

# Lower Woods Pond

## Wayne County

### **Warm-Water/Cool-Water Fish Restoration Plan, 2024 to 2029**

Lower Woods Pond (GPS: 41.738056, -75.270836) is an impoundment on the East Branch Dyberry Creek, located in Wayne County, Pennsylvania owned by the Pennsylvania Fish and Boat Commission (PFBC). The lake covers a surface area of 90 acres and has a mean and maximum depth of 9.8 feet and 26.2 feet, respectively. In December 2012 the lake was partially drawn down (Permit #: 128-12) to reconstruct the three dam structures to address present-day code requirements. The partial drawdown reduced the total surface acreage to approximately 50 acres, representing 55% of the original surface area. Given timing of the drawdown, a fish salvage operation was not performed. Additionally, fishing regulations were temporarily lifted with the initiation of the drawdown effective through April 1, 2013. Afterwards, fishing regulations reverted to Commonwealth Inland Waters and Big Bass regulations, which remained in-place throughout the remainder of the partial drawdown period. Although, during the spring 2022 to summer 2024 construction period the lake was effectively closed to fishing.

Construction was completed during summer 2024. Refill was initiated in July with the intent to return the lake back to its original 90-acre impoundment. Division of Fisheries Management (DFM), Area 5 Biologists attempted to survey the lake's fish populations Oct 2 – 3, 2024. Unfortunately, the continued dry meteorological conditions hampered refill such that the boat launch remained dewatered. All survey work for the fall 2024 was canceled and rescheduled for the spring 2025 in hopes overwinter snowpack will aid fully refilling the lake.

The restoration of Lower Woods Pond fish populations will be highly dynamic. Given the relatively large size of the remanent pool (i.e., 50 acres) and lack of a fish salvage, the resident fish population may already be well-established. Initial focus will ascertain the status of fish populations via consecutive seasonal monitoring surveys to confirm expectations of established populations. Fishing regulations are to be transitioned into the Catch-and-Release Lakes program for the 2025 season, given the uncertainty of the fish population without the fall 2024 surveys. A traditional restoration schedule is prepared; however, it will likely become modified from insights gained via survey findings.

Lower Woods Pond is a tannic, low fertility, oligotrophic water, with summer water temperatures supportive of warm-water/ cool-water (WW/CW) fishes. Fishes historically common to the lake included popular gamefishes, and a diverse forage base as collected from surveys conducted 1979 to 2009 (Table 1). The few occurrences of Muskellunge captured in 1979 (N = 4), 1986 (N = 6) and 1997 (N =1) surveys are perceived as ineffective for supporting a viable fishery. Walleye were supported by annual maintenance stockings. Those stockings were terminated in 2012 coinciding with the partial drawdown of the lake. All other fishes were naturally reproducing, self-sustaining populations.

**Table 1. Historical species occurrence within Lower Wood Pond, Wayne County, 1979 to 2009.**

<b>Species</b>
American Eel
Alewife
Golden Shiner
Yellow Bullhead
Brown Bullhead
Muskellunge
Chain Pickerel
Pumpkinseed
Bluegill
Smallmouth Bass
Largemouth Bass
Black Crappie
Yellow Perch
Walleye

## **Restoration Schedule**

A five-year restoration period, 2025 to 2029, is planned (Table 2). This timeframe, however, is highly predicated on the status of the remnant fish populations. Resident fish populations will likely quickly reestablish given the expansion of available habitat and reduced density-dependent competition for lake resources. Thus, the initial fish surveys are critical for establishing baseline population characteristics to understand future stocking needs. Should strong, well-established population structures (i.e., multiple size classes of forage fishes and gamefishes) be observed, likely restoration stockings can be adjusted (i.e., reduced stocking rates, advanced stocking schedule, or even terminate planned stockings, etc.) on a species-by-species basis. Ultimately, Lower Woods Pond is anticipated to be managed as high-quality panfish and black bass fisheries coupled with a destination Walleye fishery.

Prioritization of stockings will follow established DFM protocols, which have been demonstrated as successful in other lake restorations (Table 2). Advanced Largemouth Bass fingerlings and Golden Shiner will be initially stocked. The larger-sized Largemouth Bass will aid in overcoming potential predation by resident fish. After the initial two-years (i.e., 2024 to 2025) of stocking advanced Largemouth Bass fingerlings, stockings transition to using standard fingerlings. The early introduction of Golden Shiners will ensure a solid forage base is reestablished. Moreover, the initial two years of shiner stockings will be at a high density, to ensure their re-introduction is successful, particularly given unknown predation by resident fish from the remnant pool. Fathead Minnows will not be utilized for establishment of forage base, as they are considered an out-of-basin species, non-native to the Delaware Basin. Thereafter, various gamefishes including Black Crappie, Bluegill, Pumpkinseed, Walleye and Yellow Perch will be introduced as needed. Stocking rates for Bluegill and Pumpkinseed will be half of the rate in established protocols, given the preconception that these fishes will likely not require substantial reintroduction due to their remnant populations. The stocking of Chain Pickerel, bullheads, and

other lake species previously present is not deemed necessary for their re-establishment, rather their remnant populations are sufficient for their restoration.

