Conservation and Management Plan for the Native Walleye of Kentucky

Kentucky Department of Fish and Wildlife Resources
Fisheries Division

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INTRODUCTION

Walleye (*Sander vitreus*) are a large, piscivorous, fish of the Percid Family. They are highly valued both as a sportfish, and a commercial species in some areas, as it grows to large sizes and is excellent table fare. The species is native to North America east of the Continental Divide, including Canada, the Great Lakes, and much of the Mississippi River Basin with native populations also occurring on the mid-Atlantic slope and the Gulf Coast (Scott and Crossman 1973; Hackney and Holbrook 1978). Walleye are considered a coolwater species that inhabit a variety of water body types and sizes such as medium to large rivers and natural lakes, and have now been stocked in impoundments of varying size around the country, many outside their native range.

Southern walleye are known to grow and mature faster, reach a larger maximum size, but have shorter lifespans than their northern counterparts (Jenkins and Burkhead 1994). The southern strain spawns in shallow shoal areas of medium to large rivers in late winter/early spring. Historically, large walleye had been caught with regularity during spring spawning run fisheries throughout Kentucky into the early 20th century and as late as the 1950's in the Cumberland River of south central Kentucky. These native walleye populations were thought to have been lost until rumors of a remnant population of walleye existing in the Rockcastle River, a tributary to the Cumberland River, led to efforts to collect fish for genetic testing. Walleye were collected from the Rockcastle River in 1995 and tested using mitochondrial DNA (Billington 1997) and again in 1997 using mitochondrial DNA and allozyme analysis (Billington and Sloss 1998). Results confirmed that walleye inhabiting the Rockcastle River were genetically unique and there was no evidence of introgression of northern walleye alleles. This conclusion was later confirmed with more advanced genetic testing that included microsatellite analysis of nuclear DNA (White et al. 2012).

HISTORY

Early ichthyologists documented the southern, riverine strain of walleye in most of the major watersheds in Kentucky (Figure 1). Only the Salt and Tradewater River drainages have no official historical records, although walleye may have been present in those locations as well. According to Evermann (1918), Constantine Rafinesque first described walleye from the Ohio River in 1818, and then collected the species from the Licking and Kentucky rivers in 1820. It wasn't until the late 1800's, before any more substantive ichthyological work was conducted in Kentucky. Evermann (1918) then reports that Jordan and Brayton recorded walleye from the Rockcastle River in 1878. In an extensive fish survey of Kentucky, Woolman (1892) noted the presence of walleye in the Tennessee River near Paducah, the Cumberland River near Kuttawa, the Green River and Pitman Creek near Greensburg, the Levisa Fork of the Big Sandy River near Pikeville, and the Little Sandy River near its mouth. Clark (1941) was able to document the presence of walleye in the "upper Levisa Fork" and Kinniconick Creek, a tributary to the Ohio River in northeastern Kentucky. He also reported that walleye reached a length of three feet and a weight of twenty pounds or more. In a Levisa Fork fish survey by Kirkwood (1957) in late 1956, he was not able to collect any walleye using an electric seine. However, he did note that the species was “common in the late winter and early spring creels from Levisa Fork, and especially Russell Fork”.

By the late 1800’s, there was growing concern that fisheries across the United States were in decline. The use of waterways for power, transportation, mining, and waste disposal and the use of watersheds for rapid exploitation of timber, minerals and crops were destroying the capacity of aquatic environments to sustain fish populations (Nielsen 1993). There were also widespread fears of overharvest of fishes due to detrimental commercial fishing methods. A quote from the Kentucky Game and Fish Commission Third Biennial Report (1917) illustrates the point. “Many good citizens were greatly worried and harassed by irresponsible and wandering market fishermen who destroyed the small as well as the large fish, and who were guilty at certain seasons of the year of placing nets of such size across the mouth of streams entering these navigable waters as to entirely cut off the fish therefrom, thereby preventing them from entering the smaller streams for the purpose of spawning”.

