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Overview of the Striped Bass (*Morone saxatilis*) Samples and Weight in the Kennebec River 2020

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Introduction

The striped bass (*Morone saxatilis*) congregate from Quebec, Canada in the mouth of the St Lawrence River to Florida in the Gulf of Mexico. They are a strong muscular species of fish with a sizable distribution, growing up to 20 pounds average in Maine. My research is important because striped bass are prey for harbor seals. I also want to protect them in any way I can. No one else has done a study about striped bass in the Kennebec River.

I want to find out if certain spots on the Kennebec River in Maine are getting stressed by anglers and the lack of food. I also want to discover where I caught the most fish. The more fish I catch, the less stress the fish are in at that spot. As a recreational fisherman, you can only keep 1 fish over 28 inches per day in Maine.

Habitat

Striped bass love spots where there's a lot of current with eddies. That way, they can grab their prey and then go back into the eddy to conserve energy. Striped bass also hang out at the edges of drop-offs, deep water gradients, beaches, flats and shoals.

They can live in saltwater, brackish and freshwater, going over dams and riding the current. The Kennebec River has many dams which are located from Waterville to the East Outlet of Moosehead Lake. Dams can

prevent nutrients and food from going downriver which is a problem for fish that are downriver.

Diet

Striped bass eat eels, herring, mackerel, crab, juvenile lobster, smelt, alewives, menhaden, shad, bluefish and other baitfish like silversides. A shortage of food in a spot means stress for the fish. They will have to relocate. Anglers use their prey as bait. Surprisingly, the Kennebec River has more baitfish in 2020 than ever before with alewives reaching a peak of 2.1 million fish and menhaden in the millions.

Kennebec River Range

You can find striped bass in the Kennebec River from the north of Waterville (past the dam) to Fort Popham on the mouth of the river where I fished for them. They also go to all the spots on my charts in the results section. The current pushes food through the Kennebec tidal zone (Waterville to Fort Popham).

Breeding

Striped bass are anadromous meaning that they go to the same river they were born in to spawn every year. According to the US Fish and Wildlife Service, "A female striped bass can lay up to 3,000,000 eggs and the female will grow larger than the males." Males need to be at least 2 years old and females need to be 4 years old to spawn in saltwater, brackish, or freshwater.

Methods

Starting June 10th and ending on October 22nd in 2020, I went fishing for striped bass without a depth finder. In other words, I was blind casting which means that I did not see any action at all and then I would have a striped bass on my line. I fished Lines Island, the Arrowsic Bridge, Bald Head, the Sagadahoc Skeet Range, the Morse Cove Boat Launch, Parker Head, BIW and Doubling Pt on the Kennebec River because those spots have great refuge and habitat for the fish. These locations also help me cover a lot of water in my study because some are far upriver and some are close to the ocean.

I recorded total fish caught, hours fished and average weight. I used the length to weight scale for striped bass and charts to find out if the fish are being stressed by anglers and/or the lack of food. Anglers can put stress on striped bass by catching them too much. They also use their prey as bait.

I used different lures because striped bass are picky about what they eat and it increased my chances of catching a fish by seeing what the fish liked. When I caught a fish, I would measure the fish using inches from the jaw to the fork of the tail (fork-length) and use the length to weight scale for striped bass (inches to pounds).

I used the scale to find the average weight of the fish I caught. I let them go after I caught them, practicing catch and release. I wish I put a spot of paint on striped bass to see if I caught the same fish more than once.

Results

The combination chart below shows the fish I caught in Lines Island, the Sagadahoc Skeet Range, the Arrowsic Bridge, BIW, Doubling Point, the Morse Cove Boat Ramp, Bald Head and Parker Head and from upriver to downriver. It also shows the average weight of the fish in pounds and the hours fished in each location on the Kennebec River 2020.

The pie chart below the 1st chart shows the percentage of the fish caught in each location in 2020. The column chart shows what the first chart shows but in a more specific way and the data table shows the latitude and longitude as well as total fish caught and average weight of each location from upriver to downriver. I also have a scatter chart that compares the fish with average weight and the hours I spent on the water.

