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Black Crappie (*Pomoxis nigromaculatus*) and White Crappie (*Pomoxis annularis*) Management and Fishing in Pennsylvania

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2018 Update

Goal: Maintain or enhance Black Crappie and White Crappie sport fisheries through harvest management of naturally sustained Black Crappie and White Crappie populations and through habitat preservation and enhancement. Judiciously stock Black Crappie and White Crappie in compatible new and reclaimed habitats.

Black Crappie and White Crappie occur throughout Pennsylvania and were originally indigenous to the Ohio River and Lake Erie Drainages. The Ohio River Drainage includes the Ohio River, Allegheny River, and Monongahela River Drainages. Black Crappie typically inhabit clear water reservoir and lake (lentic) habitats, as well as slow moving river and stream (lotic) habitats. White Crappie tend to occupy waters exhibiting greater turbidity. Black Crappie and White Crappie stocking by the Pennsylvania Fish and Boat Commission into the Delaware, Susquehanna, and Potomac River Drainages has led to colonization of waters within these drainages. The Susquehanna River Drainage includes the West Branch Susquehanna River and Juniata River Drainages. The Delaware River Drainage includes the Lehigh River and Schuylkill River Drainages. Black Crappie are now self-sustaining throughout Pennsylvania. Many natural warm-water lakes and man-made reservoirs in Pennsylvania contain self-sustaining Black Crappie and/or White Crappie populations. Generally, in Pennsylvania, Black Crappie and White Crappie occur at lower densities in rivers and streams compared to lakes and reservoirs. An exception applies to navigation and power dam pools on rivers. Generally, in Pennsylvania Black Crappie occur in more waters than White Crappie and often out-number them where both occur.

Black Crappie and White Crappie populations are managed for sport fishing through harvest management, habitat management, and through stocking. Stocking typically occurs in conjunction with establishing a self-sustaining Black Crappie and/or White Crappie population in newly filled or newly acquired reservoirs that do not contain crappie or contain low-density crappie populations. Stocking is typically carried out from one to several years to establish a self-sustaining population or enhance a depressed population. Black Crappie populations in Pennsylvania waterways are naturally sustained and do not require annual maintenance stocking. Similarly, White Crappie fingerling and adults have been stocked to establish or enhance populations. White Crappie populations in Pennsylvania waterways are also largely naturally sustained and do not require annual maintenance stocking. From 2013 to 2017, Black Crappie have been stocked in from 1 to 4 waters, or water sections, depending upon year. In the same time span, White Crappie have been stocked in from 1 to 12 waters, or water sections, per year. Annual stocking summary details are posted elsewhere on this web site. Our Warmwater and Coolwater fishing map provides a broad selection of waters where fishing opportunities for both crappie species can be found in Pennsylvania.

Pennsylvania Anglers may be curious as to the maximum size this species can attain in Pennsylvania waters. Current Pennsylvania state record fish can be examined elsewhere on this website, these data provide perspective regarding maximum size attainable. Below, we illustrate the growth rate of Black Crappie and White Crappie in Pennsylvania, and note that a 9-inch crappie is approximately 4 years old (Figure 1) and weighs 0.5 pounds. With respect to harvest management, inland regulations accommodate harvest of 50 panfish, combined species, which includes Black Crappie, White Crappie, and other species. No minimum size limit or seasonal restrictions apply. Black Crappie and White Crappie are generally a prolific species, which has led to liberal harvest rules. In some cases, crappie can become too dense and grow slowly, which results in few individuals attaining desirable size. Liberal harvest is desired in these circumstances where less competition for food resources leads to faster growth. Despite liberal harvest rules, the average creel size of anglers who have kept at least one crappie and completed their fishing trip in Pennsylvania is 4. The number of crappie that anglers creel has ranged from no crappie kept to 50 kept. The low average number in angler creels may reflect an increased practice of catch and release fishing. However, in some cases, anglers may encounter few crappies of desirable size in a population for other reasons.

