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## Update on inputs to space-time modelling of survey data for 2018

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### PURPOSE

To update SRB members on space-time modelling data inputs for 2018.

### BACKGROUND/INTRODUCTION

Since 2016, IPHC Secretariat staff has used a space-time modelling approach to estimate indices of density and biomass for use in stock assessment modelling and estimation of stock distribution. Among other advantages over the previous empirical method, the modelling allows easy integration of data from expansions of the IPHC fishery-independent setline survey (FISS), removing the need for computing ad-hoc adjustment scalars each time new regions are covered by the FISS. In 2018, planned IPHC FISS expansions took place in IPHC Regulatory Areas 2B and 2C. In addition to the planned expansions, FISS stations were added off the north Washington coast in a repeat of the 2017 ad-hoc expansion that doubled the station density in that region. At the time of writing, the FISS is currently nearing completion, and results (including modelling output) are still to be determined.

### OTHER CHANGES OR UPDATES

- As per SRB recommendations in June (SRB012), environmental covariate data will not be used in space-time modelling for IPHC Regulatory Area 2A for the purpose of estimating density indices.
- The FISS timing adjustment will be updated using 2017 data (recall that following SRB advice, this adjustment has a one-year lag).
- Data from an ad-hoc northern expansion of the NMFS Bering Sea trawl survey (covering an area from the entrance to Norton Sound to the EEZ boundary with Russia) is expected to be available along with the annual trawl survey data, and will be included in the space-time modelling in 2018.
- A fixed versus snap gear comparison study is being designed for IPHC Regulatory Area 2C in 2019, with the intention being to estimate differences in catch rates using space-time modelling.
- We are exploring space-time modelling of trawl survey-caught two-year old Pacific halibut to complement the recent modelling of juvenile Pacific halibut reported at SRB012.