Lines Island: N=1 fish

Sag. Skeet Range: N=5 fish

Arrowsic Bridge: N=3 fish

BIW: N=15 fish

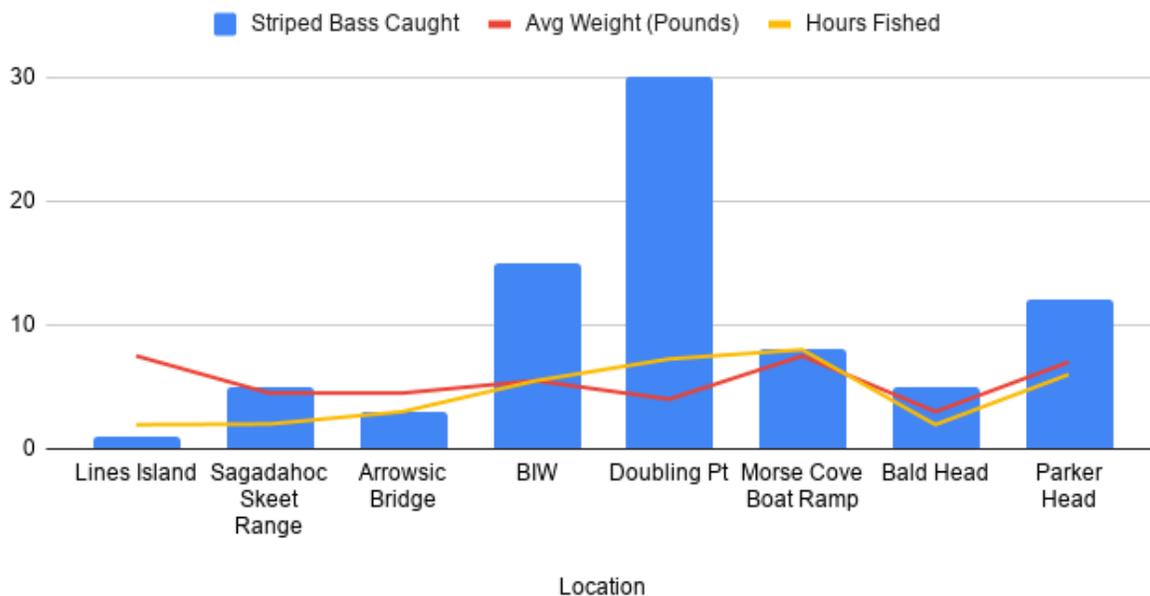
Doubling Pt: N=30 fish

Morse Cove: N=8 fish

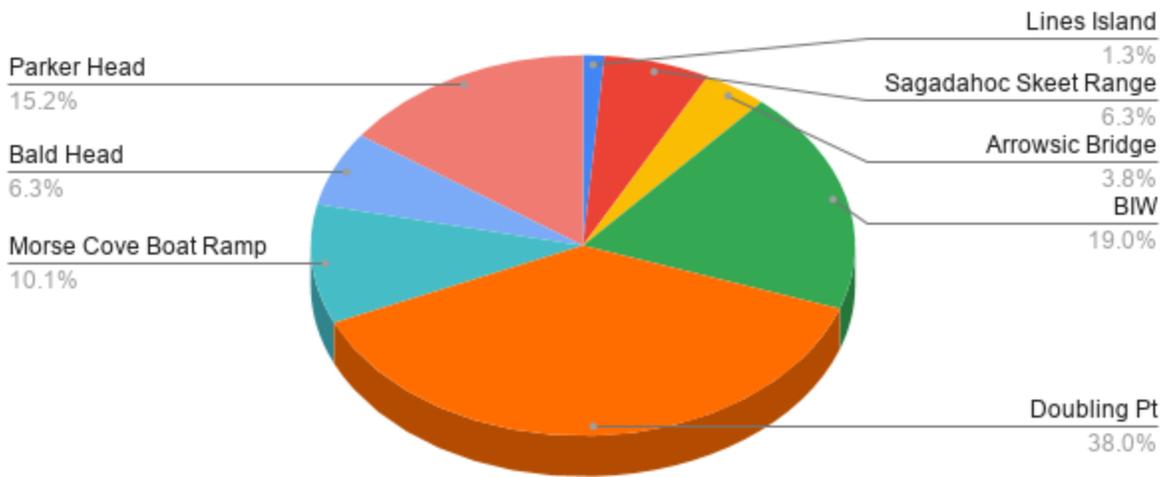
