

**Melissa Ann Braham**  
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**Education**

2012	M.Sc., Wildlife and Fisheries Resources	West Virginia University
2005	B.Sc., Wildlife and Fisheries Resources	West Virginia University

**Current Experience**

Nov 2016 – present     **Director of Data Science & Analytics, Research Biologist**, Conservation Science Global, Inc., NJ

**Other Experience**

Feb 2013 – Feb 2020     **Survey Technician I**, Developed, planned, designed, analyzed, executed, and/or presented research on the ecology, behavior, and/or interactions with renewable energy of golden eagle, bald eagle, California condor, and/or white-tailed sea eagle, West Virginia University Research Corporation, WV

May 2010 – Dec 2012    **Graduate Research Assistant** MS Candidate, Designed, executed, and presented a laboratory investigation with yellow-phase American eel habitat selection in relation to age and size length, West Virginia University, WV

Jun 2007 – May 2010    **Biological Science Technician** GS 0404 06, Designed and conducted field projects to monitor two ESA listed species, Lost River sucker and shortnose sucker in the upper Klamath River Basin, US Bureau of Reclamation, OR

Mar 2007 – Jun 2007    **Biological Science Technician** GS 0404 05, Conducted field projects to monitor and enumerate two ESA listed species, Lost River sucker and shortnose sucker in the upper Klamath River Basin, US Geological Survey, OR

Dec 2005 – Oct 2006    **Fisheries Observer**, Collected biological data while onboard commercial fishing vessels and shore side processing plants, Alaskan Observers, Inc., AK

May 2005 – Oct 2005    **Service Volunteer**, Determined running timing and abundance of Pacific salmon and other resident fish through a resistance board weir along the Tuluksak River, US Fish and Wildlife Service, AK

May 2004 – May 2005    **Student Intern**, Conducted population and movement surveys of American eel along Shenandoah River, WVU Cooperative Fish and Wildlife Research Unit, WV

Jun 2004 – Aug 2004    **Fisheries Research Technician**, Conducted sauger and walleye movement and diet surveys to determine the potential for competition along the middle Missouri River, MSU Cooperative Fishery Research Unit, MT

Jun 2003 – Aug 2003    **Biological Science Technician** GS 0404 04, Conducted stream habitat surveys and fish species distribution and abundance along Tea Creek, US Forest Service, WV

May 2002 – May 2005    **Student Intern**, Participated in a variety of graduate student projects involving brook trout population dynamics, habitat use, and movement patterns in headwater streams, West Virginia University, WV

**Peer-Reviewed Publications**

24. Rolek, B.W., **M.A. Braham**, T.A. Miller, A.E. Duerr, T.E. Katzner, J.D. McCabe, L. Dunn, and C.J.W. McClure. Flight path characteristics predict the probability that eagles enter the rotor-swept zone of wind turbines. *Global Ecology and Conservation*. *Under review*.
23. Sandhu, R., C. Tripp, E. Quon, R. Thedin, M. Lawson, D. Brandes, C. Farmer, T.A. Miller, C. Draxl, P. Doubrawa, L. Williams, A.E. Duerr, **M.A. Braham**, and T.E. Katzner. Stochastic agent-based model for predicting turbine-scale raptor movements during updraft-subsidized directional flight. *Ecological Modeling*. *Under review*.

