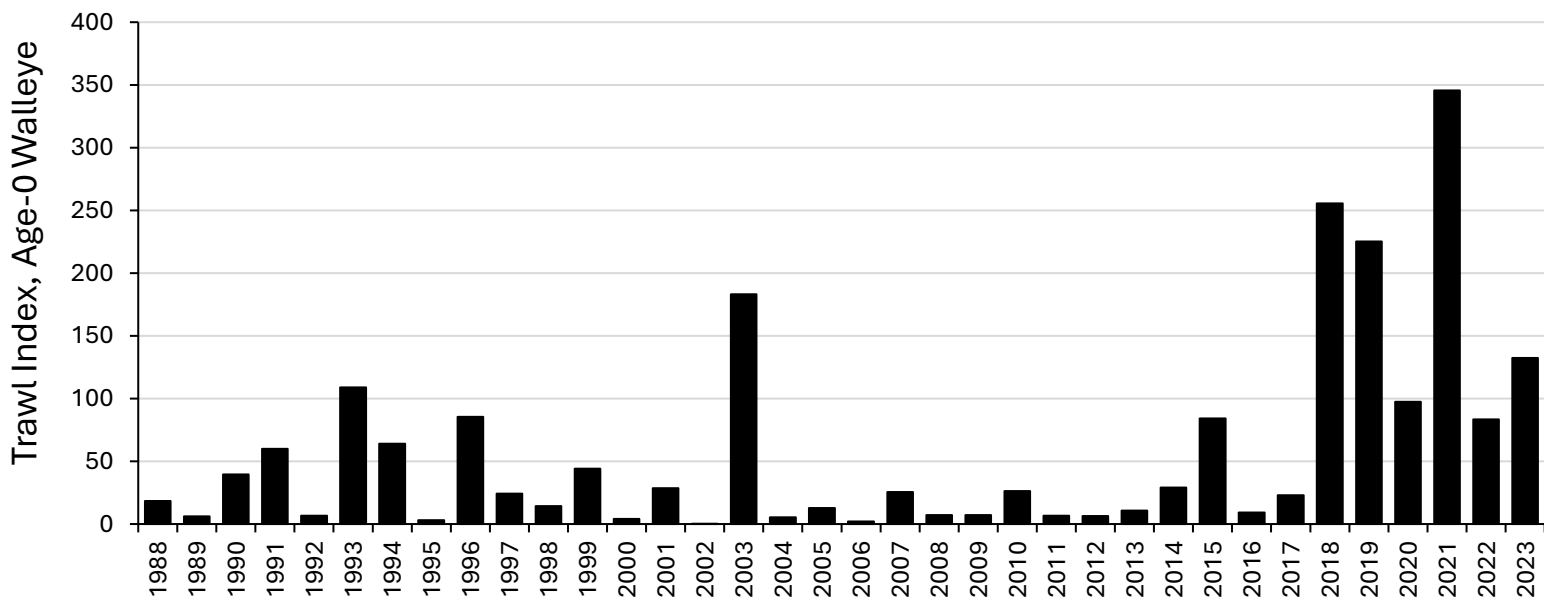


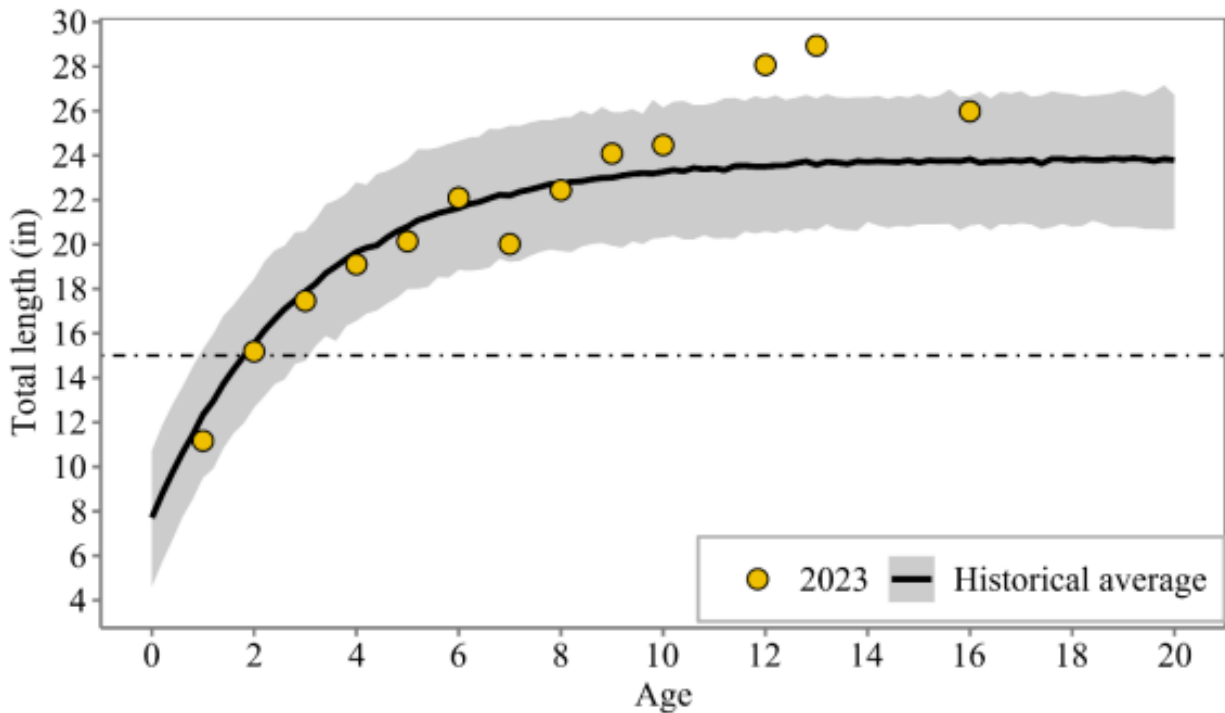
## Why am I catching so many short walleye in the western basin?

Captain Peg asked me to write an article for the August edition of *The Hook* about the different year classes of walleye currently being caught in the western basin of Lake Erie. Specifically, she asked, “Why are there so many small walleye that are not measuring up? And where have our bigger fish gone, the type you don’t have to measure before hitting the ice?” To answer these questions, you need to know a little bit about hatch success during the past 20+ years, how walleye grow, and their movement patterns throughout the year.

First, let’s take a step back and examine the recent history of Lake Erie’s walleye population since the early 2000s. Before 2003, there had not been a strong hatch since 1996. The adult population had declined to the point that the Lake Erie Committee, senior fisheries managers from around the lake, agreed to reduced harvest quotas during 2001-2003 to avoid potentially harvesting too many walleye from the lake. That all changed with the now renowned 2003 hatch, which was and still is, one of the strongest year classes in the 30+ years that biologists in Ohio and Ontario have been jointly conducting a bottom trawl survey across Lake Erie’s western basin in August to assess each year’s hatch success. Walleye hatched in 2003 drove the fishery’s success for more than a decade, with minor contributions from the 2007 and 2010 hatches. As the 2003-year class faded, consistent, strong hatches since 2015 now fuel the current run of world-class walleye fishing throughout Lake Erie. So despite consistently good walleye fishing in the past 20 years, Lake Erie has gone from a distinct period (2000-2013) with one really big hatch and many relatively unsuccessful hatches, to a period (2014-2023) in which most years have produced a successful hatch that contributed to the population and its fisheries.

