

PICES2025 Yokohama

W7:BIO Topic Workshop

**Response of Top Predators to
Unusual Oceanographic, Climatic
and Anthropogenic Events in the
North Pacific**

Welcome and Introduction to the Workshop

Yu Kanaji
(Japan Fisheries Research & Education Agency)

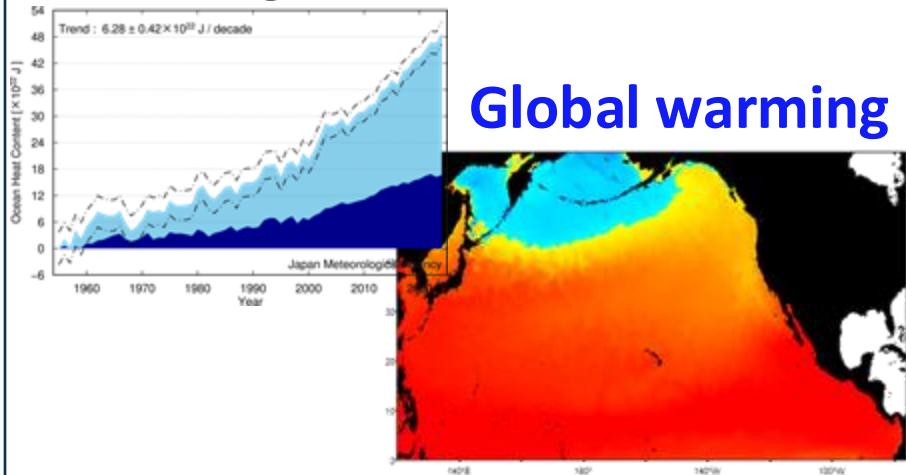
Conveners



Background

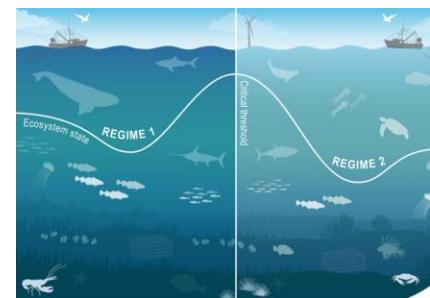
Changes in physical oceanography in several scales

