1056-92-413 **Thanate Dhirasakdanon*** (thanate@asu.edu), School of Mathematical and Statist. Sciences, Arizona State University, Tempe, AZ 85287-1804, and **Horst R Thieme**. *Infectious diseases in amphibians: adults as reservoir for epidemics in larvae.*

We consider a model for an epidemic in tiger salamander populations in Arizona caused by a lethal, directly transmitted ranavirus. The salamander has two very distinct live stages: aquatic larvae and terrestrial adults. Since the larvae are only present during parts of the year (the ponds dry up in summer), and since the adults are too dispersed to allow frequent disease transmission, the virus would have difficulty persisting in just one stage alone. Yet, recurrent epidemics have been observed. An hypothesis has been proposed (Brunner et al., 2004) in which one stage (terrestrial adults) may act as a reservoir for an epidemics in another stage (aquatic larvae). We try to corroborate this hypothesis by a mathematical model. Since strong seasonality is involved, we work with a metered (or sequential-continuous, or semi-discrete) model, which is a difference equation where the right hand side involves the time map of a differential equation. We derive conditions for the virus to persist in the salamander population, and also conditions for the virus to gradually disappear from the salamander population. (Received September 04, 2009)