GRG 396T: Species Distribution Modeling
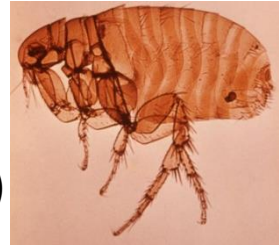
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Tuesdays 5-8; CLA 4.106
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(example syllabus available
http://www.utexas.edu/cola/files/2855309)

COURSE OBJECTIVES: While this seminar will cover some technical aspects, the main focus is to increase a student's understanding of the steps involved in **conceptualizing inferential models in a GIS environment**. Although many of the concepts of model-building and integrating spatial analysis and GIS discussed here are general enough to be appropriate for other types of inductive modeling applications, we will focus on species distribution models (SDM) as the application area. There is no formal lab component although

students are expected to be sufficiently familiar with a GIS software package (ESRI ArcGIS is recommended) in order to perform analysis for their final project as well as for a group modeling exercise. Additional experience with spatial statistics or other statistical analysis is highly recommended. An introductory GIS course is the only prerequisite, although students are expected to be very computer proficient in general.

Topics covered include:
- Vegetation theory & concepts related to SDM
- Data collection (response and predictor)
- Assessing outcomes (accuracy, transferability)
- Scale
- Uncertainty
- Spatial autocorrelation & nonstationarity
- Applications will focus on how to incorporate the effects of climate change and movement