22. Bergen, S. M.M. Huso, A.E. Duerr, **M.A. Braham**, T.E. Katzner, S. Schmuecker, and T.A. Miller. Classifying behavior from short-interval bio-logging data: an example with GPS tracking of birds. *Methods in Ecology and Evolution*. *In press*.
21. Hall, J. C., I. Hong, S.A. Poessel, **M. Braham**, J. Brandt, J. Burnett, T.E. and Katzner. 2021. Seasonal and Age-Related Variation in Daily Travel Distances of California Condors. *Journal of Raptor Research* 55(3): 388–398.
20. McClure, C.J.W., B.W. Rolek, **M.A. Braham**, T.A. Miller, A.E. Duerr, J.D. McCabe, L. Dunn, and T.E. Katzner. 2021. Eagles enter rotor-swept zones of wind turbines at rates that vary per turbine. *Ecology and Evolution* 11(16): 11267–11274.
19. McCabe, J.D., J.D. Clare, T.A. Miller, T. E. Katzner, J. Cooper, S. Somershoe, D. Hanni, C. Kelly, R. Sargent, E. Soehren, C. Threadgill, M. Maddox, J. Stober, M. Martell, T. Salo, A. Berry, M.J. Lanzone, **M.A. Braham**, C. J.W. McClure. 2021. Resource selection functions based on hierarchical generalized additive models provide new insights into individual animal variation and species distributions. *Ecography* 44(12):1756–1768.
18. Sur, M. B. Woodbridge, T.C. Esque J.R. Belthoff, P.H. Bloom, R.N. Fisher, K. Longshore, K.E. Nussear, J.A. Tracey, **M.A. Braham**, and T.E. Katzner. 2021. Linking behavioral states to landscape features for improved conservation management. *Ecology and Evolution* 00: 1–12. <https://doi.org/10.1002/ece3.7621>
17. Sur, M., B. Woodbridge, T.C. Esque, J.R. Belthoff, P.H. Bloom, R.N. Fisher, K. Longshore, K.E. Nussear, J.A. Tracey, **M.A. Braham**, and T.E. Katzner. 2021. Dataset for Linking Behavioral States to Landscape Features for Improved Conservation Management.
16. Katzner, T.E., **M.A. Braham**, T.J. Conkling, J.E. Diffendorfer, A.E. Duerr, S.R. Loss, D.M. Nelson, H.B. Vander Zanden and J.L. Yee. 2020. Assessing population-level consequences of anthropogenic stressors for terrestrial wildlife. *Ecosphere* 11(3): e03046. 10.1002/ecs2.3046.
15. Katzner, T.E., D.M. Nelson, J.E. Difendorfer, A.E. Duerr, C.J. Campbell, D. Leslie, H.B. Vander Zanden, J.L. Yee, M. Sur, M.M.P. Huso, **M.A. Braham**, M.L. Morrison, S.R. Loss, S.A. Poessel, T.J. Conkling and T.A. Miller. 2019. Wind power: an ecological challenge. *Science*. 366: 1206–1207.
14. Hall J., **M. Braham**, L.A. Nolan, J. Conley, J. Brandt, L. Mendenhall, M. Lanzone, A. McGann, and T. Katzner. 2019. Characteristics of feeding sites of California Condors (*Gymnogyps californianus*) in the human-dominated landscape of southern California. *The Wilson Journal of Ornithology* 131(3):459–471.
13. Miller, T.A., J. Cooper, A.E. Duerr, **M.A. Braham**, J.T. Anderson, and T.E. Katzner. 2019. Implications for bird aircraft strike hazard by bald eagles. *Journal of Wildlife Management* 83(4):879–892.
12. Duerr, A.E., **M.A. Braham**, T.A. Miller, J. Cooper, J.T. Anderson, and T.E. Katzner. 2019. Roost- and perch-site selection by Golden Eagles (*Aquila chrysaetos*) in eastern North America. *Wilson Journal of Ornithology* 131(2):310–328.
11. Pirotta, E., T. Katzner, T.A. Miller, A.E. Duerr, **M. Braham**, and L. New. 2018. State-space modelling of the flight behaviour of a soaring bird provides new insights to migratory strategies. *Functional Ecology* 32(9):2205–2215. DOI: 10.1111/1365-2435.13180
10. Poessel, S.A., J. Brandt, L. Mendenhall, **M.A. Braham**, M. Lanzone, A. McGann, and T.E. Katzner. 2018. Flight response to spatial and temporal correlates informs risk from wind turbines to the California Condor. *Condor: Ornithological Applications* 120:330–342.
9. Poessel, S.A., A.E. Duerr, J.C. Hall, **M.A. Braham**, and T.E. Katzner. 2018. Improving estimation of flight altitude in wildlife telemetry studies. *Journal of Applied Ecology* 55:2064–2070.
8. Brown, J.L., B. Bedrosian, D. Bell, **M. Braham**, R. Crandall, J. DiDonato, R. Domenech, A. Duerr, A. Harmata, T. Katzner, D. LaPlante, S. Lewis, C. McIntyre, R. Murphy, S. Slater, J. Smith, B. Smith, J. Watson, and B. Woodbridge. 2017. Patterns of spatial distribution of golden eagles

- across North America: how do they fit into existing landscape-scale mapping systems? *Journal of Raptor Research* 51(3):197–215.
7. Katzner, T.E., D.M. Nelson, **M.A. Braham**, J.M. Doyle, N. Fernandez, A.E. Duerr, P.H. Bloom, M.C. Fitzpatrick, T.A. Miller, R.C.E. Culver, L. Braswell, and J.A. DeWoody. 2017. Golden Eagle fatalities and the continental-scale consequences of local wind-energy generation. *Conservation Biology* 31(2):406–415.
  6. Bulut, Z., E.A. Bragin, J.A. DeWoody, **M.A. Braham**, T.E. Katzner, and J.M. Doyle. 2016. Use of noninvasive genetics to assess nest and space use by white-tailed eagles. *Journal of Raptor Research* 50(4):351–362.
  5. Poessel, S.A., P.H. Bloom, **M.A. Braham**, and T.E. Katzner. 2016. Age- and season-specific variation in local and long-distance movement behavior of golden eagles. *European Journal of Wildlife Research* 62(4):377–393.
  4. Welsh, S.A., J.L. Aldinger, **M.A. Braham**, and J.L. Zimmerman. 2016. Synergistic and singular effects of river discharge and lunar illumination on dam passage of upstream migrant yellow-phase American eels. *ICES Journal of Marine Science* 73(1): 33–42.
  3. Katzner, T., V. Bennett, T. Miller, A. Duerr, **M. Braham**, and A. Hale. 2016. Wind energy development: methods for pre-construction risk assessment for birds and bats. Special Issue on Wind Energy Development and Wildlife. *Human–Wildlife Interactions* 10(1): 42–52.
  2. Nelson, D., **M. Braham**, T.A. Miller, A.E. Duerr, J. Cooper, M.J. Lanzone, J. Lemaître, and T.E. Katzner. 2015. Stable hydrogen isotopes identify leapfrog migration, degree of connectivity and summer distribution of Golden Eagles in eastern North America. *The Condor: Ornithological Applications* 117(3):414–429.
  1. **Braham, M.**, T. Miller, A.E. Duerr, M. Lanzone, A. Fesnock, L. LaPre, D. Driscoll, and T. Katzner. 2015. Home in the heat: dramatic seasonal variation in home range of desert golden eagles informs management for renewable energy development. *Biological Conservation* 186:225–232.

