



# Potential trends in the Bering Sea pollock recruitment, abundance and spatial distribution in 2022-2032

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Current research demonstrated that annual change in the Bering Sea physical oceanographic conditions and zooplankton species composition and productivity were associated with the greater differences of the Bering Sea pollock seasonal distribution, reproduction, abundance of year classes and total population biomass. According to general trends in environmental processes for 2022-2024, the Bering Sea ecosystem status indicates stable pollock biomass at the average level (7.0-7.5 mln t).

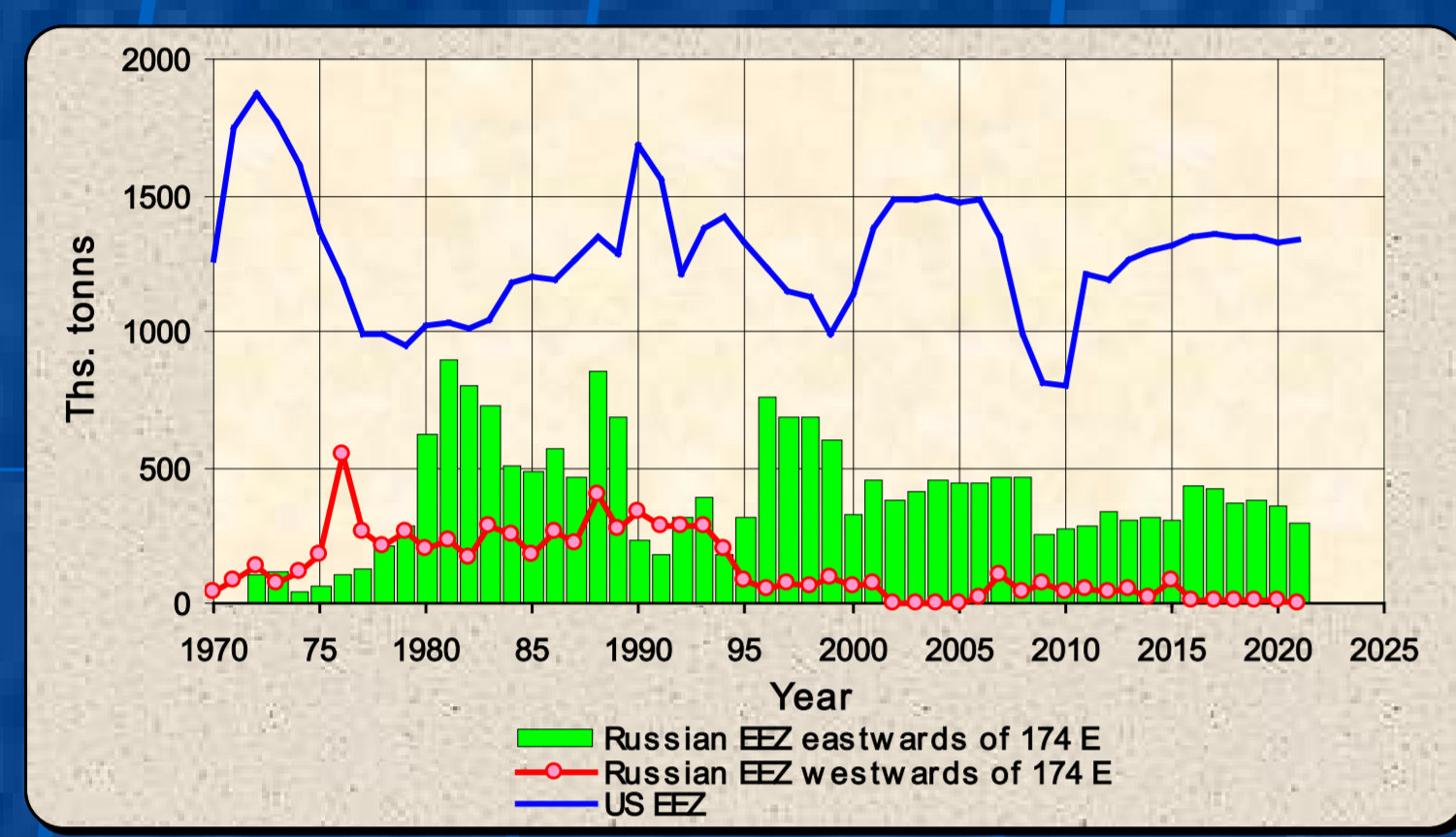


Fig. 1. Pollock catch in the eastern (blue line), northern (columns) and western (red line) Bering Sea, 1970-2021

Fig. 2. Pollock catch (x 10<sup>4</sup> mt) (columns), CPUE (line