



Diascund Reservoir 2012 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 6th and 26th, 2011. The 2011 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 6, 2011. The first run was conducted along the eastern coves of the lower end of Wahrani Creek arm. The second run was conducted along the north shore of the eastern extension arm of the Wahrani Creek arm. Run 3 was conducted along the eastern side of the lower end of the Wahrani Creek arm. Run 4 was conducted along the upper end of the Wahrani Creek arm within sight of I-64. Three survey runs were conducted on April 26th, 2011. The first run was conducted along the western coves of the lower end of the Wahrani Creek arm. The second run was conducted in the middle basin from the large, mid lake point on back to the road causeway. The third run was conducted along the eastern side of Timber Swamp Creek.

Largemouth Bass

The largemouth bass population within Diascund Reservoir appears to be in fair to decent shape. A total of 204 largemouth bass were collected for a CPUE (Catch Per Unit of Effort) of 87.43 bass/hr. This catch rate showed a slight increase from 2010 (CPUE: 79 bass/hr). Tables 1-2 provide some additional analysis of the bass collected from each sample run. The 2010 survey showed most sample runs were able to collect a respectable bass in the 18 to 20 inch range. This was not the case during the 2011 survey as few bass over 17 inches were found. The maximum size and the average size of bass per each run are expressed in the tables. The size distribution of the collected bass can be seen on the enclosed length frequency graph. The sample from Timber Swamp Creek

showed a more impressive average size (13.57") when compared to the 6 other survey runs. The abundance of bass within the 5 to 10 inch range was the driving force behind the low average size lengths

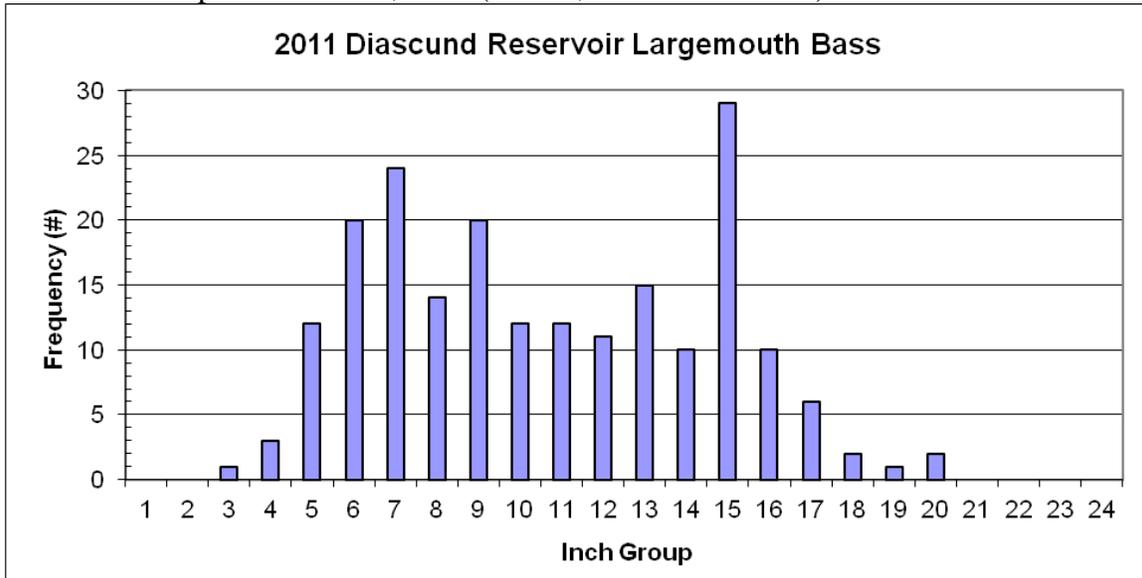
Table 1. Collection of largemouth bass from sites in the Wahrani Creek arm (4/6/11)

Run #	1	2	3	4
# of bass	37	26	26	29
CPUE bass/hr	111	78	78	87
Max size	16.77"	16.22"	16.81"	20.55"
Average size	11.46"	9.11"	10.3"	10.6"

Table 2. Collection of largemouth bass from various sites in the middle reservoir basin (4/26/11)

Run #	1	2	3
# of bass	34	25	27
CPUE bass/hr	102	75	81
Max size	17.36"	17.4"	17.36"
Average size	11.72"	10.46"	13.57"

Figure 1. Length frequency distribution of largemouth bass collected from Diascund Reservoir on April 6th and 26th, 2011 (N: 204, CPUE: 87.43 f/hr)



The 2011 distribution showed an abundance of bass less than 12 inches in length (118 bass < 12"). It appears that there has been a pair of strong year classes wedged together. A presence of 29 bass in the 15 inch range is a welcomed sight, but unfortunately the surveys collected very few bass greater than 17 inches in length. 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 survey did not collect any trophy-sized bass, but 2 memorable-sized bass (20" and larger) were collected. The largest bass measured only 20.55 inches and weighed 4.93 lbs.