Fish culture and stocking was developing in the late 1800’s and was thought to be the remedy for declining fisheries. In 1871, the United States Fish Commission was formed by the U. S. Congress to investigate “the causes of decrease in the supply of useful food-fishes of the United States, and of the various factors entering into the problem;” and “the determination and employment of such active measures as may seem best calculated to stock or restock the waters of the rivers, lakes and the sea”. Restocking of important degraded fish stocks by the U.S. Fish Commission began the next year in 1872. Specialized rail cars were used to transport fish throughout the country. Kentucky Game and Fish Commission (1915,1917) records indicate that walleye (referred to as “pike perch”) fry were stocked in various rivers and streams throughout Kentucky by the U. S. Fish Commission and by the KY Game and Fish Commission in at least 1912 and from 1914-1917. Some of these fish were documented coming from the Put-in-Bay Hatchery on Lake Erie so it is quite possible that all walleye stocked by the U. S. Fish Commission in Kentucky were of Lake Erie origin. It is notable that the waters stocked in Kentucky were mostly those same streams where walleye had been documented by early ichthyologists, including the Rockcastle River system and the Levisa Fork of the Big Sandy River. The stocking of walleye in these rivers was an apparent attempt to bolster the existing population.

However, it is now known that the genetic integrity of the native southern strain walleye has been maintained even where northern strain walleye fry had been stocked in previous years. The Rockcastle River had been stocked with northern strain walleye fry in at least the early 1900’s. The walleye populations in the Rockcastle River have also had the potential to interbreed with northern strain walleye that have been stocked in Lake Cumberland since the early 1970’s. Genetic testing of walleye from the Big South Fork has determined that some hybridization between the two strains has taken place, however there also continue to be pure native strain and pure northern strain present together in the river (M. White, pers. comm.). It seems that early 20th century stockings of northern strain walleye fry either suffered total mortality or that different reproductive life history characteristics served to isolate the two strains in some areas.

The declines in the native walleye population in Kentucky in the early half of the 20th century were likely due to a combination of factors. As one example, the Cumberland River was impounded in 1952 to form Lake Cumberland. The historic walleye spawning runs above the reservoir rapidly declined in the late 1950's and early 1960's. Speculation for the population decline included: lack of spawning sites due to the inundation of major shoals by the reservoir, the over-harvest of adult walleye during the spawning season, and the occurrence of acid mine pollution in the limited remaining spawning areas (Kinman 1990). Hackney and Holbrook (1978) observed a similar pattern of declining native walleye fisheries after impoundments of southern rivers. Extreme examples of pollution were also reported on the Levisa Fork during fish surveys by Clark (1941) and Kirkwood (1957).

RECENT MANAGEMENT EFFORTS

In 2002, a research project was initiated to study the native walleye population on the Rockcastle River. The two goals of the project were to evaluate supplemental stocking of native walleye and to determine if the native strain fish were cohabitating with northern strain fish that had been stocked downstream in Lake Cumberland. Early sampling of the river had revealed that there was a very low density population of walleye present. It was decided to collect broodfish from the river, take them to the hatchery for spawning and begin supplemental stocking to boost the native walleye population. The genetic makeup of the walleye population throughout the Rockcastle River was unknown at the time, so a contract was signed for Dr. Matt White (Ohio University) to conduct genetic analysis of all captured fish. Captured and released walleye were also tagged with a PIT tag so genetic results could be associated with individual fish if captured later. A contract was also initiated with Eastern Kentucky University to conduct a radio telemetry study of walleye in the Rockcastle River to help answer the question of cohabitation. The initial design of the radio telemetry study was to collect 30 individuals from the river of each of the two strains, implant them with radio transmitters and follow them for one year. After much sampling over the length of the Rockcastle River and collecting many individuals for genetics and implantation, it was determined that the native strain walleye in the Rockcastle show no evidence of genetic introgression with the northern strain and there were no northern strain walleye present in the Rockcastle River above the area of Lake Cumberland influence, which coincides with the area of steep gradient called the Lower Narrows. The goals of the radio telemetry study were altered to determine spawning sites, seasonal habitat use and distribution of native walleye in the Rockcastle River.

The Rockcastle River was annually stocked from May 2002 to May 2007 at a target stocking rate of 200 fingerlings (1.5 inch) per mile. Actual stocking numbers ranged from 7,972 to 31,775 (80 to 318 fingerlings/mi). The length frequency histogram of the population in 2003, prior to any effects from stocking, showed significant gaps. This led to the assumption that there is typically highly variable natural year class production. During the years of supplemental stocking, year class production was apparently more stable but there were not any particularly large year classes as length frequency histograms showed less gaps and no large peaks. Stocked fish were marked with oxytetracycline (OTC) to allow for discernment of the contribution of stocked fish to the population. All walleye sacrificed and examined (n=143) from the six year classes were marked fish, with the exception of one individual, indicating extremely limited natural reproduction. Several years after supplemental stocking had ceased, length frequency histograms still indicated a lack of natural year class production. However, recent evidence of some natural reproduction in the 2010 year class is encouraging. The Rockcastle River continues to be a source of broodstock.

