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Regaining Landscape Connectivity through the Restoration of Seed Dispersal Processes

Talk by Marinés de la Peña-Domene
Visiting Scholar, SFRC

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12:45-1:45pm
Grinter 376

Biography:
Marinés de la Peña-Domene, a native of Guadalajara, Mexico, received her B.S. in Biology at the University of Guadalajara. Her undergraduate thesis focused on restoration processes in areas adjacent to oak and pine forests of La Primavera Reserve. She then participated in research projects in Cozumel Island and the tropical dry forests of Huautla, Morelos. Marinés pursued her Master’s at the National University of Mexico (UNAM) and focused her research on a restoration project in the tropical rainforest of Los Tuxtlas, Mexico. Recently she received her PhD from the University of Illinois at Chicago under the direction of Henry F. Howe, where she looked at seed dispersal and seedling recruitment processes under experimental restoration plots in an agricultural landscape. Currently she is developing a management strategy based on agrosilvopastoral systems for the Los Tuxtlas biosphere reserve.

Content:
In my dissertation research I examined how succession is accelerated through manipulation of self-sustaining seed dispersal processes viewed through different ecological approaches. This study took place in Los Tuxtlas, Mexico, the northern most remnant of tropical rainforest in the American continent. In this study, I propose different metrics to evaluate seed dispersal and seedling establishment limitations in three different habitats (primary forest, secondary forest and pastures). I then evaluate the potential of high diversity plantings embedded in pastures to overcome dispersal and establishment limitation and accelerate succession back into forests. I assessed the potential of mixed plantings of animal-dispersed trees compared to wind-dispersed trees and to unplanted plots that simulate natural succession after pasture abandonment. I also evaluated the contribution of bats and birds to effective dispersal measured as the number of established seedlings of a given species. Finally, I studied how planted plots decreased the costs of dispersal agents for Ocotea ucranapana, an endemic and vulnerable tree species. In conclusion, high diversity plantings act as stepping-stones that increase landscape connectivity and can be used as a conservation strategy in fragmented tropical rainforest. I will also briefly present my ongoing project which focus on developing an integrated management strategy that allows for the reestablishment of ecosystem services to improve livestock production and at the same time favor the conservation of the biodiversity at Los Tuxtlas.