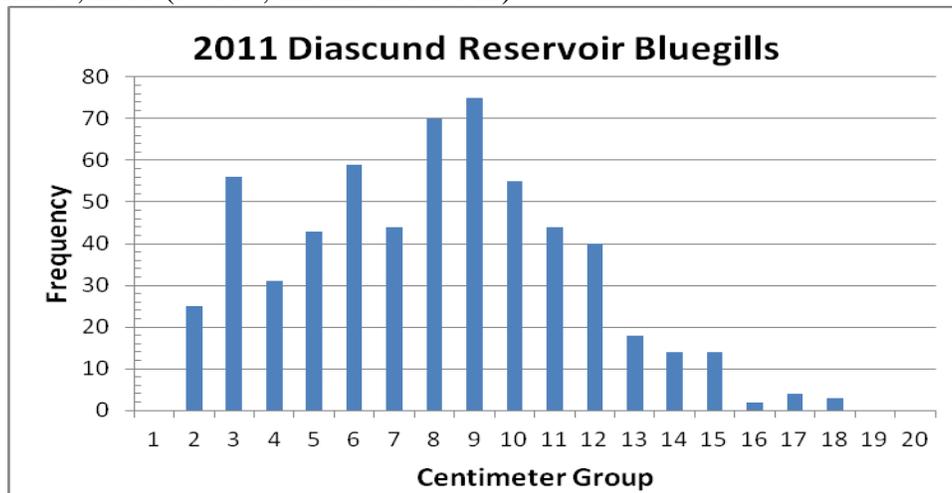
With largemouth bass being the most popular game fish in this country, it has been considered that a “preferred” bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of stock-sized bass (8 inches or larger) that are also equal to or greater than 12 inches (quality size). The sample showed a PSD value of 58, which is a direct reflection of the 87 quality-sized bass. The sample had a total of 150 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40–70 range. The 2011 PSD value (58) showed a decrease when compared to the 2010 survey (PSD: 66). 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 2011 RSD-P value of 33 is a direct reflection of the 50 preferred fish being collected and showed a decline from the 2010 survey (RSD-P: 39).

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 2011 relative weight values for stock, quality, and preferred bass (>8”, >12”, >15”) were 94, 97 and 98 respectfully. These relative weight values showed a decline from the 2010 relative weight values (97, 98 and 99), but still fall near or within the desired range of 95 to 100.

Bluegills

The survey was similar to past years with the bluegill population dominated by fish less than 6 inches in length. A total of 597 bluegills were collected over the course of two sample runs. The CPUE of 895.5 bluegills/hr showed a decline from the 2010 sample (CPUE: 948 bluegills/hr). The collected bluegills ranged in size from 2–18 centimeters (1 to 7 inches). A large proportion of collected bluegills were in the 5 to 12 centimeter range (2 to 5 inches).

Figure 2. Length frequency distribution of bluegills collected from Diascund Reservoir on April 26th, 2011 (N: 597, CPUE: 895.5 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 2011 bluegill PSD value of 7 showed a minor increase when compared to the 2010 survey (PSD: 5). The 2011 collection consisted of only 24 quality-sized bluegills and a total of 340 stock-sized fish. Both PSD

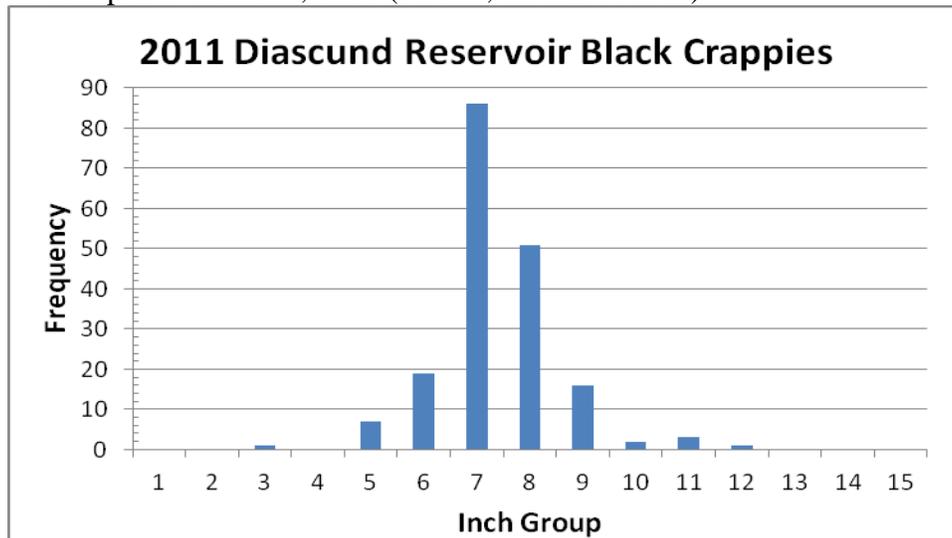
values are below the desired 20-40 range that would represent a balanced bluegill population. There was an increase in the abundance of juvenile-sized bluegills with 258 young fish less than stock size.

