

Marie J. Johnson

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EDUCATION

- Current: **Ph.D.** student. Systems Ecology. Department of Ecosystem and Conservation Sciences. W.A. Franke College of Forestry & Conservation, University of Montana
Focus: *'Leveraging satellite and airborne remote sensing to investigate the resilience of forests to wildfire across the western US.'*
Advisor: Dr. Ashley Ballantyne
Coursework: Ecosystem Climatology, Integrated Systems Ecology, Spatial Statistics, **Machine Learning**, Data Visualization, The Food-Energy-Water Nexus, Science Communication
- March 2017 **MSc.** Biology. Department of Biology, New Mexico Institute of Mining and Technology *'Bioremediation of the Peroxide Explosive Methyl Ethyl Ketone Peroxide by Horseradish Peroxidase'*
Advisor: Dr. Paul Calvert
Coursework: Ecology, Introduction to GIS, Evolutionary Biology, Microbiology, Statistics, Animal Microbiomes, Applied Bioinformatics, Introduction to Explosives Engineering, Scientific Communication
- May 2012 **BSc.** Biology. Department of Biology, University of Minnesota-Twin Cities
Coursework: Biochemistry, Genetics, Cell Biology, Organismal Biology, Animal Behavior, Physiology, Physics, General and Organic Chemistry, Calculus, Statistics

AWARDS AND MEMBERSHIPS

Fellowships

- 2019 National Research Traineeship Ph.D. Fellowship, UM BRIDGES: Bridging the Food-Energy-Water Nexus, University of Montana
- 2018 Data Science Fellowship, National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara

Internships

- 2022 NASA Jet Propulsion Lab, Pasadena, California

Professional Organizations

- 2018 Women in Science Task Force, National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara
- 2015-2016 National Energetic Materials Initiative
- 2011-2014 Emergency Department Unit Practice Council, Regions Hospital

PUBLICATIONS, PRESENTATIONS & PRODUCTS

Publications

- Hoylman, Z.H., K.G. Jencso, V. Archer, J. Efta, Z. Holden, A. Ballantyne, & **M.J. Johnson**. 2021. The influence of hydroclimate and management on forest regrowth across the western U.S. *Environmental Research Letters*.
- Johnson M.J.**, S.A. Tekmen, & M.A. Bee. 2013. *Hyla chrysoscelis* (Cope's gray treefrog) breeding activity. *Herpetological Review*. 44 (3): 495.

In Review

1. **Johnson M.J.** Orchids of Wayqecha. *Rapid Color Guides*. The Field Museum of Natural History.

In Prep

1. Yang, Di; Mitchell, Jessica; Rock, Ryan; Tobalske, Claudine; Hart, Melissa; **Johnson, Marie** *Leveraging NEON data to investigate remote sensing of biodiversity variables and scaling implications*
2. Workshop participants, **Johnson, Marie** *Broadening the use of NASA datasets by the species distribution modeling community*

Presentations

1. Johnson, Marie. (2021, December) *Estimating Forest Resilience to Wildfire in Northwestern Montana*. **Talk presented at** American Geophysical Union, Fall Meeting
2. Johnson, Marie. (2020, December) *Forest resilience to fire in the western US*. **Talk presented at** the University of Montana's graduate research conference (GradCon)
3. Johnson, Marie. (2020, December) *Forest resilience to fire in the western US: a test case for using satellite metrics to assess spatial and temporal patterns of forest recovery*. **Poster presented at** American Geophysical Union, Fall Meeting
4. Johnson, Marie. (2019, December) *Women in Science*. **Talk presented at** National Center for Ecological Analysis and Synthesis, Roundtable presentation
5. Johnson, Marie. (2016, August) *Biodegradation of Peroxide-Based Explosives using Horseradish Peroxidase*. **Poster presented at** New Mexico Institute of Mining and Technology, National Energetic Materials Initiative Poster Session
6. Johnson, Marie. (2014, October) *Doing it in the Dark: Reproductive timing in *Hyla chrysoscelis* (Cope's gray treefrog) breeding activity*. **Poster presented at** New Mexico Institute of Mining and Technology 125th Anniversary Poster Session

Products

1. Yang, Di; Mitchell, Jessica; Rock, Ryan; Tobalske, Claudine; Hart, Melissa; **Johnson, Marie** (2021): NEON Biodiversity Mapping Tools (Bio_NEON). figshare. Software.

RESEARCH EXPERIENCE

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| 2021 | 'Leveraging NEON data to investigate remote sensing of biodiversity variables and scaling implications' Spatial Analysis Lab, University of Montana |
| 2017 | <i>'Estimation of Aboveground Forest Biomass using Tree-Level Models'</i> , University of Montana |
| 2015-2017 | <i>'Bioremediation of Explosives'</i> , New Mexico Institute of Mining and Technology |
| 2012 | <i>'Biodiversity Assessment of a Peruvian Cloud Forest'</i> , Amazon Conservation Association |
| 2010-2012 | <i>'Acoustic Communication in Gray Treefrogs'</i> , University of Minnesota Twin-Cities |

PROFESSIONAL EXPERIENCE

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| 2021-2022 | Workshop Personnel, Spatial Analysis Lab, University of Montana 'Broadening the use of NASA datasets by the species distribution modeling community' |
| 2017 | Forest Research Technician, Department of Forest Management, University of Montana |
| 2014-2017 | Graduate Research Assistant, Department of Biology, New Mexico Institute of Mining and Technology |
| 2009-2014 | Emergency Room Technician, Emergency Department, Regions Hospital. St. Paul, Minnesota |

COMPUTER SKILLS AND LANGUAGES

Programming languages

Python, R

Software:

Google Earth Engine, ArcGIS, QGIS, Tableau, Paraview, ImageJ, Oriana, Cytoscape

TEACHING EXPERIENCE

2016 Social Science, New Mexico Institute of Mining and Technology

2014 Biology, New Mexico Institute of Mining and Technology

2009-2010 Math Tutor, Century College