

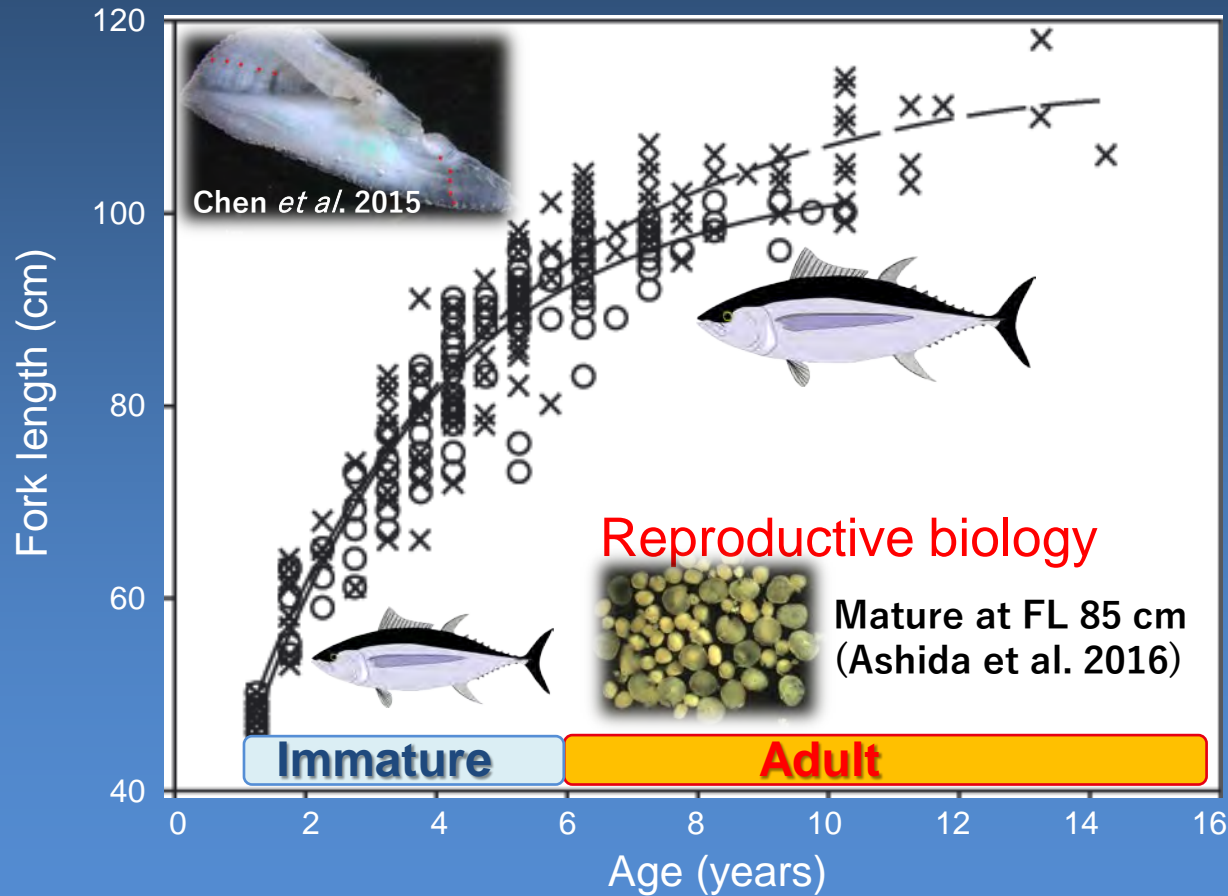
Reviews of albacore biology and fisheries around the transition areas in the north Pacific Ocean

