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## INTRODUCTION

Initiated in 1995, the 4VsW Sentinel Program utilizes commercial longliners to establish a series of catch rate and abundance indices that could be useful in assessments and management of groundfish resources. The program allows inshore waters and bottom types to be surveyed which cannot be sampled by DFO's trawl survey. Data collected provides valuable information on by-catch species, predator prey relationships and environmental conditions necessary to understanding the marine ecosystem.

In 2004, the number of stations for the stratified random survey was reduced from 202 down to 53 stations due to economic reasons, with further reduction to 18 stations in 2012. As a result of the large reduction in stations, the program has been limited to a portion of 4W.

## COMMERCIAL INDEX

Fishermen were concerned that data being collected from the survey did not provide a true representation of their fishery. In 1996, a commercial index was introduced to reflect normal fishing activity. This allowed participating commercial vessels to fish (*under certain conditions*) within 4VsW, excluding closed areas. The commercial index was discontinued in 2007 as a result of the Larocque Ruling, as well as a decline in participation over the years.

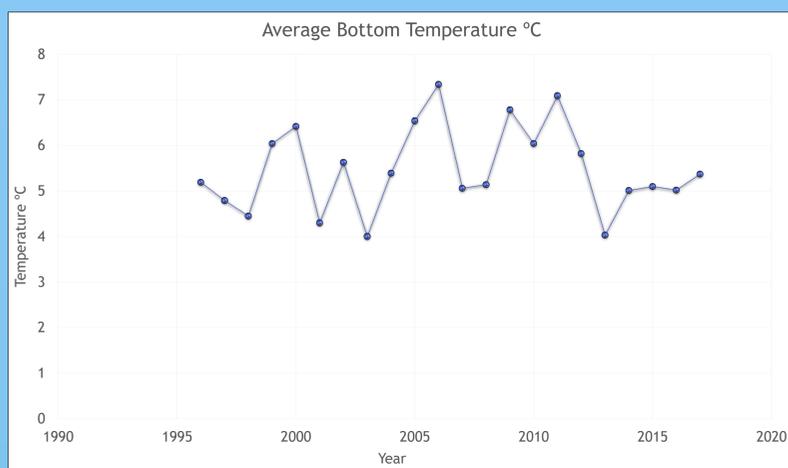
## METHODS

The program features a stratified random survey conducted in September and October of each year. Fishing locations are selected by computer within a series of depth strata. Participants follow specific sampling and gear requirements. Each longline vessel must fish with 1500 #12 circle hooks baited with frozen mackerel and set within a specified six hour period. The fishermen themselves collect scientific data, including: total catch, specific fish lengths, weights, sex, otoliths, stomachs, water temperatures and CTD (Conductivity, Temperature and Depth) profiles.

## 2017 RESULTS

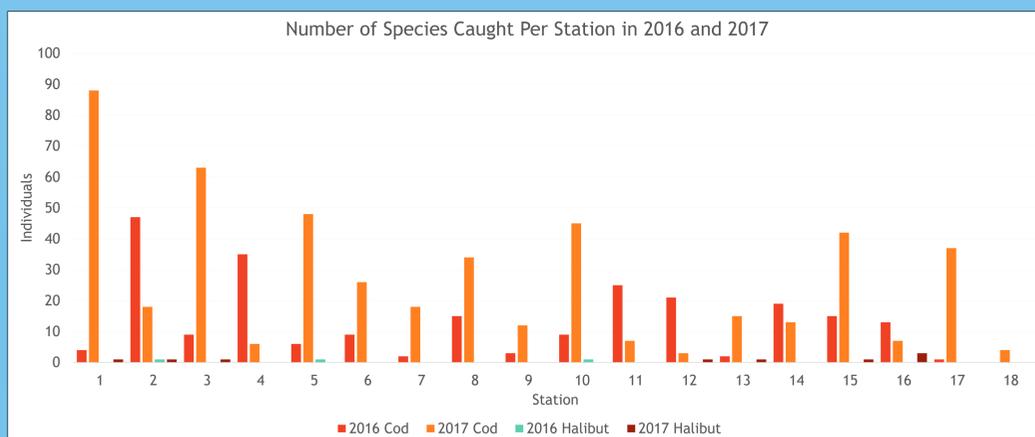
In 2017, one vessel was contracted to sample 18 stations with 2 strata in 4W. The figures to the right show catch results from all stations sampled for the 4VsW Sentinel Survey Program from 2012-2017. Not all fish species caught are shown. Results can be compared as the number of strata from 2012-2017 is 2.

The graphs below displays the average bottom temperature for 4VsW from 1996 – 2017.

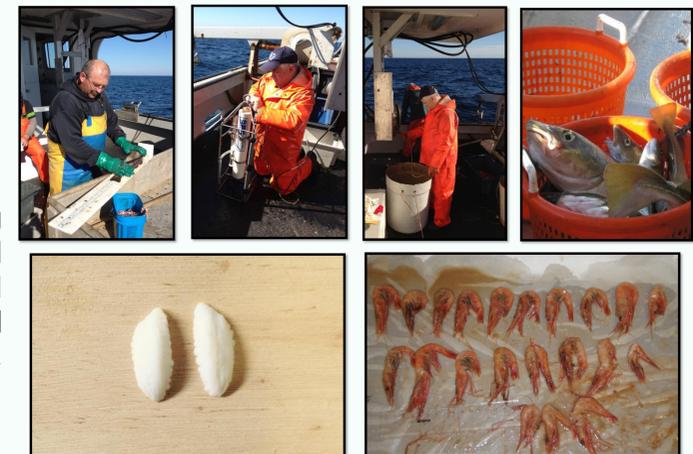
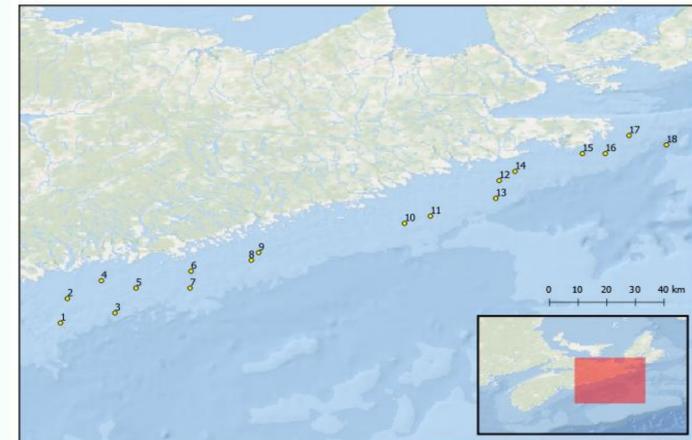


Water temperature data recorded by VEMCO data loggers.

The number of cod and halibut caught per station from 2016-2017 is shown below.



## 2017 Stations



## ACKNOWLEDGEMENTS

The Sentinel Project continues to improve the relationship and understanding between fishermen and scientists, as well as promoting fish stock conservation and management objectives. We wish to acknowledge all of the hard work and dedication that the captains and crew contribute to the Sentinel Program. The program wouldn't continue to be a success without their participation and willingness to aid in the collection of scientific data. For more information on this project, please contact [info@fsrs.ns.ca](mailto:info@fsrs.ns.ca).