

# Daniel J. Herrera

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www.HerreraWildlife.com  
HerreraWildlife@gmail.com  
(630) 485-1937

## EDUCATION

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### Doctor of Philosophy (in progress)

August 2020 - Present

George University of Maryland, College Park, MD  
Course of Study: Environmental Science and Technology  
Advisor: Dr. Travis Gallo  
GPA: 4.0/4.0

### Bachelor of Arts

May 2017

Augustana College, Rock Island, IL  
Majors: Biology, Environmental Studies. *Cum laude*  
GPA: 3.6/4.0

## RELEVANT RESEARCH AND WORK EXPERIENCE

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### Graduate Teaching Assistant

September 2021 – March 2022

George Mason University – *Department of Environmental Science and Policy*, Fairfax, VA

- Prepare pre-lab lecture and discussion topics for three sections of EVPP 109 (Environmental Science I)
- Present material in an in-person format and supervise student lab activities
- Grade data sheets, and lab activity write-ups, and papers using standardized rubrics

### Predoctoral Fellow

June 2021 – August 2021

North Carolina Museum of Natural Sciences – *Mammal Unit*, Raleigh, NC

- Analyzed presence-absence mammal data and life history traits to contribute to three peer-reviewed publications (*in prep*)
- Compiled historic (1978-2020) survey data pertaining to the endangered Key Largo Woodrat (*Neotoma floridana smalli*) to create an exhaustive dataset of species distribution and abundance to aid in management decisions
- Managed databases of mammal detections across the United States and automated data cleaning processes for future surveys

### Research Associate<sup>1</sup> & State Co-Principal Investigator<sup>2</sup>

September 2018 – June 2021

<sup>1</sup> Humane Rescue Alliance – *DC Cat Count Project*, Washington, DC

<sup>2</sup> In collaboration with the Smithsonian Conservation Biology Institute – *Snapshot USA (DC)*, Front Royal, VA

- Analyze presence/absence data to assess habitat associations of mammal species in Washington, DC
- Coordinate logistics and obtain legal permission to place 1,530 motion-activated camera traps in residences, alleys, and parks across the District of Columbia
- Set, retrieve, and process photos from motion-activated camera traps to create an urban mammal database
- Utilized Microsoft Excel, ArcMap, ArcGIS Online, and Survey123 to build a centralized asset-tracking application to keep track of deployed field equipment and upcoming camera placement location

### Nature Boardwalk Intern

May 2018 – August 2018

Lincoln Park Zoo - *Urban Wildlife Institute*, Chicago, IL

- Handled injured or disoriented wildlife in the field, determined if the animal needs medical assistance, transported injured animals to both on and off-site hospitals
- Monitored wildlife populations using point-count surveys, motion-activated camera traps, and live-traps to aid in long-term population studies
- Conducted research on the symbiotic relationship between wild Black-Crowned Night Herons (*Nycticorax nycticorax*) and captive Red Wolves (*Canis rufus*)
- Served as the crew leader for a field crew of 8 high school and college interns

## Program Associate

August 2017 – May 2018

University of Minnesota - *Resilient Communities Project*, Minneapolis, MN

- Met with city staff, university faculty, and students to define the scope and timeline of urban ecological research projects to advance the resilience of local Minnesota communities
- Supervised 143 graduate and undergraduate students on 12 research projects across 8 academic courses
- Conducted a literature review on the efficacy of experiential education
- Performed day to day project management tasks to ensure successful and timely research

## Bat Research Technician

May 2017 – August 2017

Southern Illinois University – *Cooperative Wildlife Research Lab*, Lake of the Ozarks Area, MO

- Mist-netted for bats along forested roads, streams and ponds to obtain measurable specimen in paired lit and dark environments to study how anthropogenic light affects bat feeding ecology
- Weighed, sexed, identified age, identified reproductive status, measured right forearm, took blood samples, and measured blood-ketone levels in field-caught bats for later analysis

## Research Intern

January 2017 – February 2017

Lincoln Park Zoo - *Urban Wildlife Institute*, Chicago, IL

- Installed, maintained and retrieved camera traps across the urban gradient in the Chicago Area
- Scored photographs from animal traps to determine the relative abundance of small and medium mammals throughout the Chicago urban gradient
- Digitized open water in ArcGIS to create a comprehensive digital water layer for correlational analysis in studies involving the Little Brown Bat (*Myotis lucifugus*)

## Research Assistant

June 2015 – May 2017

Augustana College - *Upper Mississippi Center*, Rock Island, IL

- Collected and curated carabid beetle specimen using pitfall traps
- Identified and measured trees using dichotomous keys to determine the species composition of urban forests
- Contributed to literature reviews for community technical reports and research presentations

