Invasive Species and Our Waterways
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GIS 180 - Ecosystem Management

Introduction
Water is an essential part of life for all creatures of the world. Fresh water on an island is an even more crucial subject when dealing with feral ungulates, invasive fauna, and invasive pests because they can greatly disrupt the purity of the water, spread more seeds downstream of invasive fauna, and cause erosion that puts extra stress on our precious water sources.

My motivation for this project is to understand if invasive species are being transported by our streams and if they are how can we take better precautions through conservation.

Methodology
I used shape files from the West Maui Watershed and from the Maui Invasive Species Committee to create my maps. I also used hillshades from the State of Hawaii Office of Planning website. The data that I acquired shows points of where Coqui Frogs and Strawberry Guavas are on the Island of Maui.

I used the Geoprocessing Buffer tool to show where Coqui Frogs and Strawberry Guavas are in relation to streams.

Results & Discussion
My thoughts on this project were that if through eradicating Strawberry Guavas along riverbeds and streams where the fruit can drop and be carried downstream in such great numbers that perhaps we could reduce the number of these invasive species.

Coqui Frogs with even small populations, have impacted tourism, agricultural and real estate markets, and affected residents’ quality of life. In greater abundance, populations have resulted in negative environmental impacts such as reductions in Hawaii’s invertebrate populations, which make up most of Hawaii’s endemic fauna. Maui Invasive Species Committee is diligent and steady in their efforts to eradicate the population of Coqui Frogs that we have here on Maui, Big Island is not so lucky and I hope that we never get to that point here on Maui.

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References
http://planning.hawaii.gov/gis/download-gis-data/
http://www.google.com/imgres?imgurl=http://thumbs1.ebaystatic.com/d/l225/m/m5Vd1_uBmKRt9g4DN92FIbw.jpg&imgrefurl=http://www.ebay.com/bhp/guava-tree&h=225&w=225&tbnid=UeDksHt1lqlZjM:&zoom=1&docid=kIFAHfsdbmxE7M&hl=en&ei=y-pKVc_CAoGzoQTI2IHoBg&tbm=isch&ved=0CgsQMygvMC8
https://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcTRqouveNfMHe1VlSREmyvPqnM4JaeGGA7KV0n6xURfZksN2Wcg

Problem Statement
Are Invasive Species Being Transported by Our Streams?
I first heard that Coqui Frogs were brought here on plants that were in a nursery not far from my house. During a heavy rainstorm some years ago they were washed down Maliko Gulch and began to populate that area. That got me thinking about waterways and transportation of invasive species.