Stocking of native walleye was also initiated in Wood Creek Lake in 2002 and has continued to present. The target stocking rate is 50 fingerlings (1.5 inch) per acre but the actual number stocked has varied with hatchery production. The reservoir has also been used as a source of native walleye broodstock since 2006. However, getting walleye for broodstock from Wood Creek Lake has been become increasingly more difficult in recent years.

Historical records indicate that native strain walleye were present in the Barren River prior to its impoundment forming Barren River Lake. The upper Barren River above the lake was selected as an isolated section of river with good habitat for native walleye restoration beginning in spring 2007. It has been stocked annually with fingerlings (1.5 inch) through spring 2014 with the eventual goal of creating a self-sustaining population. Stocking numbers have ranged from 15,800 to 59,800 (395 to 1,495 fingerlings/mi). Length frequency histograms from spring electrofishing show that the population is expanding, but apparently some year classes experienced poor survival. However, for the first time, a satisfactory level of reproductive-size fish were collected in spring 2014.

Native walleye restoration expanded to a second location in spring 2010 when the department began stocking the upper Levisa Fork above Fishtrap Lake. There are fifteen river miles between the headwaters of the lake and the Kentucky-Virginia state line. The number of fingerlings stocked has ranged between 9,100 and 33,000 (607 to 2,200 fingerlings/mi). This river has proven to be very difficult to sample with boat electrofishing as it has a very wide, shallow channel. Other fish sampling methods such as backpack electrofishing and gill netting have been judged to be impractical. The only widespread sampling was completed in January 2012 when approximately seven miles of river was boat electrofished and no walleye were collected (one walleye was observed). However, by fall 2012, department personnel had received anecdotal angler reports of walleye up to 17 inches.

In spring 2013, the number of places receiving native walleye stockings increased again when Martins Fork Lake and the upper Cumberland River above Cumberland Falls were added to the list. In May 2013, Martins Fork Lake (334 acres) received approximately 16,700 fingerlings or equivalent to 50 fingerlings per acre. There are 135 river miles of the Cumberland River mainstem between Harlan and Cumberland Falls. This area received approximately 36,500 native walleye or about 270 fingerlings per mile. Northern strain walleye had been stocked in both locations, but these stockings were halted in 2004 with the intent that they would eventually be replaced with native walleye. There has been no evidence of natural reproduction of northern strain walleye since stocking ceased and numbers of adult fish have dwindled as no walleye have been observed in recent electrofishing efforts at Martins Fork Lake and just a few large individuals were observed during electrofishing in the upper Cumberland River. Cumberland Falls will obviously serve to isolate the stocked natives from northern strain walleye present in the upper reaches of Lake Cumberland.

Native walleye are also known to exist in the Big South Fork of the Cumberland River, which flows through the Big South Fork National Recreation Area. They were first documented when three individuals were collected above the mouth of Roaring Paunch Creek in the spring of 2003 during northern strain broodfish collection. Two native strain walleye were collected again during northern strain broodfish collections in 2006. During that time, the department was actively selecting northern strain broodfish that were migrating up the Big South Fork and Cumberland River mainstem. This strategy has since been abandoned and northern strain broodfish are only sought from Lake Cumberland in the lower reaches of the main lake or from other reservoirs. Two different days of electrofishing between the areas known as Devils Jump and Yamacraw during the summer of 2013 produced 20 walleye. These fish were sent in for genetic testing and were found to be a mix of pure native strain walleye, pure northern strain walleye, and hybrids of the two.

Because the steep gradient in this area, it seems likely that northern strain walleye may not have ventured above Devils Jump and there could be a reproducing population of pure native strain walleye above. However, lack of access and lack of permission from the National Park Service to sample with electrofishing due to the presence of endangered mussels has precluded any recent sampling.

It is possible that native walleye are also present in Buck Creek (Pulaski Co.), another large tributary to Lake Cumberland. A reliable sighting of a walleye well upstream of the lake by Fisheries Division assistant director, Mike Hardin, led to several days of searching using boat electrofishing in the spring of 2012. No walleye were encountered in that effort.

