

**ERIN E. POSTHUMUS**

Outreach Coordinator and Liaison to the USFWS  
National Coordinating Office, USA National Phenology Network  
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**EDUCATION**

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- 2013 M.S. Wildlife Conservation and Management, School of Natural Resources and the Environment, University of Arizona, Advisor: Dr. John Koprowski  
Thesis: *Do red squirrel middens influence vertebrate species diversity?*
- 2005 B.A. in Environmental, Population and Organismic Biology, University of Colorado, Boulder; Summa cum laude; Study abroad at University of Wollongong, AUS (2003)

**PROFESSIONAL EXPERIENCE**

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**Outreach Coordinator & Liaison to the US Fish & Wildlife Service**, USA National Phenology Network, School of Natural Resources and the Environment, University of Arizona: lead outreach and engagement of partners and citizen scientist participants of *Nature's Notebook* plant and animal observation program; work with National Wildlife Refuges to establish phenology monitoring programs to meet Refuge management and outreach objectives (2013-Present)

**Outreach Assistant**, USA National Phenology Network, School of Natural Resources and the Environment, University of Arizona: conducted outreach and communications related to *Nature's Notebook* program (2010-2013)

**Buffelgrass Outreach Coordinator**, Tucson Clean & Beautiful: conducted outreach and engagement to local partners and community members on invasive species for environmental non-profit in Tucson, AZ (2013)

**Graduate Research Assistant**, School of Natural Resources and the Environment, University of Arizona: conducted research on the montane vertebrate community of the Mt Graham red squirrel (2010-2013)

**Graduate Assistant**, Arizona State Museum, University of Arizona: compiled information on wildlife ecology in the sky islands to be used in interpretive displays in Chiricahua NM and Coronado NM (2013)

**Field Technician**, University of Florida, Gainesville: collected data on wading bird nestling survival in the Florida Everglades (2010)

**Peace Corps Environmental Conservation Advisor**, Vanuatu, South Pacific: advised the Vanuatu government's Environment Unit on land management and resource conservation (2007-2009)

**Field Technician**, Texas Tech University, Lubbock: collected data for a study of swift fox patch occupancy (2006)

**Field Intern**, Saint Louis Zoo, Channel Islands National Park, CA: collected data to track the progress of the Channel Island Fox Captive Breeding Program (2006)

**Field Intern**, University of Hawaii, Hilo: collected data for the Avian Malaria Biocomplexity Project, funded by the National Science Foundation (2005)

## **GRANTS, AWARDS, AND HONORS**

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Principal Investigator, Cooperative Ecosystem Studies Unit (CESU): Phenology Monitoring Technical Assistance – Nature’s Notebook Citizen Science for Engagement and Management, US Fish & Wildlife Service (2019-2023), \$688k to the University of Arizona

Co-Investigator, Phenology for Resource Management and Decision Making, US Fish & Wildlife Service (2016-2019), \$332k to the University of Arizona

Co-Investigator, Phenology for Resource Management and Decision Making, US Fish & Wildlife Service (2014-2016), \$334k to the University of Arizona

Outstanding Thesis Award, School of Natural Resources and the Environment, University of Arizona (2014)

Student Leadership Award, School of Natural Resources and the Environment, University of Arizona (2013)

ASM Grants-in-Aid of Research (2012), \$1500

T&E, Inc. Grants for Conservation (2012), \$2500

University of Arizona’s Graduate Professional Student Council Travel Grant (2011, 2012), \$500

Institute of the Environment Travel Award (2011, 2012), \$500

Graduate Diversity Scholarship, University of Arizona (2010, 2011, 2012), \$3k

Peace Corps Coverdell Fellows/USA, University of Arizona (2010-2013), full tuition to University of Arizona

National Science Foundation’s Graduate Research Fellowship, Honorable Mention (2010)

European Union’s Community Water and Sanitation Programme Grant, Vanuatu (2008), \$10k

Summa cum laude, University of Colorado, Boulder (2005)

National Science Foundation’s Research Experiences for Undergraduates, University of Colorado, Boulder (2004), \$3500

Dean’s List, University of Colorado, Boulder (2002-2005)

## **SERVICE AND LEADERSHIP**

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Board Member, Jefferson Park Neighborhood Association, Tucson, AZ (2016-Present)

Volunteer, Desert Tortoise Adoption Program, Arizona-Sonora Desert Museum (2017-Present)

Volunteer, Humane Society of Southern Arizona, Tucson, AZ (2014-Present)

