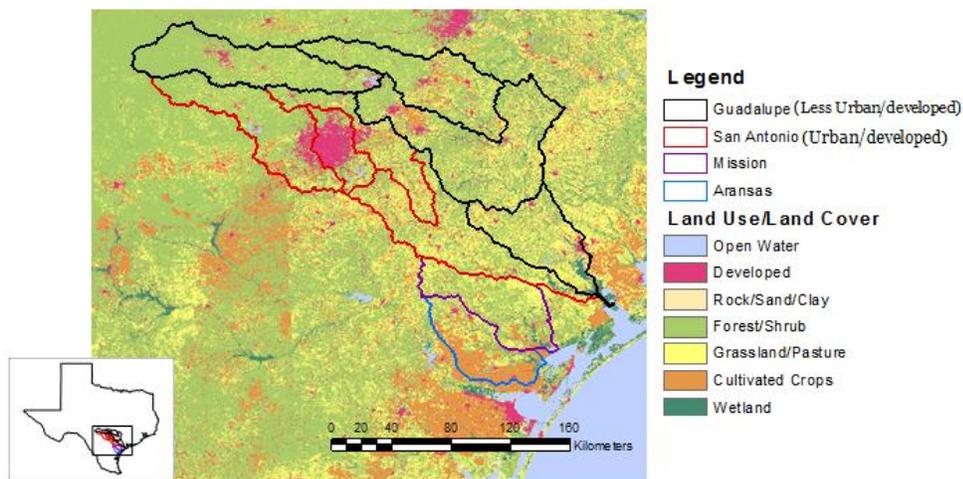


Assessing Nutrient Export in the San Antonio and Guadalupe River basins: a Preliminary Study

Objective: To assess nutrient flow using RAPID (Routing Application for Parallel computation of Discharge), a River Network Model (David et al. 2011), in the San Antonio and Guadalupe basins and quantify the impacts of urbanization. Below is a figure representing the land use/land cover of both basins. These two specific basins will serve as an urbanized case (San Antonio) and a less urbanized case (Guadalupe).

San Antonio and Guadalupe



(figure courtesy of Jim McClelland)

Proposed Methods:

As part of the NASA Interdisciplinary Science Project, I'm currently developing a nitrogen database for Texas. This database will serve as the nutrient inputs. Ahmad Tavakoly has done extensive work, in collaboration with Cedric David, on flow rate using RAPID. This project will incorporate a simple nitrogen model which will put the nutrients in the streams and RAPID will take them to the Gulf of Mexico. We will be conducting a spatial variation of nutrient flow over 1 year using USGS Stream gauge water quality data to assess the validity of our model results.

Data/Model Use: USGS Stream Gauge Data, NHDplus Data, RAPID, and nitrogen database

Collaboration: Ahmad Tavakoly