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EDUCATION

- Present **Ph.D.**, University of Nebraska, Lincoln, Nebraska
Dissertation: Complex adaptive system transformations: Studying cross-scale patterns and processes using wildfire
- 2015 **M.Sc.**, Laurentian University, Sudbury, Ontario
Thesis: Monitoring landscape and spatial behavioural outcomes of large scale forest management for boreal caribou (*Rangifer tarandus caribou*) in upland and lowland forests of Ontario, Canada
- 2012 **B.Sc.** with Distinction, Queen's University, Kingston, Ontario
Thesis: Effects of lake water vertical variation in dissolved oxygen on selection among *Daphnia pulicaria* genotypes

PROFESSIONAL APPOINTMENTS

- 2019 **Visiting Scholar**, College of Agriculture & Natural Resources, Department of Forestry, Michigan State University, Lansing, Michigan

PUBLICATIONS (*denotes student under my supervision)

Peer-Refereed Journal Articles

10. Angeler DG, Fried-Petersen HB, Allen CR, Garmestani A, Twidwell D, Chuang W, **Donovan VM**, Eason T, Roberts CP, Sundstrom SM, Wonkka CL. 2019. Adaptive capacity in ecosystems. *Advances in Ecological Research*, 60, 1-24. [Impact Factor: 5.06, Citations: 1]
9. **Donovan VM**, Roberts CP, Wonkka CL, Wedin D, Twidwell D. 2019. Ponderosa pine regeneration, wildland fuels management, and habitat conservation: Identifying trade-offs following wildfire. *Forests*, 10(3), 286. [Impact Factor: 1.96]
8. Roberts CP, **Donovan VM**, Wonkka CL, Powell L, Allen CR, Angeler DG, Wedin D, Twidwell D. 2019. Fire legacies in eastern ponderosa pine forests. *Ecology and Evolution*, 9(4), 1869-1879. DOI: 10.1002/ece3.4879 [Impact Factor: 2.34, Citations: 1]
7. Wonkka CL, Twidwell D, Allred B, Bielski C, **Donovan VM**, Roberts CP, Fuhlendorf S. 2019. Rangeland vulnerability to state transition under global climate change. *Climatic Change*. 1-20. DOI: 10.1007/s10584-018-02365-7 [Impact Factor: 3.54]

6. Keele E*, **Donovan VM**, Roberts CP, Nodskov S*, Wedin D, Allen CR, Powell L, Wonkka CL, Angeler DG, Twidwell D. 2019. Relationships between wildfire burn severity, cavity-nesting bird assemblages, and habitat in an eastern ponderosa pine forest. *American Midland Naturalist*, 181(1):1-18. DOI: 10.1674/0003-0031-181.1.1 [Impact Factor: 0.47, Citations: 2]
5. **Donovan VM**, Burnett JL, Bielski C, Birgé HE, Bevans R, Twidwell D, Allen CR. 2018. Social-ecological landscape patterns predict woody encroachment from native tree plantings in a temperate grassland. *Ecology and Evolution* 8(19), 9624-9632. DOI: 10.1002/ece3.4340 [Impact Factor: 2.34, Citations: 1]
4. Roberts CP, Twidwell D, Burnett JL, **Donovan VM**, Wonkka CL, Bielski CL, Garmestani A, Angeler DG, Eason T, Allred BW, Jones MO, Naugle DE, Sundstrom SM, Allen CR. 2018. Early warnings for state transitions. *Rangeland Ecology and Management*, 71(6): 659-670. DOI: 10.1016/j.rama.2018.04.012 [Impact Factor: 1.97, Citations: 1]
3. **Donovan VM**, Wonkka CL, Twidwell D. 2017. Surging wildfire activity in a grassland biome. *Geophysical Research Letters*, 44: 5986–5993. DOI: 10.1002/2017GL072901 [Impact Factor: 4.34, Citations: 17]
2. **Donovan VM**, Mallory FF, Brown GS. 2017. The impacts of forest management strategies for woodland caribou (*Rangifer tarandus caribou*) vary across biogeographic gradients. *PLOS One*, 12(2): e0170759. DOI: 10.1371/journal.pone.0170759 [Impact Factor: 2.77, Citations: 6]
1. Popp JN and **Donovan VM**. 2016. Fine scale tertiary road features influence wildlife use: A case study of two major North American predators. *Animal Biology*, 66: 229-238. DOI: 10.1163/15707563-00002500 [Impact Factor: 0.62, Citations: 3].