Yoshinori Aoki, Ko Fujioka and Hidetada Kiyofuji

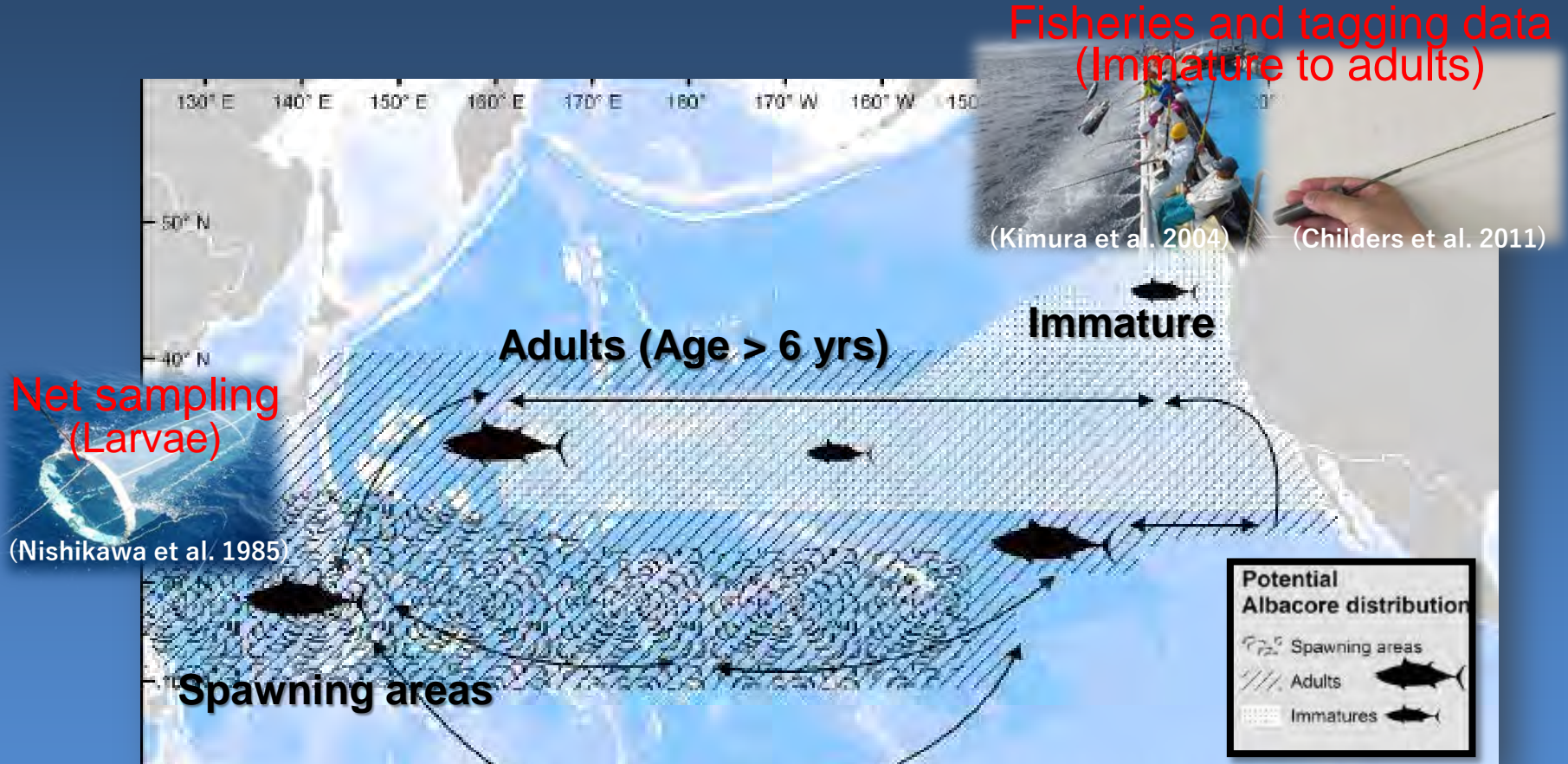
Growth and Maturity of albacore tuna

Growth from otolith analysis

Chen *et al.* 2012

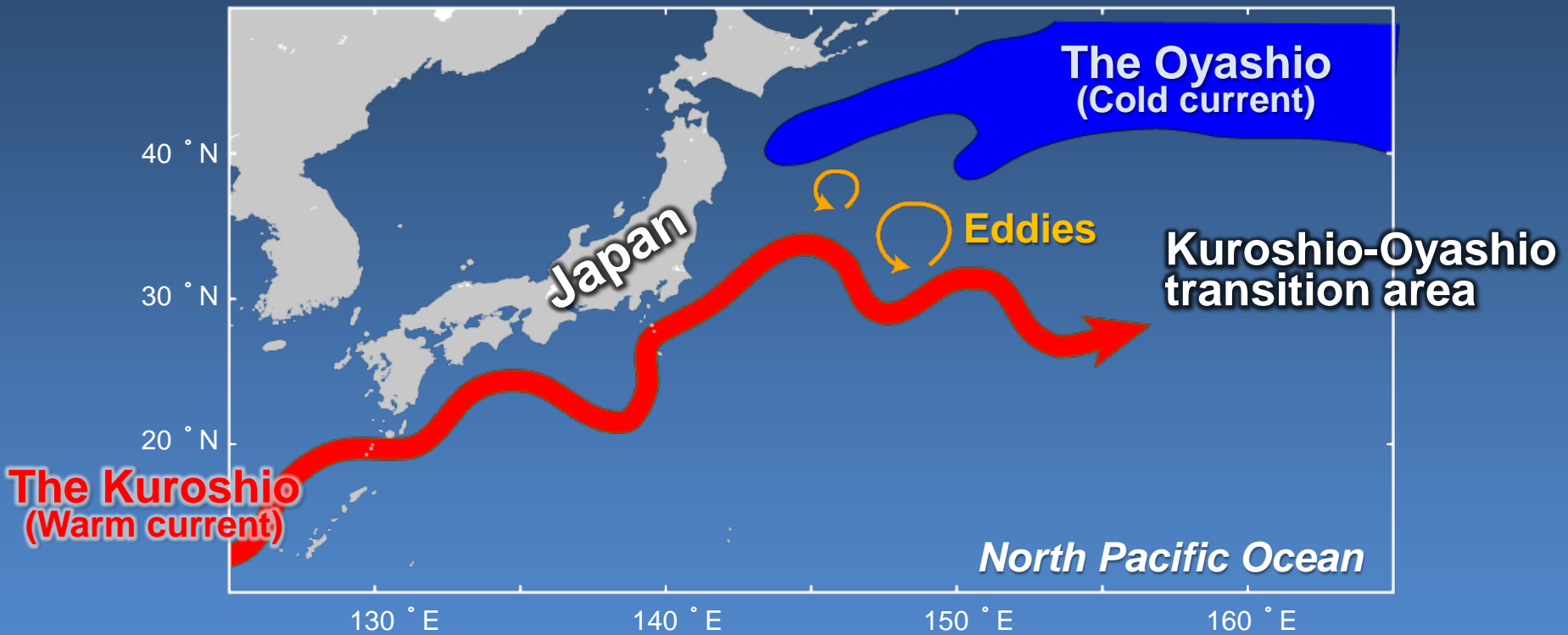


Albacore migration in the north Pacific Ocean



Nikolic *et al.* 2017

