1092-34-322   **jin shang*** (`j0shan03@louisville.edu`), Department of Mathematics, University of Louisville, Louisville, KY 40292, and **Bingtuan Li**. *Period-doubling Bifurcation and Period-undoubling Bifurcation in a Discrete-time Model.* Preliminary report.

We provided rigorous analysis for a discrete-time model composed of the Ricker function and Beverton-Holt function. This model was proposed by Lewis and Li [Bull. Math. Bio. 74 (2012), 2383-2402] in the study of a population in which reproduction occurs at discrete instants of time whereas death and competition take place continuously during the season. We show analytically that a period-doubling bifurcation and period-undoubling bifurcation occur in the model. The population becomes unstable when when the period-doubling bifurcation occurs and becomes stable when the period-undoubling bifurcation occurs. We also demonstrate that between the period-doubling bifurcation and period-undoubling bifurcation it is possible for the model to have a cascade of period-doubling bifurcations which may lead to the formation of a chaotic attractor. (Received August 12, 2013)