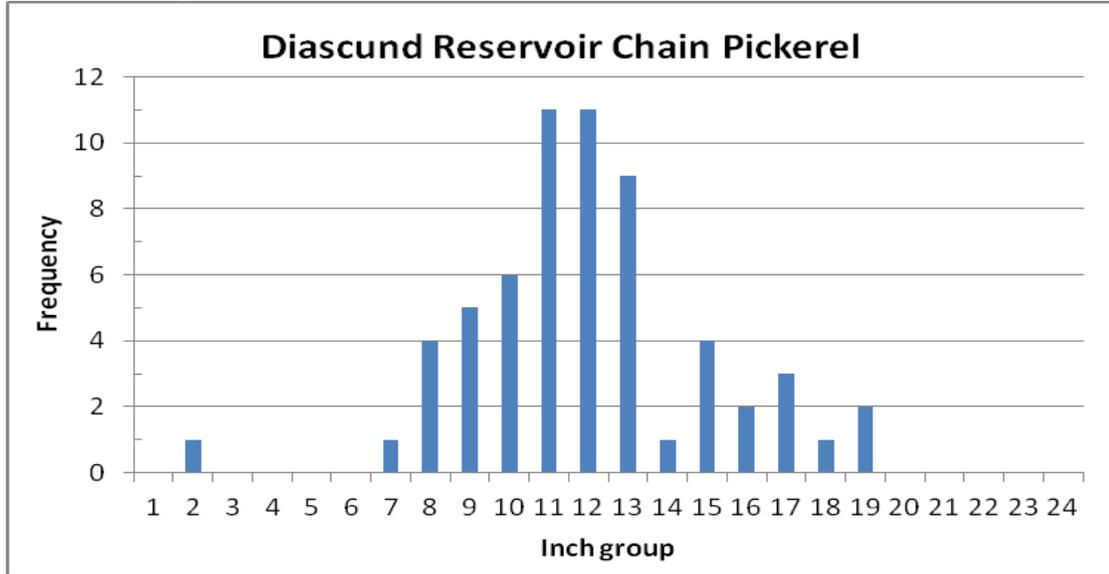


Chain Pickerel

The 2012 survey revealed an increased abundance of chain pickerel with 61 collected (CPUE: 25.1 f/hr). This catch rate showed a marked increase when compared to the 2011 survey (CPUE: 10.3 f/hr). The size distribution ranged from 2 to 19 inches. The largest chain pickerel measured 19.61 inches. The average size for the collected pickerel was 12.42 inches. The chain pickerel population offers some diversity to the fishery and will provide some fishing action when the bass are not cooperating. 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 and some of the abundant bluegill population.

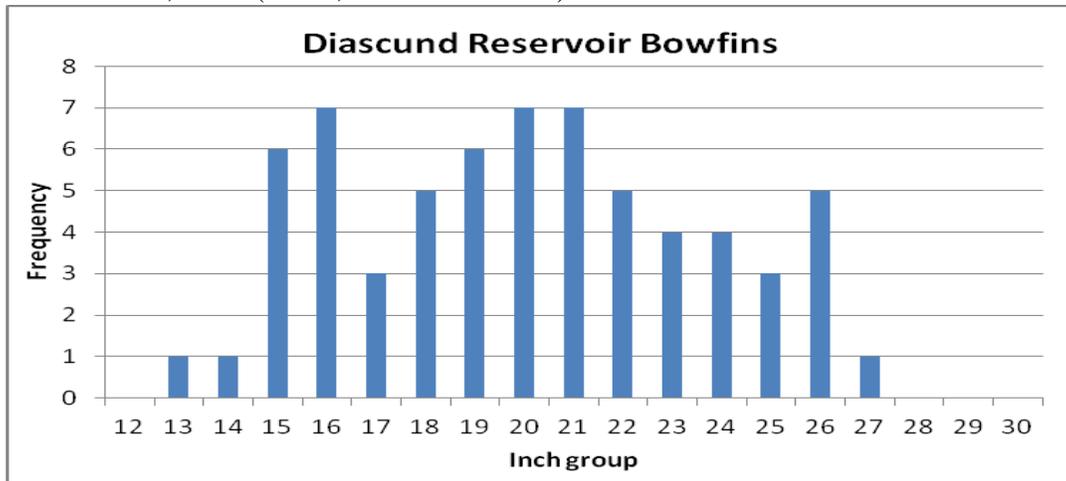
Figure 4. Length frequency distribution of chain pickerel collected from Diascund Reservoir on April 5th and 9th, 2012 (N: 61, CPUE: 25.1/hr)