Bald Head: N=5 fish

Parker Head: N=12 fish

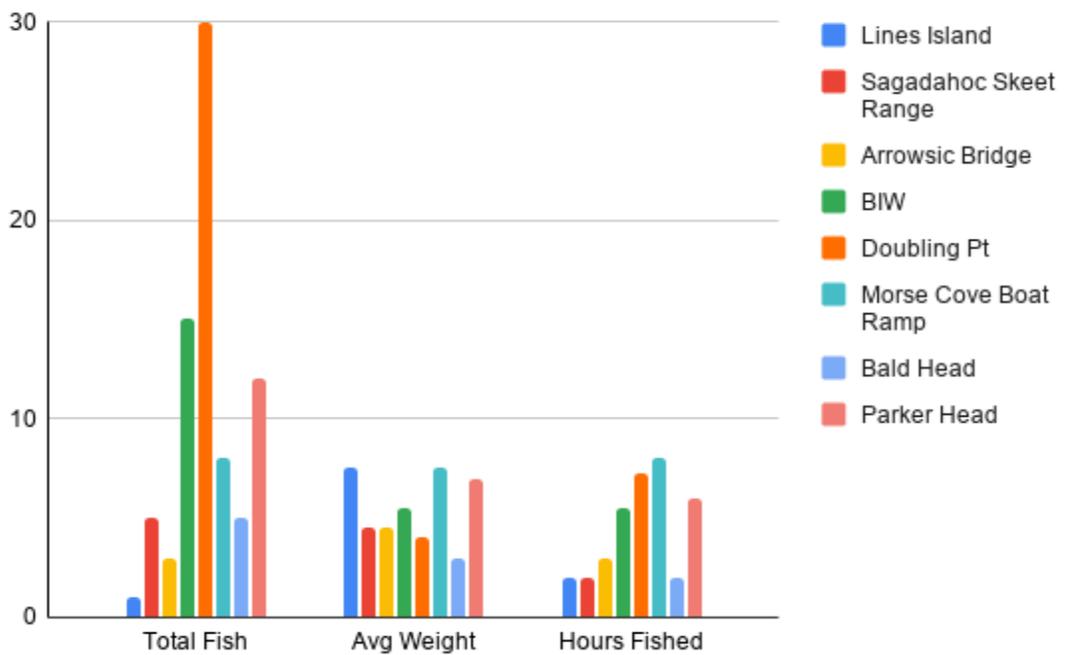
Overview of the Striped Bass Numbers, Weight and the Hours I Fished in the Kennebec River in each location 2020 (upriver-