## Research Intern

June 2016 – August 2016

Smithsonian Tropical Research Institute – *Crofoot Lab*, Barro Colorado Island, Panama

- Located white faced capuchin monkeys (*Cebus capucinus*) daily using radio telemetry
- Assisted in collecting primate feeding ecology and group decision making data using the focal tree method
- Entered and organized data in an electronic database for analysis
- Collected fecal and urine samples of *C. capucinus*
- Carried out independent project within the scope of the overall lab goals

## FORTHCOMING PEER-REVIEWED PUBLICATIONS

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**Herrera DJ**, Dixon JD, Cove MV. *In Review*. Long-term monitoring reveals the value of continuous trapping to curtail the effects of free-roaming cats in protected areas. *Global Ecology and Conservation*

Weiss KCB, Green AM, **Herrera DJ**, Hubbard T, Rega-Brodsky CC, Allen ML. *In Review*. Plasticity in demographic traits facilitates urban exploitation in mammal species. *Ecology*

Rega-Brodsky CC, Weiss KCB, Green AM, Iannarilli F, Tleimat J, Fritts S, **Herrera DJ**, Fisher-Reid MC, Compton JA, Lafferty DJR. *In Review*. Human intensity and climate drive functional differentiation of mammal communities at varying spatial scales across the USA. *Urban Ecosystems*

## PEER-REVIEWED PUBLICATIONS

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**Herrera DJ**, Cove MV, McShea WJ, Decker S, Flockhart DTT, Moore SM, Gallo T. *In Press*. Spatial and temporal overlap of domestic cats (*Felis catus*) and native urban wildlife. *Frontiers in Ecology and Evolution (Special Issue: Ecological Impacts of Domestic Cat Activity on Wildlife)*

Cove MV, Herrmann V, **Herrera DJ**, Augustine BC, Flockhart DT, McShea WJ. *In Press*. Counting the capital's cat's: Estimating the drivers of the occupancy and abundance of free-roaming domestic cats (*Felis catus*) in an urban mosaic. *Ecological Applications*

Kays R, Cove M, Allen M, Diaz J, Todd K, Bresnan C, Snider M, Lee TE, Jasper JG, Douglas B, Crupi A, Weiss K, Rowe H, Sprague T, Schipper J, Lepczyk C, Fantle-Lepczyk, JE, Davenport J, Zimova M, Farris Z, Williamson J, Fisher-Reid MC, Rezendes D, King S, Chrysafis P, Jensen AJ, Jachowski D, King KC, **Herrera DJ**, Moore S, van der Merwe M, Lombardi JV.; Sergeev M, Tewes, M, Horan R, Rentz M, Driver A, Brandt L, Nagy C, Alexander P, Maher SP, Darracq A, Barr EG, Hess G, Webb S, Proctor MD, Vanek J, Lafferty D, Hubbard T, Jimenez J, McCain C, Favreau J, Fogarty J, Hill J, Hammerich S, Gray M, Rega-Brodsky C, Durbin C, Flaherty E, Brooke J, Coster S, Lathrop R, Russell K, Bogan D, Shamon H, Rooney B, Rockhill A, Lonsinger R, Teague O'Mara M, Compton J, Barthelmess E, Belant J, Wehr N, Beyer DE, Scognamillo D, Schalk C, Day K, Ellison C, Nunley B, Fritts S, Whittier C, Neiswenter S, Pelletier R, DeGregorio BA, Davis ML, Baruzzi C, McDonald B, Whipple L, Sperry J, Alexander E, Wolff PJ, Hagan R, Mortelliti A, Bolinjar A, Wilson AM, Van Norman S, Powell C, Coletto H, Schauss M, Bontrager H, Beasley J, Ellis-Felege SN, Wehr SR, Giery S, Pekins CE, LaRose SH, Revord RS, Hansen C, Hansen L, Millspaugh JJ, Zorn A, Gerber B, Rezendes K, Adley J, Sevin J, Green A, Şekercioğlu C, Pendergast ME, Mullen K, Bird T, Edelman A, Romero A, O'Neill B, Schmitz N, Vandermus, RA, Alston J, Kuhn K, Hasstedt SC, Lesmeister DB, Appel CL, Rota C, Stenglein J, Anhalt-Depies C, Nelson, C, Long R, Remine K, Jordan MJ, Elbroch LM, Bergman D, Cendejas-Zarelli S, Sager-Fradkin K, Conner M, Morris G, Parsons E, Ruthven C, Kuprewicz E, Lashley M, Mason D, Risch D, Hernández-Yáñez H, McShea, W, Andy K. *In Press*. SNAPSHOT USA 2020: A second coordinated national camera trap survey of the United States during the COVID-19 Pandemic. *Ecology*. DOI: 10.1002/ecy.3775

