Theme session A

Advancement of stock assessment methods for sustainable fisheries
Conveners: Steve Cadrin (USA), Ciaran Kelly (Ireland),
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The ICES theme session A was co convened by the co-chairs (Steve Cadrin and Ciaran Kelly) and a steering committee member (Rick Methot) of the ICES Strategic Initiative on Stock Assessment Methods (SISAM). The idea behind the theme session was developed at the SISAM open session at the 2014 ICES ASC, and was intended to further support the strategic initiative on stock assessment, by facilitating the promotion and exchange of developments and identification of best practices from ICES assessment groups as well as from regional fishery management organizations, national fisheries agencies, and academic researchers. Given the other relevant and cross cutting sessions held at the 2015 ASC, the session was very well subscribed, with 38 high quality abstracts, of which there was only time to hear an oral presentation from 22. These presentations were split over two days with an afternoon session on the Monday the 21st and a morning session on Tuesday the 22nd. The remainder of the abstracts were presented by poster, and available throughout the ASC.

In order to facilitate audience needs during the ASC -whereby many participants like to maximize their opportunity to attend several theme sessions, which may be running concurrently Theme session A was organized thematically covering the themes of Methods, Applications, Uncertainty, Management and Multispecies considerations. We were honoured by the presence of Sidney Holt, a pioneer in the development and application of population dynamics models for stock assessment, who gave the keynote presentation at the opening of the session. Sidney spoke of the origins, and more recently the resurrection and misinterpretation of the MSY concept (with respect to the original concept). Sidney spoke of the original idea of maximizing yield to meet the needs of fishery management organizations at the time which were focused on food supply, and how the concept was not a property of fish stocks (as has tended to be argued by stakeholders more recently), but rather a product of the choices made in the exploitation strategies employed to harvest the stock.

The first thematic session then concentrated on an update of recent developments in assessments. In this segment we heard from eight speakers, who presented details on aspects from calibrating the catchability co-efficient, to resolving spatial and size structured issues, to newly developed methods and refinements in computational processes such as likelihood estimation. It was evident that current topics such as spatially resolved assessments and dealing with biased catch data, are being addressed and that these new approaches and refinements will support the continuous development of stock assessment in the ICES community.

The second theme under which presentations were made was Applications. Under this theme we heard about new applications for the assessment of northern cod, channel cuttlefish and Barents Sea capelin. Each of these stocks has biological, behavioural or distributional properties which were addressed by the new applications.

The theme of Uncertainty had three presentations dealing with aspects of how this can be evaluated in stock assessment. A presentation from Iceland showed how uncertainty is addressed in length based assessments, a presentation from the A4A

community showed how biological and model uncertainty is incorporated in this framework. And we heard from developments in dealing with uncertainty in data limited situations using the example of Arctic Char.

In the morning session on Tuesday we continued with the Management theme. The three presentations in this session provided interesting insight into issues like, whether we could detect the causes for the decline in fishing mortality in the North Sea fisheries, and a range of indicators outside the usual population dynamic reference points which could be used to manage a spatially discreete shellfish fishery in the USA. A final presentation covered the newly released CASAL application which is the framework used by New Zealand to assess and provide management advice for fisheries in its jurisdiction.

In the final session we considered multispecies aspects. These three interesting presentations covered aspects from a tool to facilitate the discussion on trade-offs in the multispecies dimension between stakeholders, to a multispecies gadget based model which is being developed for use in NAFO, to a perspective piece on whether we can with current data resolve the multispecies interactions in a dynamic environment.

Discussions at the end of each presentation were somewhat limited due to the priority to maximize the number of presentations. However in all it was a reasonable trade-off which facilitated each speaker getting an opportunity to convey interesting and important developments in stock assessment.

At the end of the session we had an appeal for interested participants to consider continuing the discussions beyond the ICES ASC at the World Fisheries Congress in Korea (WFC) in May 2016. It is proposed that at the WFC the Global forum for Assessment Methods (GAME), will be initiated and this will provide a platform for ICES scientists to discuss problems and solutions in a wider context, where global issues such as guidelines and the adoption of standards for the evidence basis for fisheries management advice could be appropriately developed. The WFC and transition to GAME will conclude the work of SISAM.