Book Chapters:

1. **Donovan VM**, Popp JN. 2017. *Linear corridors and predator movement dynamics in the Great Lakes Basin*. In: Freedman E, Neuzil M (Eds), *Biodiversity, Conservation and Environmental Management in the Great Lakes Basin*. Routledge, New York: 88-98. [Citations: 1]

Submitted Work:

3. **Donovan VM**, Wonkka CL, Wedin D, Twidwell D. Planning for future wildfire: The contribution of land use types to wildfire exposure in the Great Plains. *Earth's Future* (Status: Under second round review).
2. **Donovan VM**, Roberts CP, Wonkka CL, Wedin D, Allen C, Angeler DG, Drijber R, Twidwell D. Collapse, reorganisation, and regime identity. *Ecological Applications*. (Status: Under Review)
1. Roberts CP, **Donovan VM**, Allen CR, Angeler DG, Helzer C, Wedin D, Twidwell D. Incorporating spatial resilience and regimes into ecological monitoring. *Journal of Applied Ecology*. (Status: Submitted)

In Preparation:

2. **Donovan VM**, Twidwell D, Uden D, Wardlow BD, Tadesse T, Bielski CH, Allen CR, Allred B, Jones M, Naugle D. The resilience of a grassland biome to large, ‘catastrophic’ wildfire. Target Journal: *Global Environmental Change*.

1. **Donovan VM**, Roberts CP, Wonkka CL, Beck JL, Popp JN, Allen CR, Twidwell D. Range-wide monitoring for broad-scale conservation and restoration: Assessing translocation outcomes on Rocky Mountain bighorn sheep. Target Journal: *Conservation Biology*.

GRANTS, AWARDS, AND FELLOWSHIPS

Grants and Awards:

- 2019 National Socio-Environmental Synthesis Center (SESYNC) Short Course: Teaching Socio-environmental synthesis with case studies, Annapolis, Maryland (\$5,000 USD)
Title: Biome-scale woody plant transitions in the Great Plains
Authors: D Fogarty, VM Donovan, D Uden, C Barnes
- 2017-19 Great Plains Fellow, Center for Great Plains Studies, Lincoln, NE, (\$750 USD annually)
- 2018 Science with a Story Grant, Center for Grassland Studies, Lincoln, NE (\$500 USD)
- 2018 Canadian Institute of Forestry Conference Travel Award, Grande Prairie, Alberta (\$1,000 CAD)
- 2017 Hutchinson Travel Award, University of Nebraska, Lincoln NE (\$250 USD)
- 2015 Esri Canada GIS Scholarship Award, Sudbury, ON (\$1,500 CAN, lifetime subscription to ArcGIS software, ArcGIS textbooks, ESRI online courses)
- 2015 Ruffed Grouse Society Wildlife Conservation Bursary, Sudbury, ON (\$840 CAN)
- 2014 The Wildlife Society Student Travel Grant, 2014 Wildlife Society Conference, Pittsburgh, PA (\$450 USD)
- 2008 Excellence Scholarship, Queen's University, Kingston, ON (\$1,500 CAD)

Fellowships:

- 2019 Preparing Future Faculty Fellow, University of Nebraska, Lincoln, NE
- 2017-19 Great Plains Fellow, Center for Great Plains Studies, Lincoln, NE

Unfunded Proposals:

- 2018 Wyoming Governor's Big Game License Coalition Grant, VM Donovan, J Beck, D Twidwell, Fire outcomes for bighorn sheep habitat (\$7,558 USD)
- 2016 Joint Fire Science Graduate Research Innovation Award, VM Donovan, D Twidwell, CR Allen, CL Wonkka, Identifying earlier signals of pending shifts in large wildfire size (\$25,000 USD)

PRESENTATIONS (*denotes student under my supervision)

Organised Symposia:

1. Advancing resilience science for ecological restoration. **VM Donovan**, D Fogarty, CR Allen, W Bond, K Maciejewski. Society for Restoration Ecology, Cape Town, South Africa, Sept 2019
(*Accepted symposium*)

Invited presentations:

4. Tracking wildfire driven regime shifts across a biome: Implications for ecosystem restoration. **VM Donovan**, D Twidwell. Society for Restoration Ecology, Cape Town, South Africa, Sept 2019
(*Accepted abstract*)
3. The impacts of changing forest management strategies for woodland caribou, **VM Donovan**, GS Brown, FF Mallory, Canadian Institute of Forestry Conference, Sept 2018.
2. Changing wildfire trajectories and future implications for Great Plains ecosystems, **VM Donovan**, CL Wonkka, D Twidwell, Midwest Fish and Wildlife Conference, Feb 2017
1. Long-term legacy effects of a mixed-severity wildfire in eastern ponderosa pine. CP Roberts, **VM Donovan**, D Wedin, CR Allen, L Powell, CL Wonkka, DG Angeler, D Twidwell, Midwest Fish and Wildlife Conference. Feb, 2017.