Many small crappies in a water may result from slow growth as described above, or alternatively result from intense angler removal of desirable size crappies such that those remaining are of smaller size. Where harvest is especially intense smaller size crappies may make up a significant portion of the population. If the Management Biologist is faced with angler harvest reducing density of desirable size Black Crappie and White Crappie, harvest restrictions may be applied though selective application of Panfish Enhancement regulations. In this program, for example, Black Crappie and White Crappie harvest is limited to specimens 9 inches or greater with a maximum daily harvest of 20 combined species. This size enhancement program in Pennsylvania has proven effective where growth is adequate and where angler harvest truncates size structure. Biologists regularly sample fish populations to measure their density, growth, size structure, and sample anglers while fishing to measure harvest. Circumstances more complex than those described may apply where a variety of alternate management approaches may be applied.

Apart from inland harvest regulation programs and Panfish Enhancement Regulations, Pennsylvania Fish and Boat Commission biologists have also collaborated with biologists in neighboring states to develop harvest regulations that apply to border waters to sustain high quality fishing experiences in those shared waters. Those waters include Lake Erie, Pymatuning Reservoir, and Conowingo Reservoir on the lower Susquehanna River among others. Border water regulations applying to these locations may differ from inland harvest regulations and can be found elsewhere on this website. Anglers should consult the current Summary of Fishing Laws and Regulations which detail all inland and border regulations and abide by applicable harvest rules.

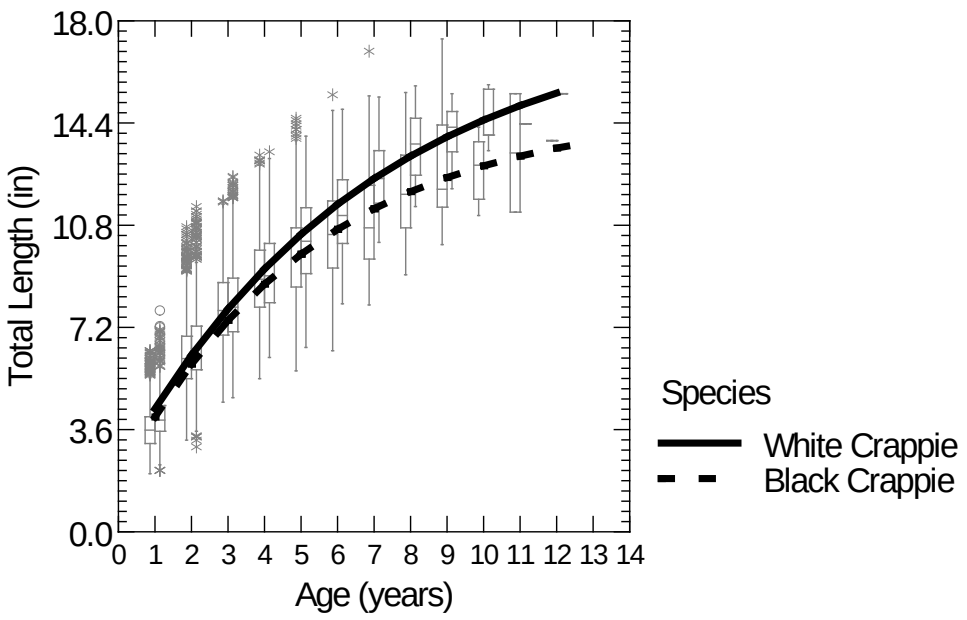

Figure 1. Average length at age of Black Crappie and White Crappie collected by fisheries biologists in assessment gear in Pennsylvania (March-June)

