1056-39-916   **April Harry** (`aharry@xula.edu`), Department of Mathematics, Xavier University of Louisiana, PO box 62, New Orleans, LA 70125, **Candace M Kent** (`CMKENT@VCU.EDU`), Mathematics and Appl. Mathematics Department, Virginia Commonwelth University, PO Box 842014, Richmond, VA 23284, and **Vlajko L Kocic*** (`vkocic@xula.edu`), Department of Mathematics, Xavier University of Louisiana, Po Box 62, New Orleans, LA 70125. *The Dynamics of the Periodically Forced Sigmoid Beverton-Holt Model, part I.* Preliminary report.

We study the dynamics of periodically forced Sigmoid Beverton-Holt model

$$x_{n+1} = \frac{a_n x_n^\delta}{1 + x_n^\delta}, n = 0, 1, ...$$

where $\{a_n\}$ is positive p-periodic sequence, $\delta > 0$, and initial condition $x_0 > 0$.

In the case when $\delta = 1$, the ab ove equation reduces to well-known periodically forced Beverton-Holt model which has been thoroughly studied recently. The autonomous case of the above equation ($a_n = a = const$) was introduced and widely used in fisheries science as a model which exibits the Allee effect.

In this paper we study the extreme stability, the existence of periodic solutions and their stability, Allee effect, and attenuance of periodic cycles. (Received September 18, 2009)