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Shandelle M. Henson* (henson@andrews.edu), Department of Mathematics, 4260 Administration Dr., Andrews University, Berrien Springs, MI 49104, and **J. M. Cushing** and **James L. Hayward**. *Environmental change and life history strategies: cannibalism and reproductive synchrony III*. Preliminary report.

Increased sea surface temperatures depress marine food webs and are associated with large increases in egg cannibalism in glaucous-winged gulls. The synchronization of gull ovulation cycles, observed in these birds, may be an adaptive response to increased egg cannibalism. We pose a general discrete-time model for ovulation dynamics during the breeding season and then extend it across multiple seasons. We show that in the presence of cannibalism ovulation synchrony can enhance total population size and allow the population to persist at lower birth rates than would be possible without synchrony. (Received January 29, 2015)