

# Channel Catfish Management Plan

## VDWR Small Impoundments Committee

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## Introduction

Across the United States 8.1 million anglers fish for catfish (USFWS 2016). Channel Catfish are popular sport and food fish that can be pursued by anglers in many small impoundments (Neal and Willis 2012). Stocked at a moderate level, Channel Catfish can complement existing fisheries resources that generally include Largemouth Bass and Bluegill without impacting productivity or growth of those existing populations. Most stocked Channel Catfish have been found to be vulnerable to angling (Masser et. al 1993) and as a result have become quite popular for use in urban fishing programs and kid’s fishing events. A nationwide emphasis on R3 (recruitment, retention, reactivation) can also utilize Channel Catfish as both a recruitment tool for new anglers as well as retaining/reactivating current or former anglers.

Generally, in small ponds and lakes with limited aquatic vegetation, juvenile Channel Catfish rarely recruit to the adult population as a result of predation by Largemouth Bass and Bluegill (Neal and Willis 2012). As a result of predation, Channel Catfish must be periodically stocked to maintain fishable populations (Neal and Willis 2012). Put-grow-take fisheries are less costly than stocking catchable catfish, but predation must be considered. Studies have shown that stocked Channel Catfish should be 250mm or greater in length to avoid predation by Largemouth Bass (Howell and Betsill 1999; Jackson and Francis 1999; Odenkirk 2002; Neal and Willis 2012). Results from the most recent Virginia Statewide Angler Survey (2016) found that 54% of Virginia anglers specifically fished for catfish in the last twelve months (VDGIF 2016 Angler Survey). Virginia anglers pursued catfish in a variety of habitats including: small impoundments (23%), large impoundments (27%), warmwater streams (38%), and private lakes (12%).

The Virginia Department of Wildlife Resources (VDWR) has been managing a variety of small impoundments throughout the Commonwealth by stocking sub-catchable and catchable Channel Catfish. Channel Catfish are obtained from commercial hatcheries at considerable cost (up to \$120K/year). Many anglers pursuing Channel Catfish stated that they only fished DWR managed or owned small impoundments (27%), documenting the popularity of these intensively managed resources.

## Methods

Past research has led to the development of Channel Catfish (CCF) stocking guidelines for managing DWR owned or managed small impoundments (Table 1). These rates serve as a general guide and target for stocking – fish may be stocked at lower rates when circumstances (budget, impoundment status) require.

Table 1. Channel Catfish stocking Guidelines for waters managed by DWR.

<b>Waterbody</b>	<b>Stocking Rate</b>
Standard non-DWR Impoundment	10/acre
DWR Impoundment	15/acre
DWR Impoundment w/high pressure	20/acre
CLIP Ponds	100/acre
Urban	250/acre

Stocking rates are tailored towards angling pressure, public access, and catchability. General CCF stockings utilize a fish that average about a half pound (~10”), while fish used in the Urban Fishing Program average about 1 pound. Standard impoundments are managed less intensively and stocked at lower rates than DWR owned lakes. Many of these waters may have a lower degree of angler use and in many cases more restrictive access. These standard impoundments are stocked in the fall at a rate of 10 CCF/acre (Table 2).

Table 2. Channel Catfish allocations for impoundments stocked at the standard rate (10/acre). The minimum allocation is 50 fish. Stocking Rate = SR.