Contributed presentations:

9. Collapse, reorganisation, and regime identity, **VM Donovan**, CP Roberts, CL Wonkka, DR Uden, DG Angeler, CR Allen, DA Wedin, RA Drijber, D Twidwell, 12th North American Forest Ecology Workshop, June 2019.
8. Multi-scale vegetation response to large wildfire across the Great Plains, **VM Donovan**, D Uden, BD Wardlow, T Tadesse, CH Bielski, B Allred, M Jones, D Naugle, D Twidwell, US International Association of Landscape Ecology 2019 Annual Meeting, April 2019.
7. Characterising large wildfire patterns in the Great Plains, **VM Donovan**, CL Wonkka, D Twidwell, Society for Range Management 72nd Annual Meeting, Feb 2019.
6. Post-fire management legacy effects in severely burned ponderosa pine savanna. **VM Donovan**, CP Roberts, CL Wonkka, D Wedin, D Twidwell, Nebraska Natural Legacy Conference, Oct 2017
5. Alternative grass:woody states correspond to changing large wildfire patterns. **VM Donovan**, CL Wonkka, D Twidwell, Ecological Society of America Annual Conference, Aug 2017
4. The influence of fire severity on community structure in Nebraska's Pine Ridge. **VM Donovan**, CP Roberts, CL Wonkka, D Twidwell, Nebraska Natural Legacy Conference, Oct 2016
3. Long-term legacy effects of a severe wildfire in eastern ponderosa pine. CP Roberts, **VM Donovan**, D Wedin, CR Allen, L Powell, CL Wonkka, DG Angeler, D Twidwell, Nebraska Natural Legacy Conference, Oct 2016

2. Forest management of boreal caribou in Ontario: are habitat guidelines effective? **VM Donovan**, GS Brown, FF Mallory, Evolution in Action Symposium, Laurentian University, Feb 2015
1. Forest management of boreal caribou in Ontario: are habitat guidelines effective? **VM Donovan**, GS Brown, FF Mallory, 2014 Annual Wildlife Society Conference, Oct 2014

Poster Presentations:

8. Post-fire management alters structural and community characteristics of eastern ponderosa pine forest. **VM Donovan**, CP Roberts, CL Wonkka, D Wedin, D Twidwell. Canadian Institute of Forestry Conference, Sept 2018
7. Patterns of woody encroachment from native tree plantings in a temperate grassland. **VM Donovan**, Burnett JL, Bielski C, Birgé HE, Bevans R, Twidwell D, Allen CR. Great Plains Grassland Summit, April 2018
6. Patterns of woody encroachment from native tree plantings in a temperate grassland. **VM Donovan**, Burnett JL, Bielski C, Birgé HE, Bevans R, Twidwell D, Allen CR. Nebraska Prescribed Fire Conference, Dec 2018
5. Linking surging wildfire activity to the grass-forest continuum in the Great Plains. **VM Donovan**, CL Wonkka, D Twidwell. Nebraska Prescribed Fire Conference, Dec 2017
4. Influences of mixed severity and time since fire on diversity in ponderosa habitats. Nodskov S*, Roberts CP, **Donovan VM**, Keele E*, Wedin D, Allen CR, Powell L, Wonkka CL, Angeler DG, Twidwell D. Midwest Fish and Wildlife Conference, Feb 2017
3. Surging wildfire activity in the Great Plains. **VM Donovan**, CL Wonkka, D Twidwell. Nebraska Prescribed Fire Conference, Dec 2016
2. Long-term legacy effects of mixed-severity wildfire in eastern ponderosa pine. CP Roberts, **VM Donovan**, L Powell, Allen CR, Wonkka CL, Wedin D, Twidwell D. Nebraska Prescribed Fire Conference, Dec 2016
1. Effects of dissolved oxygen on zooplankton dynamics and selection among Daphnia genotypes, **VM Donovan**, WA Nelson, SE Arnott, Undergraduate Biology Seminars, Queen's University, Feb 2012

TEACHING EXPERIENCE

Courses Developed:

Rangeland Research, upper-level undergraduate independent study course, University of Nebraska

Teaching Positions:

Primary Instructor, Rangeland Research, University of Nebraska (2016, 2018-19)

Course Description: Undergraduate research course that mentors students in scientific research and writing. Specifically, students learn how to ask scientific questions, conduct scientific research, write to scientific and outreach outlets, and present research at scientific conferences.