MISSION STATEMENT

TO CONSERVE AND ENHANCE EXISTING NATIVE WALLEYE POPULATIONS IN KENTUCKY AND ESTABLISH OTHER SELF-SUSTAINING POPULATIONS IN SUITABLE WATERS USING OPTIMAL HATCHERY PRODUCTION AND STOCKING PRACTICES.

Goal 1. To conserve and enhance native walleye populations in specific refuge areas in Kentucky.

Objective 1. Maintain the existing native walleye populations and their genetic integrity in specific refuge areas.

Rationale: As of December 2014, the water bodies in Kentucky known to contain native walleye are the Big South Fork of Cumberland River, upper Cumberland River above Cumberland Falls (including Martins Fork Lake), the Barren River watershed (both above and below Barren River Lake), upper Levisa Fork (including Fishtrap Lake), and the Rockcastle River (including Wood Creek Lake) (Figure 1). It is reasonably certain that all these populations are either physically or reproductively isolated from northern strain walleye populations with the exception of the population in the Big South Fork of the Cumberland River and the native walleye recently stocked in the upper Cumberland River (which may still contain declining numbers of adult northern strain). The genetic integrity of any pure native walleye populations must be maintained and used as a source of broodstock for future stocking efforts. These populations should be managed with the expectation of having fishable populations which are adequately protected with special regulations.

Actions:
1. There should be no supplemental stocking of the Rockcastle River as long as a natural year class is produced at least every fourth year.
2. Continue investigating the status of the native walleye population in the Big South Fork of the Cumberland River, however there should be no supplemental stocking.
3. The upper Barren River, upper Cumberland River and the upper Levisa Fork should be stocked according to the evaluation criteria developed in Goal 2 Objective 1 until a reproducing population is established or that goal is deemed unattainable.
4. Continue stocking Wood Creek and Martins Fork Lakes according to the evaluation criteria developed in Goal 2 Objective 1.
5. Continue investigating suspected rivers with remnant native walleye populations if or when these areas come to our attention.
6. Develop genetic memorandum of understanding with adjoining states having common watersheds containing native walleye populations (TN, WV, and VA).

7. Establish a standard set of restrictive creel and size limits adequate for native walleye population protection.
    a. The recommended size limit shall be an 18 to 26 in protective slot limit for all waters containing native walleye and the daily creel limit shall be two fish. These regulations allow for a low level of exploitation of smaller fish and yet protect any fish that make it to the minimum slot size. The 18 to 26 in slot will provide essential protection for prime breeding size female native walleye. See Table 1 for an example of available growth information of native walleye in the Rockcastle River.

Objective 2. Establish standardized data collection parameters for the evaluation of management efforts of native walleye populations.

Rationale: Standardized data collection parameters are necessary to objectively evaluate the stability of existing populations in the Rockcastle and Big South Fork of the Cumberland Rivers. These parameters will also be used to evaluate the success or failure of stocking to establish new populations in Upper Barren River, Levisa Fork, the Upper Cumberland River and any future introductions and to determine whether new populations are self-sustaining.

Actions:

1. Conduct late winter/spring electrofishing to collect standardized catch per unit effort data.
2. Determine what electrofishing catch rates are indicative of desirable population levels. The threshold values of the following metrics will come with more years of sampling in various watersheds.
    a. CPUE of age-2.
    b. Mean length at age-2.
    c. CPUE of ≥15.0 in walleye.
    d. CPUE of ≥25.0 in walleye.
3. Determine maximum length/age of native walleye through continued sampling and dorsal spine aging.
4. Conduct FAST population modeling.
    a. Determine annual mortality of native walleye.
    b. Obtain a fishing mortality estimate if/when deemed warranted.
5. Continue PIT tagging in the Upper Barren River with the possibility of getting a population estimate and movement information.

Goal 2. To establish self-sustaining native walleye populations in other suitable watersheds in Kentucky.

Objective 1. Expand native walleye stocking to suitable watersheds to create additional refuge areas with fishable populations that are isolated and could be used as broodstock.

Rationale: Maintaining the genetic diversity and limiting hybridization with northern strain walleye is critical to the prolonged survival of native walleye populations in Kentucky waters. Restoration of native walleye to their former native waters is desirable, but most important are reliable and pure sources of native walleye broodstock that will be needed for the future stocking efforts to be successful. These native walleye populations should be protected with the special regulations described in Goal 1, Objective 1, Action 7.

