1042-39-25   **Ann M Brett*** (`ambrett@verizon.net`), 9 Greenhouse road, Department of Mathematics, University of Rhode Island, Kingston, RI 02881. *Two species competitive model with Allee's effect.* Preliminary report.

We consider the following system of difference equations:

$$x_{n+1} = \frac{ax_n^2}{1+x_n^2+cy_n}$$

$$y_{n+1} = \frac{by_n}{1+y_n^2+dx_n}, \quad n = 0, 1, \ldots,$$

(1)

where a, b, c, d are positive constants and $x_0, y_0 \geq 0$ are initial conditions. System (1) has interesting dynamics and it can have up to nine equilibrium points. The most complex and perhaps interesting case is one where (1) has nine equilibrium points, four of which are local attractors, four are saddle points and one is repeller. Using recent results of Kulenović and Merino we are able to characterize the basins of attractions of all local attractors and thus describe the global dynamics of (1). This case can be considered as a two-dimensional version of the Allee's effect for competitive systems. (Received July 23, 2008)