Transition area in the north Pacific Ocean



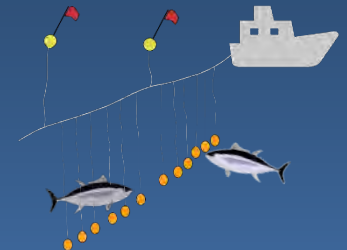
Objective

To overview the impact of the transition area on the albacore behavior and distribution

Albacore catch around Japan

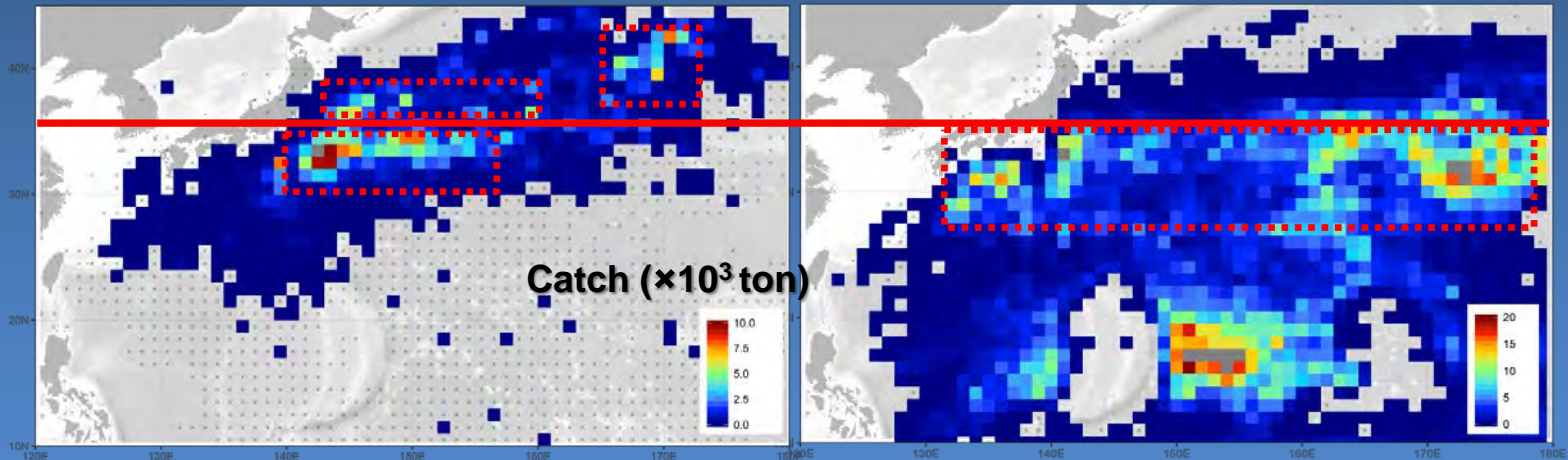


Japanese pole & line
Logbook (2000-2017)