Actions:

1. Develop a list of possible water bodies for future native walleye restoration to be designated as "refuge" waters. Any areas that would provide physical barriers to genetic migration, and therefore isolate native walleye populations, should be examined to determine their potential for restoration and/or as a future broodstock source.
    a. It may be necessary to evaluate the feasibility of discontinuing stocking of northern strain walleye in some prospective waters.
2. **Refuge waters should receive full allotment of native walleye each year before non-refuge waters receive fish. See Goal 2, Objective 2.**
3. Stock native walleye fingerlings at each restoration area for a minimum of five consecutive years, and knowing that there may be some failed year classes, stocking should continue until the electrofishing CPUE of ≥15.0 in walleye is 3.5 fish/h or greater (This number is based on the long term average (2003-2012) electrofishing catch rate of these size fish observed on the Rockcastle River). Stocking would be limited to a maximum of nine consecutive years.
4. Priority of native walleye stockings to be set annually using the Native Walleye Stocking Decision Tool. See Goal 2, Objective 4 and Appendix 1.
5. Continue monitoring native walleye introductions for five years post-stocking to check for the minimum electrofishing CPUE described in Action 3 and for natural reproduction.

Objective 2. Develop self-sustaining and fishable native walleye populations in suitable watersheds where genetic integrity is not critical.

Rationale: The establishment of native walleye populations in rivers and reservoirs conducive to their survival, regardless of genetic isolation, would provide and enhance opportunities for fishing throughout Kentucky. While maintaining distinct genetic populations for recovery of the species and procurement of broodstock remain vital, meeting the fishing opportunities component of KDFWR's mission statement is also important to successful management of native walleye. These native walleye populations should be protected with the special regulations described in Goal 1, Objective 1, Action 7.

Actions:

1. Develop a list of possible water bodies for future native walleye stocking where mixing with Northern strain is not a concern (designated as "non-refuge waters") and where broodstock will not be collected.

2. Stock native walleye fingerlings at each non-refuge water for a minimum of five consecutive years, and knowing that there may be some failed year classes, stocking should continue until the electrofishing CPUE of ≥15.0 in walleye is 3.5 fish/h or greater.
3. Priority of native walleye stockings to be set annually using the Native Walleye Stocking Decision Tool; however Refuge waters always have priority over Non-refuge waters. See Goal 2, Objective 4 and Appendix 1.
4. Continue monitoring native walleye introductions for five years post-stocking to check for the minimum electrofishing CPUE described in Action 2 and for natural reproduction.

Objective 3. Consider alternate stocking strategies to the current approach.

Rationale: The consideration of alternate walleye stocking rates, frequencies, and stocking sizes will help to develop more efficient stocking strategies. Reduced annual stocking rates and/or alternate year stocking may increase survival and still provide the same contribution to populations. Additionally, larger fish are less susceptible to predation, and previous walleye studies have shown that increased survival is positively correlated with size. Better stocking strategies would lead to increased survival and expansion of native walleye, and may prove to be more cost effective in the future.

Actions:

1. The standard stocking rate shall be 50 fingerlings (1.5 in) per acre or approximately 600 fingerlings (1.5 in) per mile.
2. The upper Cumberland River is being stocked at a rate that is one half of above (i.e. 25 fingerlings per acre or 300 fingerlings per mile). Other stocking rates that result from variable hatchery production should be evaluated when possible.
3. Consider reducing stocking frequency at some locations to enable quicker expansion of the number of native walleye populations. A list could be developed of the areas to evaluate alternate year stocking approaches. Areas that have already been stocked for at least three years should be given priority.
4. Develop a list of areas to evaluate the stocking of advanced fingerling walleye (2 – 4 in). Areas that have been previously stocked and shown poor survival should be given priority.

Objective 4. Devise objective method for determining locations for stocking and prioritization.

Rationale: A structured decision making approach should be used to evaluate potential bodies of water for native walleye stocking and to set a prioritization. An objective method will simplify the decision-making process and enable everyone that is part of the process to have a unified concept of the stocking plans and why. While there still will be some initial subjectivity on how to rate locations for some of the criteria that are developed, as we gain more knowledge the goal will be for the procedure to be as objective as possible.

