Theme Session O
Advances in studying spatial distribution

Conveners:
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Knowing migration routes and the spatial distribution of marine species is an issue that has always received substantial attention, but available data and expertise for improvement within this area have been limited. Traditional methods for analysing spatial distribution such as the use of information from fisheries (logbooks), tagging experiments, surveys, and acoustic measurements all have their limitations. For surveys the main problem is unknown and variable "availability", and for tagging experiments it is tagging mortality, tag loss, and the requirement to recapture the fish, with the obvious shortcomings that species with low fishing mortality have low probability of recapture. In recent years tags have been developed that are able to register depth, temperature, and salinity as well as giving some ideas about position of the tagged fish in selected periods without recapturing the fish (acoustic tags, popup tags).

Application of acoustic tags is based on a grid or a line of buoys with acoustic transducers that can pick up signals from the tags. Progress in this field has been fast in recent years and the tags are becoming smaller and longer lasting. Progress will most likely be much faster if more customers bought these products. A limiting factor is that many potential customers are government institutions with a limited budget. In Canada a large project Ocean Tracking Network (www.otncanada.org) has been started that could be a prototype for similar projects in other areas.

Within this context, contributions will be welcomed on the following topics

- How to combine different data sources to estimate/map spatial distribution;
- How to utilize data from acoustic tags and how to combine them with available traditional data;
- How accurate does the location need to be? There will be a compromise between the range of the acoustic signals and the precision of the location;
- Would data from acoustic tags help in interpreting already available data from traditional tags;
- Measuring nuisance factors in tagging like tagging mortality and tag loss, factors that affect both traditional and acoustic tags;
- Experimental design of projects, including acoustic tags, number of species, buyos, and tags;
- Other possible uses of a grid of buyos, for example measurements related to physical oceanography;

- The feasibility and cost benefits of applying underwater tagging techniques to diminish tagging mortality.

Invited keynote speaker might come from the Ocean Tracking Network project. Having manufacturers of electronic tags and tagging equipment present will likely be an important part of this theme session. Manufacturers will have the opportunity to show and demonstrate their products, but also participate in a forum where possibilities in the development of electronic tags that do not require recapture will be discussed.