

CURRICULUM VITAE

Emily C. Adams

Research Scientist, Earth System Science Center, University of Alabama in Huntsville
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EDUCATION:

Old Dominion University Biology, Wetlands Concentration M.S. 2015
Thesis: Blue Carbon in Freshwater/Brackish Marshes on the Barrier Islands of Virginia:
Aboveground Productivity and Carbon Pools,

Elon University Biology / Environmental Studies B.S. 2011
Undergraduate research on aquatic and wetland plants, including vegetative propagation
techniques, plant-water relations, transpiration, chlorophyll *a* fluorescence, developing soil-
water monitoring systems, and plant growth measurements.

PROFESSIONAL EXPERIENCE:

Research Scientist, May 2021 – Present
University of Alabama in Huntsville
NASA SERVIR Science Coordination Office, NASA Marshall Space Flight Center,
Huntsville, AL.

Research Associate, April 2016 – May 2021
University of Alabama in Huntsville
NASA SERVIR Science Coordination Office, NASA Marshall Space Flight Center,
Huntsville, AL.

Center Lead, May 2015 – April 2016
NASA DEVELOP | SSAI, NASA Langley Research Center, Hampton, VA. (May 2015
– April 2016).

Team Lead, January 2015 – April 2015
NASA DEVELOP | SSAI, NASA Langley Research Center, Hampton, VA. (January
2015 – April 2015).

Team Member September 2014 – November 2014
NASA DEVELOP | SSAI, NASA Langley Research Center, Hampton, VA.

OBJECTIVES:

1. To support the application of remote sensing and geospatial technologies, inclusive of gender and other social considerations, to inform better decisions related to agriculture and food security, land use land cover change, weather and climate, and water resources.

2. To provide resources, mentorship, and inspiration to the future generation of scientists, particularly those that come from minority or disadvantaged groups.

SKILLS AND EXPERTISE:

Gender integration in applied Earth science and service planning
Advanced techniques in GIS and remote sensing for Earth science applications including moderate programming knowledge (JavaScript, python, R)
Numerical Weather Prediction, Weather Research Forecasting (WRF) model
Service design and planning for providing effective science applications

PUBLICATIONS:

- Adams, E.C.**, K. Grace, and S. Shukla (2022). Editorial: Gender and social consideration in climate and impacts research and services. *Frontiers in Climate*.
<https://doi.org/10.3389/fclim.2022.1038266>.
- Adams, E.C.**, P. Odour, A. Wahome, and G. Tondapu (2022). Reflections on two years teaching Earth Science and the Women Science (WiSci) STEAM Camp. *Journal of Women and Minorities in Science and Engineering*.
<https://doi.org/10.1615/JWomenMinorScienEng.2021033536>
- Adams, E.C.**, H.B. Parache, E. A. Cherrington, W.L. Ellenburg, V. Mishra, R. Lucey, and C. Nakalembe. (2021). Limitations of Remote Sensing in Assessing Vegetation Damage Due to the 2019–2021 Desert Locust Upsurge. *Frontiers in Climate*.
<https://doi.org/10.3389/fclim.2021.714273>
- Miller, S.E., V. Mishra, W.L. Ellenburg, **E.C. Adams**, J.B. Roberts, A. Limaye, and R. Griffin. (2021). Analysis of a Short-Term and a Seasonal Precipitation Forecast over Kenya. *Atmosphere*. <https://doi.org/10.3390/atmos12111371>
- Shukla, S., D. Macharia, G. Husak, M. Landsfeld, C.L. Nakalembe, S. L. Blakeley, and **E. C. Adams** (2021). Enhancing access and usage of earth observations in environmental decision making in Eastern and Southern Africa through capacity building. *Frontiers in Sustainable Food Systems*.
- Miller, S. E., **E. C. Adams**, K.N. Markert, L. Ndungu, W. L. Ellenburg, V. Mishra, E. R. Anderson, R. Kyumae, A. Limaye, R. Griffin, D. Irwin (2020). Assessment of a spatially and temporally consistent MODIS derived NDVI product for application in index-based drought insurance. *Remote Sensing*.
- Mugo, R., R. Waswa, J. Wanjohi, A. Ndubi, **E.C. Adams**, A. Flores (2020). Quantifying land use land cover changes in the Lake Victoria Basin using satellite remote sensing: The trends and drivers between 1985 and 2014. *Remote Sensing*.
- Ouko, E. O., S. O. Omondi, R. Mugo, A. Wahome, K. Kasera, E. Nkurunziza, A. Flores, **E. C. Adams**, S. Kuraru, M. Wambua (2020). A model for invasive plant species in Kenya's Northern Rangelands. *Frontiers in Environmental Science*. <https://doi.org/10.3389/fenvs.2020.00069>
- Cherrington, E. A., R. E. Griffin, E.R. Anderson, B.E. Hernandez Sandoval, A. I. Flores Cordova, R. E. Muench, K. N. Markert, **E. C. Adams**, A. S. Limaye, D. E. Irwin (April 2020) Use of public Earth Observation data for tracking progress in sustainable management of coastal forest ecosystems in Belize, Central America. *Remote Sensing of Environment*
- Ndungu L.W., A. M. Oware, S. O. Otineo, A. M. Wahome, **E. C. Adams** (December 2019). Application of MODIS NDVI for Monitoring Kenyan Rangelands through a Web Based