with black dots) and fishing efforts in the northwestern Bering Sea (Russian EEZ), 1978-2021

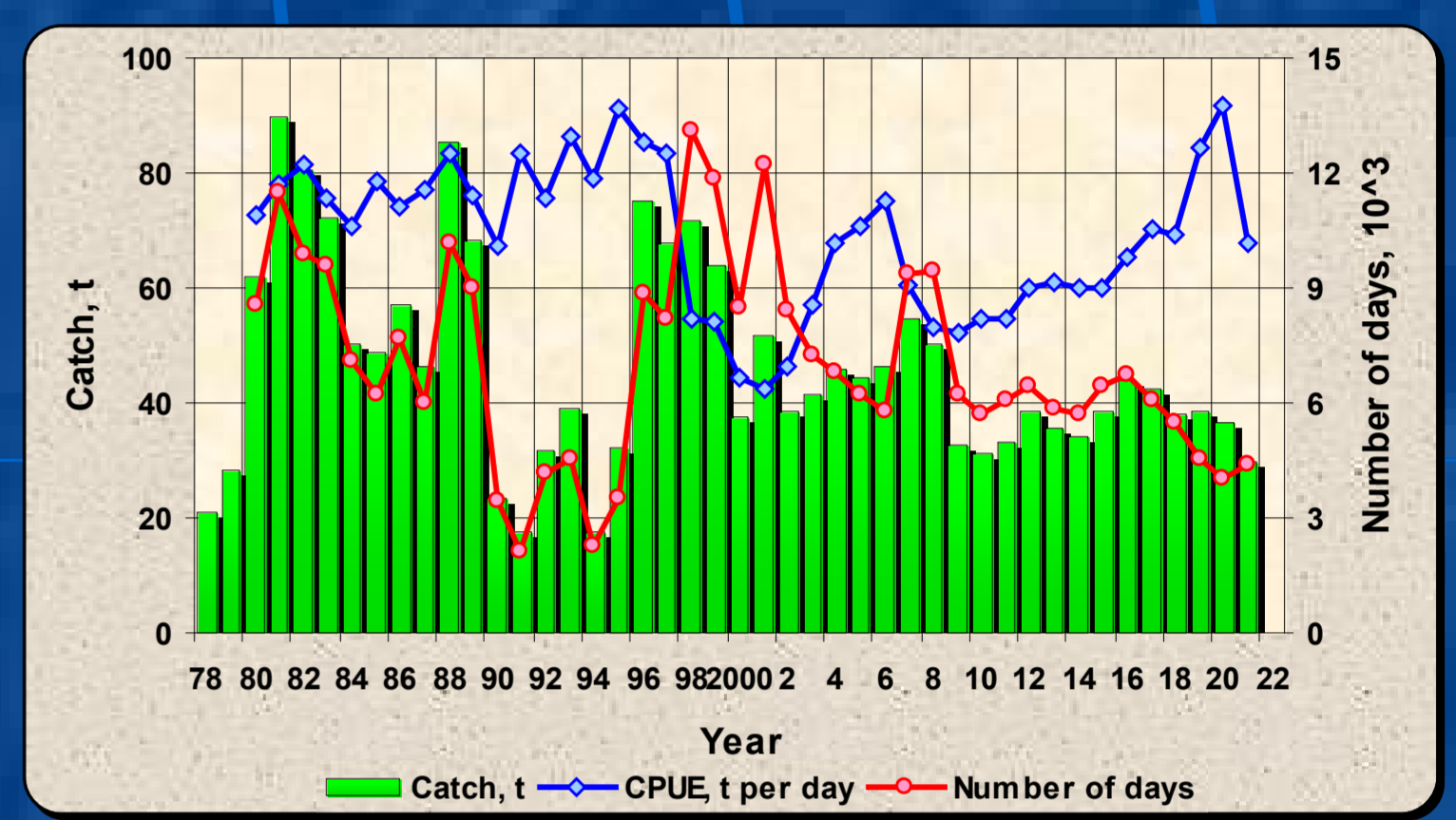
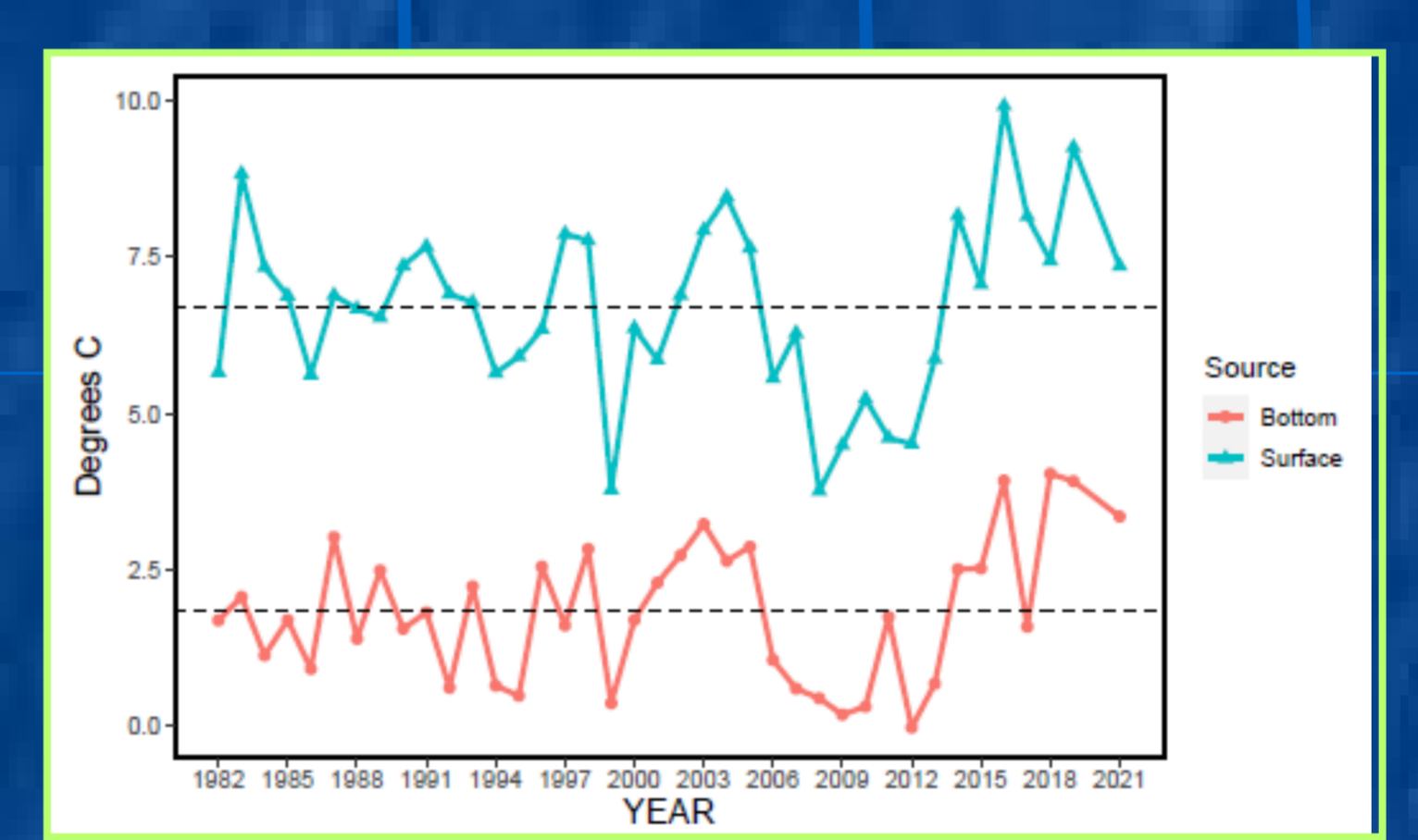
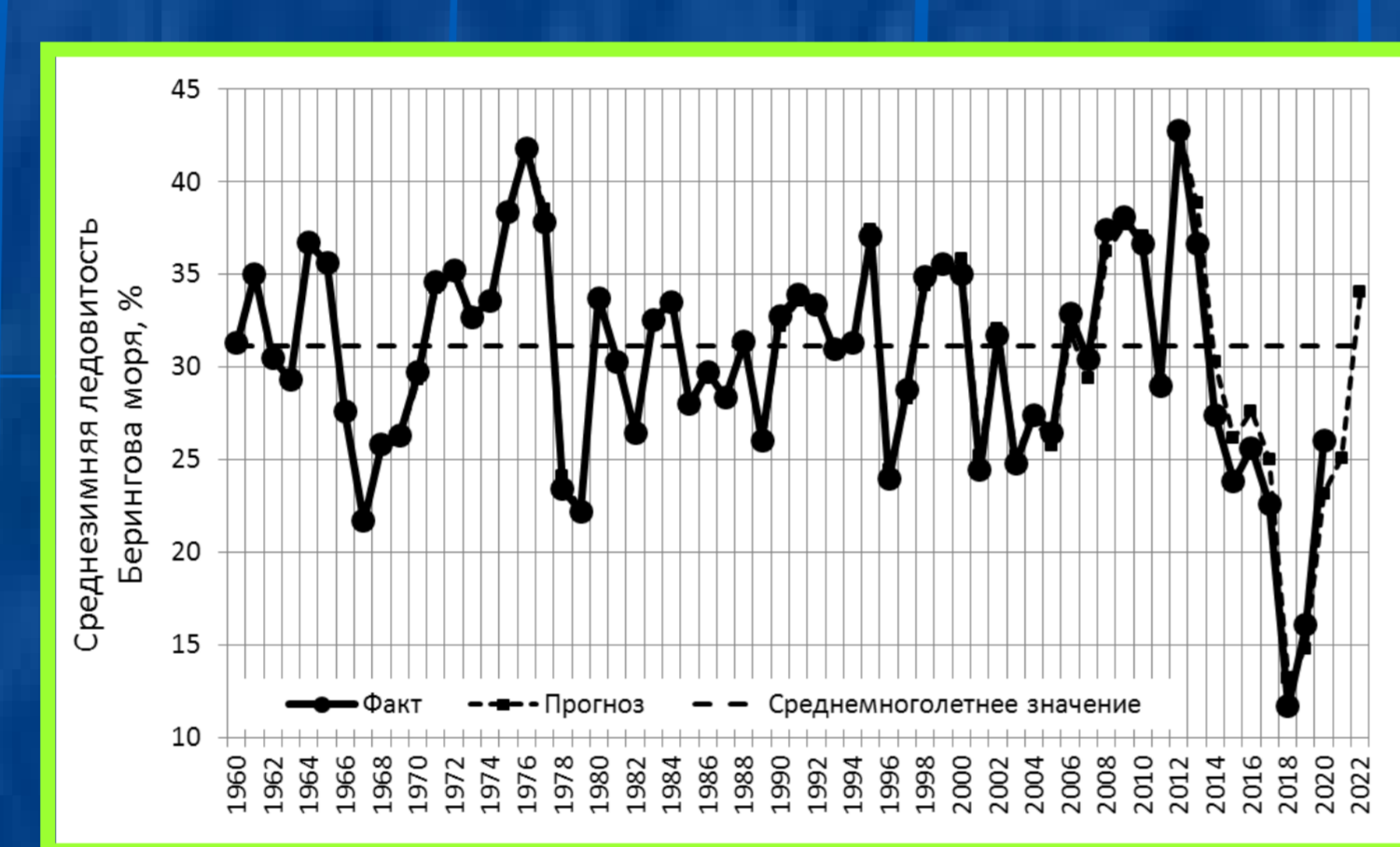
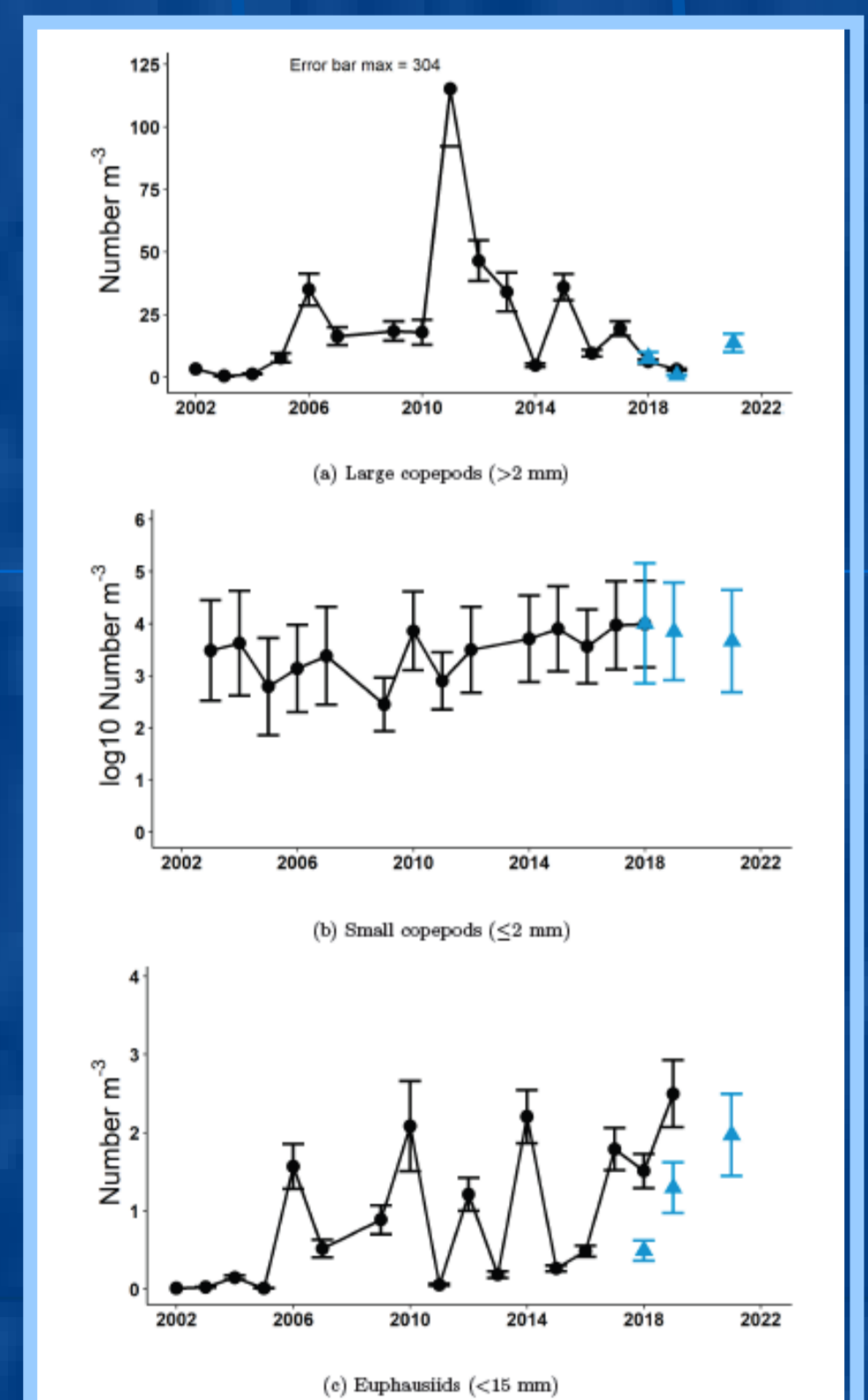


