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**Proceedings of the  
Transboundary Resources Assessment Committee (TRAC)  
Mackerel Benchmark Assessment**

**Report of Meetings held  
22-23 Oct 2009<sup>1</sup>  
1-4 March 2010<sup>2</sup>**

<sup>1</sup> by Videoconference

<sup>2</sup>**Stephen H. Clark Conference Room  
Woods Hole Laboratory  
Northeast Fisheries Science Center  
Woods Hole, Massachusetts, United States**

**Meeting Chairpersons**

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## **B. RESEARCH RECOMMENDATIONS**

- Explore opportunities for the development of alternative indices of abundance. Attempt to develop total stock abundance.
- Initiate broad scale international egg surveys covering potential spawning habitat that is consistently representative of the total stock area, including the shelf break. Investigate potential to conduct work in cooperation with commercial fishing industry (priority: high, long term)
- Explore spatial distribution of stock relative to the mixing of the northern and southern 'contingents' of mackerel i.e. tagging, genetics, chemical assay, microchemistry of otoliths (priority:high, medium-long term).
- Explore influence of environmental factors on spatial distribution of the stock e.g. rate of mixing and distribution of stock relative to the survey area (high priority, short term)
- Extend predation estimates to include DFO data and entire predator spectrum (marine mammals, highly migratory species).
- Examine methodology for incorporating consumptions estimates in the assessment.
- Quantify the magnitude of additional sources of mortality in Canada including the bait fishery, recreational catch and discards (high priority ; short term)
- Exploration of bottom trawl characteristics for catchability of mackerel.
- Participate with industry in investigating the contemporary overlap of survey stock area, commercial fishery, and mackerel distribution and explore historical databases for the same purpose to better understand interpretation of abundance indices (survey, cpue) (medium term)
- Collaborate with industry to investigate alternative sampling gear (i.e. jigging) to survey adult abundance (long term)
- Explore MARMAP database relative to spatial distribution of survey indices.
- Investigate alternative assessment models that incorporate spatial structure (i.e. northern and southern contingents, different age groups).
- Explore alternative assessment models that incorporate covariates.
- Initiate a technical TRAC WG in order to advance and monitor progress of research recommendations.