Trap net sampling was conducted on Diascund Reservoir on March 16-18, 2011. The main purpose of this type of sampling is to collect the schooling fish such as black crappies and bluegills. The reservoir was broken up to allow for 10 net nights in the western half of the reservoir and 10 net nights in the eastern half. The trap nets were able to collect 12 species of fish. Three of the nets in the Diascund Creek area were knocked down by curious anglers. These nets were removed from the overall sampling effort. The remaining nets showed some limited success in catching bluegills. A total of 682 bluegills were collected (CPUE: 40.1 f/net night). This catch rate fell well below the 2010 trap net survey (CPUE: 214.8 f/net night). The majority of the bluegills were in the 2 to 5 inch range. A total of 154 quality-sized bluegills were collected. All bluegills were less than 8 inches in size.

Black Crappie

The black crappie population appears to be in fair shape with majority of the sample consisting of crappies in the 7 to 8 inch range. The electrofishing sample collected 186 black crappies for a CPUE of 79.7/hr. This catch rate showed a major increase from the 2010 sample (CPUE: 29.3/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. Some black crappies may have been near the shallows in preparation for the spring spawn. No black crappies greater than 12 inches were collected during the electrofishing surveys.

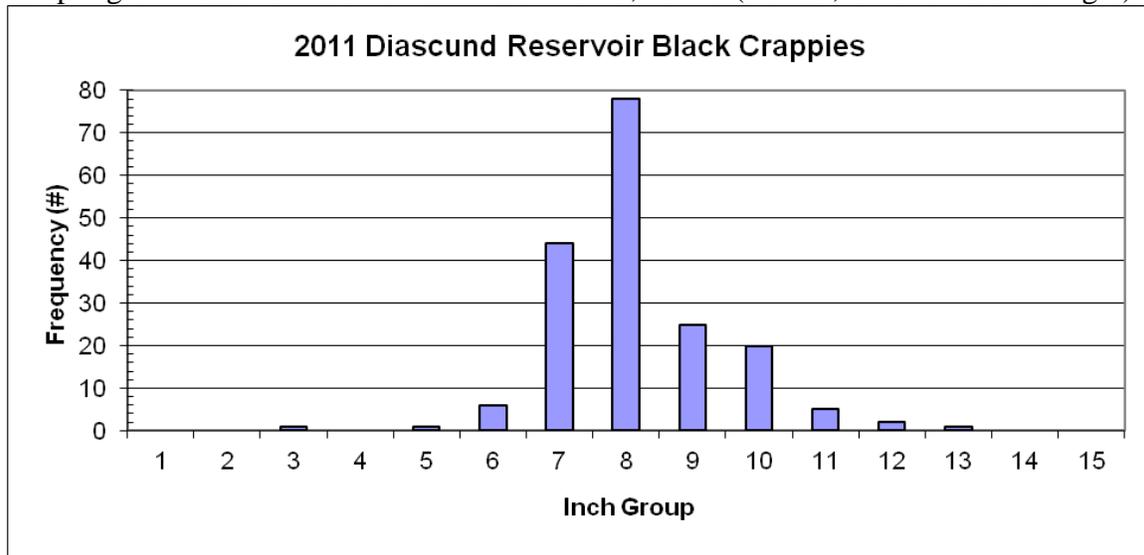
Figure 3. Length frequency distribution of black crappies collected from Diascund Reservoir on April 6th and 26th, 2011 (N: 186, CPUE: 79.7/hr)



The trap net survey collected a total of 183 black crappies from the 17 trap nets (CPUE: 10.8 f/net night). This catch rate showed a major decline when compared to the 2010 survey (CPUE: 21.1 f/net night). The majority of crappies were in the 7 to 10 inch range with very few fish greater than 11 inches in length. The largest crappie was a male

fish that measured 13.85 inches and weighed an impressive 2.02 pounds. Diascund Reservoir has the potential to produce some larger black crappies even though there is a large percentage of the population less than 10 inches in size. Angler harvest of crappies in the 7 to 9 inch range will assist the overall population's attempt to become more balanced in the future. Anglers reported a respectable total of 9 citations during 2011.