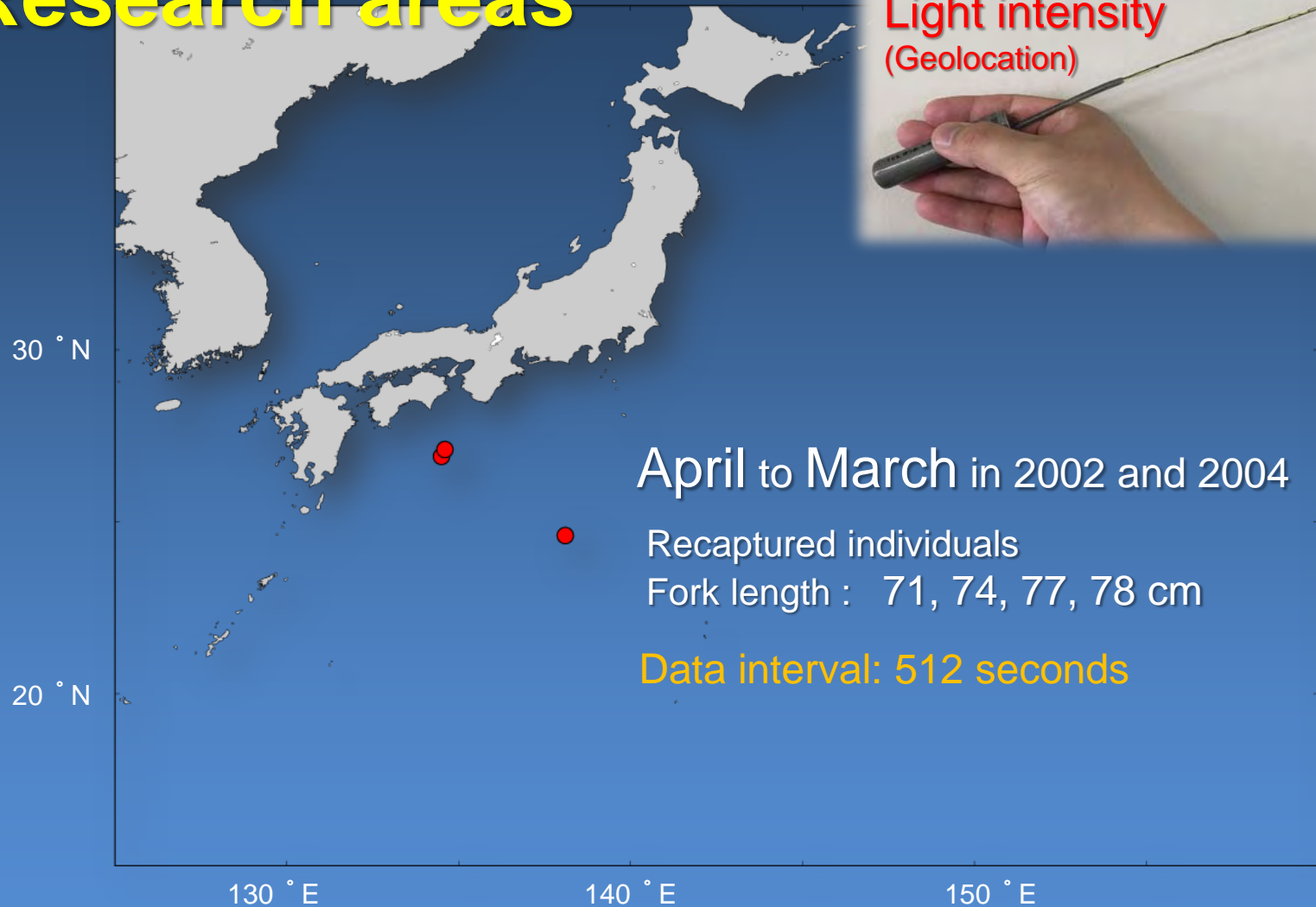
Japanese long line
Logbook (2000-2016)

