POST DOCTORAL FELLOW:

Modeling Vegetation Management Effects on Ecosystem Services

Project Description: Landscape change by way of woody plant proliferation is widespread in central and western North America. The effects of woody plant expansion and 'brush management' aimed at reducing their proliferation for improved forage production and stream flow have been widely studied, and results indicate that management expectations are often not met. Reasons for this are unclear. Furthermore, effects on other ecosystem services (ESs) are largely understudied and remain unknown. As a result, we are poorly positioned to predict or objectively evaluate trade--offs or synergies associated with contrasting management scenarios. A new project, funded by the USDA, will conduct a comprehensive evaluation of vegetation management effects on a suite of ESs (e.g., forage production, plant diversity, primary production, carbon sequestration, evapotranspiration, water/sediment yield) with the aim of improving the ability of existing simulation models to predict ESs changes in managed rangelands. We seek an individual with modeling expertise to lead an effort that will compare and contrast a portfolio of ESs on instrumented watersheds with intact and cleared woody vegetation using an integrated combination of field survey, flux tower, and high resolution remote sensing data. Dynamic simulation and decision support models will be used to evaluate how contrasting land cover, climate, and management scenarios will impact the provisioning of rangeland ESs at watershed scales. The post--doctoral fellow will work with a team that includes physiological ecologists, hydrologists, resource economists, and ecosystem and remote sensing scientists at the University of Arizona (Steve Archer, Greg Barron--Gafford, Phil Guertin), Arizona State University (Enrique Vivoni), New Mexico State University (Heather Throop), and the USDA--Agricultural Research Service Southwest Watershed Research Center (Phil Heilman, Russell Scott). The successful candidate is expected to generate peer--reviewed publications in top--tier scientific journals and to serve as Co--PI on future proposals.

Requirements: Applicants should have successfully defended their dissertation or have completed their Ph.D. in ecology, hydrology, soil science or related disciplines. Demonstrated proficiency in modeling, statistics and database management including skills in R, Matlab, SAS or equivalent desirable. The position will be based at the University of Arizona in Tucson and field research will be conducted on the nearby Santa Rita Experimental Range (http://ag.arizona.edu/SRER/). Fluency in English and a valid drivers license required. Periodic field campaigns will entail challenging working conditions, including extreme temperatures.

Salary and Conditions: Salary commensurate with experience ($40,000/y base); duration is one year with funding available to extend position to a total of 3--4 years with adequate annual progress. Start date is flexible, but is expected to be mid--2015. The School of Natural Resources and the Environment at the University of Arizona (http://www.snre.arizona.edu/) has a diverse faculty, strong programs in research, graduate education, and extension, and strong ties with the UA Institute of the Environment (http://www.environment.arizona.edu/). The position offers abundant opportunity to interact across multiple universities, NGOs and federal agencies with scientists working in diverse disciplines.

Application Information: Applicants should email a cover letter, curriculum vitae, and contact information for three references to Steve Archer (sarcher@email.arizona.edu). Please use the phrase "Agroecosystems PostDoc" in the subject line of the email. The CV should contain a list of publications and information documenting relevant skills and experience. Review of applications will begin 15 February 2015 and continue until a suitable candidate is found.