A new research project on the Sakura shrimp (*Lucensosergia lucens*) in Suruga Bay, Japan: Towards recovery from a historic decline in catches

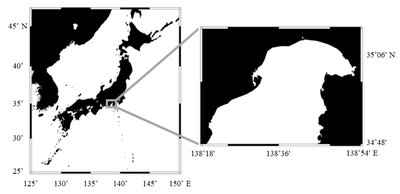


Jun Nishikawa[1], Aoba Kojima[1], Akiyuki Kenmochi[2], Junya Hirai[3], Gaël Dur[4], Hiroyuki Matsuura[1], Takashi Yoshikawa[1], Rumi Sohrin[4], Katsuhiko Mineta[2,5,6], Kazuo Amakasu[7], Norihiro Monna[8] and Motoharu Abe[8]

[1]Tokai University, Shizuoka, Japan. E-mail: jun_nishikawa@tokai.ac.jp , [2]Shizuoka Institute of Science and Technology, Shizuoka, Japan, [3]The University of Tokyo, Kashiwa, Japan, [4]Shizuoka University, Shizuoka, Japan, [5]Waseda University, Tokyo, Japan, [6]Marine Open Innovation (MaOI) institute, Shizuoka, Japan, [7]Tokyo University of Marin Science and Technology, Tokyo, Japan, [8]Shizuoka Prefectural Research Institute of Fishery and Ocean, Shizuoka, Japan

[Background]







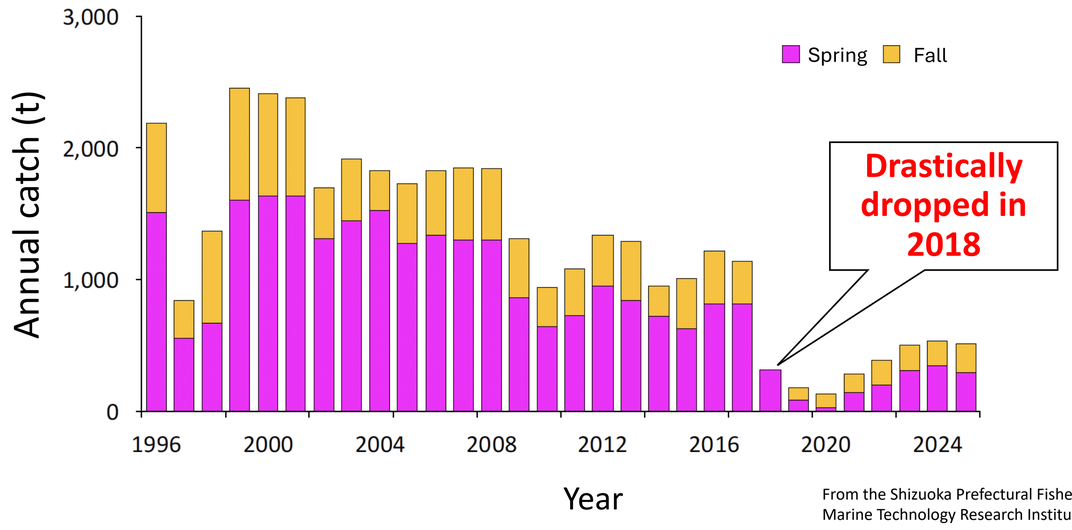


Sakura Shrimp, *Lucensosergia lucens*

- a small deep-sea shrimp.
- In Japan, they appear in large numbers **only in Suruga Bay**
  →**Fishing has continued for 130 years**

- **It brings significant economic benefits** to the local community
- Its distribution is localized**, making it a valuable species**

A marine organism representative of Shizuokas



From the Shizuoka Prefectural Fisheries and Marine Technology Research Institute website

- Catch volume: While it had been on a gradual downward trend, **it suddenly plummeted to a record low** in 2018.
- Up to now, stocks **have not** yet **returned to pre-2018 levels.**
- While there are various hypotheses regarding **the causes of the poor catch**, **only a limited number of studies have been made.**

Elucidating the causes of the poor catch is an urgent priority

[New Research Project] under the "Suruga Bay Marine DX Advanced Hub Initiative" funded by Japan Cabinet Office Grants for Revitalization of Regional universities and industries: FY 2025-2034 (10 years)

To clarify

Population Dynamics and Seasonal Variations | **Horizontal and vertical distributions** | **Larval identification**

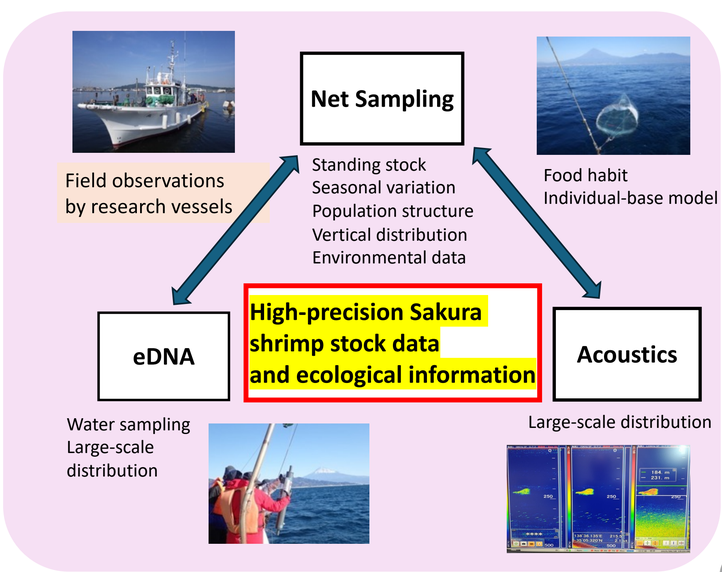
When, where, and what stage of the shrimp and in what quantities during the period of low catch?

Accurate abundance and biomass + various biological and ecological data

Incorporating the obtained information into the models that predict the distribution and fishing grounds of the shrimp

Contributing to the conservation of Sakura shrimp resources and sustainable fisheries

Research Concept Diagram



Through a multiple approaches, estimation of Sakura shrimp stocks and acquisition of biological and ecological information

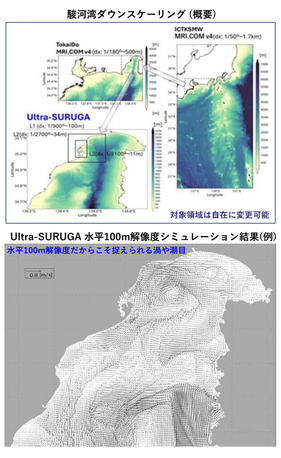
[Expected Outcomes]

By incorporating the **biological parameters of the Sakura shrimp** into **the model to simulate fine-scale water-currents** ("Digital Suruga Bay")

⇒ Contributing to the development of **the prediction system for Sakura shrimp fishing-grounds**

By making **science-based recommendations** for the sakura shrimp fishery

⇒ Contributing to **the conservation of the stocks** and **the sustainable development of the fishery** for the shrimp



Digital Suruga Bay, a fine-scale ocean-current model newly developed by the other group of the project

[Future Prospects]



Sakura shrimp fishing-ground prediction model

Lowering monitoring camera with acoustics



AI analysis based on on-site observation

