

Short Term Task – Illex Aging, Update

Jason Didden

Samples have been sent to:

Dr. Angel Gonzalez
Instituto de Investigaciones Marinas
Vigo, Spain

Dr. Gonzalez will age *Illex illecebrosus* samples by counting the number of growth increments in one statolith extracted from each individual. The statolith samples (about 400) were shipped by Lisa Hendrickson from the Northeast Fisheries Science Center.

It is currently not clear whether COVID-19 will delay processing, but we were expecting results by mid-summer.

The method used to determine the age of each individual will involve mounting each statolith on a microscope slide with Crystalbond, with the anterior concave side uppermost. The statoliths will be ground, first on the anterior surface and then on the posterior surface. The grinding of both surfaces in the sagittal plane will result in the production of relatively thin statolith sections. Increments will be counted along the axis of maximum statolith growth with an NIS Elements D 2.30 image analysis system interfaced with a Nikon compound microscope ($\times 400$ magnification). Counts of increments will be conducted by eye. In statoliths of the oldest individuals, for which the increments may not be clear enough to see (especially at the edge of the statolith or near the nucleus due to statolith crystallization), the number of unclear increments will be estimated by extrapolation from the adjacent area. Extrapolations will not exceed 20% of the total surface area of the mounted statolith. Two independent increment counts of each statolith will be undertaken by Dr. Gonzalez on different days and the count data for each statolith shall be entered into an Excel spreadsheet provided to him by L. Hendrickson.

A subset of 60 statoliths covering the length range of the aged squid will be selected by L. Hendrickson and the statolith ID numbers will be provided to Dr. Gonzalez, who will have a second squid ager conduct two increment counts of each statolith during different dates. The increment counts of the second ager will be compared with increment counts of the same 60 statoliths by Dr. Gonzalez in order to estimate aging bias. Increment counts conducted by the second ager will be labeled as such and entered into the Excel spreadsheet provided for the project. Approximately 400 statoliths will be processed for age. 60 Statolith increment counts will be conducted by the second squid ager.

AIS, Inc conducted the U.S.-based processing and collection of biological information from the squid the statoliths were extracted from.

Samples covering the 2019 fishery season were provided by Lund's and Town Dock.