### Thesis

- Braham, M.A.** 2012. Selection of benthic habitat by yellow-phase American eels (*Anguilla rostrata*). Master's thesis, West Virginia University, Morgantown, WV.

### Technical Reports

16. Miller, T.A., A.E. Duerr, M.A. Braham, J.T. Anderson, and T.E. Katzner. 2019 Understanding movements of bald eagles and implications for bald eagle aircraft strikes at Marine Corps Base Quantico. Prepared for Marine Corps Base Quantico. 39 pp.
15. Katzner, T., A. Duerr, T. Miller, M. Braham, J. Hall, D. Brandes, M. Lanzone & A. McGann. 2014. Movement Ecology of California Condors within the DRECP Area. Prepared for the California Department of Fish and Wildlife Cooperative Endangered Species Conservation Fund (Section 6) Grant # P1382015. 17 pp.
14. Katzner, T., A. Duerr, T. Miller, P. Turk, M. Braham, D. Brandes, M. Lanzone, P. Bloom, J.A. DeWoody & J. Doyle. 2014. Data collection and synthesis of current knowledge of golden eagles. Prepared for the California Department of Fish and Wildlife Cooperative Endangered Species Conservation Fund (Section 6) Grant #P1182024. 22 pp
13. Hall, J., A. Duerr, D. Brandes, T. Miller, **M. Braham**, M. Lanzone, A. McGann, and T. Katzner. 2016. California condor flight response in a variable meteorological and topographic environment: Phase I. Autumn 2016 progress report.
12. Hall, J., A. Duerr, D. Brandes, T. Miller, **M. Braham**, M. Lanzone, A. McGann, and T. Katzner. 2015. California condor flight response in a variable meteorological and topographic environment: Phase I. Autumn 2015 progress report.

11. Hall, J., A. Duerr, D. Brandes, T. Miller, **M. Braham**, M. Lanzone, A. McGann, and T. Katzner. 2014. California condor flight response in a variable meteorological and topographic environment: Phase I. Winter 2014 progress report.
10. Katzner, T., A. Duerr, T. Miller, **M. Braham**, J. Hall, D. Brandes, M. Lanzone, and A. McGann. 2014. Movement ecology of California condors within the DRECP area. Prepared for the California Department of Fish and Wildlife Cooperative Endangered Species Conservation Fund (Section 6) Grant # P1382015. 17 pp. 14 December 2014.
9. Katzner, T., A. Duerr, T. Miller, P. Turk, **M. Braham**, D. Brandes, M. Lanzone, P. Bloom, A. DeWoody, and J. Doyle. 2014. Data collection and synthesis of current knowledge of golden eagles. Quarterly Report. Prepared for the California Department of Fish and Wildlife Cooperative Endangered Species Conservation Fund (Section 6) Grant #P1182024. 22 pp. 1 August 2014.
8. Katzner, T., A. Duerr, T. Miller, P. Turk, **M. Braham**, D. Brandes, M. Lanzone, P. Bloom, A. DeWoody, and J. Doyle. 2013. Data collection and synthesis of current knowledge of golden eagles. Quarterly Report. Prepared for the California Department of Fish and Wildlife Cooperative Endangered Species Conservation Fund (Section 6) Grant #P1182024. 22 pp. 20 August 2013.
7. Welsh, S.A. and **M. Braham**. 2012. Migration of silver-phase and yellow-phase American eels in relation to hydroelectric dams on the Shenandoah River: Quarterly Progress Report submitted to Allegheny Energy Supply, 18 December 2012.
6. Welsh, S.A., D.R. Smith, S. Eyler, M.T. Mandt, and **M. Braham**. 2011. Migration of silver phase and yellow phase American eels in relation to hydroelectric dams on the Shenandoah River: Quarterly Progress Report submitted to Allegheny Energy Supply, 15 December 2011.
5. Welsh, S.A., D.R. Smith, S. Eyler, M.T. Mandt, and **M. Braham**. 2011. Migration of silver phase and yellow phase American eels in relation to hydroelectric dams on the Shenandoah River: Quarterly Progress Report submitted to Allegheny Energy Supply, 15 June 2011.
4. Welsh, S.A., D.R. Smith, S. Eyler, M.T. Mandt, and **M. Braham**. 2011. Migration of silver phase and yellow phase American eels in relation to hydroelectric dams on the Shenandoah River: Quarterly Progress Report submitted to Allegheny Energy Supply, 15 April 2011.
3. Welsh, S.A., D.R. Smith, S. Eyler, M.T. Mandt, and **M. Braham**. 2011. Migration of silver phase and yellow phase American eels in relation to hydroelectric dams on the Shenandoah River: Quarterly Progress Report submitted to Allegheny Energy Supply, 10 January 2011.
2. Reclamation. 2010. Biological Evaluation: the effects of the 2010 Klamath Project operations on federally-listed shortnose sucker (*Chasmistes brevirostris*) and Lost River sucker (*Deltistes luxatus*) in Upper Klamath Lake. US Bureau of Reclamation, Klamath Basin Area Office, internal report, Klamath Falls, OR.
1. **Braham, M.A.** and A.X. Wilkens. 2009. Klamath Project: Fish Salvage at Agency Lake and Barnes ranches, January-May 2008, with comparison to 2006 and 2007. US Bureau of Reclamation, Klamath Basin Area Office, unpublished report, Klamath Falls, OR.

