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RESPONSE

Reply to 'Clarifying the interpretation of Hamer *et al*. (2008) by Bilgmann *et al*. (2008)'

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In our recent study on the population genetic structure of short-beaked common dolphins *Delphinus delphis* in southern Australia (Bilgmann *et al*., 2008) we unequivocally showed a high level of genetic differentiation between the local common dolphin population in South Australia (SA) and the one in south-eastern Tasmania. The differentiation found in short-beaked common dolphins over this relatively small geographic scale of *c*. 1500 km is unusual for such a wide ranging and highly mobile species (Bilgmann *et al*., 2008). The genetic subdivision and the very low migration rates between the populations reported in our study has important implications for the management of dolphin interactions with the purse-seine fishery in SA; these interactions have lead to serious concerns over the long-term viability of the local dolphin population in this area.

Around the same time of publication of our paper, Hamer, Ward & McGarvey (2008) reported on the creation of the purse-seine fishery Code of Practice (CoP) to reduce dolphin mortalities in SA. In Bilgmann *et al*. (2008), we referred to the dolphin bycatch rate before the implementation of the CoP. We commend the proactive industry approach to reduce dolphin bycatch. Moreover, we commend the industry for indirectly supporting our research through logistical support provided by the South Australian Research and Development Institute. Critically, the industry undertook mitigation before the publication of our findings.

Hamer *et al*. (2008) results suggest that the CoP is highly effective, albeit their assessment covered only a 7-month period. Although we welcome the implementation of the CoP, we counsel caution about confidence in its efficacy. CoPs are not universally effective and may lead to a false sense that the problem has been resolved (Wiley *et al*., 2008). To the best of our knowledge, the most successful bycatch mitigation program was based upon an extensive, ongoing 100% observer coverage, application of proven mitigation measures, annual expert review and evolving fishery and mitigation practices (Waugh *et al*., 2008). The observer coverage reported in Hamer *et al*. (2008) was 11.8% and the assessment time (7 months) was short. We emphasize the importance of a careful and independent long-term monitoring of the efficacy of the industry CoP. The CoP is at its early stages of implementation, and using the 'worst case bycatch statistics' in the absence of a long-term, extensive observer programs is a precautionary approach.

Given the findings in our study we strongly recommend the (1) continued independent monitoring and estimation of the magnitude of fishery interactions including the long-term effectiveness of the CoP; (2) identification of the boundaries of the common dolphin population in SA and its size; (3) assessment of the distributional changes of the population over time; (4) given that dolphin distribution may be closely linked with prey distribution, the quantification of dolphin diet, prey abundance and its distribution in the area.

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