Long-term & wide scale



Global warming

Mid-term & basin scale

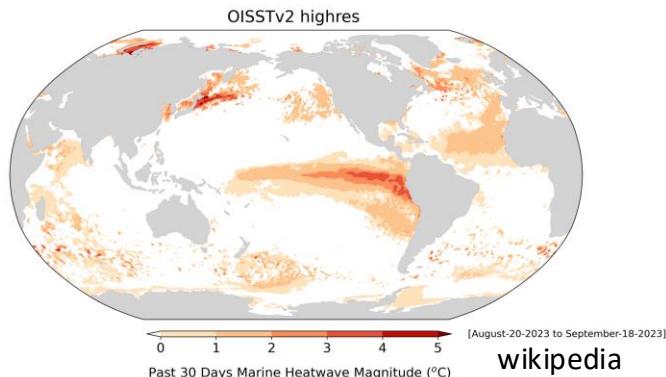


Regime shift



Kuroshio
meandering

Short-term & local scale



wikipedia

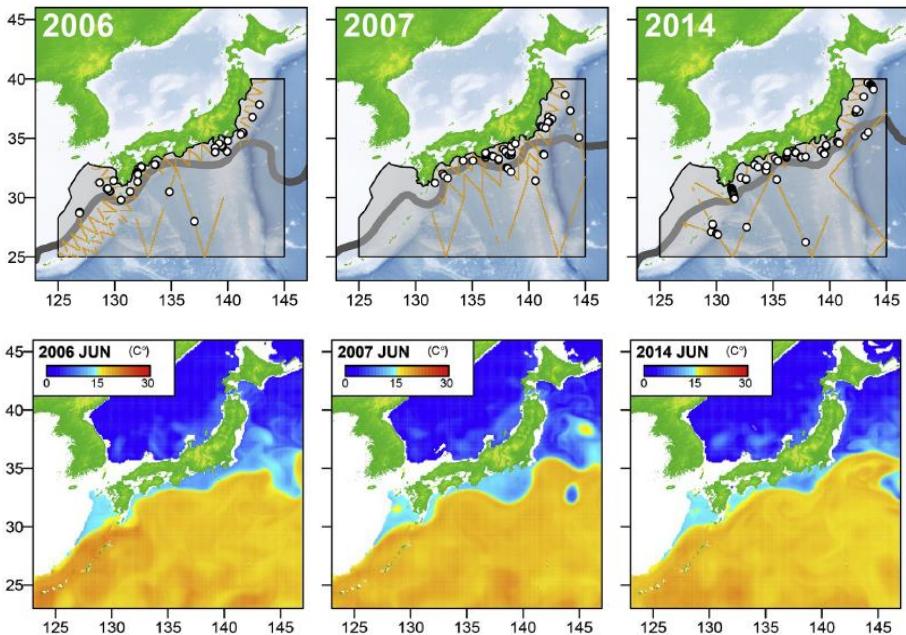
Ocean heatwave

Background

Effects on marine top-predators



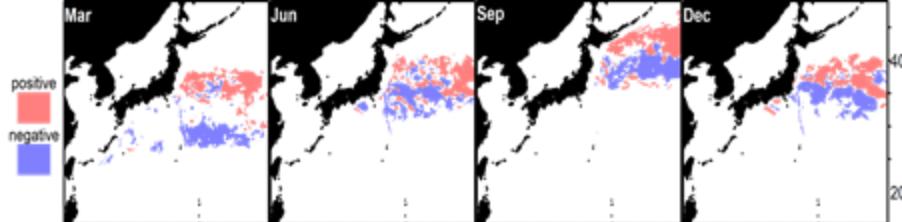
Risso's dolphin
(*Grampus griseus*)



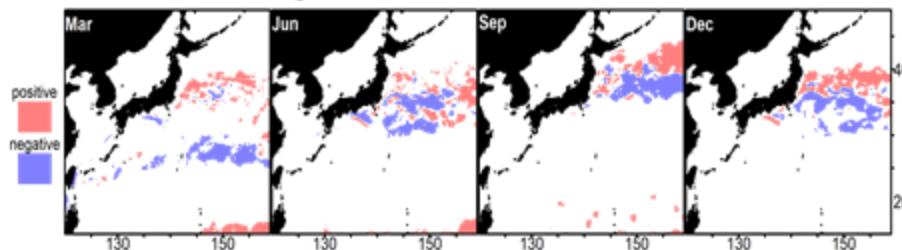
Kanaji and Gerrodette (2019, Deep-Sea Res II)



Common dolphin
(*Delphinus delphis*)



Striped dolphin
(*Stenella coeruleoalba*)



Kanaji et al. (in press, Diversity & Distributions)



Background

Effects on marine top-predators

Rhinoceros auklets
Cerorhinca monocerata

Regime (PDO)

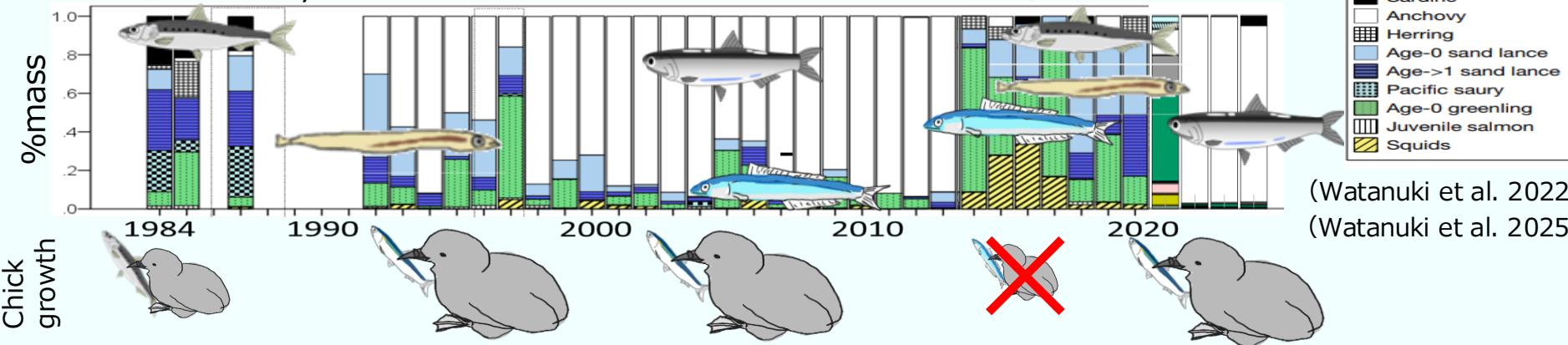
COLD (+) | WARM (\pm) | WARM (-) | Unconventional

