ICES CM 2017/E:425

**Age, growth rate, and otolith growth of polar cod (*Boreogadus saida*) in two fjords of Svalbard, Kongsfjorden and Rijpfjorden**

**Authors:** Fey D.P., Węsławski J.M

**Abstract**

This work presents biological information for polar cod (*Boreogadus saida*) collected with a Campelen 1800 shrimp bottom trawl in Kongsfjorden (two stations located in the inner part of the fjord adjacent to the glacier) and Rijpfjorden (one station at the entrance to the fjord) in September and October 2013. The otolith-based ages of polar cod collected in Kongsfjorden (6.1 to 24 cm total length TL; n=813) ranged from 0 to 4 years. The growth rate was relatively constant at approximately 4.7 cm year-1 between years 1 and 4, which indicates that growth was fast in the glacier area. The ages of polar cod collected in Rijpfjorden (8.6 to 15.9 cm TL; n=64) ranged from 2 to 3 years. The fish from Rijpfjorden were smaller at age than those from Kongsfjorden, and their growth rate between years 2 and 3 (no other age classes were available) was approximately 3.3 cm year-1. In both fjords, males and females were of the same size-at-age and the same weight-at-TL. The low spatial scale of the origin of samples, the results on growth rate are not representative of the entire fjords. Instead, the results can be discussed as presenting the possible growth rates of some populations. A strong relationship was identified between otolith size (length and weight) and fish size (TL and TW), with no differences between males and females or the fjords. A significant, strong relationship was also noted between fish and otolith growth rates.

**Keywords:** Arctic; fish growth; annual rings; sagitta.

**Contact author:** Dariusz P. Fey; National Marine Fisheries Research Institute, Department of Fisheries Oceanography and Marine Ecology, Kołłątaja 1, 81-332 Gdynia, Poland;

E-mail: dfey@mir.gdynia.pl