### **Presentations and Workshops**

51. Miller, T.A., M.J. Lanzone, **M.A. Braham**, A.E. Duerr, J. Cooper, S. Somershoe, D. Hanni, E.C. Soehren, C. Threadgill, M. Maddox, J. Stober, C. Kelly, T. Salo, A. Berry, M. Martell, S. Mehus, B. Dirks, T. Sargent, and T.E. Katzner. Distribution of Golden Eagles (*Aquila chrysaetos*) in eastern North America. Virtual Raptor Research Foundation Annual Conference, Boise, Idaho. October 2021.
50. Thedin, R. P. Doubrawa, E. Quon, D. Brandes, R. Sandhu, C. Tripp, M. Lawson, T.E. Katzner, C. Farmer, T.A. Miller, A.E. Duerr, and **M.A. Braham**. Assessment of updraft modeling bias using computational fluid dynamics. Virtual Raptor Research Foundation Annual Conference, Boise, ID. October 2021.

49. Sandhu, R., C. Tripp, D. Brandes, R. Thedin, E. Quon, L. Williams, M. Lawson, T.E. Katzner, C. Farmer, T.A. Miller, A.E. Duerr, and **M.A. Braham**. Bayesian state space modeling framework for understanding and predicting golden eagle movements using telemetry data. Virtual Raptor Research Foundation Annual Conference, Boise, Idaho. October 2021.
48. Miller, T.A., J.M. Lockhart, B. Smith, **M.A. Braham**, and T.E. Katzner. Flight behavior of Golden Eagles in Wyoming: Implications for wind power. Virtual Wind Wildlife Research Meeting of the National Wind-Wildlife Collaborative. December 2020.
47. Bergen, S., M. Huso, T.E. Katzner, **M.A. Braham**, A.E. Duerr, S. Schmuecker, and T.A. Miller. Improved classification of flight behavior informs risk modeling of bald eagles at wind facilities in Iowa. Virtual Wind Wildlife Research Meeting of the National Wind-Wildlife Collaborative. December 2020.
46. Miller, T.A., J. Cooper, A.E. Duerr, **M.A. Braham**, J.T. Anderson, and T.E. Katzner. Implications for bird aircraft strike hazard by bald eagles. Oral presentation. National Military Fish and Wildlife Association Annual Meeting. Omaha, NE. March 2020.
45. Miller, T.A., J. Cooper, A.E. Duerr, **M.A. Braham**, J.T. Anderson, and T.E. Katzner. Implications for bird aircraft strike hazard by bald eagles. Oral presentation. Virginia Bird-Aircraft Strike Hazard Coordinating Meeting. Charles City, VA. 2019.
44. Miller, T.A., J.M. Lockhart, B. Smith, **M.A. Braham**, L. Schueck, and T.E. Katzner. Flight behavior of Golden Eagles in Wyoming: Implications for wind power. Oral presentation. Wyoming Golden Eagle Working Group Meeting. Sheridan Wyoming. 2019.
43. Miller, T.A., J.M. Lockhart, B. Smith, **M.A. Braham**, L. Schueck, and T.E. Katzner. Flight behavior of Golden Eagles in Wyoming: Implications for wind power. Oral presentation. Raptor Research Foundation Annual Conference, Fort Collins, Colorado. November 2019.
42. Duerr, A. E., T. Conkling, T. A. Miller, **M.A. Braham**, Douglas A. Bell, Peter H. Bloom, Robert N. Fisher, J. Tracey, and T. Katzner. Risk of Golden Eagles Colliding with Wind Turbines in California, USA. Oral presentation. Raptor Research Foundation Annual Conference, Ft. Collins, CO. November 2019.
41. Horton, R. J. Cooper, T. Grubb, **M.A. Braham**, T.A. Miller, and T.E. Katzner. Post-fledging movements of bald eagles from nests in Oklahoma. Annual Oklahoma Natural Resources Conference. Tulsa, OK. February 2019
40. Duerr, A., D. Bell, J. Belthoff, P. Bloom, **M. Braham**, E. Bjerre, A. DeWoody, J. Doyle, L. Dunn, N. Fernandez, R. Fisher, M. Fitzpatrick, T. Miller, B. Millsap, D. Nelson, S. Poessel, M. Sur, J. Tracey, and T. Katzner. Update on research on golden eagles. Oral presentation. California-Nevada Golden Eagle Working Group, Sacramento, CA. February, 2019.
39. Miller, T.A., J. Cooper, A.E. Duerr, **M.A. Braham**, J.T. Anderson, and T.E. Katzner. Movements of juvenile bald eagles: Implications for bird aircraft strike hazard in the Chesapeake Bay. Oral presentation. National Military Fish and Wildlife Association, Bird-Aircraft Strike Hazard Working Group, Norfolk, VA. March 2018.
38. Katzner, T., **M. Braham**, J. Hall, J. Brandt, J. Burnett, A. Duerr, T. Miller, S. Poessel, M. Sur, D. Brandes. Aeroecology Predicts the Movements of a Terrestrial Raptor, the California Condor. Oral presentation. Raptor Research Foundation Annual Conference, Kruger National Park, South Africa. November, 2018.
37. Gross, D.S., **M.A. Braham**, M. Sur, T.E. Katzner, S.A. Poessel, A.J. McGann, M.J. Lanzone, J. Brandt, M. Astell, and J.C. Hall. Accelerating the pace of conservation research: Using advanced telemetry technology in California Condor research and management. Oral presentation. Raptor Research Foundation Annual Conference, Kruger National Park, South Africa. November, 2018.
36. **Braham, M.A.** Eagle research and damage management. Oral presentation. USDA-APHIS-Wildlife Services Tri-State Meeting, Shenandoah National Park, VA. May 2018.
35. **Braham, M.A.** Golden Eagle (*Aquila chrysaetos*) in Eastern North America: migration patterns. Brooks Bird Club. Invited speaker at Annual Foray meeting, Lost City, WV. June, 2017.