Partnerships Committee Chair, AZ Master Naturalists, Pima County Chapter (2017-2018)

Volunteer, Tucson Wildlife Center, Tucson, AZ (2014)

Mentor, Tucson Women in STEM Program, University of Arizona (2013-2014)

Chair, Natural Resources Graduate Student Organization, University of Arizona (2012-2013)

Committee Member, American Society of Mammalogists' Conservation Committee (2012-2013)

Graduate student representative, School of Natural Resources and the Environment's Awards Committee, University of Arizona (2013)

Graduate student representative, School of Natural Resources and the Environment's Web Task Force Committee, University of Arizona (2012-2013)

Graduate student representative, School of Natural Resources and the Environment's Strategic Planning Committee, University of Arizona (2011-2012)

Co-Chair, Natural Resources Graduate School Organization, University of Arizona (2011-2012)

Mentor, Peace Corps Coverdell Fellows Program, University of Arizona (2011-2013)

#### **PEER-REVIEWED PUBLICATIONS AND BOOK CHAPTERS**

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Crimmins, TM, KL Gerst, D Huerta, R Marsh, EE Posthumus, A Rosemartin, J Switzer, J Weltzin, L Coop, N Dietscher, D Herms, S. Limbu, RT Trotter, & M Whitmore. In press. Short-term forecasts of pest insect activity inform management activities. *Annals of the Entomological Society of America*.

Gerst, KL, TM Crimmins, EE Posthumus, A Rosemartin, & M Schwartz. In Revision. How well do the Spring Indices predict phenological activity across plant species? *International Journal of Biometeorology*.

Gerst, KL, AH Rosemartin, EE Posthumus, and TM Crimmins. Successes and challenges on a spectrum of stakeholder engagement. *Collaboration Now for the Future: Biodiversity and Management of the Madrean Archipelago VI meeting proceedings, Tucson, Arizona, May 14-18, 2018*. In press.

Posthumus, EE, L. Barnett, TM Crimmins, E Stancioff, J Einerson, PL Warren. Building local resilience to climate change through citizen science, environmental education, and decision-making. In: *Addressing Climate Change at the Community Level in the United States*. 2018. Eds. P.R. Lachapelle and D.E. Albrecht. New York: Routledge/Taylor & Francis.

EK Waller, TM Crimmins, JJ Walker, EE Posthumus, JF Weltzin. 2018. Differential changes in the onset of spring across US National Wildlife Refuges and North American migratory bird flyways. *PLOS One*. doi.org/10.1371/journal.pone.0202495

Posthumus, EE, JL Koprowski, RJ Steidl. 2015. Red squirrel middens influence abundance but not diversity of other vertebrates. *PLoS ONE* 10(4):e0123633. doi:10.1371/journal.pone.0123633

Derbridge, JD, EE Posthumus, HL Chen, JL Koprowski. 2015. *Solenodon paradoxus*. *Mammalian Species*.

Rosemartin, AH, TM Crimmins, C Enquist, KL Gerst, JL Kellerman, EE Posthumus, JF Weltzin, EG Denny, P Guertin, LR Marsh. 2013. Organizing phenological data resources to inform natural resource conservation. *Biological Conservation*. doi:10.1016/j.biocon.2013.07.003

Koprowski, JL, SL Dumas, MJ Merrick, B Oleson, EE Posthumus, TG Jessen, and RN Gwinn. 2013. It's lonely at the top: Biodiversity at risk to loss from climate change. In Gottfried, Gerald J.; Ffolliott, Peter F.; Gebow, Brooke S.; Eskew, Lane G.; Collins, Loa C., comps. 2013. Merging science and management in a rapidly changing world: Biodiversity and management of the Madrean Archipelago III and 7th Conference on Research and Resource Management in the Southwestern Deserts; 2012 May 1-5; Tucson, AZ. Proceedings. RMRS-P-67. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 593 p.

Posthumus, E E, L Barnett, TM Crimmins, G Kish, W Sheftall, E Stancioff, P Warren. 2013. *Nature's Notebook* and Extension: Engaging citizen-scientists and 4-H youth to observe a changing environment. *Journal of Extension*. 51(1).

Posthumus, EE, A Cruz, J Chase. 2010. Influence of habitat type on bird diversity in the Colorado subalpine. *Colorado Birds* 44(4):227-237.

### **POPULAR PRESS ARTICLES**

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Posthumus, EE 2020. Join Us in Tracking Flowers for Bats in Arizona. *The Arizona Wildlifer: The Voice of the Arizona Chapter of The Wildlife Society*. Winter 2020 Issue 1.