Flockhart DTT, Lipsey L, **Herrera DJ**, Belsley J, Decker ST, Moore SM, Robinson E, Kilgour J, Gramza A, McShea W, Cove MV, Haston R, Slater MR, Bays D, Boone JD. 2022. Estimates of domestic cats in urban areas using interdisciplinary science: The Washington DC Cat Count. *Society & Animals* 2022: 1-18. DOI: 10.1163/15685306-BJA10097

**Herrera DJ**, Cove MV, McShea WJ, Flockhart DT, Decker S, Moore SM, Gallo T. 2022. Prey selection and predation behavior of free-roaming domestic cats (*Felis catus*) in an urban ecosystem: implications for urban cat management. *Biological Conservation* 268: 109503. DOI: 10.1016/j.biocon.2022.109503

**Herrera DJ**, Moore SM, Herrmann V, McShea WJ, Cove MV. 2021. A shot in the dark: White and infrared LED flash camera traps yield similar detection probabilities for common urban mammal species. *Hystrix The Italian Journal of Mammalogy* 32(1): e1-4.

Cove MV, Kays R, Bontrager H, Bresnen C, Frerichs T, Klann R, Lee TE Jr., Crockett SC, Crupi AP, Weiss KCB, Rowe H, Sprague T, Schipper J, Lepczyk CA, Fantle-Lepczyk JE, LaPoint S, Williamson J, Fisher-Reid MC, King SM, Bebko AJ, Chrysafis P, Jensen AJ, Jachowski DS, Sands J, MacCombie KA, **Herrera DJ**, Van Der Merwe M, Horan RV III, Rentz MS, Brandt LSE, Nagy C, Barton BT, Thompson WC, Maher SP, Darracq AK, Hess G, Lasky M, Parsons A, Wells B, Roemer GW, Hernandez CJ, Webb SL, Vanek JP, Lafferty DJR, Bergquist AM, Hubbard T, Forrester T, Clark D, Facka AN, Halbur M, Hammerich S, Gray M, Rega-Brodsky CC, Durbin C, Flaherty EA, Brooke JM, Coster SS, Lathrop RG, Russell K, Bogan DA, Cliché R, Shamon H, Hawkins MTR, Marks SB, Lonsinger RC, O'Mara MT, Compton JA, Fowler M, Barthelmess EL, Andy KE, Belant JL, Beyer DE Jr., Kautz TM, Scognamillo DG, Schalk C, Leslie MS, Nasrallah SL, Ellison CN, Ruthven C, Fritts S, Tleimat J, Gay M, Whittier CA, Neiswenter SA, Pelletier R, DeGregorio BA, Kuprewicz EK, Davis ML, Dykstra A, Mason DS, Baruzzi C, Lashley M, Risch DR, Price MR, Allen ML, Whipple LS, Sperry J, Hagen RH, Mortelliti A, Evans BE, Studds CE, Sirén APK, Kilborn J, Sutherland C, Warren P, Fuller T, Harris NC, Carter NH, Trout E, Zimova M, Giery ST, Iannarilli F, Higdon SD, Revord RS, Gompper ME, Hansen CP, Millspaugh JJ, Zorn A, Benson JF, Wehr NH, Solberg JN, Gerber BD, Burr JC, Sevin J, Green AM, Şekercioğlu CH, Pendergast M, Barnick KA, Edelman AJ, Wasdin JR, Romero A, O'Neill BJ, Schmitz N, Alston JM, Kuhn KM, Lesmeister DB, Linnell MA, Appel CL, Rota C, Stenglein JL, Anhalt-Depies C, Nelson C, Long RA, Jaspers KJ, Remine KR, Jordan MJ, Davis D, Hernández-Yáñez H, Zhou J, McShea WJ. 2021. SNAPSHOT USA: A coordinated national camera trap survey in the United States. *Ecology* 102(6): e03353.

**Herrera DJ**, Moore S, Flockhart DTT, McShea WJ, Cove MV. 2021. Thinking outside the park: Best practices for using camera traps within the urban matrix. *Journal of Urban Ecology* 6(1): e1-13. DOI: 10.1093/jue/juaa036

**Herrera DJ** & Cove MV. 2020. Camera trap serendipity and citizen science point to broader impacts of urban heat islands. *Food Webs* 25: e00176. DOI: 10.1016/j.fooweb.2020.e00176.

