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How can we gain? Potential ways to use opportunistic industry acoustic data to improve stock assessments and scientific advice

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Abstract

Pelagic species are commonly surveyed using acoustic methods. Many pelagic species are widely distributed with large interannual variations making scientific surveys challenging and costly. In the case of surveys targeting spawning aggregations, if the spatial distribution or spawning time changes unexpectedly, a scientific survey might miss (part of) the stock it was intending to observe. Part of the problem is that scientific surveys have no flexibility in terms of timing and duration. Here we explore the potential ways acoustic data collected opportunistically by industry could be used to i) adapt scientific survey designs in response to major spatial shifts (*prior scouting*); ii) provide information on spatial extent to estimate a posteriori the surveyed proportion of the stock (*availability scouting*); iii) complement scientific acoustic data in addition to or as part of the survey design (*additional data*); iv) provide acoustic data in the absence of a scientific survey (*opportunistic data*). Prior scouting (i) does not require calibrated acoustic data, while provision of acoustic data (iii & iv) does. For availability scouting (ii) it will depend on how the information is used. In all cases effective use of industry acoustic data requires efficient, as far as possible automated, data provision and use. For dynamic adaptation of survey designs appropriate data streams and data bases for the industry information as well as agreed procedures for how to adapt the sampling design (vary spacing between transect lines or orientation, etc.) are needed. Ideas for these procedures will be presented.

Keywords: adaptive survey design, opportunistic data collection; acoustic data

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