34. Duerr, A, L. Dunn, **M. Braham**, T. Miller, A. Fesnock, D. Bell, P. Bloom, R. Fisher, J. Tracey, and T. Katzner. Response of Golden Eagle flight altitude to topographic variation in California and implications for potential for wind-wildlife interactions. Oral presentation. Wind Wildlife Research Meeting XI, Broomfield, CO. November, 2016.
33. Poessel, S.A., J. Brandt, L. Mendenhall, **M. Braham**, M. Lanzone, A. McGann, and T. Katzner. Flight response to topographic, vegetative, and temporal correlates predicts risk from wind turbines to an obligate-soaring bird, the California condor. Oral presentation. Wind Wildlife Research Meeting XI, Broomfield, CO. November, 2016.
32. Brown, J.L. C.L. McIntyre, B. Bedrosian, D.A. Bell, **M. Braham**, A. Duerr, T. Miller, T.L. Booms, J. Cooper, R. Crandall, R. Domenech, A. Shreading, J.R. Dunk, T.E. Katzner, M. Lanzone, D. Laplante, S.B. Lewis, R. Murphy, S. Slater, B.W. Smith, J. Smith, J.W. Watson, and B. Woodbridge. Continental-scale movements of golden eagles in western North America. Oral presentation. Raptor Research Foundation, Cape May, NJ. October, 2016.
31. Duerr, A.E., **M. Braham**, T. A. Miller, J. T. Anderson, J. Cooper, and T. Katzner. Resting site selection by golden eagles (*Aquila chrysaetos*) demonstrates resource use driven by flight behavior. Oral presentation. Raptor Research Foundation, Cape May, NJ. October, 2016.
30. Hall, J., **M. Braham**, L.A. Nolan, J. Conley, J. Brandt, M. Lanzone, D. Brandes, L. Rhea, and T.E. Katzner. Gone to ground: dynamics of foraging-associated risk of California condors (*Gymnogyps californianus*) in the human-dominated landscape of Southern California. Oral presentation. Raptor Research Foundation Annual Conference, Cape May, NJ. October, 2016.
29. Lanzone, M., **M.A. Braham**, T. Miller, A. Duerr, S. Blackshire, D. Brandes, B. Fogg, and A. McGann. Part 3: Working with Data: Analysis and Software (3 part workshop). Co-instructor for workshop held at the Raptor Research Foundation Conference, Cape May, NJ. October 16, 2016.
28. Miller, T.A., **M. Braham**, A. Duerr, J. Cooper, M.J. Lanzone, J.T. Anderson, and T.E. Katzner. Juvenile dispersal of bald eagles in the Chesapeake Bay, Virginia, USA. Oral presentation. Raptor Research Foundation, Cape May, NJ. October, 2016.
27. Poessel, S.A., J. Brandt, L. Mendenhall, **M.A. Braham**, M.J. Lanzone, A.J. McGann, and T.E. Katzner. Strong flight response to topographic, vegetative, and temporal correlates predicts risk from wind turbines to an obligate-soaring bird, the California Condor. Oral presentation. Raptor Research Foundation Annual Conference, Cape May, NJ. October, 2016.
26. Katzner, T, D.M Nelson, **M.A. Braham**, J.M. Doyle, N. Fernandez, A.E. Duerr, P. Bloom, M.C. Fitzpatrick, T.A. Miller, and J.A. Dewoody. Origins of Golden Eagles Killed at Altamont Pass Wind Resource Area: Continental-Scale Environmental Consequences of Local-Scale Renewable Energy Development. Oral presentation. Raptor Research Foundation meeting, Sacramento, CA. November, 2015.
25. McIntyre, C.L., B. Bedrosian, D.A. Bell, J.L. Brown, R. Crandall, R. Domenech, A. Shreading, K. Heyden, T. Miller, A. Duerr, **M. Braham**, M. Lanzone, J. Cooper, T.E. Katzner, D. Laplante, R. Murphy, S. Slater, B.W. Smith, J. Smith, J.W. Watson, and B. Woodbridge. Describing landscape level movement patterns of Golden Eagles in North America using ARGOS and GPS tracking data. Oral presentation. Raptor Research Foundation meeting, Sacramento, CA. November, 2015.
24. Miller, T.A., **M. Braham**, A. Duerr, J. Cooper, M.J. Lanzone, T.E. Katzner. In-flight winter habitat use and selection of golden eagles (*Aquila chrysaetos*) in eastern North America. Oral presentation. Raptor Research Foundation meeting, Sacramento, CA. November, 2015.
23. Poessel, S.A., P.H. Bloom, **M.A. Braham**, and T.E. Katzner. Age- and season-specific variation in movement behavior of golden eagles in California. Oral presentation. Raptor Research Foundation meeting, Sacramento, CA. November, 2015.
22. Rus, A., T.A. Miller, A.E. Duerr, **M. Braham**, J. Lemaitre, D. Brandes, M. Lanzone, and T. Katzner. The role of experience and multiple meteorological factors in the migratory performance of golden eagles (*Aquila chrysaetos*). Oral presentation. Raptor Research Foundation Annual Conference, Sacramento, CA. November, 2015.