35°N



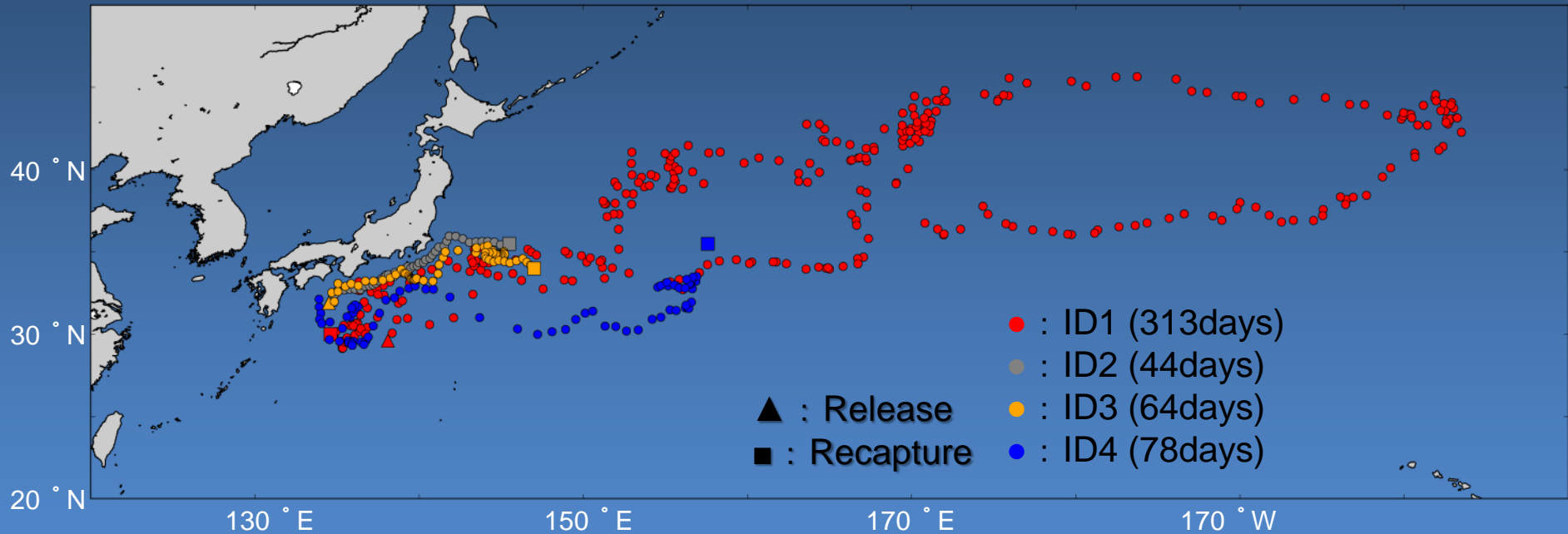
Long line catch decrease in the northern area (>35N)