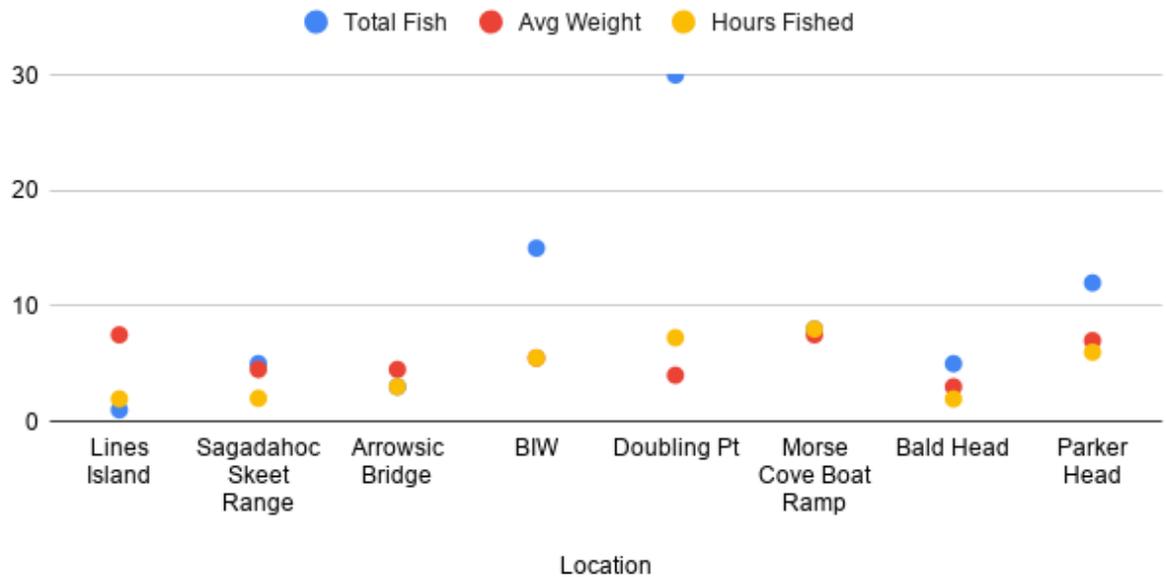
Percentage of Striped Bass Caught by Location 2020 Upriver-downriver



Striped Bass Samples From Lines Island to the Ocean



Total Fish, Avg Weight and Hours Fished on the Kennebec River 2020 in Each Location Upriver to Downriver (Scatter Chart)



Location name	Lat (degrees)	Long (degrees)	Number of fish	Average weight (pounds)
Lines Island	43.57 N	69.49 W	1	7.5
Sagadahoc Skeet Range	43.57 N	69.50 W	5	4.5
Arrowsic Bridge	43.54 N	69.47 W	3	4.5
BIW	43.54 N	69.48 W	15	5.5

Doubling Pt	43.52 N	69.48 W	30	4
Morse Cove Boat Ramp	43.52 N	69.48 W	8	7.5
Bald Head	43.49 N	69.47 W	5	3
Parker Head	43.47 N	69.47 W	12	7