Course Products: Student led manuscript published in American Midland Naturalist, student led poster presentation at a regional conference

Primary Instructor, Ecosystem Monitoring and Assessment, University of Nebraska (2018)

Course Description: Upper level undergraduate/graduate course, composed of both a lecture and field component that teaches students how to measure and monitor vegetation and environmental factors that are used to develop management guidelines for grasslands, savannahs, woodlands, and wetlands. A major component of the course included a term project focused on allowing students to work collaboratively with local land managers to conduct analyses and create outreach products requested by managers.

Course Products: This course resulted in a number of pamphlets and a webpage as outreach materials for managers to utilise in the Prairie Corridor.

Teaching Assistant, Ecosystem Monitoring and Assessment, University of Nebraska (2016, 2017)

Description of Duties: I was in charge of coordinating and implementing a term project for undergraduate and graduate students that collaborated with managers at a local urban forest (Fontenelle Forest in Omaha). Students worked with forest staff to design and implement projects that used monitoring data to inform the public on the forest's prescribed burning program. I also developed and implemented online and field learning modules that allowed students to practice their monitoring techniques.

Products: An interactive educational webpage on prescribed fire, including a short film and outreach materials created by students, that is linked to Fontenelle Forest's webpage. Accessible from: <https://agronomy.unl.edu/fire-urban-forest-project#other>. Online modules for practicing monitoring techniques using google earth software to measure ecological data from satellite imagery, making class accessible to distance students.

Teaching Assistant, Experimental Methods, Laurentian University (2015)

Description of Duties: Assisted with grading student assignments and held office hours for students to discuss questions on course content.

Teaching Assistant, Field Camp and Report, Laurentian University (2013, 2014)

Description of Duties: Developed and implemented field learning modules that included teaching undergraduate students how to collect, measure, analyse and interpret aquatic invertebrate field data, how to use radio telemetry equipment, how to identify plants, forestry field techniques and equipment, and how to identify mammal diet through scat analysis. I also hosted two guest lectures.

Teaching Assistant, Principles of Ecology, Laurentian University (2013, 2014)

Description of Duties: I ran field and laboratory sessions for undergraduate students where I taught students how to collect, analyse, interpret and write scientific reports on ecological data through both lectures and hands on field and lab work.

Products: I developed a lecture and associated power point presentation on scientific writing that was integrated into subsequent lab sections by the lab coordinator.

Teaching Assistant, Biology II, Laurentian University (2014)

Description of Duties: I ran laboratory sessions for undergraduate students where I taught basic plant and animal classification and physiology both through lectures and hands on student lab work.

Undergraduate Students Mentored:

Briana Kouma, undergraduate student, University of Nebraska, Lincoln, NE, 2019

Project: Urban perceptions of prairie threats and management

Jacob Wagner, undergraduate student, University of Nebraska, Lincoln, NE, 2017

Project: Controlling huisache encroachment using extreme fire

Sarah Nodskov, undergraduate student, University of Nebraska, Lincoln, NE, 2016

Project: The influence of severity and time-since-fire on habitat diversity in eastern ponderosa pine habitats

Emma Keele, undergraduate student, University of Nebraska, Kearny, NE, 2016

Project: Relationships between wildfire burn severity, cavity-nesting bird assemblages, and habitat in an eastern ponderosa pine forest

PROFESSIONAL SERVICE

Service to Profession:

Session Moderator, Great Plains Symposium, Center for Great Plains Studies, 2018

Invited Speaker, Open webinar hosted by The Great Plains Fire Science Exchange, Surging wildfire activity in the Great Plains biome, **VM Donovan**, CL Wonkka, D Twidwell., 2017. Accessible from: <http://www.gpfirescience.org/events-webinars-source/2017/8/25/webinar-surging-wildfire-in-the-great-plains-biome>

Reviewer, Biophysical Settings Models (BpS) update, LANDFIRE Project, 2017

Committee Member, Sudbury Elk Restoration Committee, Sudbury, Ontario, 2013-15

Campus and Departmental Service:

Invited Speaker, Center for Grassland Studies Fall Seminar Series, University of Nebraska, 2019

Committee Member, Search committee for Great Plains Forestry faculty position, School of Natural Resources, University of Nebraska, 2018

Invited Speaker, National Research Traineeship (NRT) Meeting, University of Nebraska, 2018.

Invited Speaker, Agronomy and Horticulture Undergraduate Recruiting Event, University of Nebraska, 2017.

