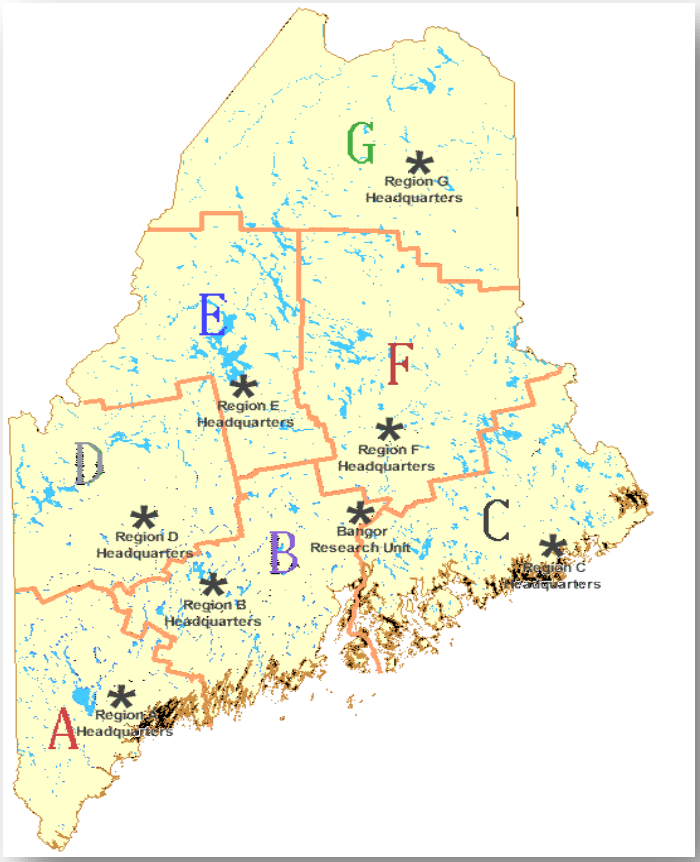
The Fishes of West Harbor Pond

Jason Seiders, Maine Inland Fisheries and Wildlife

My name is Jason Seiders and I'm one of three fisheries biologists that operate out of the Maine Department of Inland Fisheries and Wildlife's (IFW) "Region B" or "Belgrade Lakes Regional Office." The area that we manage starts at the Androscoggin River, runs east to the Penobscot River, the entire coastline between the two rivers, north to Skowhegan, and the Kennebec River from Augusta north to the Forks. Needless to say, we stay busy! That said, out of the 300+ ponds we manage in this region, West Harbor Pond is one of the most unique ponds we've encountered.



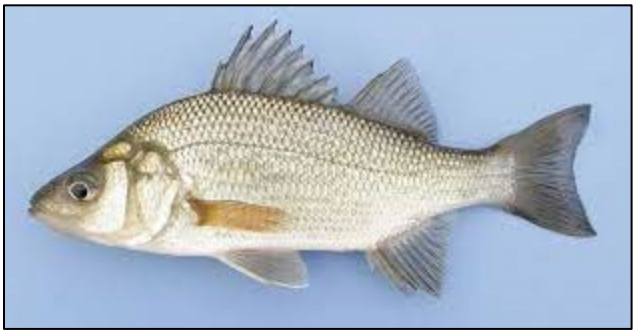
Map depicting the seven IF&W management regions

You're most likely aware of the issues surrounding saltwater intrusion into West Harbor Pond. This creates a huge problem in terms of managing for cold-water species like trout. Trout require cold (65 F° [18.3° C] or less), well oxygenated water (5mg/L) to survive. Summer water quality conditions are just too harsh for trout to survive in West Harbor. The deeper, colder areas of the pond go completely anoxic during the summer months, relegating any cold-water fish to the warmer surface water where they perish. The Department stocked brown trout in West Harbor Pond from 1958 to 1979, and they closely monitored the status of the fishery. There are several notes in our historic files that discuss poor fish quality, lack of oxygen, and the effects of

hydrogen sulfide on sampling equipment. One sampling event documented a strange chemical reaction when the biologists conducted dissolved oxygen sampling. The biologists noted a strange "fizzing" reaction when they added indicator chemicals to ascertain oxygen concentration.

Enough with the bad news! While West Harbor Pond presents its challenges, it still provides suitable habitat for a host of species. The most common fishes we encounter in West Harbor Pond include largemouth bass, smallmouth bass, pumpkinseed sunfish, and white perch. Each of these species is more tolerant of water quality related issues, and they are referred to as warmwater species. Where trout cannot survive in the warmer surface waters, these other species thrive in warmer, productive water. Unlike our trout species, these warmwater fishes require less specialized spawning and juvenile habitat, and they are far more prolific in terms of their reproductive abilities.

White perch are common throughout the state of Maine. Though they are named as a perch, white perch are closely related to striped bass rather than true perch species. Their true endemic habitat in Maine is believed to be in estuaries, such as Merrymeeting Bay. From those areas, white perch have been introduced into waters throughout Maine. White perch are incredibly prolific; each female laying hundreds of thousands of eggs each spring. Perch spawn in larger tributaries to lakes and ponds and along rocky shoreline that receives some wave action. Perch are typically a schooling fish and they tend to stay in open water rather than relying on structure and cover habitat. White perch consume zooplankton and insects throughout their life, and incorporate larger items (fish, etc.) as they achieve larger size themselves. This species can provide anglers with a wonderful fishing opportunity as they fight hard and bite a wide variety of baits and lures, and they are highly prized as a food fish.