To illustrate a Fishery Biologists' management approaches, a biologist faced with many slow growing and small crappie in a reservoir or lake may elect to reduce refuge habitat of young crappie through (1) vegetation control, or (2) increase predator density to thin crappie numbers, or a combination of both. Findings of such evaluations and proposed management approaches are often detailed in biologist reports contained elsewhere on this web site. By way of example, to reduce refuge habitat, a planned, over-winter partial draw-down will freeze and desiccate some near shore vegetation and serve to concentrate predators and prey over winter. This procedure may successfully thin crappie numbers to enhance their growth (size). Alternatively, where refuge habitat is sparse, predator abundance might be enhanced through predator stocking, such as Walleye (*Sander vitreus*) stocking, or though application of predator harvest restrictions to bolster predator abundance. For example, Big Bass regulations may be applied to bolster abundance of black bass. Biologists may also prescribe addition of habitat devices that attract crappie. These devices can bolster angler harvest. What determines the specific course of action on a water body relates to diverse features including those mentioned and others. For example, some species of aquatic plants are more susceptible to control (reduction) through water level management and others are not, managers must also consider the capability of the aquatic resource to sustain an increased density of predators, which is influenced by resource productivity. With respect to placement of fish attractant devices, the Pennsylvania Fish and Boat Commission has an active corps of volunteers that assist in construction and placement of structures after an approved habitat plan has been developed. We encourage organizations interested in volunteering time to contact our Habitat Unit for more information.

In association with evaluations by Fishery Biologists, growth of Black Crappie and White Crappie is examined by measuring length, weight, and taking a scale sample or other anatomical sample (fin spine, otolith, etc…) to determine age. We have tabulated average ages and weights for a variety of lengths of Black Crappie and White Crappie in Pennsylvania (Table 1). Anglers find these tables useful in approximating the weight and age of their catch. It should be known that weight and age based on length can vary between individuals and across populations. Age of individuals is essential to other assessments conducted by biologists. In standard

biological collections, the decrease in relative or absolute number of Black Crappie and White Crappie at each age can be used to describe the total annual mortality rate. On average, the total annual mortality rate is 62% for both species, which includes annual losses due to fishing and loss due to natural causes such as predation and disease. Examination of age structure allows biologists to index annual production of young Black Crappie and White Crappie. Growth, recruitment of young to the population, and loss rate of older crappie are important considerations in developing harvest regulations that yield desirable size crappie for harvest.

Table 1. Average weight and average age of Black Crappie and White Crappie, at a given length, collected by fisheries biologists in Pennsylvania (March-June).

	Black Crappie		*White Crappie*	
Inches	*Pounds*	*Years*	*Pounds*	*Years*
4	0.1	1	0.1	0.8
4.5	0.1	1.2	0.1	1.1
5	0.1	1.5	0.1	1.3
5.5	0.1	1.8	0.1	1.6
6	0.1	2.1	0.1	1.9
6.5	0.1	2.4	0.1	2.2
7	0.2	2.7	0.1	2.5
7.5	0.2	3	0.2	2.8
8	0.3	3.4	0.2	3.1
8.5	0.3	3.8	0.3	3.4
9	0.4	4.2	0.3	3.8
9.5	0.5	4.7	0.4	4.2
10	0.5	5.2	0.4	4.6
10.5	0.6	5.8	0.5	5
11	0.7	6.5	0.6	5.5
11.5	0.9	7.2	0.7	6
12	1	8	0.8	6.5
12.5	1.1	9	0.9	7.1
13	1.3	10.3	1.1	7.7
13.5	1.5	11.9	1.2	8.4
14	1.7	14.3	1.4	9.1
14.5	1.9	18.8	1.5	10
15	2.1	> 18.8	1.7	11
15.5	2.4	> 18.8	1.9	12.1
16	2.6	> 18.8	2.1	13.5
16.5	2.9	> 18.8	2.4	15.2
17	3.2	> 18.8	2.6	17.5
17.5	3.6	> 18.8	2.9	> 17.5