Decision Support Tool Manuscript. *Frontiers in Environmental Science*.
<https://doi.org/10.3389/fenvs.2019.00187>

- Kotikot, S., A. Flores, R.E. Griffin, J. Nyaga, J. Case, R. Mugo, A. Sedah, **E. Adams**, A. Limaye, D. Irwin (Septmeber 2019). Statistical Characterization of Frost Zones: Case of Tea Freeze Damage in the Kenyan Highlands. *International Journal of Applied Earth Observation and Geoinformation*. <https://doi.org/10.1016/j.jag.2019.101971>
- Thomas, E., C. Nagel, J. Needoba, D. Kaberia, J. Butterworth, R. Mugo, P. Odour, D. Macharia, F. Mitheu, **E. Adams** (2019) Quantifying increased groundwater demand from prolonged drought in the East African Rift Valley. *Science of the Total Environment*.
- Gidudu, A., R. Mugo, L. Letaru, J. Wanjohi, R. Nakibule, **E. Adams**, A. Flores, B. Page, and W. Okello (2018) Evaluation of satellite retrievals of water quality parameters for Lake Victoria in East Africa. *African Journal of Aquatic Science*,
- Day, F.P., **E. C. Adams**, L. A. Gibala-Smith, D.J. Graziana, B. McMillan, N. Sedghi, J. Shafer, and M. Smith (2018) A decade of change in coastal barrier island dune vegetation following a decade of nitrogen fertilization. *Journal of Coastal Research*,
- Sedghi, N., **E. C. Adams**, and F. P. Day (2017) Carbon input and accumulation in freshwater to brackish marshes on the Barrier Islands of Virginia, USA. *Wetlands*,
- Adams, E.C.**, I. D. Valle-Martinez, M. Harris and S. Zimmerman (2015) Impact of decreasing lake water levels on Great Lakes Wetlands. Earthzine Virtual Poster Session,
- Maldonado Jaime, J. **E. C. Adams**, L. Cuker, K. Currie, L. Freese, M. Harris, P. King, and D. Marx (2014) Are they disappearing? Georgian Bay wetland response to changing water levels. Earthzine Virtual Poster Session,
- Touchette, B.W., **E. C. Adams**, P. Laimbeer, and G. A. Burn (2012) Age specific responses to salinity stress in the coastal salt marsh plant black needlerush (*Juncus roemarianus* Scheele) as determined through polyphasic chlorophyll a fluorescence transients (OJIP). *Marine Biology*,
- Touchette, B. W., M. Poole, M. D. McCullough, **E.C. Adams**, and C. E. Niedziela (2011) Vegetative Propagation in the Emergent Macrophyte American Water Willow (*Justicia americana* L. Vahl). *Journal of Aquatic Plant Management*,
- Touchette, B.W., M. R. Poole, M.D. McCullough, G.A. Smith, and **E. C. Adams** (2010). Coastal plant growth and CO₂ enrichment: Can the productivity of black needle rush keep pace with sea level rise? *Proceedings of the 21st international Meeting of the Coastal Society, Shifting Shorelines: Adapting to the Future*. Wilmington, NC.