Research areas



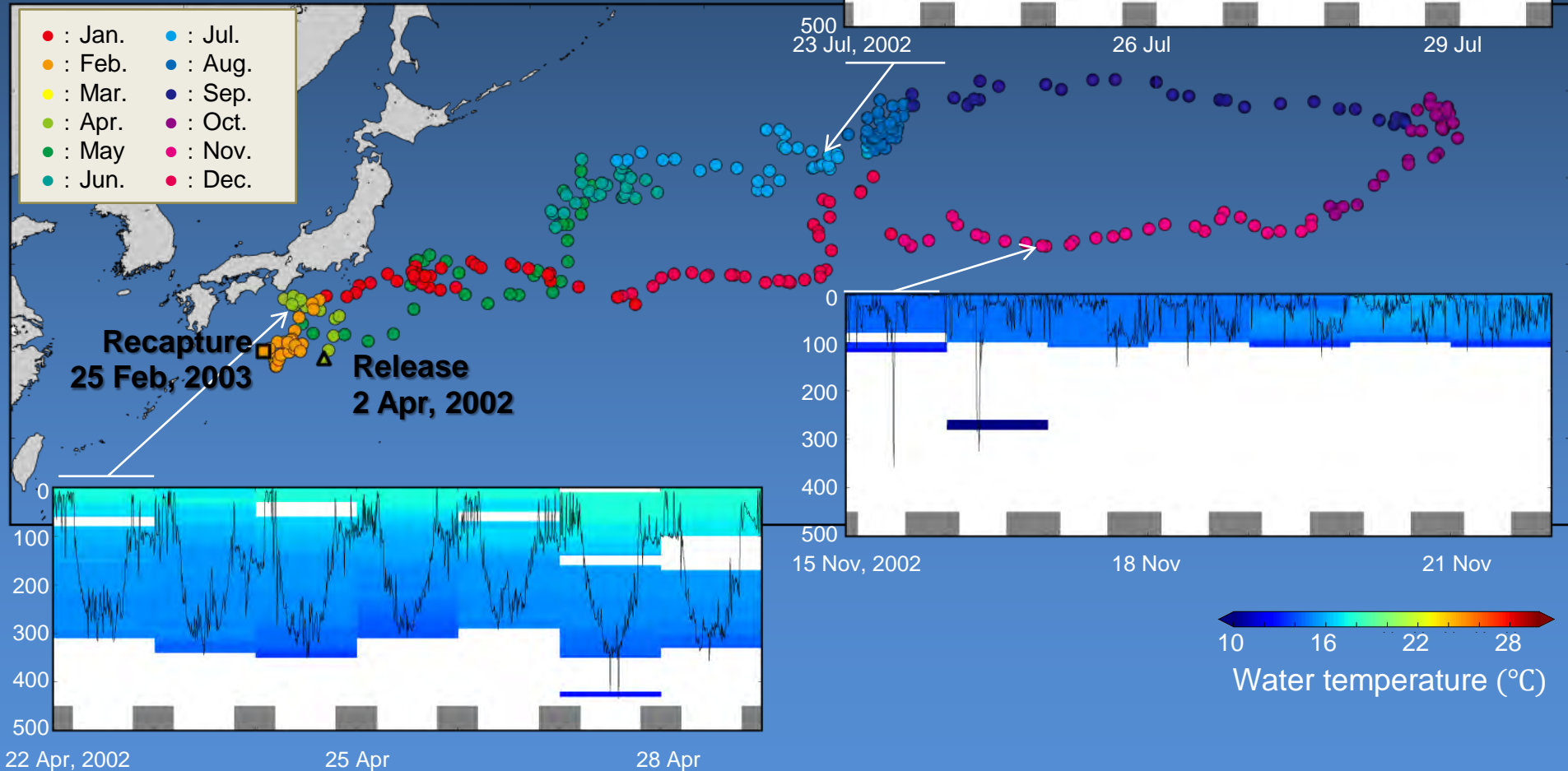
Hokimoto and Kiyofuji, 2014;
Kiyofuji et al. 2013 (ISC/13/ALBWG-03/04)