Industry/Agency Reports:

3. Dwinnell S, **VM Donovan**, K Monteith. 2019. Trends in dispersal and resource use of Ferris-Seminole bighorn sheep, 2019 Research Brief. Wyoming Game and Fish Department. 19 pp.
2. Twidwell D, CL Wonkka, **VM Donovan**, CP Roberts. 2017. Impact of severe wildfires on the pine forest and mixed-grass prairie vegetation of the Pine Ridge Biologically Unique Landscape. Nebraska Game and Parks Commission. 48 pp.

1. Twidwell D, CH Bielski, JL Burnett, **VM Donovan**, CL Wonkka. 2017. Review of LANDFIRE Biophysical Settings Models (BpS) in the Great Plains. LANDFIRE Project. 67 pp.

Committees, Working Groups, and Professional Memberships:

- 2019 US-IALE Member
- 2019 Society for Range Management Member
- 2016-19 Complexity Science Working Group, University of Nebraska
- 2017-19 Eastern Red Cedar Working Group, University of Nebraska
- 2016-17 Women in Science, University of Nebraska

Peer-Reviewer:

- Ecology and Society
- Ecosphere
- Eco-science
- Forests
- Landscape Ecology

Community Lectures and Presentations

Boreal caribou and forest management in Ontario, **VM Donovan**, GS Brown, FF Mallory, Sudbury Naturalist Society, 2015.

Outreach and Science Communication Products

Twidwell D, CR Allen, D Fogarty, C Bielski, **VM Donovan**, CP Roberts, CL Wonkka. 2018. Scientific report on eastern redcedar invasions: causes, consequences, and technical guidance. Nebraska Legislature. 20 pp.

Fire in the Urban Forest Project Website, Access from: <https://agronomy.unl.edu/fire-urban-forest-project>, 2017

You Tube Video, *Tori Donovan's Research on the Woodland Caribou*, Producers: Cassandra Elliott and Maxine Myre, Laurentian University, 2014

NATIONAL/INTERNATION RECOGNITION AND IMPACT

Contacted and interviewed by Plimsoll Productions to discuss wildfires in grasslands for a Netflix documentary.

Research listed by EPA on their website as an example of the applications of EPA ecoregions

Research presented by the Nebraska Forest Service at a workshop on fuels reduction and utilization hosted in Springview, Nebraska.

Research cited by the National Management Plan for the Eastern Wolf in Canada, drafted by Environment and Climate Change Canada as part of the Species at Risk Act Management Plan Series.

TV and Radio Interviews

- NET Radio
- Farm Journal Media

News and Media Coverage

The Washington Post
The Independent
NET Nebraska News
Climate Central
Harvest Public Media
Inside Climate News
Nebraska Today

Omaha World-Herald
Wichita Public Radio
Kansas City University Radio
Grist
Sott
Santa Fe New Mexican
Salon

Star Tribune
Nebraska Farmer
AgWeb
Planetizen
High Plains Public Radio
Kiowa County Independent

PROFESSIONAL DEVELOPMENT

Invited Attendee, SESYNC short-course: Teaching Socio-environmental synthesis with case studies, Annapolis, Maryland, July 2019

Attendee, Sharing Science on LGBTQ Day webinar hosted by the American Geophysical Union, June 2019

Fellow, Preparing Future Faculty 3 week seminar course, University of Nebraska Lincoln, May 2019

ADDITIONAL PROFESSIONAL EXPERIENCE

- 2013-15 Wildlife Field Technician, Sudbury Elk Restoration Committee, Laurentian University, Sudbury, Ontario
- 2014 Wildlife Field Technician, Eco-Kare International, Sudbury, Ontario
- 2012-13 Animal Care Attendant, Ontario SPCA Lennox-Addington, Napanee, Ontario
- 2012 Wildlife Rehabilitation Intern, Sandy Pine Wildlife Rehabilitation Center, Napanee, Ontario
- 2011-12 Undergraduate Research Assistant, Experimental and Mathematical Population Biology Lab, Queen's University, Kingston, Ontario
- 2011 Field and Lab Technician, Dynamic Ecosystem Health Lab, Queen's University, Kingston, Ontario
- 2010 Field and Lab Technician, Experimental and Mathematical Population Biology Lab, Queen's University, Kingston, Ontario
- 2009 Waters Laboratory Technician, Ontario Agency for Health Protection, Kingston, Ontario

COMMUNITY INVOLVMENT

- 2016-19 'Big Sister' (youth mentor) with the Heartland Big Brothers Big Sisters program in Lincoln, Nebraska