

## 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

1. 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*.
2. **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 125<sup>th</sup> 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      | <b>'Leveraging NEON data to investigate remote sensing of biodiversity variables and scaling implications'</b> 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<br><b>'Broadening the use of NASA datasets by the species distribution modeling community'</b> |
| 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