Burns MK, **Herrera DJ**, Brosius T, Muir TJ. 2020. Depressed supercooling point and increased glycerol concentration in overwintering adult tiger beetles (*Cicindelida*). *CryoLetters* 41(4): 216-222.

## **CONFERENCE PRESENTATIONS**

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**Herrera DJ**. Prey selection and predation behavior of free-roaming domestic cats in an urban ecosystem: Implications for urban cat management. 2022 Spotlight on National Park Resources in the National Capital Region (Virtual). April 20, 2022. (poster)

**Herrera DJ**. Prey selection and predation behavior of free-roaming domestic cats in an urban ecosystem: Implications for urban cat management. Virginia Wildlife Society Annual Meeting. March 15, 2022. (presentation)

**Herrera DJ**. Planned for people, built for birds: A case study of inadvertent ecological benefit from urban planning in Washington, DC. International Urban Wildlife Conference (Virtual). May 27, 2021. (presentation)

**Herrera DJ**. Nesting site preferences of black-crowned night heron. Lincoln Park Zoo Summer Intern Symposium. Chicago, Illinois. August 17, 2018. (presentation)

**Herrera DJ**. Foraging efficiency and learning in capuchin monkeys. Smithsonian Tropical Research Institute REU Symposium. Panama City, Panamá, Panama. August 12, 2016. (presentation)

**Herrera DJ**, Reisner M, Fockler M. Urban forest and emerald ash borer management plan. Sustainable Working Landscapes Initiative Symposium. Clinton, IA. May 24, 2016. (poster)

**Herrera DJ**, Lipke M. The effects of urbanization of amphibian biodiversity. Upper Mississippi River Research Consortium. Lacrosse, WI. April 27-29, 2016. (poster)

## **TECHNICAL REPORTS, GREY LITERATURE, ETC.**

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Bays D, Boone JD, Decker S, Flockhart T, Hamrick L, **Herrera DJ**, Lipsey L, Moore S, Slater M. 2021. Cat counting toolkit: Introduction to cat counting. Washington (DC): DC Cat Count. Available at <https://hub.dccatcount.org/pages/toolkit>

**Herrera DJ**. 2021. Constructing your own FELINE (Field Equipment Location and Information Network). Washington (DC): Humane Rescue Alliance.

**Herrera DJ**. 2018. An introduction to ArcGIS: Basic methodology in ArcMap 10.6.x as it pertains to the DC Cat Count Project. Washington (DC): Humane Rescue Alliance.

Osing T, **Herrera DJ**. 2017. Addressing childhood lead poisoning through GIS: A proactive approach in Scott County, Iowa. Rock Island (IL): Upper Mississippi Center.

**Herrera DJ**, Chileen B. 2016. Clinton public trees report. Rock Island (IL): Upper Mississippi Center.

## **JOURNAL REVIEWS (by number of reviews)**

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*Journal of Urban Ecology* (3), *Food Webs* (2), *Biological Conservation* (1)

## **SELECTED SCIENTIFIC ILLUSTRATION & COMMUNICATION**

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What is urban ecology? Study by Moll RJ, Cepek JD, Lorch PD, Dennis PM, Tans E, Robinson T, Millspaugh JJ, Montgomery RA. Artist. August 2019.

Visible at <https://twitter.com/HerreraWildlife/status/1164900455228616705>

“Los Tlacuaches en la Ciudad” (Opossums in the City) in *My Footprint on Planet Earth*. Museo El Péndulo de Ciencia y Tecnología (The Foucault Pendulum Museum of Science and Technology), Santiago Querétaro, Mexico. Collaborating Artist. July 2019.

Beyond Predation: Typical predator-avoidance behaviors don't always hold up in cities. Study by Gallo T,

Lehrer EW, Magle S. Contracted Artist. June 2019. Visible at <https://www.instagram.com/p/Bwb8nY6BtAA/>

Snapshot USA logo. Smithsonian Conservation Biology Institute. Contracted Artist. March 2019.  
Visible at <https://emammal.si.edu/snapshot-usa>

## **AWARDS AND HONORS**

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2022 Virginia Wildlife Society Annual Meeting Student Travel Award Virginia chapter of The Wildlife Society	March 2022
Fall 2021 Mason Core Teaching Excellence Award George Mason University	Fall Semester 2021
2020 Map Gallery – Educational Map Category, <i>Third Place</i> Environmental Systems Research Institute (ESRI)	July 2020
Graduate Research Fellowship Program, <i>Honorable Mention</i> National Science Foundation	April 2020, April 2021
Senior Honors, <i>Honorable Mention</i> Augustana College Biology Department	2016 – 2017 Academic Year
Best Poster, <i>Undergraduate Evolutionary Biology Division</i> Sigma Xi Scientific Research Society Annual National Meeting	November 2016

## **MEDIA AND PRESS**

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Kim N. 2022 April 10. Urban cats and wildlife w/ Dan Herrera. *At Risk* 1(14). podcast.