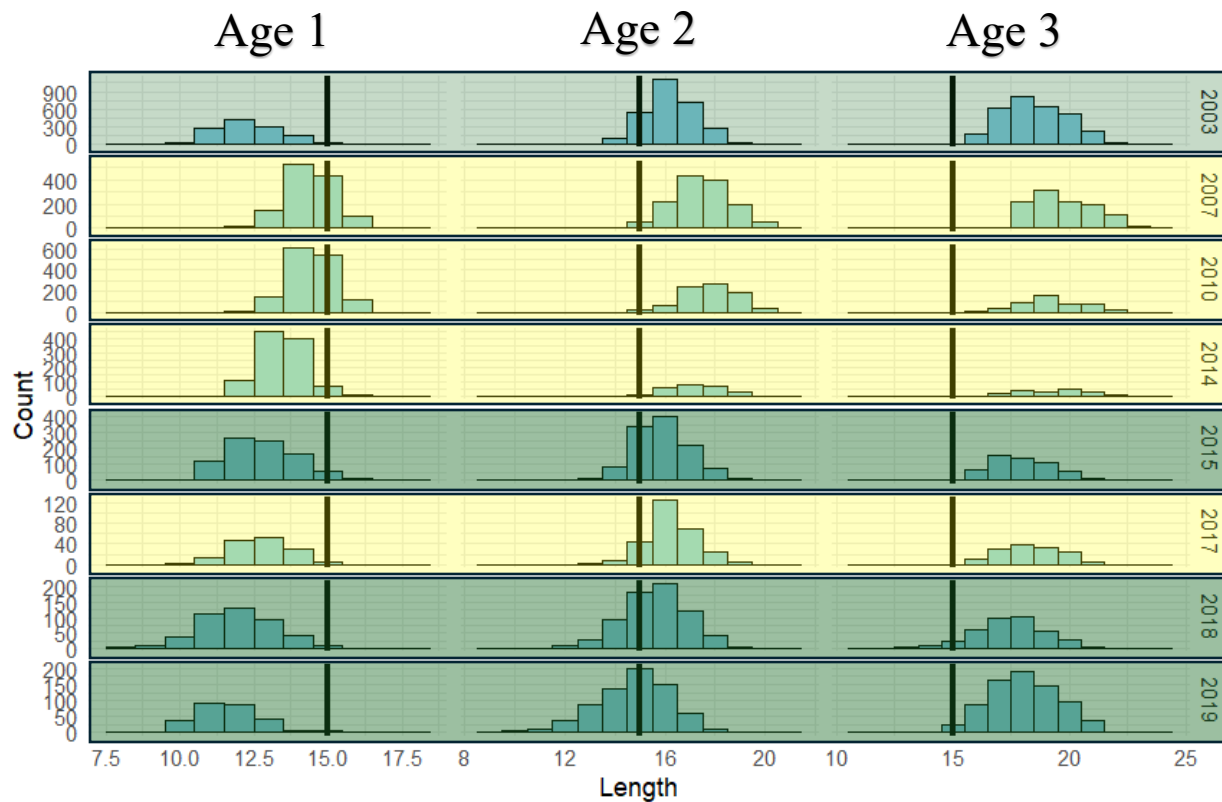
Walleye Hatch Strength during 1988-2023





How does hatch strength translate into catching lots of short walleye? On average, it takes a walleye about 2 years to reach 15", Ohio's minimum length limit used on Lake Erie (see figure above). However, high abundance usually results in slower growth. This is a normal process and does not signal that something is necessarily wrong or out of balance in Lake Erie. It happened to the walleye hatched in 2003, and it has happened with the recent years' hatches, too. A key difference between the years following 2003 and now is the number of large year classes present in Lake Erie, with walleye now competing with fish from multiple hatches rather than a single hatch.

The figure below shows the range of walleye lengths for fish sampled by Ohio's fall gillnet survey at 1, 2, and 3 years old for large (2003, 2015, 2018, and 2019) and average (2007, 2010, 2014, and 2017) hatches, along with the 15" minimum length limit (black vertical line). Walleye from large hatches took longer for fish to reach 15" than fish from average hatches. For the two most recent large hatches (2018 and 2019), you can see that the squeeze exists even as age-2 fish with plenty of those fish being less than 15". So, to answer Captain Peg's initial question about why so many short walleye are being caught, it is a combination of good hatches since 2014 and those walleye experiencing slower growth because there are so many more competitors both within a given year and from competitors hatched in neighboring years. Lots of short walleye today will eventually be the limits of legal walleye harvested by clients in the coming years.



Captain Peg's second question was about the larger walleye and where they had gone. The simplest answer is that those fish are still present in the lake, but they are outnumbered by their smaller, younger relatives in most recent years. As an example, I'll use estimated abundance from 2023 when we estimated 9.4 million 3-year old walleye and 37.4 million 2-year old walleye. Fish of these ages tend to be found in the same places, so your bait needs to make it past all of the 2-year old fish that measure right around 15" and into the mouth of the larger 3-year old walleye that will head straight to ice. Simply put, it is a numbers game so anglers end up needing to work through smaller fish before getting the chance to harvest the larger ones. Short walleye were likely a frustration in the summer of 2005, but not a nearly every year occurrence as it is in recent years.

Another piece that could also partially explain where the larger walleye are located is their tendency to move throughout Lake Erie. We've learned from years of tagging using both jaw tags and acoustic transmitters that adult walleye do not spend much time in the western basin after spawning, with many moving east of the islands and into the central basin by early June. For example, only 5-10% of all tagged adults remained in the western basin during a study of 2014 and 2015. However, I have also tagged smaller, younger (approximately 15-18") walleye from Ohio's western basin sport fishery during late May-early July since 2017. The figure below shows the proportion of these smaller tagged fish inside and outside the western basin. In August, an average of 60% of those smaller tagged fish remained in the western basin during 2018-2022, a much higher proportion than the adult population as a whole.

Inside or outside western basin? inside outside