**Table 2. Restoration milestone table of warm-water/cool-water fishes for Lower Woods Pond, Wayne County, 2024 to 2029.**

Species	Life Stage	Base Rate (No./ac.)	Base Allocation	2024	2025	2026	2027	2028	2029
<b>Gamefishes</b>									
Largemouth Bass	ADV. FING	40	3,600	X	X				
	FING	20	1,800			X	X	X	
Yellow Perch	FING	40	3,600		X	X	X	X	
Black Crappie	FING	40	3,600		X	X	X	X	
Bluegill	FING	20	1,800					X	X
Pumpkinseed	FING	20	1,800					X	X
Walleye*	FING	20	1,800						X
<b>Forage Fishes</b>									
Golden Shiner	FING	100	9,000	X	X	X			
		50	4,500				X	X	X
* – Annual maintenance stocking									

Lower Wood Pond historically supported a Walleye fishery maintained by stocking. While the lake was able to grow Walleye fingerlings to desirable fishery sizes, it was unable to sufficiently support a self-sustaining Walleye population via natural reproduction. These stockings will be delayed until all forage and other gamefishes are well-established to limit increased piscivore predation on newly restored populations. The initial stocking rate (Table 2) was set at the historical density but will likely need adjustment pending guidance from the PFBC Walleye Management Plan and the results of pending surveys. Moreover, after completion of the lake’s restoration, the Walleye fishery is presumed to remain an annually stocked, put-and-grow fishery.

Reestablishment of Muskellunge will not be pursued for Lower Woods Pond. Historical catch rates were indicative of the lake’s inability for supporting present-day management benchmarks set forth in PFBC Muskellunge Management Plan. Muskellunge are generally intolerant of the naturally high, tannic waters characteristic of most northeastern, DFM Area 5 waters, inclusive of Lower Woods Pond.

Historically, Lower Woods Pond was not within the Stocked Trout Water (STW) program, nor did it support a known resident wild trout population. Upon restoration of the resident WW/CW fish populations, the PFBC does not envision entry of this water into the STW program.

## Monitoring Schedule

Consistent, routine monitoring of fish populations will provide valuable insight into the status of the lake’s fish populations (Table 3). Establishment of baseline conditions will be critical, given the remnant pool likely supported well-established populations throughout the drawdown and reconstruction period. Potentially, the proposed restoration schedule can be reduced, based on initial survey findings. Thus, upon refill, an initial 2025 spring survey (presuming refill complete)

and following consecutive year of sampling (i.e., 2026) will be conducted to generate a baseline condition. Subsequent sampling will be comparatively evaluated for identifying stabilization of species-specific populations.

**Table 3. Monitoring milestone table for assessment of Lower Woods Pond fish populations.**

Year	PA-style Trap Net		Nigh-boat Electrofishing		Comment
	Apr.	Jun.	Oct.	Nov.	
2025	X	X	X	X	Establish baseline catch rate and size distribution metrics. Adjust/terminate restoration stockings as appropriate.
2026	X	X	X	X	Identify appropriate management regulations as appropriate.
2028	X	X	X	X	Evaluate population status to baseline conditions. Adjust/terminate restoration stockings as appropriate. Identify appropriate management regulations as appropriate.
2030	X	X	X	X	Determination of successful restoration for returning the lake to high-quality bass and panfish populations. Identify appropriate management regulations as appropriate.
2032	X	X	X	X	Initiate routine monitoring, reoccurring on a three-year rotation (i.e., next sampling 2035)
...	...		...		...

Two techniques will be employed to evaluate Lower Woods Pond fish populations including PA-style trap nets and night-boat electrofishing; trap nets to target the panfish and Walleye populations and electrofishing for black bass populations. Sampling will entail both spring and fall surveys for both gear-types (Table 3). A minimum of 24 trap nets (April: N = 12 sets; October: N = 12 sets) and 20 ten-minute electrofishing runs (June: N = 10 runs; November: N = 10 runs) are anticipated to be accomplished during each years' assessment. All sites for either gear will be randomly selected, with all fish being enumerated by species, measured to the nearest millimeter, and released back into the lake.

Metrics for assessment of restoration success will rely on empirical, descriptive, and comparative evaluations. Initial key considerations should encompass comparison to historical findings to determine the status of the present-day, species-specific populations relative to their status under full pool conditions. Initial comparisons should also focus on size distributions, specifically for the identification of multiple-size classes suggestive of juvenile production and sizes desirable to the fishery. Should size distributions of the present-day population compare favorably to the historical assessments, likely restoration stockings could be reduced and/or terminated. Species-specific relative abundance (i.e., catch rates) of the present-day populations are anticipated to be at a reduced magnitude compared to the historical assessment given the inherent lower carrying capacity of the remanent pool. Should catch rates be less than 50% of the historical assessments, restoration stockings will be intended to aid bolstering population abundance (i.e., put-and-grow), rather than reestablishment of natural reproduction. Otherwise, it would be expected that the density-compensatory mechanisms for lake resources would favorably support quick expansion of the fish populations. Ultimately, evaluation will likely require combination of various metric considerations, professional

judgement, various species-specific management plan guidance, as well as consistent routine monitoring.

Significant reforestation occurred in dewatered shorelines of the original lake littoral habitats. The greatest reforestation occurred in the northern and southern regions of the lake, which historically were shallow water, submerged aquatic vegetation beds, that were likely primary panfish/ bass nesting grounds. Baseline assessments may be precluded from this habitat type, potentially underrepresenting year-class production. Evaluations will need to carefully take this bias into consideration. Likely assessments of successful year-class production will be reliant on observing multiple size classes of yearling and larger-sized fish.

## **Conclusion**

We are pleased to have Lower Woods Pond re-opened to the public for fishing and boating opportunities. It is our expectation that restoration stocking will not be required across a prolonged timeframe given our expectation of well-established fish populations existing in the lake's remnant pool. Routine monitoring will greatly aid refinement of the restoration stocking effort. Upon completion of restoration, appropriate fishing regulation programs will be enacted based on monitoring findings and social interests to achieve high-quality panfish, bass, and Walleye fisheries.

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