21. **Braham, M.**, R. Braham, J. Brandt, L. Mendenhall, J. Hall, T. Miller, M. Lanzone, A.E. Duerr, A. McGann, and T.E. Katzner. 2015. Wing loading and correlates of flight behavior of California condors (*Gymnogyps californianus*). Poster presentation. Association of Field Ornithologists, the Society of Canadian Ornithologists / Société des ornithologistes du Canada, and the Wilson Ornithological Society joint annual meeting. Wolfville, Nova Scotia, Canada. July 15-19, 2015.
20. **Braham, M.**, T. Miller, A.E. Duerr, M. Lanzone, A. Fesnock, L. LaPre, D. Driscoll, and T. Katzner. 2015. Home in the heat: Dramatic seasonal variation in home range of desert golden eagles informs management for renewable energy development. Oral presentation. Association of Field Ornithologists, the Society of Canadian Ornithologists / Société des ornithologistes du Canada, and the Wilson Ornithological Society joint annual meeting. Wolfville, Nova Scotia, Canada. July 15-19, 2015.
19. Katzner, T.E., Z. Bulut, E. Bragin, J.A. DeWoody, **M. Braham**, and J.M. Doyle. 2015. Non-invasive genetic assessment reveals low nest site fidelity and long-distance foraging movements of white-tailed sea eagles in central Asia. Oral presentation. Association of Field Ornithologists, the Society of Canadian Ornithologists / Société des ornithologistes du Canada, and the Wilson Ornithological Society joint annual meeting. Wolfville, Nova Scotia, Canada. July 15-19, 2015.
18. Rus, A., T.A. Miller, A.E. Duerr, **M. Braham**, and T. Katzner. 2015. Relative Importance of Experience and Meteorological Factors in Migratory Performance of Golden Eagles (*Aquila chrysaetos*). Oral presentation. Idaho Conference on Undergraduate Research. Boise, ID. July 29-30, 2015.
17. Nagy, L., C. Farmer, **M. Braham**, A. Duerr, A. Fesnock, T. Katzner, L. LaPre, T. Miller and E. Mix. 2014. Golden eagle point counts and telemetry data: a project-specific comparison. Oral presentation. Wind Wildlife Research Meeting X. American Wind Wildlife Institute. Denver, CO. December 1, 2014.
16. Katzner, T., A. Duerr, T. Miller, **M. Braham**, D. Nelson, P. Bloom, J. Doyle and A. DeWoody. 2014. Origins of eagles killed at the Altamont Pass Wind Resource Area. Oral presentation. Wind Wildlife Research Meeting X. American Wind Wildlife Institute. Denver, CO. December 1, 2014.
15. **Braham, M.**, T. Miller, A. Duerr, M. Lanzone, A. Fesnock, L. LaPre, and T. Katzner. 2014. Correlates of variability in monthly home range of Mojave golden eagles (*Aquila chrysaetos*): Interpreting the scale of threat from renewable energy. Oral presentation. 2014 annual meeting, Raptor Research Foundation, Corpus Christi, TX September 24–28, 2014.
14. Miller, T.A., J. Cooper, M.J. Lanzone, **M. Braham**, A.E. Duerr, and T.E. Katzner. 2014. Movements of juvenile bald eagles (*Haliaeetus leucocephalus*) near the Chesapeake Bay, Virginia: implications for bird aircraft strike hazard. Oral presentation. 2014 annual meeting of the Raptor Research Foundation, Corpus Christi, TX September 24–28, 2014.
13. Welsh, S., S. Hammond, H. Liller, J. Zimmerman, **M. Braham**, and J. Aldinger. 2014. An 11-Year Series of Passage Counts of Upstream Migrant American Eels at the Millville Dam Eel Ladder, Lower Shenandoah River, USA. Oral presentation. International Eel Symposium 2014: Are Eels Climbing Back up the Slippery Slope? Part 7. Annual AFS Meeting, Québec City, Canada. August 17–21, 2014.
12. Katzner, T., A. Duerr, T. Miller, and **M. Braham**. 2014. Movements of eagles in the California desert. Oral presentation. 39th annual meeting and symposium, The Desert Tortoise Council, Ontario, CA. February 2014.
11. Duerr, A. E., T. M. Miller, **M. Braham**, and T. Katzner. 2014. Flight behavior of desert golden eagles. Oral presentation. 39th annual meeting and symposium, The Desert Tortoise Council, Ontario, CA. February 2014.
10. **Braham, M.A.**, Duerr, T. Miller, M. Lanzone, D. Brandes and T. Katzner. 2014. Year-round home range of Mojave golden eagles: interpreting the scale of threat from renewable energy development. Oral presentation. The Western Section of The Wildlife Society 2014 Annual Meeting. Reno, NV. January 27–31, 2014.