Bowfin

Diascund Reservoir continues to produce some respectable bowfins. The 2012 survey collected 65 bowfins (CPUE: 26.74/hr). This catch rate showed a major increase from the 2011 survey (CPUE: 6.4/hr). The bowfin ranged in size from 13 to 27 inches. The largest bowfin measured 27.28 inches and the average size measured 20.52 inches. Past electrofishing surveys have usually produced a citation-sized bowfin, but no citations have been collected during the last three survey years. The possibility exists for anglers to catch a bowfin while fishing Diascund Reservoir. Anglers will be surprised how strong a hooked bowfin will fight.

Figure 5. Length frequency distribution of bowfins collected from Diascund Reservoir on April 5th and 9th, 2012 (N: 65, CPUE: 26.74/hr)



Yellow Perch

A total of 158 yellow perch were collected during the electrofishing runs. The CPUE of 65/hr showed an increase when compared to the 2011 survey (CPUE: 43.7/hr). The size distribution ranged from 3.5 to 9.6 inches with the majority in the 4 to 6 inch range. One could assume that the yellow perch growth potential has been stunted due the white perch and black crappie abundance. Anglers targeting the yellow perch population should take into account the abundance of small perch and the limited presence of larger perch. An occasional larger yellow perch is found by anglers each year. That was the case during 2012, when 3 citation yellow perch were caught and reported from Diascund Reservoir.

Redear Sunfish

The redear sunfish population appeared to be in fair shape. A total of 153 redear sunfish were collected during the two, full community runs. The CPUE of 229.5/hr showed a large increase from the 2011 sample (CPUE: 91.5/hr). The majority of fish were juveniles in the 2 to 3.5 inch range with a few fish in the 6 to 9 inch range. Past surveys have shown a limited presence of young redear sunfish. This was not the case as the recruitment of juvenile redear sunfish was very high. The increased presence of hydrilla in various areas of the reservoir most likely aided in the survival of redear sunfish fingerlings.

White Perch

The electrofishing survey showed a decreased abundance of white perch within Diascund Reservoir. A total of 25 white perch were collected for a CPUE of 10.28 f/hr. This catch rate showed a sizeable decline from the 2011 survey (CPUE: 185.6 f/hr). The warm spring weather could have influenced the patterns and movements of white perch so that they were schooling in other areas of the reservoir and not holding near the shoreline areas that were sampled. The size distribution ranged from 4 to 7.5 inches. The white perch population has historically put extra stress on the reservoir's forage base. White perch will compete with the bass, chain pickerel and black crappie for small baitfish and juvenile sunfish. All white perch were removed from the reservoir and transported to the Harrison Lake Federal Fish Hatchery for use in the DGIF freshwater mussel propagation project.

Additional Species

The remaining fish species collected in limited abundance during the electrofishing survey were: spotted bass, brown bullhead, creek chubsucker, tessellated darter, American eel, longnose gar, eastern mosquitofish, golden shiner, gizzard shad bluespotted sunfish and warmouth sunfish. These species will provide some diversity to the fishery and the chance to surprise an angler from time to time.

Sample Summary

The electrofishing surveys of Diascund Reservoir showed a diverse fishery. The reservoir provides some decent bass fishing and has recently been one of the more heavily fished impoundments in Region 1, District 1. The electrofishing sample revealed an abundance of bass in the 10 to 14 inch range and a fair number of bass in the 15 to 17 inch range. The overall catch rate of largemouth bass (CPUE: 95.85 bass/hr) was decent.

This catch rate is based on the collection of 233 largemouth bass. A total of 48 bass were 15 inches or greater in length. These fish will be the target of many anglers trying their luck on Diascund Reservoir.

The bluegill and yellow perch fishery is primarily based on small fish less than 6 inches in length. The electrofishing of black crappies showed an abundance of crappies in the 6 to 9 inch range with a few larger fish mixed in. The reservoir still provides some action for anglers that enjoy catching chain pickerel and bowfin. The survey showed an increased presence of juvenile redear sunfish with a fair number of 6 to 8 inch fish present.

Anglers had a productive 2012 fishing year on Diascund Reservoir with a total of 17 citations reported. The 2012 total consisted of 6 longnose gar, 3 black crappies, 3 yellow perch, 2 largemouth bass, 2 bowfins and 1 chain pickerel. Diascund Reservoir provides an assortment of fishing opportunities. It just depends upon which species of fish you plan to target.