Figure 4. Length frequency distribution of black crappies collected from the trap net sampling of Diascund Reservoir on March 16-18, 2011. (N: 183, CPUE: 10.8/net night)



Chain Pickerel

The 2011 survey revealed a limited abundance of chain pickerel with 24 collected (CPUE: 10.3 f/hr). This catch rate showed a decline when compared to the 2010 survey (CPUE: 13.7 f/hr). The size distribution ranged from 2 to 22 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.

Bowfin

Diascund Reservoir continues to produce some respectable bowfin. The 2011 survey collected 15 bowfins (CPUE: 6.4/hr). This catch rate showed a decline from the 2010 survey (CPUE: 9/hr). The bowfin ranged in size from 12 to 29 inches. The largest bowfin measured 29.6 inches and weighed 8.24 pounds. Past electrofishing surveys have usually produced a citation-sized bowfin, but both the 2010 and 2011 surveys were unsuccessful in finding one of the larger female bowfins. The possibility exists for anglers to catch a bowfin while fishing Diascund Reservoir. There is also a chance that they might hook into one of the citation-sized bowfins greater than 10 pounds.

Yellow Perch

A total of 102 yellow perch were collected during the electrofishing runs. The CPUE of 43.7/hr showed a decline when compared to the 2010 survey (CPUE: 84.7/hr). The size distribution ranged from 3 to 9.5 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 abundance and limited presence of juvenile bluegills. 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 2011, when one angler was able to catch 3 citation yellow perch from Diascund Reservoir.

Redear Sunfish

The redear sunfish population appeared to be in decent shape. The CPUE of 91.5/hr showed a slight increase from the 2010 sample (CPUE: 85.5/hr). The majority of fish were in the 5 to 7 inch range with a few fish in the 8 to 9 inch range. The survey revealed a limited abundance of juvenile redear sunfish less than 5 inches in length. This is an area of concern when it comes to future stock of the redear sunfish population. The majority of redear sunfish were collected along the pocket coves on the western side of the Wahrani Creek arm.

White Perch

The electrofishing survey continued to show an abundance of white perch within Diascund Reservoir. A total of 433 white perch were collected over the course of the two days. The catch rate of 185.6 f/hr showed a sizeable increase from the 2010 survey (CPUE: 129 f/hr). Large schools of white perch were observed in various areas of the reservoir. The size distribution is based around the 5 to 7 inch range with a handful of fish reaching the 8 inch range. The white perch population has 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 during the electrofishing survey were spotted bass, common carp, creek chubsucker, American eel, longnose gar, eastern mosquitofish, pumpkinseed sunfish, golden shiner, gizzard shad bluespotted sunfish and warmouth. These species were collected in limited abundance and will provide some diversity to the fishery.

The trap net survey collected a total of 12 species. Fish diversity was similar to species collected during the electrofishing survey. The trap net survey was successful in catching bluegills and black crappies. The species caught in low abundance were: largemouth bass, yellow bullhead, creek chubsucker, American eel, flier, white perch, chain pickerel, golden shiner, redear sunfish and warmouth.

Sample Summary

The electrofishing and trap net 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 12 to 15 inch range and a fair number of bass in the 16 to 20 inch range. The overall catch rate of largemouth bass (CPUE: 87.4 bass/hr) was decent. This catch rate is based on the collection of 204 largemouth bass. A total of 50 bass were 15 inches or greater in length. The length frequency distribution showed the presence of two year classes of bass packed lightly together with fish in the 5 to 10 inch range.

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 increased presence of crappies in the 7 to 9 inch range. The trap net survey was not as productive as the 2010 survey, but did reveal a black crappie size distribution similar to the electrofishing survey. The reservoir still provides some action for anglers that enjoy catching chain pickerel and bowfin even though their catch rates should a decreased presence. The reservoir produces some nice redear sunfish in the 7 to 9 inch range.

Anglers had a very productive 2011 fishing year on Diascund Reservoir with a total of 22 citations reported. This total showed a major increase when compared to the 4 citations reported during 2010. The 2011 total consisted of 9 black crappies, 6 longnose gar, 3 largemouth bass, 3 yellow perch and 1 sunfish. Diascund Reservoir provides an assortment of fishing opportunities. It just depends upon which species of fish you plan to target.