Fig. 3. Mean sea ice extent in the Bering Sea (January – April), 1960-2022



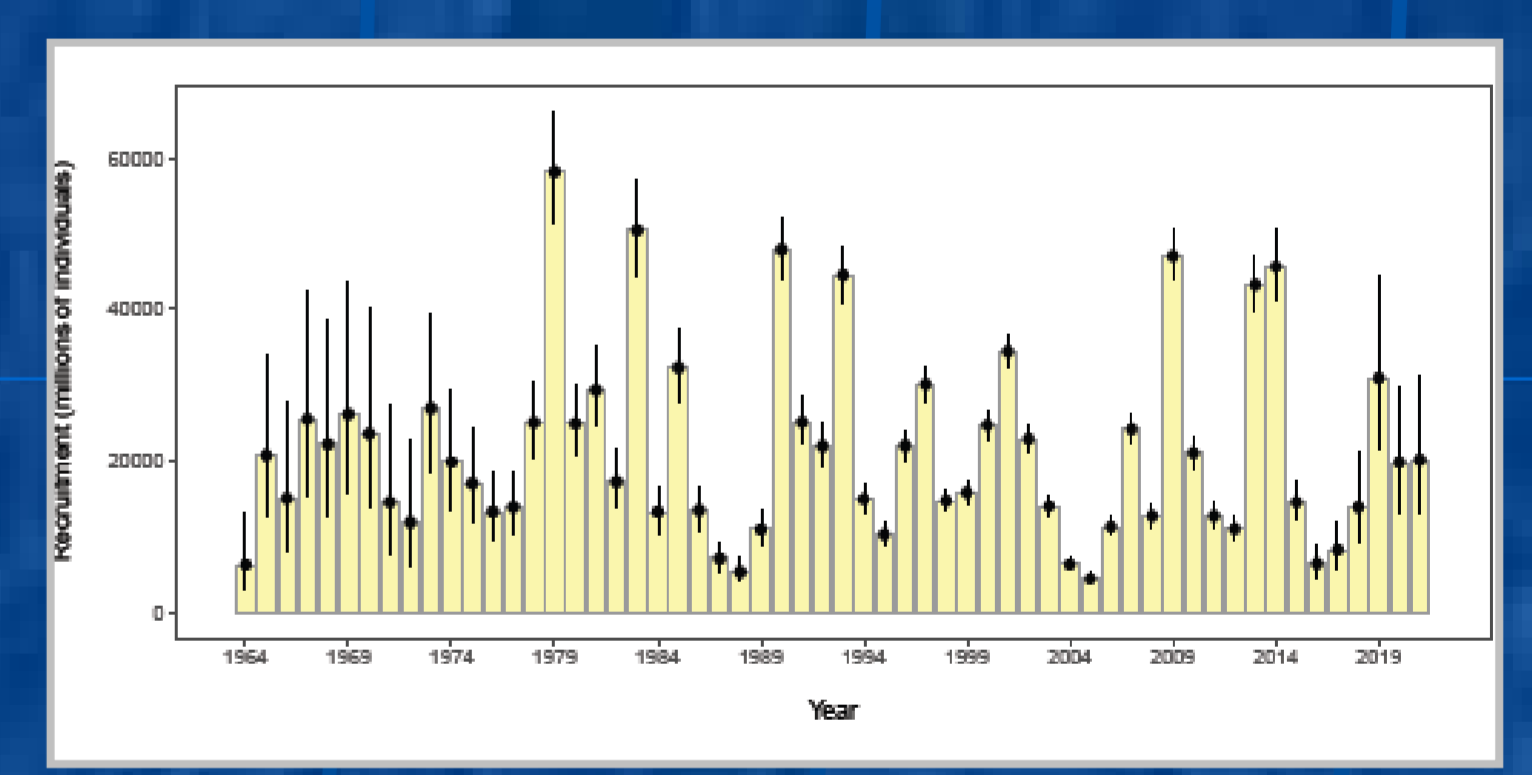
\*Fig. 4. Bottom and surface temperatures for the Bering Sea from NMFS summer bottom-trawl surveys (1982-2021)  
 \*From: NPFMC Bering Sea and Aleutian Islands SAFE, November 2021

Increased pollock biomass up to 8.0-8.5 mln t is expected in 2025-2029 as a result of relatively high abundance of large zooplankton (euphasiids and large copepods) and higher survival of the pollock juveniles in overwinter period due to feeding high lipid food, which will bring higher pollock year classes abundance.



