

### **APPENDIX B3: Rapporteur's Report from Mackerel Working Group Meeting**

Concerns were raised regarding the lack of correspondence between the total landings from VTR and weighout data for 2004. Although some Atlantic mackerel may be going to bait markets without passing through dealers, industry representatives think 85-90% of landings pass through dealers, accounting for the vast bulk of landings. In Canada it is known that there is underreporting of catch going to the bait market, but they cannot quantify the magnitude, although it is not expected to be a major portion of the catch. There are no discard estimates but these catches are thought to be minor based on the gear required to catch mackerel in most years. However, as large year classes enter the fishery discarding of small fish may be an issue. The Working Group agreed that current catch estimates are reasonable.

The Working Group noted that although commercial landings increased in 2004 the number of length and age samples collected decreased. The 2004 sampling was inadequate and sampling should increase in future years to ensure the estimated catch at age is representative of the actual landings.

The relative lack of old fish in both the commercial catch and the surveys caused concern. Several possible explanations were discussed. The most likely explanations for the commercial catch was either a shift in location of the fishery to more inshore waters where older fish are less available, a shift in the location of fish due to environmental conditions, or insufficient sampling of the catch to detect the old fish amongst the more numerous younger fish. It was noted that the surveys have never caught large numbers of old mackerel but it could not be easily explained why the old fish are not currently seen by the survey if they are present in the area. The alternative explanation of a high fishing mortality rate does not agree with the recent low catches compared to historical catches. The Canadian fishery is targeting the large 1999 year class, which could explain the lack of old fish in that portion of the landings.

Retransformation of the spring index was discussed in detail. The technical procedure was described but an apparent inconsistency between the regular scale and retransformed data caused concern, specifically the change in direction from 2003 to 2004 between the regular and retransformed plots. It was explained that single large tows can lead to this apparent inconsistency. Since the retransformed data is then split into age groups, and the age samples from the early part of the time series are not available electronically, it is currently not possible to compute untransformed indices for the entire time series.

The Canadians have observed large changes in migration paths, timing of arrival and departure, distribution, etc. in recent years. This has made Canadian surveys difficult to use because their surveys are not measuring changes in abundance but rather changes in availability. They are continuing to explore development of indices, but the indices are not ready yet.

The Working Group agreed that since it is not possible currently to quantify the impact of consumption by predators on the natural mortality rate, the use of constant  $M$  in modeling is justified.

The Working Group agreed that the VPA models did not provide reasonable estimates for this stock and so was not used as a tool for classifying current stock status. The added structure in the

ASAP model allowed development of a Base Case analysis and a number of sensitivity runs to evaluate current stock status. The Base Case ASAP run has good fits to the indices and catch at age data, but exhibits a retrospective pattern. The Working Group concluded that it was preferable to keep this model even though it has a retrospective pattern because the approach that reduced the retrospective pattern, allowing a dome in recent years for the commercial fishery, could not be sufficiently justified. The Working Group agreed that without strong evidence for a domed pattern in recent years, the default of an asymptotic pattern for all years was most appropriate for this stock. The uncertainty in the recent SSB estimates was relatively high and encompassed most sensitivity runs.