JOB OFFERING: GIS analyst to assist with wildfire risk research

PROJECT DESCRIPTION: Center for Conservation Biology Research Specialist Erin Conlisk and Biology Professor Helen Regan are looking for a graduate student or upper division undergraduate student with strong GIS skills to participate in a project exploring how homeowners prepare for wildfire in California. Specifically, we are looking for a spatial analyst to delineate defensible space, defined as a buffer around a structure where vegetation has been altered to improve survivability during wildfire. Defensible space measurements will be matched to home price data to determine if more affluent individuals are more likely to create defensible space. These activities are part of a larger project to analyze a combination of defensible space data, home price data, census data on socioeconomic vulnerability, and post-fire CALFIRE Damage Inspection Survey (DINS) data that describes wildfire damage as a function of home building elements.

RESPONSIBILITIES: The student’s primary responsibility will be to measure defensible space using Google Earth imagery and 1-meter resolution NAIP orthophotography of residential structures that were exposed or nearly exposed to recent wildfire. Imagery will come from the most recent year prior to each fire.

The ultimate goal of the data collection is to provide a proof-of concept analysis and report for funders (UCR’s OASIS program) which would contribute to further funding requests and a manuscript for peer-reviewed publication. Depending on student experience and progress digitizing data, the student can choose to perform initial analyses comparing defensible space creation to home price data. Alternatively, the student can pass analytical tasks to collaborators.

QUALIFICATIONS: The student candidate must be familiar with:

* Displaying and manipulating spatial layers in Google Earth and ArcMap or ArcGIS Pro,
* Identifying differences in vegetation types and objects in aerial imagery,
* Measuring distances between points (among layers displayed within the same coordinate system and projection),
* Measuring areas within polygons,
* Creating buffers around points and polygons,
* Performing simple raster algebra,
* Calculating the mean raster value within polygons, and
* Editing attribute tables, including creating new fields and populating rows with new data.

The ideal candidate would also have experience using R to perform spatial analyses and simple statistical tests. Familiarity with publically available spatial datasets on vegetation, wildfire, and property boundaries would also be preferred.

PROJECT TEAM: The student will work with Research Specialist Erin Conlisk (Center for Conservation Biology) and Professor Helen Regan (Department of Biology). The team will collaborate with Dr. Alexandra Syphard at the Conservation Biology Institute (<https://consbio.org>), offering the student candidate exposure to research outside academia. The position will be funded for 20 hours/week (including tuition) for winter quarter. There is no additional funding beyond this quarter, but Dr. Conlisk would welcome student involvement in the pursuit of future funding.