

Capturing decision-making tradeoffs between government and industry: a bi-level programming approach

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Abstract

Disease control decisions at a sector level often reflect different types of goals and incentives between various stakeholders. While government may pursue policy objectives to eliminate disease at any cost, for example, the success of such initiatives relies on the capability and desire of industry to adopt such measures as part of their own decision-making calculus. These tradeoffs complicate the uptake of different interventions, yet ignoring them may lead to sub-optimal choices. One way of addressing these tradeoffs is through the use of bi-level programming models, in which the decision making choices of industry are couched directly within the objective function of government. Such approaches have had limited application in the fisheries literature, and have not been applied in the context of aquaculture health. In this presentation, a bi-level programming approach for sea lice control is presented, with preliminary results to be given based on a simplified, proof-of-concept model.