Posthumus, EE 2017. National Phenology Network hits 10M Records. *UA News*, University of Arizona.

Posthumus, EE, TM Crimmins. 2011. *Nature's Notebook: A Tool for Education and Research*. *Bulletin of the Ecological Society of America* 92:185–187.

Crimmins, TM, EE Posthumus. 2011. Join the USA National Phenology Network in Tracking Plants and Animals in Your Own Backyard! *The Plant Press* 34(2):8.

Rosemartin, A, TM Crimmins, EE Posthumus. 2010. The USA-NPN: A National Observation and Information Management Network for Phenology. *ILTER Network News* 23(2).

### **REPORTS**

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USA-NPN National Coordinating Office. 2019. Phenology for Resource Management and Decision Making: Phase III and IV Program Evaluation and Final Report. USA-NPN FWS Series 2019-001. Available online at [www.usanpn.org/fws](http://www.usanpn.org/fws). 25 pp.

USA-NPN National Coordinating Office. 2017. Phenology for Resource Management and Decision Making: Phase I and II Program Evaluation and Final Report. USA-NPN FWS Series 2017-001. Available online at [www.usanpn.org/fws](http://www.usanpn.org/fws). 19 pp.

USA-NPN National Coordinating Office. 2015. USA National Phenology Network Valle de Oro NWR Pilot Project. USA-NPN FWS Series 2016-001. Available online at [www.usanpn.org/fws](http://www.usanpn.org/fws). 16 pp.

Hudson, AM, JJ Minor, and EE Posthumus. 2013. *Stories of the Sky Islands: Exhibit Development Resource Guide for Biology and Geology at Chiricahua National Monument and Coronado National Memorial*. Final Report to National Park Service, Cooperative Ecosystems Studies Unit Agreement H1200-05-0003, Task Agreement J8680090020. May 17, 2013: 92 pp.

Posthumus, EE, JL Koprowski. 2013. Squirrel middens as potential hotspots for species diversity: the potential influence of climate change. Final Report. USFS Rocky Mountain Research Station.

Posthumus, EE, JL Koprowski. 2012. Squirrel middens as potential hotspots for species diversity: the potential influence of climate change. Annual Report. USFS Rocky Mountain Research Station.

Posthumus, EE, JL Koprowski. 2011. Squirrel middens as potential hotspots for species diversity: the potential influence of climate change. Annual Report. USFS Rocky Mountain Research Station.

## **PRESENTATIONS AND WORKSHOPS**

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“USA Nacional Phenology Network: Fomentando colaboraciones para entender el impacto de cambio climático en los ecosistemas” (Keynote Speaker) Simposio Fenología y Ciencia Ciudadana, Mexico City (2019)

“Timing is Everything: Phenology Forecasts Aid Managers in Knowing When to Treat Invasive Plants” (Presenter) Southwest Vegetation Management Association Meeting, Flagstaff, AZ (2019)

“Informing wildlife management with phenology data and information” (Workshop Facilitator), The Wildlife Society Annual Meeting (2019)

“Implementing a Successful Citizen Science Effort” (Webinar Presenter) National Conservation Training Center, Shepherdstown, WV (2019)

“National Park Service Binational Restoration Workshop” (Presenter) Elgin, AZ (2018)

“Phenology Information and Tools for Restoration in the Southwest” (Workshop Co-Facilitator) Flagstaff, AZ (2018)

“Schoodic Institute’s Strengthening Your Citizen Science workshop” (Invited Panelist) Estes Park, CO (2018)

“*Nature’s Notebook*: A dynamic plant and animal observation program” (Workshop Facilitator) Madrean Conference, Tucson, AZ (2018)

“Designing a long-term phenology monitoring program for your Refuge or Unit” (Workshop Facilitator) National Conservation Training Center, Shepherdstown, WV (2017)

“Empowering group leaders with real-time data on participation and data quality” (Presenter) Citizen Science Association Conference (2017)

“A long-term phenology monitoring program for your Refuge – Train the Trainers Workshop” (Workshop Facilitator) Neal Smith National Wildlife Refuge, IA (2017)

“Engaging youth in citizen science with *Nature’s Notebook*” (Webinar Presenter) Engaging Youth in Conservation Science Webinar Series, National Conservation Training Center (2017)

“Citizen science on your refuge” (Presenter) National Conservation Training Center, Shepherdstown, WV (2016)

“Become a citizen scientist by tracking plants and animals with *Nature’s Notebook*” (Presenter) Arizona Senior Academy, Tucson, AZ (2016)

