

Invasive species model with linear rat harvesting on Easter Island

Gabriella Svantnerné Sebestyén

Eötvös Loránd Tudományegyetem

gabriella.sebestyen@gmail.com

The invasive species model describes the connections between three species: people, trees and rats. In 2008, Basener, Brooks, Radin and Wiandt presented an article in that, they created a mathematical model for such dynamical system. In this work we change the model and investigate the equilibrium points and stability of the invasive species model with linear rat harvesting. We show that the system has a conditionally stable equilibrium point, in this case the three populations live together. We make numerical simulations, too. We also show that the amount of the rats decrease because of the harvesting.

References

- [1] Basener, W., Brooks, Radin, Wiandt (2008a) Rat instigated human population collapse on Easter Island. *Nonlinear Dynamics, Psychology and Life Science*, 12, 227-240.