

Abstract: Swimmer's itch, or cercarial dermatitis, is a rash caused by an allergic reaction to infection with certain parasites of birds and mammals. Concerns about this issue have been growing recently due to an apparent increase in the occurrence of swimmer's itch and its subsequent impacts on recreational activities and revenues. We have been exploring a mathematical model to find cost effective ways of controlling the spread of the parasites. Part of the life cycles of the parasites is development into flukes while in a waterfowl host. An environmentally safe, cost effective method is administration of the drug praziquantel into the parasite's host. By manipulating the system of differential equations on the model, we will share preliminary results of the optimization problem: Which treatment options for swimmer's itch are most cost effective?