Region	County	Waterbody	Size (acres)	SR (#/acre)	Allocation
1	Chesapeake	Oak Grove Lake	70	10	700
1	Hampton	Sandy Bottom Park Pond	12	10	120
2	Amherst	Mill Creek Lake	189	10	1890
2	Appomattox/Buckingham	Holliday Lake	145	10	1450
2	Brunswick	Great Creek Lake	212	10	2120
2	Buckingham	Slate River Reservoir	38	10	380
2	Buckingham	Bear Creek Lake	42	10	420
2	Buckingham	James River State Park Ponds (3)	3	10	150
2	Cumberland	Cumberland State Forest Lakes (4)	28	10	280
2	Fort Pickett	Beavertrail Pond	2.4	10	50
2	Fort Pickett	Wonju Pond	2.5	10	50
2	Fort Pickett	Dearing Pond	7	10	70
2	Fort Pickett	Butterwood Pond	9	10	90
2	Fort Pickett	Engineers Pond	12.8	10	128
2	Fort Pickett	Lewis Pond	12	10	120
2	Henry	Martinsville Reservoir	175	10	1750
2	Lunenburg	Victoria Reservoir/Lunenburg Lake	15	10	150
2	Lunenburg	Nottoway Falls Lake	60	10	600
2	Lunenburg	Modest Creek Lake	29	10	290
2	Nottoway	Fort Pickett Reservoir	384	10	3840
2	Prince Edward	Goodwin Lake	15	10	150
2	Prince Edward	Prince Edward Lake	36	10	360
2	Prince Edward	Wilcks Lake	30	10	300
3	Carroll	Lovill's Creek Lake	45	10	450
3	Dickenson	Laurel Lake	14	10	140
3	Pulaski	Gatewood Reservoir	162	10	1620
3	Smyth	Sugar Hollow Pond	1	10	50
3	Smyth	Glade Mountain Ponds (4)	8	10	200

3	Tazewell	Lincolnshire Lake	23	10	230
3	Tazewell	Witten Lake	52	10	520
3	Wise	Wise Reservoir	46	10	460
3	Wise	Big Cherry Reservoir	132	10	1320
3	Wise	North Fork Pound Reservoir	154	10	1540
3	Wise (City of Norton)	Norton Reservoir (upper)	9	10	90
3	Wythe	Wytheville C.C. Pond	3	10	50
4	Albemarle	Beaver Creek	104	10	1040
4	Albemarle	Chris Green Lake	62	10	620
4	Albemarle	Mint Springs Lake	8	10	80
4	Albemarle	Totier Creek Lake	66	10	660
4	Albemarle	Walnut Creek Lake	60	10	600
4	Alleghany	Clifton Forge Reservoir	9	10	90
4	Augusta	Elkhorn Lake	50	10	500
4	Augusta	Hearthstone Lake	14	10	140
4	Augusta	Sherando Lake (lower)	20	10	200
4	Augusta	Sherando Lake (upper)	8	10	80
4	Bath	Douthat Lake	52	10	520
4	Bath	Rec Pond Lower	32	10	320
4	Bath	Rec Pond Upper	40	10	400
4	Fairfax	Fairfax Lake	28	10	280
4	Fairfax	Huntsman Lake	27	10	270
4	Fairfax	Royal Lake	35	10	350
4	Fauquier	Germantown Lake	109	10	1090
4	Frederick	Clearbrook Lake	3	10	50
4	Louisa	Gordansville Lake	81	10	810
4	Louisa	Northeast Reservoir	187	10	1870
4	Loudon	Sleeter Lake	101	10	1010
4	Page	Arrowhead Lake	34	10	340
4	Page	Bealer's Ferry Pond	7	10	70
4	Page (Town of Shenandoah)	Big Gem Pond	1	10	50
4	Prince William	Silver Lake	23	10	230
4	Rockingham	Briery Branch Lake	9	10	90
4	Rockingham	Hone Quarry Lake	6	10	60
4	Rockingham	Silver Lake	10	10	100
4	Rockingham	Slate Lick Lake	10	10	100
4	Shenandoah	Tomahawk Pond	2	10	50
4	Shenandoah	Lake Laura	44	10	440
4	Spotsylvania	Motts Run Reservoir	160	10	1600
4	Stafford	Abel Lake	185	10	1850

DWR owned and managed impoundments are intensively managed for multiple species of fish and receive higher stocking rates than non-DWR impoundments. Most DWR impoundments offer boat access, adequate parking, night-time fishing, shoreline access, and at many locations a handicapped accessible fishing pier. DWR owned small impoundments are stocked in the fall at a rate of 15 CCF/acre (Table 3).

