

Summary Report of Short-term Visitors Maria Leite and Benito Chen, May 18-25, 2013

We worked on preparing a manuscript addressing the dynamics of two major disturbances of forest lands: wildfire and insect infestations. First, we obtained real data to fit the parameters of a pine beetle-pine trees model and modified it to reflect the data. Then, we performed a theoretical analysis of the new model using standard dynamical system tools as well as numerical simulations, and we extended the model by incorporating “average” wildfire disturbances and their interaction with insect outbreak dynamics. Finally, we conceptually built a beetle-tree-fire model, where the wildfire disturbance is random. Future work: a) Complete the preparation of the paper. b) Develop more realistic mathematical models.

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