1035-37-899 Ann Brett* (ambrett@verizon.net), Department of Mathematics, University of Rhode Island, Kingston, RI 02881, and M. R. S. Kulenovic (kulenm@math.uri.edu), Department of Mathematics, University of Rhode Island, Kingston, RI 02881. Positive Difference Equations with Several Equilibrium Points: Attractivity and Basins of Attraction. Preliminary report.

We investigate the global character of the difference equation of the form

 $x_{n+1} = f(x_n, x_{n-1}, \dots, x_{n-k+1}), \quad n = 0, 1, \dots$

with several equilibrium points, where f is increasing in all its variables. We show that a considerable number of well known difference equations can be embedded into this equation through the iteration process. We also show that a negative feedback condition can be used to determine a part of the basin of attraction of different equilibrium points. (Received September 17, 2007)