Recovered 4 tracks from tags

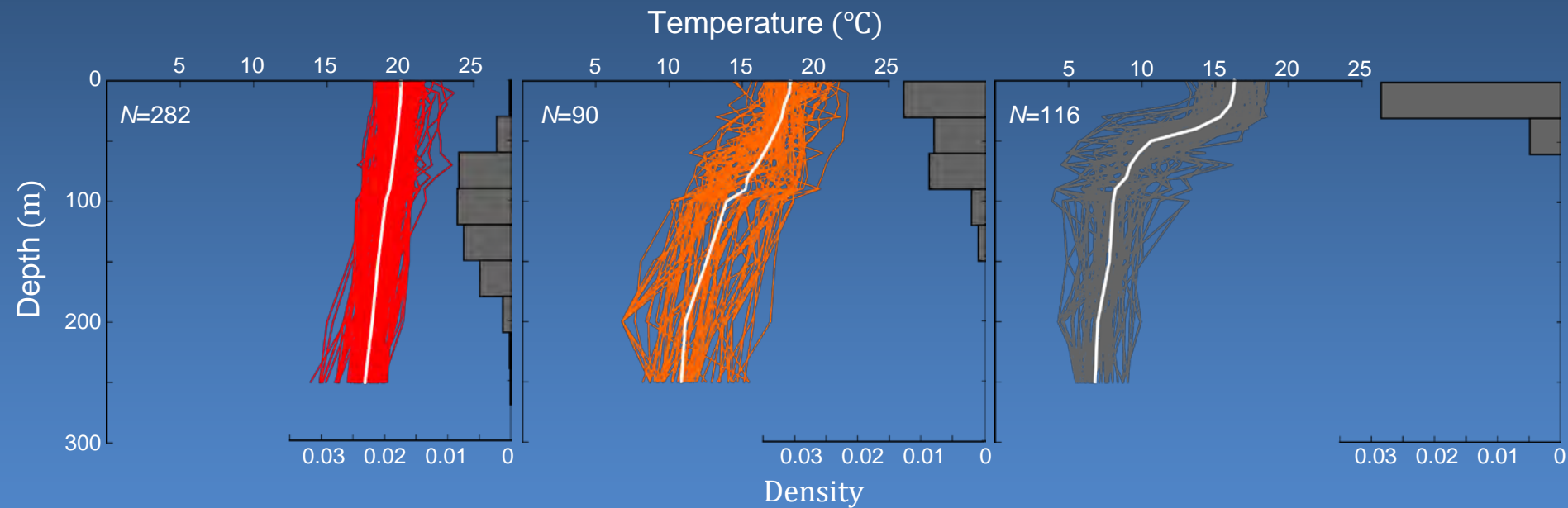


All individuals move to eastward after release

Example of individual 1

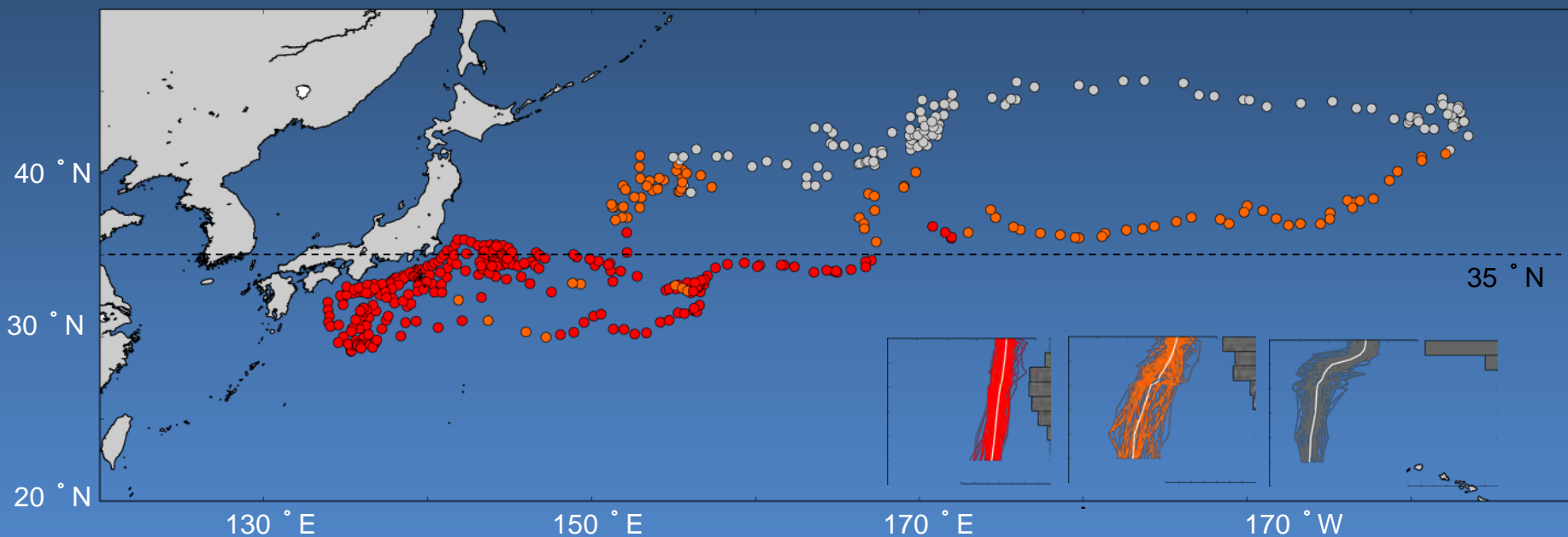


Habitats based on thermal environment



ALB widely distribute in the mixed layer, while they stay at the surface in the strong thermocline

