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Why didn’t the salmon return?

Morioka Shirayuri Gakuen Senior High School

1.Introduction

Let me share a story about a river close to my heart, Nakatsugawa, located in Morioka, Iwate Prefecture. Growing up, I often saw salmon returning from the sea after a 200-kilometer journey to spawn. Every spring, local residents would host salmon release events, celebrating the river’s rich ecosystem, which included not only salmon but also sweetfish, swans, and kingfishers.
Last year, I heard the shocking news that in my city, no salmon came back from the sea.
To find the reason, I started researching about salmon.

The number of salmon was caught in Kitakamigawa river system(including Nakatugawa)

2. Hypotheses

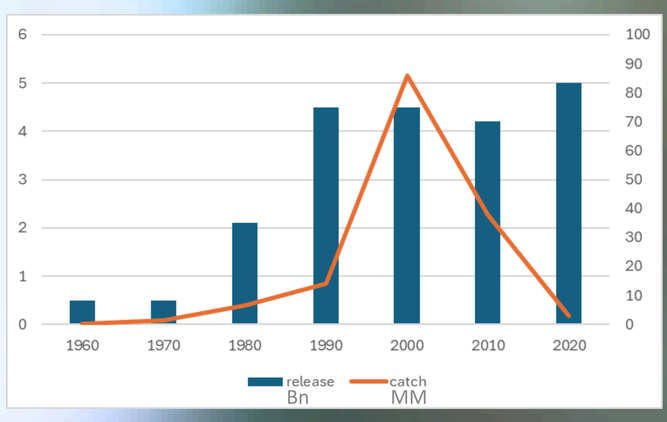
After researching, I found two hypotheses.

- This is because of increase of river temperature.
  There is a report said that after 1980, the temperature of river is increasing. *1
- This is because of excessive releasing. We should release salmons carefully not to go over the river’s limit.*2

I thought I need more research.

I interviewed experts directly involved with salmon.

The number of releasing and catching of salmon in Iwate prefecture



3.Community Insights

I’m sad at this situation. I think we should create a sustainable environment in Nakatsugawa to be crucial for salmon return.

Mr. Seiki Matsumoto
The chairman of honcho shinkoukai

A salmon that was training its swimming skill *1

About the history of Nakatsugawa

Because of development of Matsuo mine, Nakatsugawa change to dirty river and salmon stopped to return to Nakatsugawa once.
People in Morioka love Nakatsugawa and salmon, so they made many efforts to make Nakatsugawa clean river again.
Thank to the effort,Nakatsugawa became clean again.
After that, salmon returned to Nakatsugawa for 48 years.

We think the declining salmon population to rising sea temperatures and shifting ocean currents, which may hinder salmon survival.
We have experimented with high-calorie feeds and artificial water flows in breeding ponds to enhance the fry’s swimming skills.

Mr. Abe
Iwate Prefecture’s Marine Production Development section

4.Academic Perspectives

I suggested that salmon are evolving, with weaker genes persisting due to inbreeding between natural and hatchery salmon. This weakens the population’s overall resilience.
I argued for minimizing hatchery interventions, enabling natural spawning, and creating supportive environments like salmon slips at dams.

Dr.Akira Terui
An assistant professor at the University of North Carolina at Greensboro

The part of salmon in the river ecosystem

Salmon have an important role in the river ecosystem.
They returns from the sea, so they also carries nutrients from there.
Animals and plants can get nutrition from salmon.
Some aquatic insects hatch earlier than other ones because salmon dig river bed and aquatic insects are dead because of this.

5.Conclusion

We should take actions to protect the environment.Salmon may return to Nakatsugawa in about three years, but their future remains uncertain. However, by protecting the environment now, we might encourage their eventual return. The salmon of Nakatsugawa travel a long journey, from Iwate to Miyagi, through the Sanriku Sea, and back. Nature connects us all in ways that are deeper than we may realize.
let’s commit to preserving the ecosystems around us. Together, we can work toward a future where a thriving environment exists in our neighborhoods for generations to come.

6.References

*1NHK盛岡(2024)岩手取材ノート魚種の交代”に立ち向かう～秋サケ復活への模索
*2北海道大学(2023)放流しても魚は増えない ～放流は河川の魚類群集に長期的な悪影響をもたらすことを解明～