9. Katzner, T., D. Nelson, **M. Braham**, J. Doyle, P. Bloom, T. Miller, A. Duerr and A. DeWoody. 2014. Origins of eagles killed at the Altamont Pass Wind Resource Area. Oral presentation. The Western Section of The Wildlife Society 2014 Annual Meeting. Reno, NV. January -29-31, 2014.
8. Merovich, G., R.P. Braham, **M.A. Braham**, and D. Hanks. 2012. R Workshop. Assistant Instructor for workshop held at the Northeast Association of Fish and Wildlife Agency's Annual Meeting, Charleston, WV. April 16–17, 2012.
7. **Braham, M.A.** and S.A. Welsh. 2012. Selection of Benthic habitat by small, yellow-phase American eels (*Anguilla rostrata*). Oral presentation. West Virginia University: Wildlife Seminar, Morgantown, WV, April 4, 2012.
6. **Braham, M.A.** and S.A. Welsh. 2011. An experimental study of habitat use by American eels. Oral presentation. Oral presentation. West Virginia University: Wildlife Seminar, Morgantown, WV. April 20, 2011.
5. **Braham, M.A.** 2011. Life history and habitat use of American eels (*Anguilla rostrata*). Oral presentation. Advanced Ichthyology course at the National Conservation Training Center, Shepherdstown, WV. November 14–18 2011.
4. **Braham, M.A.** and A.X. Wilkens. 2010. Endangered Lost River and shortnose suckers in Lake Ewauna and use of the Link River Dam fish ladder, Oregon. Poster presentation. Annual AFS Meeting, Pittsburgh PA, September 5–9, 2010.
3. **Braham, M.A.** and A.X. Wilkens. 2010. Endangered Lost River and shortnose suckers in Lake Ewauna and use of the Link River Dam fish ladder, Oregon. Poster presentation. Annual AFS Oregon Chapter Meeting, Eugene, OR February 24–26, 2010.
2. **Braham, M.A.** and A.X. Wilkens. 2010. Endangered Lost River and shortnose suckers in Lake Ewauna and use of the Link River Dam fish ladder, Oregon. Poster presentation. Annual Klamath Basin Science Conference, Medford, OR, February 1–5, 2010.
1. **Braham, M.A.** 2009. Data summary of endangered Lost River and shortnose suckers in Lake Ewauna. Oral presentation. US Fish and Wildlife Service Upper Klamath River Basin Agencies Meeting, Klamath Falls, OR, Fall 2009.