Map legend

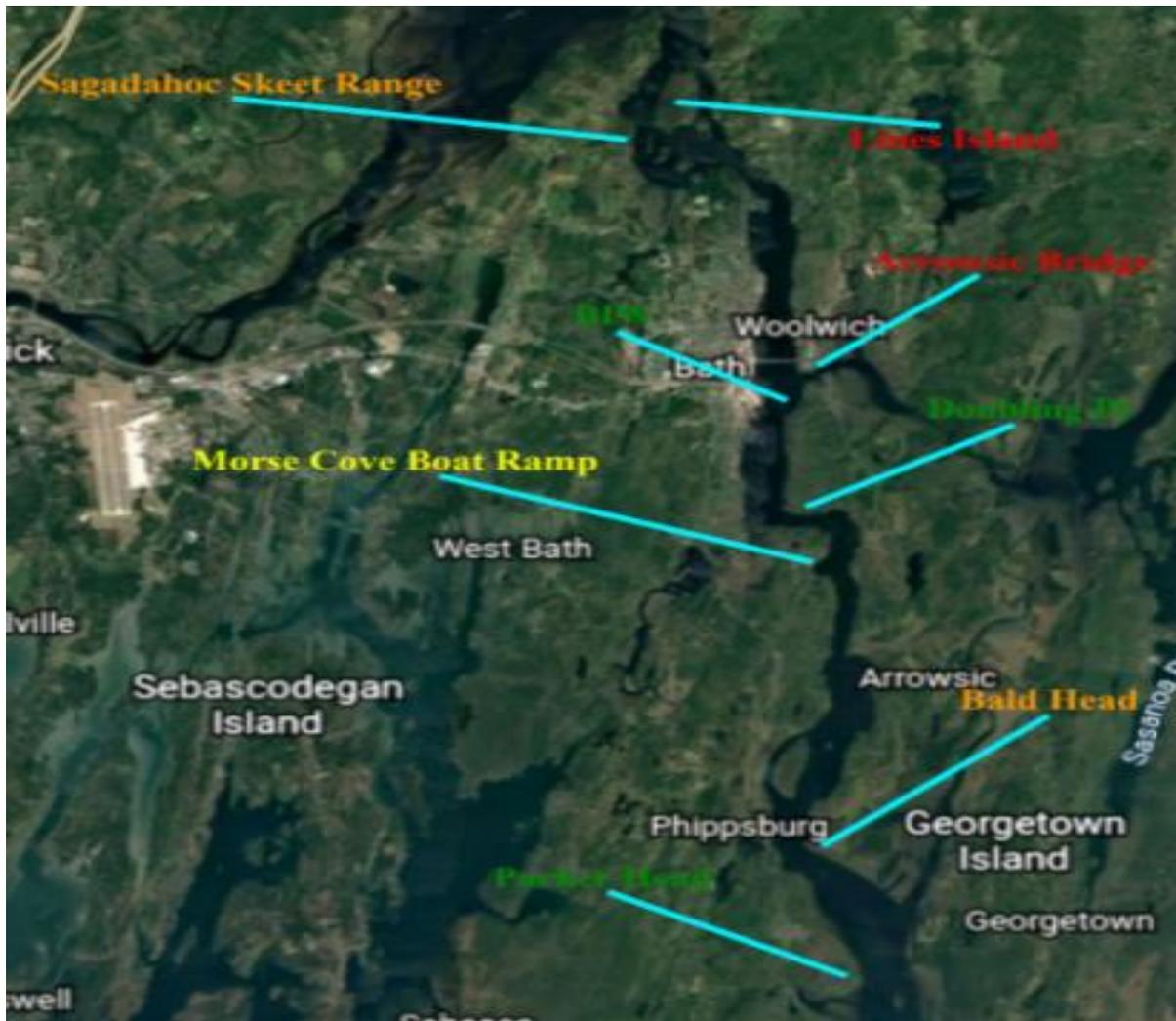
Red = 1-3 fish

Orange = 4-7 fish

Yellow = 8-11 fish

Green = 12+ fish

Turquoise lines point to the locations.



Discussion

I noticed in my charts, I caught the most fish at Doubling Pt with 30 striped bass followed by BIW with 15 bass and Parker Head with 12 bass. I caught the least amount of fish at Lines Island with 1 striped bass.

This can prove that anglers and the lack of food in a spot can put stress on striped bass because I caught 50 striped bass at Lines in 2013. In 2020, I only caught 1 fish last summer at Lines. Another example is that

recreational fishing has been going up significantly in most states over the past 2 decades (onthewater.com). A piece of evidence on the lack of food is according to the US fish and Wildlife Service,

“A female striped bass can lay up to 3,000,000 eggs and the female will grow larger than the males”. More striped bass means that they need more food to grow up into an adult but the Kennebec River has seen record alewives and menhaden in 2020. Other solutions that I did catch 1 fish at Lines are climate change because the water gets warmer, they were too deep to catch for most lures (over 15 ft) or the bass followed the baitfish to Waterville. Most lures are more efficient at catching striped bass between 5 and 14 ft when you reel them in.

Conclusion

In conclusion, According to the bar chart and map, Lines is the farthest location from the mouth of the river in my study. It is also the location with only one fish caught. On the other hand, the most fish caught was downriver at the location of Doubling Pt. What surprises me the most is that the striped bass is least concerned about conservation status.

Striped bass have to be protected in every state where they're native in order for a healthier population and a better ecosystem. Unfortunately, I did not have tags so I could not track them further than the Kennebec River

Striped bass are a crucial part of the food chain. Striped bass are a great food for seals, bluefin tuna and sharks. If they die off, it will impact the food chain and their ecosystem. If they were less bass, we would see less harbor seals, sharks and bluefin near the mouth of the river. I will continue my research and make a trendline for the striped bass population in the

Kennebec River. What results will I find then? This is why I am continuing my research on the striped bass.

Acknowledgements

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