

USGS Post-Doctoral Research Fellowship – Quantitative ecologist/Geographer/Physical scientist focused on the impacts of land-use land-cover change on urban ecosystem services and monarch butterfly habitat.

The United States Geological Survey is recruiting a post-doctoral scientist for a multi-disciplinary project focused on (1) understanding the consequences of land use-land cover (LULC) change on lands that support monarch butterfly migrations, (2) quantifying ecosystem services in urbanizing landscapes, and (3) using results to inform decision making. Funding for the fellowship is for 1 year and is subject to renewal up to 3 years given available funding. Remuneration is US\$ ~\$84,000, plus benefits. The post-doc will work with project co-leads Jay Diffendorfer, Mark Drummond, and Ken Bagstad (USGS Geosciences and Environmental Change Science Center), as well as Wayne Thogmartin (USGS Upper Midwest Environmental Sciences Center) and Darius Semmens (USGS Geosciences and Environmental Change Science Center). The research fellow will be in Denver, CO, at the Geosciences and Environmental Change Science Center.

The candidate will have latitude to pursue novel approaches related to the impacts of LULC change on socio-ecological systems and is expected to take lead and collaborative roles in all, or some combination, of: 1) Quantifying and understanding drivers of LULC change; 2) Developing urban ecosystem service models in ARIES ([ARTificial Intelligence for Ecosystem Services](#)) for analyses at regional and national scales; 3) Enhancing existing modeling efforts for urban natural capital accounting using the [System of Environmental Economic Accounting](#) (SEEA), and applying them to the [Colorado Front Range](#) or other regions where historic land-cover change data are available; 4) Developing methods to link observed patterns of LULC change to changes in monarch habitat across all parts of its range; 5) Analyzing the spatial pattern of monarch habitat in the Midwest and prioritizing locations for habitat restoration or enhancement.

The post-doc will participate in framing and performing analyses and authoring and presenting results of research. The project supports ongoing research and offers opportunities to collaborate with a broader community of investigators and decision makers, through the Denver Urban Field Station, the Monarch Conservation Science Partnership, and national and international natural capital accounting initiatives. The project also employs technical science staff, undergraduates, and graduate students for geospatial analysis, literature synthesis, and model development.

Applicants should possess strong skills in R and/or Python programming languages; knowledge of Java programming is a strong plus for model development in ARIES. Experience with geospatial methods/GIS skills are highly desirable as are advanced statistical expertise. Experience with economics and ecosystem services is preferred, but not a requirement for this position. The position is available as soon as a suitable candidate is found.

To apply, please prepare a cover letter, curriculum vitae, transcripts, and contact information for three references. Please send your application via email, subject line “LULC impacts.” For eligibility requirements, see (<https://www.usgs.gov/about/organization/science-support/human-capital/usgs-postdoctoral-research-fellowship-program>). The successful applicant will develop a research proposal in collaboration with research team as a requirement of the hiring process. The application and any questions should be directed to:

Jay Diffendorfer, jediffendorfer@usgs.gov
United States Geological Survey
Geosciences and Environmental Change Science Center