PROGRESS AND ROADBLOCKS IN THE ESTIMATION OF STOCK STATUS AND CATCH LIMITS FOR GLOBAL FISHERIES

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SUBTHEME: ABC Specification for Data-Limited and Model-Resistant Stocks

BIO

Dr. James Thorson obtained a Masters working with Jim Berkson at Virginia Tech, and a Ph.D. working with André Punt at University of Washington. He conducts meta-analytic research regarding life history traits and statistical research regarding hierarchical and spatial tools for analysis of fisheries data.

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Both James and Jason currently work for the stock assessment team at the Northwest Fisheries Science Center.

ABSTRACT

Interest among NMFS researchers in estimating catch limits for previously unassessed stocks has exploded since the Magnuson-Stevens Reauthorization in 2007, and other scientific bodies also have longstanding interest in global fisheries status (e.g., the Food and Agriculture Organization). Stocks may be unassessed for a variety of reasons, including low economic value, limited or spatially unsuitable data sources, inability to fit available assessment models, etc., and we will collectively call these "data-poor" stocks. Many methods have been developed in the last decade for assessing data-poor stocks, and the evaluation of these methods is ongoing.

In this talk, we provide an up-to-date bestiary of methods for estimating status and/or catch limits for data-poor stocks. We start by introducing a distinction between algothmic and statistical methods for estimating status and/or catch limits for data-poor fisheries, where statistical methods include both mechanistic and meta-analytic approaches. We then outline recent developments in combining meta-analytic and mechanistic approaches within statistical models. We also discuss efforts to incorporate opportunistic (composition or citizen-science) data when available. We conclude by summarizing

ongoing efforts to evaluate performance of these methods, either via simulation or by comparison with regional or global estimates arising from data-rich assessments. Throughout, we offer our personal perspectives on future directions for data-poor assessments, including the importance of spatial approaches to data-poor stocks, the role of flexible software tools, and the benefit of improved linkages with data-rich models.