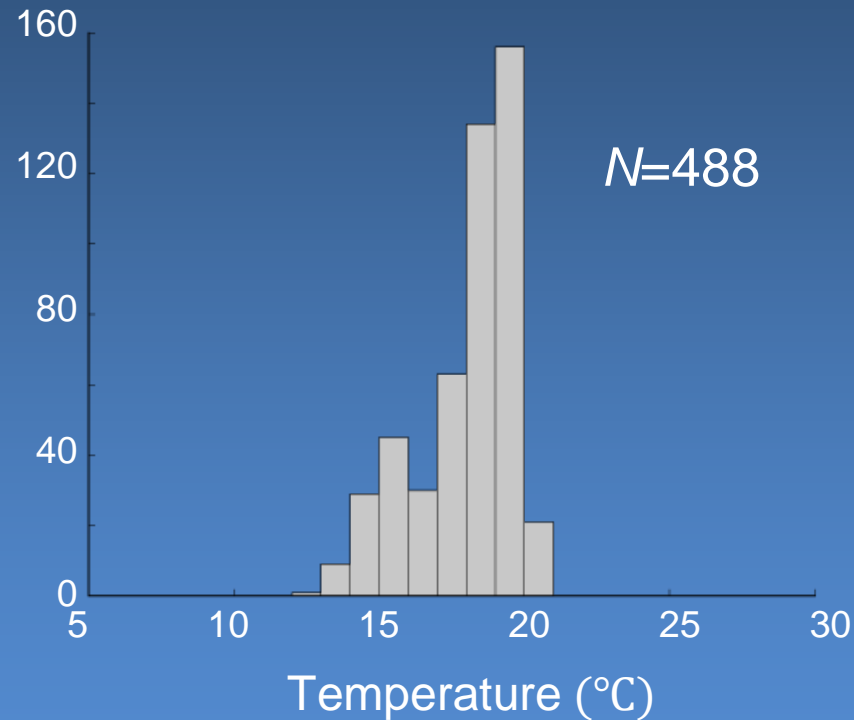
Classified habitat positions



Distinct depth change around the transition area

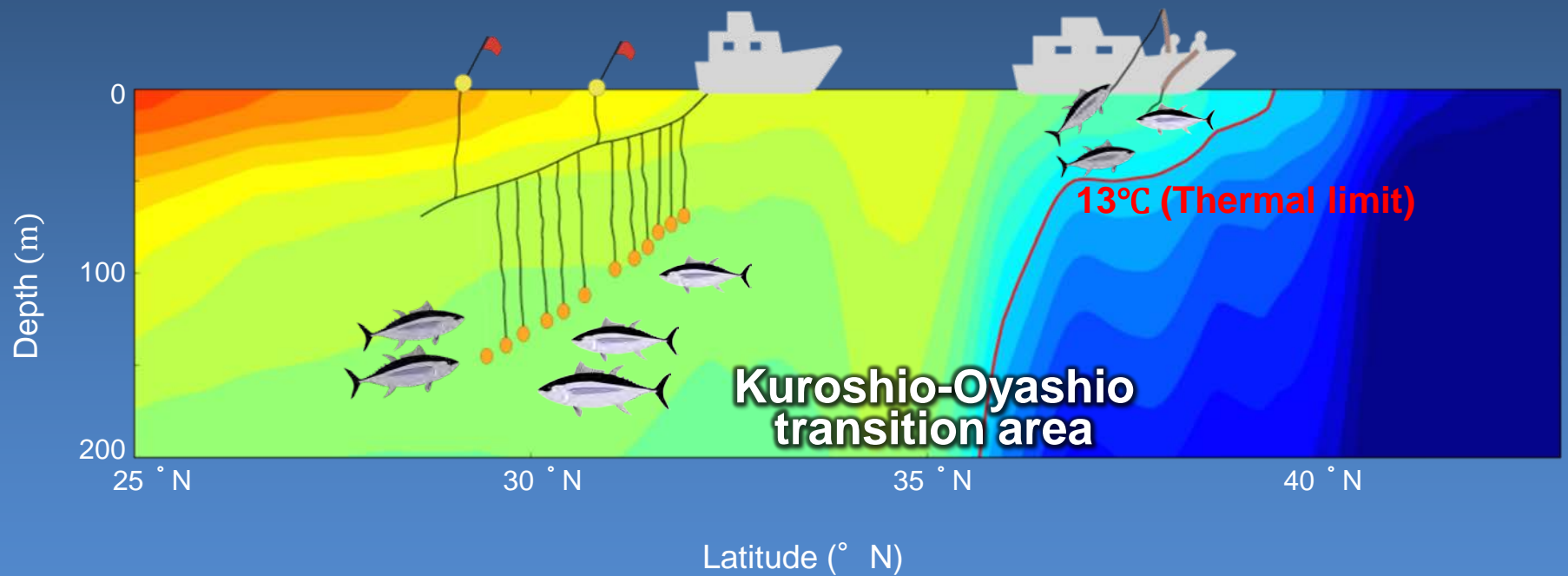
Daily averaged temperature

Min: 12.9°C, Mean: 18.0°C, Max: 20.9°C



The lower thermal limit is about 13°C

Interactive between the fish and fisheries



Conclusion

We investigated juvenile albacore distribution in the north western Pacific ocean by using archival tag

Tagged albacore exhibit depth change related to water column:
In well mixed layer, they widely distributed in the layer, while they stayed at the surface in the strong thermocline

⇒ Distribution constraints may be linked to the fishery efficiency as it changes interaction depth of the fish and fisheries

Thank you for your attentions