White perch (Morone americana). Internet photo.

Largemouth bass, smallmouth bass, and pumpkinseed sunfish are all related in the family of sunfishes, and they all share some similar habits in terms of life history. One trait that makes them incredibly successful is their protection of eggs and young. Sunfishes (including bass) make nests in the substrate by clearing organic material and silt, making a bright, circular area near the shoreline. Spawning takes place during the months of May-June for bass, with sunfish spawning a little later in the spring or early summer. After the act of spawning takes place, the male of each species remains on the nest to protect the eggs and young from predation, and even keep the eggs clean of any silt. The guarding males are quite aggressive; driving away anything

Photo of multiple sunfish nests in a shallow cove. IFW Photo.

that comes close to the eggs or developing young. It's not uncommon to observe male bass or sunfish nipping swimmer's feet when they get too close for comfort! When juvenile bass are large enough to leave the nest and fend for themselves, smallmouth bass tend to seek rocky habitat while largemouth bass prefer weedy areas. Juveniles of these species readily feed on large zooplankton and insects until they achieve enough size to feed on larger prey items. Adult bass will feed on virtually anything that will fit in their mouth including crayfish, dragonflies, leeches, frogs, ducklings, and various fishes (including smaller bass). Maine has a very short growing season for bass due to our cooler climate. As such, once bass reach sexual maturity their growth slows tremendously. A 20-inch bass in Maine could very well be 20 years old!

Contrary to the beliefs of many anglers, largemouth and smallmouth bass are not native to Maine. Both species were introduced during the 1800's, so they certainly have become "naturalized" in the minds of many. In southern Maine we manage bass with size and bag limits because they are a prized gamefish. In Northern Maine, which is more renowned for its wild trout and salmon resources, bass are viewed as an invasive species. Any new introductions of bass, including any bass populations in the northern part of the state are designated with a "no size or bag limit." This means anglers can harvest as many as they wish. A testament to the prolific nature of bass, we have yet to see a bass population eliminated through angling.

In addition to its year-round resident fishes, West Harbor Pond hosts some sea run fishes. Adult alewives make their way into West Harbor to reproduce. After the adults either perish or return to the ocean, the juveniles grow in the pond until they leave in the fall. American eel is another species that uses both marine and fresh environments. Adult eels live in freshwater systems until they reach sexual maturity, which can take several years. The adults reproduce at sea, and the juveniles return to the freshwater environment to complete the cycle. While IF&W has

some management of these two species, overall responsibility for their management lies with the Maine Department of Marine Resources.

A juvenile largemouth bass collected during a sampling event. IFW Photo

I certainly hope I've provided you with a little bit of new information. One of the best parts of my job is to meet with the public and discuss our state's tremendous inland fisheries resources. Unfortunately, the Covid-19 pandemic has made in-person meetings nearly impossible, so we've all adapted to new ways of doing business. If you ever have questions regarding the fishery resources of West Harbor Pond, or any other water, please don't hesitate to contact our office. Thank you.

WHPWA PRESIDENT'S NOTE ON TROUT AND WEST HARBOR POND:

In February of this year (2021), our analysis of the data collected since the new siphon began operation in March 2019 demonstrated that the siphon had significantly improved the Pond's water quality, decreasing salinity and increasing oxygenation. Since then, I have hoped that West Harbor Pond would eventually be able to support a trout population. Jason Seiders sets out the conditions necessary for trout to survive in the Pond. Year-round there must be a stratum of the Pond where the water is oxygenated to at least 5 mg/L and where the temperature remains below 65° F (or 18.3° C).

After analyzing our temperature and oxygenation data in light of these two criteria, I regret to say that the Pond cannot yet support a trout population. As the chart below shows, in 2019 and 2020 there were at least two months when the conditions necessary to support trout existed nowhere in the Pond.

The chart may, however, show some improvement, as there were three months in 2019 when the Pond could not support trout but only two in 2020. We will know more by the end of the summer of 2021.

Merritt R. Blakeslee, President
West Harbor Pond Watershed Association

DEPTHS AT WHICH POND TEMPERATURE IS BELOW 65° F *AND* OXYGEN IS ABOVE 5 mg/L (2019-2021)

Month	2019 (mid-pond)	2019 (dam)	2020 (mid-pond)	2020 (dam)	2021 (mid-pond)	2021 (dam)
January	0'-8'	No data	0'-15'	0'-16'	No data	No data
February	0'-7'	No data	0'-14'	0'-16'	0'-18'	0'-25'
March	0'-6'	No data	No data	No data	0'-20'	0'-25'
April	0'-11'	0'-11'	0'-18'	0'-20'	No data	No data
May	0'-10'	0'-11'	10'-17'	5'-18'	0'-20'	0'-25'
June	**No habitat**	**No habitat**	17'*	19'-20'	5'-22.5'	5'-17.5'
July	14'-15'	14'-15'	**No habitat**	**No habitat**		
August	15'	**No habitat**	**No habitat**	**No habitat**		
September	**No habitat**	**No habitat**	0'-15'	5'-16'		
October	0'-12'	0'-12'	No data	No data		
November	0'-12'	0'-14'	0'-18'	0'-20'		
December	No data	No data	0'-20'	0'-25'		
			*No data collected below 17'			