



Postdoctoral Researcher: Depressional Wetland Carbon modeling through DayCent

Description: The Landscape Modeling Lab (Department of Ecosystem Science and Sustainability at Colorado State University) seeks a postdoctoral researcher interested in process-based modeling of landscape-scale wetland carbon, soil, water, and plant dynamics. The successful applicant will work on multiple funded projects conducted in partnership with Ducks Unlimited, the USDA, and NASA. A primary goal will be to evaluate and adapt DayCent as a mechanism for understanding soil carbon and Green House Gas (GHG) flux in depressional wetlands enrolled in the USDA Conservation Reserve Program. Target wetlands are located in the United States High Plains and larger Great Plains region, and are sampled as part of a funded grant with multiple institutional partners, including USDA, USGS, Ducks Unlimited, and university collaborators. We welcome applicants with strong open-source modeling backgrounds who are not interested in field work. But there is also an opportunity to conduct field work within High Plains playa wetlands. These are semi-arid depressional wetlands on private agricultural and shortgrass prairie lands, across Texas, Colorado, Kansas and Nebraska. Potential field work will collect plant, water, soil, and GHG data. GHG collection may involve unmanned aerial vehicle, chamber, and/or eddy covariance tower methods.

Timing: The position is initially for one-year, but funds are in hand for performance-based extension. Start date is Spring 2025. Applicants will be reviewed in the order submitted.

Location: This position is within the Landscape Modeling Lab (www.landscapemodeling.net) in the Department of Ecosystem Science and Sustainability at Colorado State University. We are located in Fort Collins, CO, adjacent to the Rocky Mountains. There is abundant open space and hiking trails nearby.

Required qualifications: The applicant should have experience in *process-based modeling such as DayCent* and programming in an open source language, such as R. A track record of successful writing, such as publications or grants is also required.

Desired additional qualifications: Experience with DayCent or other ecosystem carbon models (example: RCEM), as well as experience with reproducible research flows and open source programming. Experience with remote sensing analyses, including remote sensing of wetlands and wetland carbon. Experience with unmanned aerial vehicle deployment and/or data processing. Experience with field work in remote environments, especially wetlands. Experience with eddy covariance carbon flux or chamber-based gas sampling and data processing is also potentially useful. A US drivers license or international equivalent and clean driving record are helpful and should be indicated in the application.

Salary: \$61,000-\$70,000 depending on experience

To apply: The lab strongly encourages all applicants to apply, regardless of demographics or nationality. Please send a cover letter outlining your interests and goals (no more than 2 pages), a curriculum vitae, and contact information for references. In your cover letter, please include your available start date, your experience with carbon modeling, whether you are interested in field work, and if you want to conduct field work, if you have a valid drivers license. These materials should be emailed as a single pdf to Jessica O'Connell (jessica.oconnell@colostate.edu), Assistant Professor, CSU. For more about the lab, see: www.landscapemodeling.net.