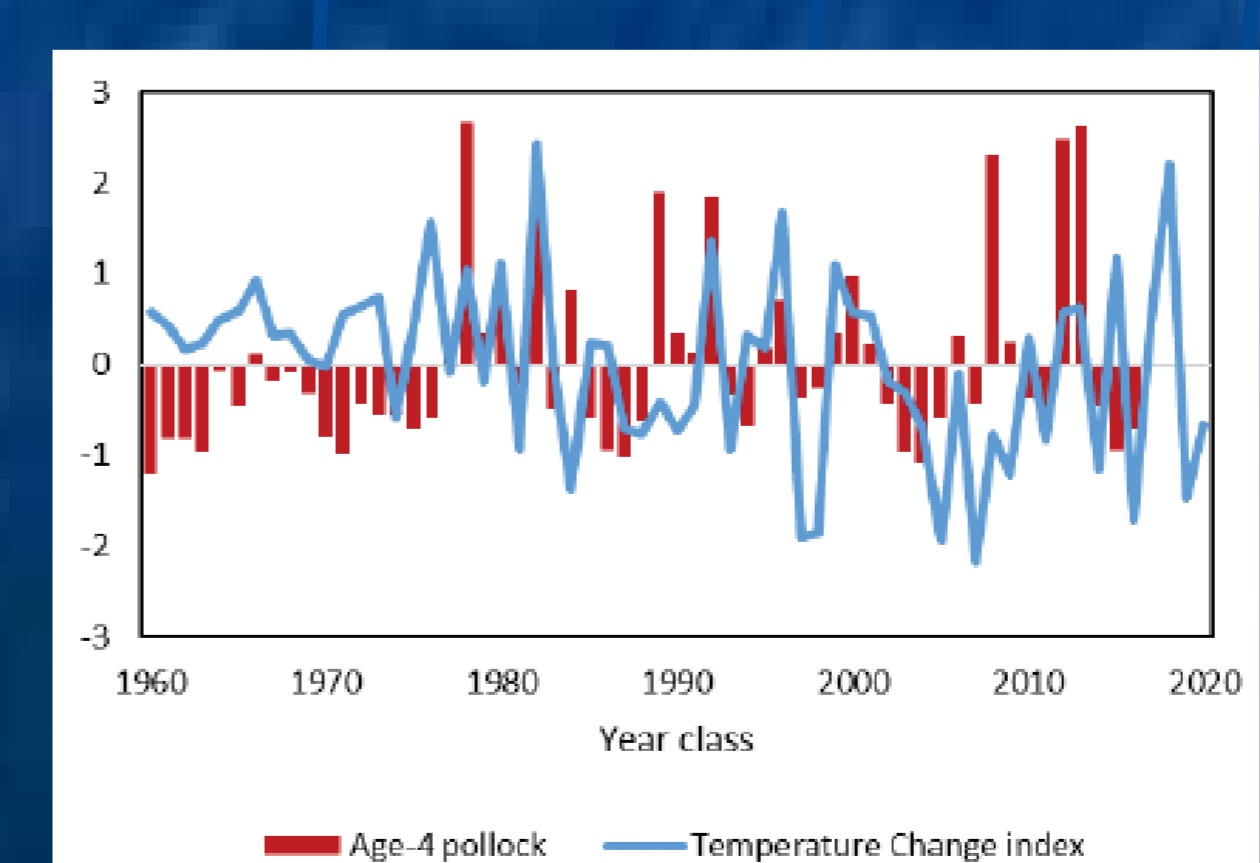
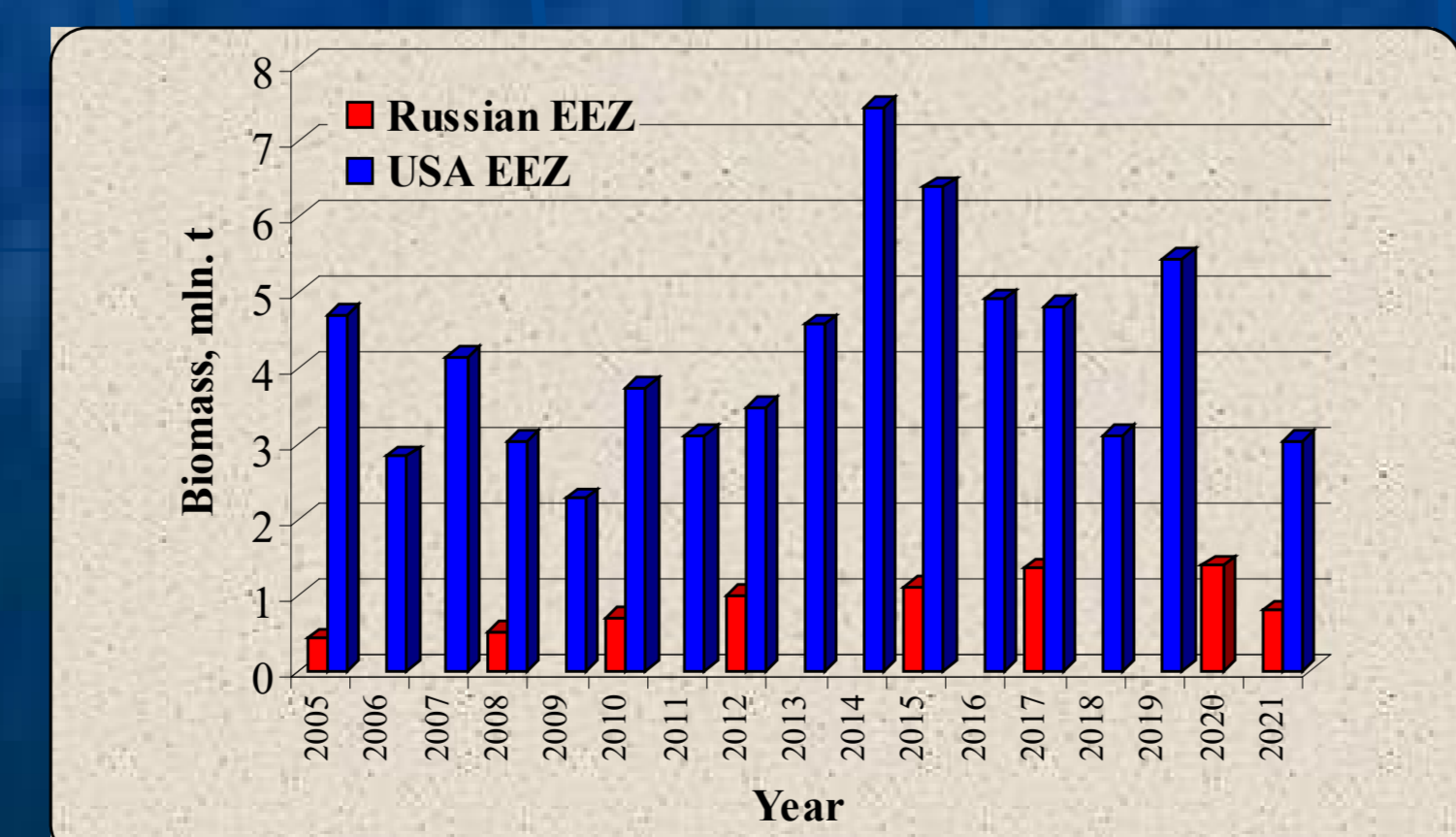
\*Fig. 5. Mean abundance of large copepods (>2 mm), small copepods (<2 mm) and euphasiids in the southeastern middle shelf region of the Bering Sea  
 \*From: NPFMC Bering Sea and Aleutian Islands SAFE, November 2021

\*Fig. 6. Dynamic of 1-year-old walleye pollock number in the Eastern Bering Sea in 1964-2021  
 \*From: NPFMC Bering Sea and Aleutian Islands SAFE, November 2021



Decreased pollock biomass down to 7.0-7.5 mln t is expected in 2030-2032 due to increasing sea water temperature and, therefore, decreasing large zooplankton abundance and pollock year classes abundance by the end of 2030-s.

Fig. 7. Pollock biomass in the northwestern (Russian EEZ) and eastern (USA EEZ) Bering Sea estimated for 2005-2021 bottom surveys



\*Fig. 8. Temperature index and estimated abundance of 4-year-old walleye pollock in the southeastern Bering Sea  
 \*From: Ecosystem Status Report 2021 (Eastern Bering Sea)