Table 3. Channel Catfish allocations for impoundments stocked at the DWR rate (15 fish/acre). The minimum allocation is 50 fish. Stocking Rate = SR.

Region	County	Waterbody	Size (acres)	SR (#/acre)	Allocation
2	Amelia	Amelia Lake	100	15	1500
2	Brunswick	Brunswick Lake	150	15	2250
2	Buckingham	Horsepen Lake	19	15	285
2	Halifax	Connor Lake	110	15	1650
2	Mecklenburg	Gordon Lake	157	15	2355
2	Nelson	Lake Nelson	40	15	600
2	Nottoway	Nottoway Lake	188	15	2820
3	Lee	Keokee Lake	92	15	1380
3	Washington	Hidden Valley Lake	61	15	915
3	Wythe	Rural Retreat Lake	90	15	1350
4	Albemarle	Lake Albemarle	35	15	525
4	Fairfax	Burke Lake	218	15	3270
4	Fluvanna	Fluvanna Ruritan Lake	50	15	750
4	Frederick	Frederick Lake	117	15	1755
4	Powhatan	Powhatan Lake (lower)	36	15	540
4	Powhatan	Powhatan Lake (upper)	35	15	525
4	Powhatan	Powhatan Ponds	20	15	300
4	Stafford	Curtis Lake	91	15	1365

DWR owned impoundments that receive high angling pressure are stocked in the fall at a higher rate (20 CCF/acre) than normal to provide better catch rates (Table 4). Some of the heaviest fished DWR impoundments are also fertilized to increase fish production and may offer concessions that include boat rentals, bait, and snacks.

Table 4. Channel Catfish allocations for impoundments stocked at the DWR-High Pressure rate (20 fish/acre). The minimum allocation is 50 fish. Stocking Rate = SR.

Region	County	Waterbody	Size (acres)	SR (#/acre)	Allocation
1	James City	Woodstock Pond	7.5	20	150
3	Smyth	Hungry Mother Lake	108	20	2160
4	Augusta	Braley Pond	5	20	100
4	Fauquier	Lake Brittle	77	20	1540
4	Fauquier	Phelps Pond	3	20	60
4	Orange	Lake Orange	124	20	2480
4	Rockbridge	Lake Robertson	26	20	520
4	Rockingham	Shenandoah Lake	36	20	720

Small ponds that are intensively managed that receive heavy fishing pressure in developed areas are managed under CLIP (Community Lake Improvement Program). These small ponds receive 100 CCF/acre and are stocked in the fall (Table 5).

Table 5. Channel Catfish allocations for impoundments stocked at the CLIP rate (100 fish/acre). The minimum allocation is 50 fish. Stocking Rate = SR.

Region	County	Waterbody	Size (acres)	SR (#/acre)	Allocation
1	Ashland	DeJarnette Park Lake	1	50(1/2 CLIP)	50
1	City of Petersburg	Willcox Lake	22	50(1/2 CLIP)	220
1	Hanover	Courthouse Pond	3	50(1/2 CLIP)	150
1	Henrico	Crump Park Lake	2	100	200
1	Henrico	Deep Run Park Pond - lower	2	100	200
1	Henrico	Deep Run Park Pond - upper	2	100	200
1	Henrico	Echo Lake Park	12	50(1/2 CLIP)	600
1	Henrico	Three Lake Park (Lake #1)	7	50(1/2 CLIP)	300
1	Richmond (City)	Bryan Park Lake (Youngs Pond)	6	50(1/2 CLIP)	300
1	Richmond (City)	Forest Hill Park Lake	5	3/10 CLIP	150
1	Richmond (City)	Swan Lake	23	1/4 CLIP	300
2	Franklin	Gilly's Pond	2.5	100	250
2	Franklin	Woody's Pond	2.5	100	250