**Herrera D.J.**, Gallo T. 2022 April 8. To protect wildlife from free-roaming cats, a zone defense may be more effective than trying to get every feline off the street. *The Conversation*. web.

Escobar K. 2022 April 5. Why you should care about climate change w/ George Mason University graduate student panel. *Clandestino* 2(5). podcast.

Leshan B. 2022 Feb 11. Coyotes are wily, adaptable, and in the DMV to stay: Experts report scores of coyote sightings in Rock Creek Park, the National Arboretum, and along the C&O Canal. *WUSA9*. video.

Machemer T. 2020 Jan 15. Unusual urban bobcat spotted in Washington, D.C. *Smithsonian Magazine*. web.

Fenston J. 2020 Jan 15. Are bobcats back in D.C.? Researchers document first known sighting in the city. *National Public Radio, WAMU*. radio.

Fox5 Staff. 2020 Jan 15. Bobcat caught on camera in the District. *Fox5*. web.

Hedgpeth D. 2020 Jan 15. 'A real wildcat in the District': Bobcat spotted in D.C. along the C&O Canal. *Washington Post*. Sect. B:1. print.

Segraves M, Cook G. 2020 Jan 15. Bobcat spotted prowling woods in Northwest DC. *NBC Washington*. video.

Main D. 2020 Jan 14. Bobcat spotted roaming Washington D.C. in rare sighting. *National Geographic*. web.

Delgadillo N. 2020 Jan 14. What was this lone bobcat doing wandering near Georgetown? *DCist*. web.

ABC7 Staff. 2020 Jan 14. This bobcat was caught on camera near Georgetown in D.C. *ABC News WJLA*. web.

Boykin N. 2020 Jan 14. Photos: Bobcat spotted, photographed in Washington as part documenting DC's outdoor cat

population. *WUSA9*. web.

Contstantino A. 2020 Jan 14. Cat-tivating: Bobcat spotted along C&O Canal in Georgetown. *National Public Radio, WTOP*. web.

Hotovoy M. 2019 October. Cat Count captures plant 'visitors.' *Capital Metro Area Update*. United States Postal Service. p5. print.

Lange KE. Spring 2019. Up for the count. *All Animals*. p8. print.

Lange KE. Spring 2019. Up for the count. *Animal Sheltering*. p8. print.

Moyer JWM. 2019 April 5. A \$1.5 million project is a year closer to determining where cats live in D.C. *The Washington Post*. Sect. B:1. print.

Winter 2019. Summer Learnin'. *Lincoln Park Zoo Magazine*. p6. print.

Fenston J. 2018 November 11. To decrease bird kills, cat lovers team up with bird lovers in D.C. Cat Count. *National Public Radio, Weekend Edition*. Originally aired on *WAMU*. radio.

## **PROFESSIONAL ORGANIZATIONS**

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**The Wildlife Society – George Mason University Chapter** July 2020 – Present  
Member

**Wild Felid Research and Management Association** September 2020 – September 2022  
Member

**Augustana College Campus Sustainability Committee** August 2016 – May 2017  
Student Liaison

**Beta Beta Beta National Biological Honor Society** March 2016 – May 2017  
Member

**Psi Chi International Honor Society in Psychology** March 2016 – May 2017  
Member

**Sigma Xi Scientific Research Society** November 2015 – January 2018  
Associate Member

**Augustana College Institutional Animal Care and Use Committee** August 2014 - May 2015  
Student Liaison

## **COMMUNITY INVOLVEMENT**

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Mount Vernon High School Science Fair, Judge February 2022

Humane Rescue Alliance *Humane Education*, Guest Speaker November 2020

Boys Scouts of America, Volunteer Merit Badge Instructor July 2018

Citizen Science Bat Monitoring Project May 2018

People's Climate Movement Rally – Quad Cities, Featured Speaker April 2017

Augustana College Slough Clean Up April 2017

Augustana College invasive plant removal April 2017

QCA Conservation Alliance Bio Blitz

July 2015

US Fish and Wildlife Mussel Survey

July 2015

Boy Scouts of America, Eagle Scout

May 2012