SELECTED PROFESSIONAL PRESENTATIONS:

- “Making GAIINS – Gender-Sensitive Agricultural Index-Based Insurance” **E.C.Adams**, A. Wanjau, A. Wahome, B. Kenduiyowo, D. Macharia, D. West, E. Anderson, F. Otieno, F. Rono, G. Hartman, G. Koech, J. Nnassuna, J. Nackoney, J. Kiogora, J. Murage, M. Gamoyo, P. Odour, R. Mugo, S. Miller, and S. Masese. *International Conference on Inclusive Insurance (October 2022)* *Invited
- “Limitations of remote sensing for assessing damage caused by Desert Locusts during the East Africa upsurge” **E.C. Adams**, H. Blue Baldwin, E. A. Cherrington, W. L. Ellenburg, C. Nakalembe, V. Mishra, R. Lucey, R. Sahajpal. *American Geophysical Union Fall Meeting (December 2020)*. * Invited
- “Engaging and Inspiring young women in STEAM: NASA SERVIR's contributions to the Women in Science (WiSci) STEAM Camps” **E.C. Adams**, P. Odour, A.M. Wahome, G. Tondapu, A.B. Thomas, D. Macharia. *American Geophysical Union Fall Meeting (December 2019)*.

- “Forecasting Frost: Using high resolution WRF runs to predict frost occurrence in the tea growing regions of Kenya” **E.C. Adams**, J.N. Wanjohi, W.I. Ellenburg, A. S. Limaye, R. M. Mugo, A. Flores, D. Irwin, J. Case, S. Malaso, A. Sedah. Joint Satellite Conference (October 2019).
- “Bringing Space to Village” SERVIR Global’s STEAM outreach and learning opportunities for youth” **E.C. Adams**, P. Oduor, A. Wahome, R. Thapa, K. Kasera, K. Mubea, G. Tondapu, T. Debass, A. Nelson, L. Ettinger, K. Casey, A. Flores, R. Muench. American Geophysical Union Fall Meeting (December 2018).
- “Designing a frost forecasting service for small scale tea farmers in East Africa” **E.C. Adams**, J.N. Wanjohi, W.I. Ellenburg, A. S. Limaye, R. M. Mugo, A. Flores, D. Irwin, J. Case, S. Malaso, A. Sedah. American Geophysical Union Fall Meeting (December 2017).
- “Using Esri story map technology to demonstrate SERVIR Global success stories” **E. C. Adams**, A. Flores, R. Muench, D. Coulter, A.S. Limaye, D. Irwin. American Geophysical Union Fall Meeting (December 2016)
- “Blue carbon in coastal freshwater marshes on the barrier islands of Virginia: Aboveground carbon pools.” **E. C. Adams** and F. P. Day. Ecological Society of America Annual Meeting, Baltimore, MD (August 2015).
- “Great Lakes Climate: Impact of Decreasing Water Levels on Great Lakes Wetlands,” **E. C. Adams**, I. Del Valle Martinez, M. Harriz, S. Zimmerman, J. Maldano, L. Cuker, K. Currie, L. Freese, P. King, and D. Marx. Great Lakes and St. Lawrence Cities Initiative Annual Meeting, Sarnia, ON, CA (June 2015).
- “Blue carbon in coastal freshwater marshes on the barrier islands of Virginia: Above ground carbon pools.” **E.C. Adams** and F. P. Day. Joint Aquatic Sciences Meeting, Portland, OR (May 2014)
- “Blue carbon in coastal freshwater marshes on the barrier islands of Virginia: Above ground carbon pools.” **E.C. Adams** and F. P. Day. Association of Southeastern Biologists meeting, Spartanburg, SC (April 2014)
- “Blue carbon in coastal freshwater marshes on the barrier islands of Virginia.” **E.C. Adams** and F. P. Day. Long Term Ecological Research All Scientists Meeting, Estes Park, CO (September 2012)
- “Salinity stress on different age classifications of black needle rush as determined through chlorophyll fluorescence.” **E. C. Adams** and B.W. Touchette. Student Undergraduate Research Forum, Elon, NC (April 2011).

ADDITIONAL ACTIVITIES AND AWARDS:

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| 2022 | NASA Diversity, Equity, and Inclusion Medal |
| 2021 | The University of Alabama in Huntsville, Earth System Science Center, Meritorious Service Award |
| 2020 | Elon University, Top 10 Under 10 Alumni Award Recipient |
| 2020 | SERVIR Global Collaboration Award, SAR Handbook Team |
| 2017-2020 | Coordinator and curriculum provider for NASA representation at the Women in Science “WiSci” Girls STEAM Camp (Malawi 2017, Namibia 2018, Estonia 2019, Kosovo 2019, Virtual Morocco 2020) |

- 2018 NASA Group Achievement Award MSFC Hurricane Harvey Disaster Response Team
- 2018 NASA Marshall Space Flight Center “Essential to the Mission”
<https://www.nasa.gov/centers/marshall/about/star/star180307.html#four>
- 2017 NASA Marshall Space Flight Center Science and Technology Office Peer Award
“Above and Beyond”