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Stephan B Munch* (steve.munch@noaa.gov), **Ethan Deyle**, **Charles Perretti** and **George Sugihara**. *Towards model-free ecosystem management*. Preliminary report.

There are many good reasons for ecosystem-based approaches to management. In particular, ecosystem approaches to management promise to make explicit the trade-offs between yields at different trophic levels and help avoid the systemic problems engendered by single-species management. Numerous ecosystem models have been developed to help quantify these trade-offs. There is, however, a great gulf between ecosystem models and ecological reality. In light of this, the key to successful ecosystem-based management may be to make robust, short-term ecosystem forecasts that don't rely on an explicit model structure. To this end, we have developed tools for non-parametric analysis of population dynamics. These methods significantly outperform parametric models at multispecies forecasting for both simulated data and field observations. Current research in this area is focused on scaling-up these nonparametric methods to ecosystem-wide forecasts and the development of robust harvest policies. (Received September 24, 2012)