

Future Use of “ST windows” index calculated by a new method: A proposal

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The current ST windows index is calculated basing on two different methods to prepare the ratio of age 4+ between periods 1969-1999 and 2000-2005 (The age 4+ ratio is used for calculating catch for that age). To avoid future confusion in verification process of ST windows due this inconsistency, it is better that the same method is used for all years. Here a new simpler calculation method of ST windows (without using the age 4+ ratio) and future use of the index calculated by the method are proposed. There was no substantial difference found in trend between two ST windows calculated by the current and new methods.

現在の ST windows の算出では、1969-1999 と 2000-2005 の期間で 4+歳魚の割合を出す方法が異なっている（4+歳魚の割合は、その年齢クラスの漁獲量を計算するために使用している）。ST windows の検証プロセスにおいて、この不整合による将来の混乱を避けるためにも、全年にわたって同じ方法を用いることが望ましい。そこで、新たな、より単純な ST windows の計算方法（4+歳魚の割合を使用しない）及び新たな方法で計算した ST windows を今後使用することを提案する。現在の方法と新たな方法で計算された ST windows のトレンドには大きな違いは見られなかった。

The current calculation method of “Spatial-Temporal (ST) windows” index is to sum up all 1x1 degree CPUE values for each year (Takahashi 2006). These CPUEs are calculated from 1x1 degree catch and effort data (CE) for age 4+ fish. This CE data is restricted to Area 8/September and October, and Area 9/May and June (This is what “ST windows” represents). The 1x1 degree catch data for age 4+ is prepared by multiplying catch for all ages by the ratio of age 4+ which calculated from size frequency data (Itoh and Takahashi 2006). Because data format of size frequency data used for a period 1969-1999 differed from that for 2000-2005, different methods were applied to prepare the age 4+ ratio between periods 1969-1999 and 2000-2005 (Itoh and Takahashi 2006). This inconsistency confused the Secretariat in understanding the methods, and had preparation done prior to the SAG meeting for the Secretariat verification of ST windows to take a longer time than expected. Considering such inconvenience in verification process which may occur again in the future, it is better that the same method is applied for all years. Here we propose a new simpler calculation method of ST windows (without using the age 4+ ratio) and future use of the index calculated by this method.

The new method utilizes 1x1 degree fished square information and 5x5 degree catch at age and effort data. Both data are restricted to Area 8/September and October, and Area 9/May

and June as before. Description of the new method is the following:

- 1) From "CPUE input data" (provided by the CCSBT Secretariat), 5x5 degree catch at age for age 4+ fish and effort (Area 8/September and October, and Area 9/May and June only) are extracted for 1969 to the most recent year, and then nominal CPUEs for age 4+ are calculated for each 5x5 degree square.
- 2) The number of 1x1 degree fished squares in each 5x5 square is calculated using 1x1 degree data.
- 3) Each 5x5 degree CPUE calculated in (1) is multiplied by the number of 1x1 fished squares calculated in (2) corresponding to the 5x5 square of CPUE.
- 4) Resultant values of (3) are summed up for each year to obtain ST windows index.
- 5) Values of ST windows are normalized to the mean.

Fig. 1 illustrates comparison of trends between ST windows indices by the current and new methods. There is no substantial difference found between the two and the trends are very similar. Thus, effect of future use of the new ST windows index on conditioning of operating model may be negligible.

References

- Takahashi, N. 2006. Data and method used to calculate STwindows CPUE Series. A document submitted to the CCSBT Secretariat for the 2006 Data Exchange.
- Itoh, T. and N. Takahashi. 2006. Documentation on the method for preparation of CPUE data by Japan. A document submitted to the CCSBT Secretariat for the 2006 Data Exchange.

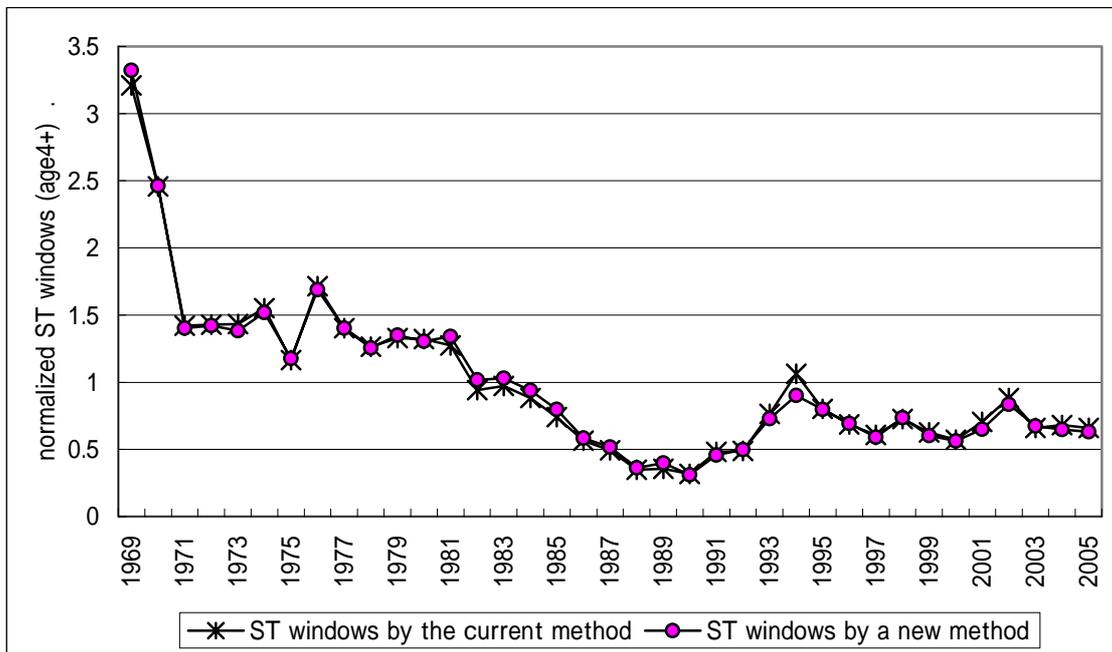


Fig. 1. Trends of ST windows indices by the current and new methods.