Actions:

1. Use the Native Walleye Stocking Decision Tool found in Appendix A to facilitate a structured decision making approach to future native walleye stocking. The tool consists of six parameters to rank the candidate bodies of water: Genetic Integrity, Special Concern, Past Stocking, Habitat Quality, Population Status, and Broodstock Accessibility. Each parameter has defined scoring criteria ranging from 0 to 4. The parameters have various weights, ranging from 3 to 7. The maximum total score is 100. The Native Walleye Stocking Decision Tool is in the form of a Microsoft Excel spreadsheet where all necessary formulas are already in place.
2. Situations that are addressed in the stocking decision tool are as follows:
    a. Is getting necessary number of broodstock still a concern? **If yes, only "Refuge" areas stocked, either existing or new.**
    b. Do current populations need stocking? If yes, they should have priority.
    c. New river systems proposed for stocking support the goal of isolated broodstock until this is no longer a concern.
    d. Once broodstock sources are secure, begin stocking areas where genetic integrity is not critical.
    e. Identify and define important variables in areas where native walleye occur.
    f. Prioritize river systems according to criteria developed for stocking and future restoration.
    g. How far down the list gets stocked determined by hatchery production.

Objective 5. Expand and enhance native walleye hatchery production.

Rationale: It is imperative to make the most efficient use of native walleye hatchery production in order to meet the two goals of this plan. In particular, accomplishing this objective will mean quicker implementation of Goal 2, establishing self-sustaining native walleye populations into other suitable watersheds in Kentucky.

Actions:

1. Continue expanding sources of native walleye broodstock for use as wild hatchery broodstock.
2. Continue with developing a hatchery-held native walleye broodstock.
3. Attempt to develop hatchery production methods that will ensure constant production of a minimum average size of 1.5 in fingerlings.
4. Attempt to develop hatchery production methods to grow out a portion of native walleye to advanced fingerlings (3-5 in).
5. MCFH production numbers of both 1.5 in and advanced fingerling native walleye will be set annually to be consistent with other fish species production.

Objective 6. The Native Walleye Management Committee shall use the guidelines defined in this plan to collaboratively guide the decision-making process.

Rationale: The KDFWR began active management of native walleye over a decade ago. Previously, there had been no effort to formally define goals for native walleye management and what procedures to use in expanding the program. The question on where to next stock native walleye and what criteria should be used to make that decision was debated annually. The clearly defined written management goals and guidelines formed in this plan are the first step towards simplifying the decision-making process.

Actions:

1. The Native Walleye Management Committee shall consist of Fisheries Division biologists and administrators appointed by the Director of Fisheries.
2. The Native Walleye Management Committee shall use the guidelines developed in this plan to make management recommendations to the director.

ACKNOWLEDGEMENTS

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Table 1. Mean estimated length at age based on back-calculation from otoliths of sporadic collections of native walleye from 2002-2008.

	Age											
	1	2	3	4	5	6	7	8	9	10	11	12
Mean Growth for Females (N=11)	9.5	13.0	16.8	21.4	23.5	25.0	26.2	27.1	28.0			
Mean Growth for Males (N=35)	9.1	12.3	15.2	16.6	17.6	18.5	19.2	19.7	20.3	19.4	20.1	20.4
Mean Growth for Sex Unknown (N=34)	8.2	11.8	15.1	16.0	17.1	18.3	19.0	19.8	20.5	20.9	21.2	
Overall Mean Growth	8.8	12.3	15.4	16.9	17.9	19.0	19.7	20.4	21.1	20.3	20.6	20.4