4	Albemarle	Scottsville Lake	2	100	200
4	Fairfax	EC Lawrence Pond (Walney)	1	100	100
4	Fairfax	Mason Neck Pond	2	100	200
4	Fairfax	Woodglen Lake	3	100	300
4	Fauquier	Sky Meadows SP Pond	1	100	100
4	Fauquier	WARF (Warrenton)	1.5	100	150
4	Loudon	Banshee Reeks Pond	1	100	100
4	Loudon	Claude Moore Lower Pond	1	100	100
4	Loudon	Claude Moore Upper Pond	1.5	100	150
4	Loudon	Franklin Park Pond	1	100	100
4	Prince William	Merrimac Farm Pond	1	100	100
4	Spotsylvania	Anna State Park Pond	1	100	100

Virginia's Urban Fishing Program began in the 1990's and includes both a winter trout stocking program in addition to a late spring CCF stocking program. This program has functioned with a goal of providing anglers a catch rate of 1 fish/hour. These urban waters were developed with the hope of recruiting new anglers in the more developed areas of Virginia. Most of the urban sites are located in county or municipal parks that offer ample parking, restroom facilities, and other amenities that are family friendly. Urban waters are stocked in the spring with CCF averaging one pound at a rate of 250/acre (Table 6).

Table 6. Channel Catfish allocations for impoundments stocked at the Urban rate (250 fish/acre). The minimum allocation is 50 fish. Channel Catfish are stocked during the spring. Stocking Rate = SR.

Region	County	Waterbody	Size (acres)	SR (#/acre)	Allocation
1	Chesapeake	Northwest River Park	3	250	425
1	City of Hampton	Lake Armisted	3	250	1000
1	Henrico	Dorey Park Pond	5	250	1750
1	Richmond (City)	Shields Lake	7	250	1750
2	City of Lynchburg	Clemmons Lake	1.4	250	350
4	Alexandria	Cook Lake	4	250	1000
4	Prince William	Locust Shade	8	250	2000
4	City of Fredericksburg	Old Cossey Pond	3	250	750

## **Regulations**

Channel Catfish regulations for small impoundments fall under three categories that vary from the standard statewide regulation of 20 per day with no length limit. Costs associated with purchasing and stocking catchable size catfish have necessitated a more restrictive set of regulations that creates more of a put-grow-take program versus put and take with the exception of the urban sites. Urban sites are managed with a 4 fish/day regulation with no minimum length that allows for immediate harvest. Biologists may opt to manage the other stocked waters under either a 5 fish/day 15 inch minimum length or 5 fish/day 18 inch minimum length. These regulations are in place to allow for at least a year's growth prior to legal harvest after stocking.

## **Program Effectiveness**

Any program should be evaluated for effectiveness, particularly a program that is a large budget item. Channel Catfish stockings have been periodically evaluated at sites around the Commonwealth to look at fishing pressure, catch rates, harvest, and angler satisfaction. Angler surveys are the easiest and most cost effective means to evaluate success of a Channel Catfish stocking program in terms of angler success, angler recruitment/retention, and program popularity. Past surveys have evaluated the Channel Catfish stockings at our Urban Fishing Sites as well as many of our DWR impoundments (i.e. Lake Orange). Channel Catfish tend to rank as the second to third most popular fish species at many of our public fishing lakes. Channel Catfish also tend to provide for the highest harvests by anglers at many of our sites. As an example, Lake Orange has had an annual creel survey for over 20 years offering the best small impoundment data set in Virginia. In 2020, Channel Catfish were the second most abundant species harvested by anglers (N = 1009; WT = 1073 kg; Mean WT = 1.1 kg). It is important to note that Lake Orange only receives an annual stocking of 2,480 Channel Catfish, while anglers are harvesting over 1,000 fish per year out of this put-grow-take fishery. This resource is highly utilized by anglers and the cost effectiveness of the program is clearly evident. Additional waters around the Virginia need to be evaluated as funding and staff time allows.

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