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Abdul-Aziz Yakubu* (ayakubu@howard.edu), Howard University, Department of Mathematics, 2441 6th Street NW, Was, DC 20059, and **Najat Ziyadi**, Department of Mathematics, Morgan State University, Baltimore, MD. *Strong Allee Effect and Basins of Attraction in a Discrete - Time Zoonotic Infectious Disease Model.*

Motivated by the Feline Immunodeficiency Virus, the virus that causes AIDS in cat populations, we use discrete-time infectious disease models with demographic strong Allee effect to examine the impact of the fatal susceptible- infected (SI) infections on two different types of growth functions: Holling type III or modified Beverton-Holt per-capita growth function (compensatory density dependence), and Ricker per-capita growth function with mating (overcompensatory density dependence). The occurrence of the strong Allee effect in the disease-free equation renders the SI population model bistable, where the two coexisting locally asymptotically stable equilibrium points are either the origin (catastrophic extinction state) and the second fixed point (compensatory dynamics) or the origin and an intrinsically generated demographic period $k > 1$ population cycle (overcompensatory dynamics). We use the basic reproduction number and the spectral radius to examine the structures of the coexisting attractors. (Received January 14, 2021)