1988/89 | 1997/98

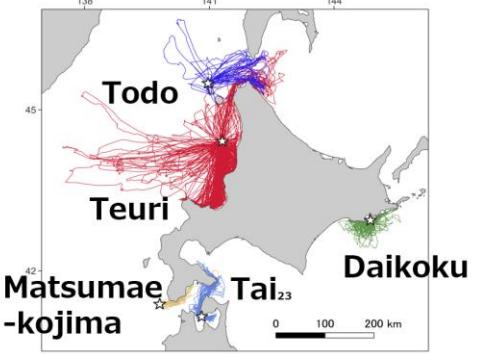
2014/15 | 2020/21

1988/89 | 1997/98

2014/15 | 2020/21

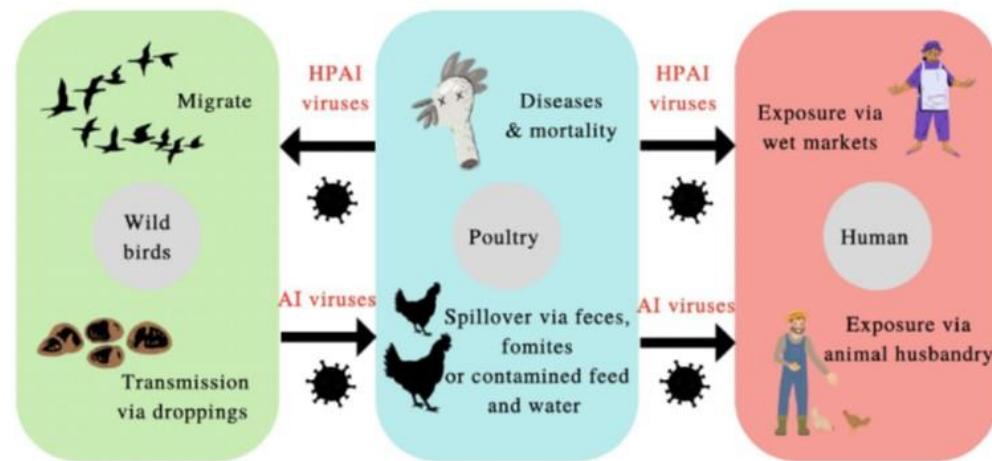


Diet monitoring and GPS tracking (2014-)



- Occurrence of anchovies during warm regimes are important for reproductive success of rhinoceros auklets.
- The PDO – Oceanic environment – Seabird relationships are widely observed across colonies around Japan.
- Behavioral responses of seabirds on the regime shifts across colonies around Japan will be studying.

Background Avian Influenza



Chai (2024, UGA Poultry Science)

The Mainichi
Japan's National Daily Since 1922



Search

Top Latest Japan Politics World Business Sports Science Entertainment Opinion Lifestyle Obi
Bird flu suspected in mass deaths of sea animals in eastern Hokkaido

May 8, 2025 (Mainichi Japan)

Japanese version



A slaty-backed gull collapses after stumbling in Shunkuntau in the city of Nemuro, Hokkaido, March 18, 2025, in this photo provided by the Wild Bird Society of Japan, a public interest incorporated foundation. This abnormal behavior is believed to be due to the avian flu.

NEMURO, Hokkaido -- The highly pathogenic avian influenza, known for its high mortality rate, is suspected as the cause of mass deaths and abnormal behavior of sea animals in eastern Hokkaido.

Since mid-March, the eastern coast of Hokkaido has seen a rise in seabirds and marine mammals believed to have been infected with bird flu. In the city of Nemuro, an independent survey by volunteers had confirmed the carcasses of 614 seabirds as of May 4, along with seals and sea



**Don't touch
wild animals!**



Goal

- 1. Understand changing ocean and its effects on top-predators (case study & review)**
- 2. Discuss how we address mortality events and health impacts under changing environments (monitoring & measurement)**

Speakers

Invited 1 Vladimir Burkanov



(North Pacific Wildlife Consulting LLC)

Unprecedented Mass Mortality of Marine Mammals and Seabirds on Teleny Island, Sakhalin, Russia, in 2023

→Case study of mass die-off of marine mammal and birds: how we detect unusual event

Invited 2 Jennifer Provencher



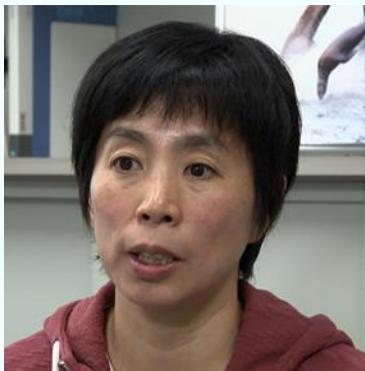
(Environment and Climate Change Canada)

Assessing exposure to avian influenza in seabirds in Canada

→Case study of avian influenza infection to wild birds: research network to monitor and prevent virus spread-out

Speakers

Special talk Kaoru Hattori



(Japan Fisheries Research and Education Agency)

Status review for unusual mortality events in the world

→TBD

Contributed Hikari Maeda



(Japan Fisheries Research and Education Agency)

Monitoring of life history parameters of small cetaceans: Framework to monitor population dynamics of top-predators

→Fishery-dependent monitoring system to assess health conditions of dolphin populations