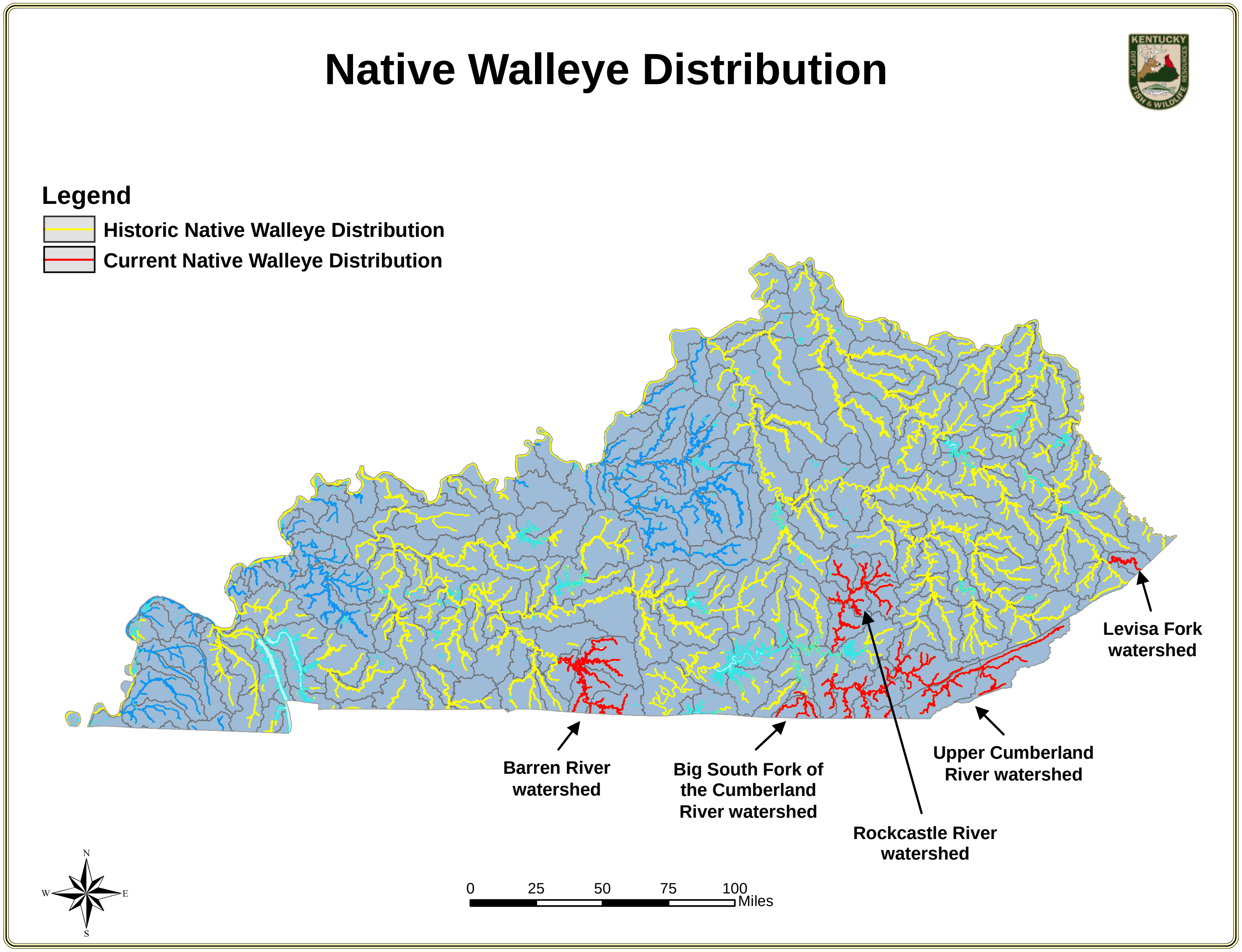

Figure 1. Historic and current (December 2014) native walleye distribution in Kentucky.

APPENDIX A

Native Walleye Stocking Decision Tool

Criterion	**Genetic Integrity**		**Special Concern**		**Past Stocking**		**Habitat Quality**		**Population Status**		**Broodstock Accessibility**		
	Confidence that the stocked native walleye will remain isolated from northern strain?		**Some special concern that requires native walleye stocking? (new stocking, poor recruitment, etc.)**		**How many consecutive years have native walleye been stocked in body of water?**		**Confidence that stocking native walleye will result in a self-sustaining population?**		**What is the current status of ≥15 in. native walleye population?**		**Ease of broodstock collection from body of water?**		
Weight	7		6		3		3		3		3		
Body of Water	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Total Score
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0
		0		0		0		0		0		0	0

Confidence that the stocked native walleye will remain isolated from northern strain?	**Some special concern that requires native walleye stocking? (new stocking, poor recruitment, etc.)**	**How many consecutive years have native walleye been stocked in body of water?**	**Confidence that stocking native walleye will result in a self-sustaining population?**	**What is the current status of ≥15 in. native walleye population?**	**Ease of broodstock collection from body of water?**
0 = Low	0 = No	0 = None or 8 years or more	0 = Low	0 = ≥3.5 fish/h	0 = Poor
1			1	1 = 3.0-3.4 fish/h	1
2 = Moderate	2 = New stocking	2 = 6-7 years	2 = Moderate	2 = 2.5-2.9 fish/h	2 = Average
3			3	3 = 2.0-2.4 fish/h	3
4 = High	4 = Poor recruitment	4 = 1-5 years	4 = High	4 = <2.0 fish/h	4 = Excellent