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Ann Brett*, Department of Mathematics, Kingston, RI 02881. *Basins of Attraction of Equilibrium Points of Monotone Difference Equations.*

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 the boundaries of the basins of attractions of different locally asymptotically stable equilibrium points are in fact the global stable manifolds of neighboring saddle or non-hyperbolic equilibrium points. (Received September 20, 2010)