18	3.9	> 18.8	3.2	> 17.5
18.5	4.3	> 18.8	3.5	> 17.5
19	4.7	> 18.8	3.8	> 17.5

Tabulating catch and harvest from a sample of anglers to estimate total catch and harvest from a waterway is also essential in developing management plans. Information such as this, derived from creel surveys frequently yields information not only essential to biologists, but also of interest to anglers, since seasonal peaks in angler catch occur for most species. Black Crappie and White Crappie can be caught most any time of year, generally though, highest catch per hour occurs in spring and fall (Figures 2, 3, and 4). In spring, at spawning time, brood guarding adults are concentrated in colonies and quite vulnerable to anglers. Large reservoirs and lakes yield catch rates in winter (ice season) that exceed those in other seasons (Figure 3). Crappie fishing destinations may be identified from maps elsewhere on this site, on these maps a broad selection of waters where crappie fishing opportunities exist can be located. With information describing seasons where catch rate of crappie is high, and fishing locations where crappie may be found identified, anglers need only select an effective bait or lure. Crappie spawning colonies are typically located at deeper locations than other panfish, such as Bluegill *(Lepomis macrochirus*). Most anglers were introduced to crappie fishing by fishing with a minnow and bobber combination; adjustable depth slip bobbers provide a great method for shore anglers to adjust a bait to different depths. Small jigs and spoons slowly retrieved, trolled, or drifted can also be very effective and attractive baits. The abundance of crappie in many waters across the state, the ability to catch them in summer, fall, and through the ice in winter, makes them an especially popular panfish.

A summary of crappie information including fishing tips, best fishing waters, species identification, and more can be found elsewhere on this website. Additional information helpful in answering angling questions can be found on the Fishing FAQs page located elsewhere on this website.

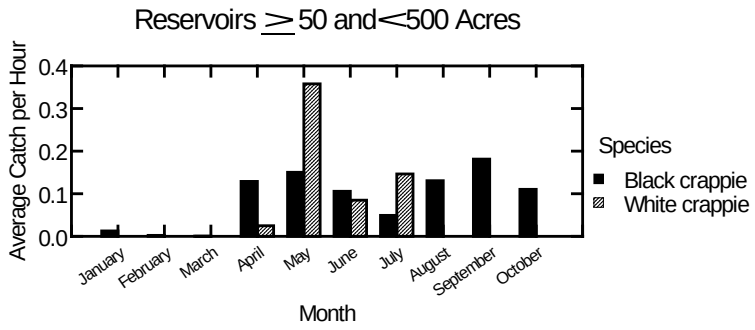

Figure 2. Average catch per angler hour, by month, of Black Crappie and White Crappie from medium size Pennsylvania reservoirs.

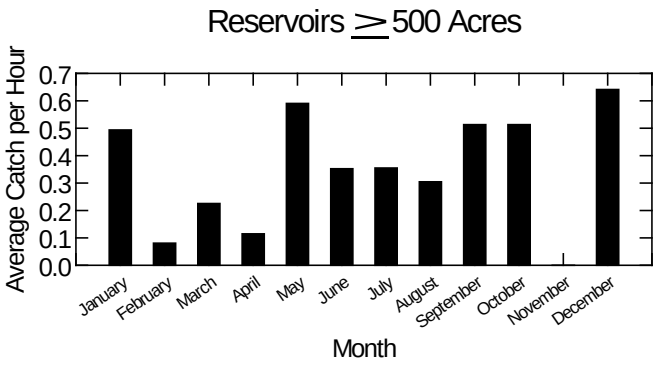

Figure 3. Average catch per angler hour, by month, of Black Crappie from large size Pennsylvania reservoirs.

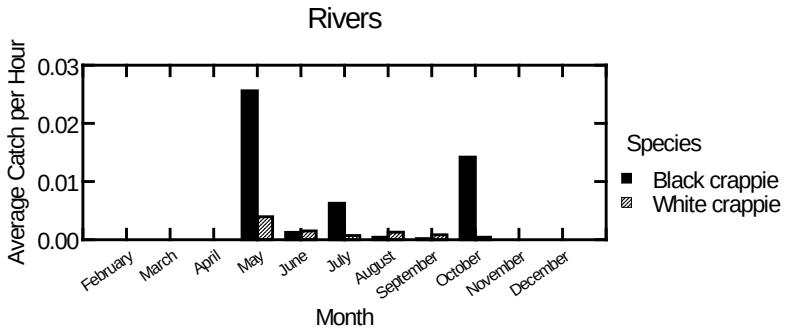

Figure 4. Average catch per angler hour, by month, of Black Crappie and White Crappie from Pennsylvania rivers.