### **Grants and Research Funding**

- U.S. Air Force. 2020. Bald Eagle aircraft strike hazard at Joint Base Langley-Eustis. Co-Pi with T. Miller and A. Duerr. \$139,999
- National Renewable Energy Lab. 2020. Golden Eagle risk modeling. Co-Pi with T. Miller and A. Duerr. \$93,145.
- The Peregrine Fund. 2019. Refining informed curtailment – Phase 2. Co-PI with T. Katzner, T. Conkling, A. Duerr, and T. Miller. \$37,500.
- Bureau of Land Management. 2019. Movement of ravens across the urban-wildlands gradient. Co-PI with A. Duerr and T. Miller. \$300,000.
- Bureau of Land Management. 2019. Estimating population-wide consequences of renewable energy facilities. Co-PI with A. Duerr and T. Miller. \$164,956.
- National Park Service. 2019. Telemetry analysis at Lake Clark National Park. Co-Pi with T. Miller and A. Duerr. \$64,000.
- Kansas Department of Wildlife, Parks, and Tourism. 2019. Home range and landscape use by Bald Eagles in Kansas. Co-PI with T. Katzner, T. Conkling, A. Duerr, and T. Miller. \$116,300.
- The Peregrine Fund. 2019. Refining informed curtailment. Co-PI with T. Katzner, T. Conkling, A. Duerr, and T. Miller. \$30,000.
- Apple Valley, CA. 2018. Analysis of Golden Eagle home ranges in support of habitat conservation and planning for Apple Valley, CA. Co-PI with T. Miller and A.E. Duerr. \$8,007.
- Joint-Base Langley-Eustis. 2018. Understanding waterbird use of airfields at JBLE-Langley. Co-PI with T. Miller and A.E. Duerr. \$4,975.



- National Fish & Wildlife Foundation. 2017. Assessing risk to Golden Eagles from wind turbine development: an adaptive management approach to building, validating, refining, and implementing risk models. Co-PI with Todd Katzner, Adam Duerr, Maitreyi Sur, Sharon Poessel, and Tricia Miller. \$781,958.
- California Energy Commission. 2015. Learning from real-world experience to understand renewable energy impacts to wildlife. Co-PI with Todd Katzner, David Nelson, James Diffendorfer, Scott R. Loss, Julie Yee, Taber Allison, Adam Duerr, and Tricia Miller. \$1,000,000.
- ENEL Green Power. 2015. Conservation and management of bald eagles in Virginia. Co-PI with Todd Katzner, Jeff Cooper, Tricia Miller, and Adam Duerr. \$100,000.
- National Fish and Wildlife Foundation. 2014. California condor flight response in a variable meteorological and topographic environment. Co-PI with Todd Katzner, Jonathan Hall, Tricia Miller, Adam Duerr, David Brandes, and Michael Lanzone. \$150,000.
- California Department of Fish and Wildlife. 2014. Movement ecology of California condor within the DRECP area. Co-PI with Jonathan Hall, Adam Duerr, Tricia Miller, Phil Turk, and Todd Katzner. \$83,540.

### **Peer Review**

Reviewed manuscript for Wildlife Society Bulletin

### **Awards**

- Star Award – completing a Biological Evaluation on a proposed 2010 Klamath Project operation document within an extremely short deadline, *April 2010*
- Star Award – teamwork in deploying a rotary screw trap into the Link River, *July 2009*
- Star Award – exceeding expectations by going above and beyond the requirement of her position with regards to project development and report writing, *February 2009*
- Award of Appreciation – recognize work on The US Freedom of Information Act request, *August 2008*
- Star Award – surveying, logistics and placement of rigging gear for spill test on Link River, *July 2008*
- Star Award – daily commitment to safe work practices, *March 2008*

### **Certifications**

- Hazard Waste Management / Federal Uniform Hazardous Waste Manifest, Hazard Communication / FRA training
- B3 Combination Helicopter / Airplane Safety
- Backpack Electrofishing and Fish Handling Techniques: Effective Methods for Maximizing Fish Capture and Survival (Meets NMFS and USFWS criteria)
- Crane Safety Training, Div 3 Chp 437 of OR OSHA to include “Core” plus capacities Hydro <50 tons
- Motorboat Operator Certification Course (MOCC), DOI
- North Pacific Groundfish Observer Program, NOAA Fisheries
- Bear Behavior and Firearm Safety, USFWS Region 7
- Maryland Safe Boating, MD DNR

### **Additional Skills**

- Database Management – MS Access and MS SQL Server
- ArcGIS software (10.x) – managed and stored data in geodatabases, organized and prepared data for analysis, used Python add-ins, used GIS extensions (i.e. Tracking Analyst, Spatial Analyst), conducted geospatial analysis, estimated home ranges using aLoCoH, KDE, MCP estimators, determined nest, roost, and perch locations, determined migration connectivity using stable isotope values from IsoMAPs, modeled suitable orographic and updraft, mapped flight patterns and behavior in close proximity to renewable energy development, and created maps for field staff, reports, biological evaluations, webpages, and published manuscripts

Geospatial Modeling Environment software

Jenness Spatial tools (DEM Surface Tools, Land Facet Corridor Tools)

R statistical software – Akaike information criterion, descriptive statistics, generalized estimating equation, graphical data explorations, home range estimations (e.g. aLoCoH, KDE, MCP), linear mixed-effects models, multinomial logistical regression models, resource selection functions, and spatial data analysis

**Professional Societies and Volunteer Activities**

Raptor Research Foundation, 2014–present

Eastern Golden Eagle Working Group, 2013–present

Potomac Valley Audubon Society, 2014–2018

American Fisheries Society, 2002–2005, 2008–2012

West Virginia University student chapter, The Wildlife Society, 2002–2005

West Virginia Raptor Rehabilitation Center, 2002–2005

Coopers Rock Mountain Lion Sanctuary, 2002–2005