“How to use *Nature’s Notebook* in the field” (Workshop Co-Facilitator), Grand Bay National Estuarine Research Reserve and National Wildlife Refuge, MS (2016)

“Natural resource applications of the phenology data and information housed in the National Phenology Database” (Presenter) Annual Meeting of the Wildlife Society (2016)

“Natural resource applications of the phenology data and information housed in the National Phenology Database” (Presenter) Joint Annual Meeting of the AZ/NM Chapters of the Wildlife Society Flagstaff, AZ (2016)

“Engaging youth in citizen science with *Nature’s Notebook*” (Webinar Presenter) Engaging Youth in Conservation Science Webinar Series, National Conservation Training Center (2016)

“*Nature’s Notebook* workshop for Region 3 of the US Fish & Wildlife Service” (Workshop Co-Facilitator) Minnesota Valley National Wildlife Refuge, MN (2015)

“Involving citizen scientists in natural resource management and public engagement at a National Wildlife Refuge” (Poster Presenter) College of Agriculture and Life Sciences Poster Forum, University of Arizona (2015)

“Engaging citizen scientists with *Nature’s Notebook*” (Webinar Presenter) Engaging Youth in Conservation Science Webinar Series, National Conservation Training Center (2015)

“The USFWS Phenology Network: A collaboration between the USFWS and USA-NPN” (Webinar Presenter) National Conservation Training Center (2015)

“Do red squirrel middens promote vertebrate species diversity?” (Presenter) Joint Annual Meeting of the AZ/NM Chapters of the Wildlife Society, Pinetop, AZ (2014)

“Engaging citizen scientists with *Nature’s Notebook*” (Webinar Presenter) Engaging Youth in Conservation Science Webinar Series, National Conservation Training Center (2014)

“Engage your Master Naturalists in scientific observations of plant and animal seasonal changes” (Presenter) Alliance of Natural Resource Outreach and Service Programs Annual Conference, Las Vegas, NV (2014)

“Can red squirrel middens influence species diversity?” (Presenter) Joint Annual Meeting of the AZ/NM Chapters of the Wildlife Society, Albuquerque, NM (2013)

Making meaning out of science: Using *Nature’s Notebook* to engage citizens in exciting and relevant research” (Webinar Presenter) Alliance of Natural Resource Outreach and Service Programs Annual Conference (2013)

“Importance of microclimate to food storage of a larderhoarding mammal” (Poster Presenter) Joint Annual Meeting of the AZ/NM Chapters of the Wildlife Society, Albuquerque, NM (2013)

“Can red squirrel middens influence species diversity?” (Presenter) Institute of the Environment’s Grad Blitz, Tucson, AZ (2012)

“*Nature’s Notebook*: Tracking wildlife and habitat within changing environments” (Workshop Facilitator) Annual Meeting of the Wildlife Society, Portland, OR (2012)

“Can red squirrel (*Tamiasciurus hudsonicus*) middens influence species diversity?” (Poster Presenter) Annual Meeting of the Wildlife Society, Portland, OR (2012)

“Can red squirrel (*Tamiasciurus hudsonicus*) middens influence species diversity?” (Poster Presenter) Annual Meeting of the American Society of Mammalogists, Reno, NV (2012)

“Can red squirrel (*Tamiasciurus hudsonicus*) middens influence species diversity?” (Presenter) 6<sup>th</sup> International Colloquium on Arboreal Squirrels, Kyoto, Japan (2012)

“Use of red squirrel (*Tamiasciurus hudsonicus*) middens by deer mice (*Peromyscus maniculatus*) and cliff chipmunks (*Tamias dorsalis*).” (Poster Presenter) 6<sup>th</sup> International Colloquium on Arboreal Squirrels, Kyoto, Japan (2012)

“Can red squirrel middens influence species diversity?” (Poster Presenter) Annual Meeting of the Wildlife Society, Waikoloa, HI (2011)

“Engage Your Program Participants in Tracking Climate Change Using *Nature’s Notebook!*” (Workshop Facilitator) at Alliance of Natural Resource Outreach and Service Programs Annual Conference, Park City, UT (2011)

“*Nature’s Notebook: Tracking Phenology for Research, Management and Education in the Face of Climate Change*” (Workshop Co-Facilitator) at ESA Annual Conference, Austin, TX (2011)

“How to Use *Nature’s Notebook*” (Workshop Co-Facilitator) at Rocky Mountain Sustainability and Science Network’s Summer Academy, Tetons National Park, WY (2011)

## **PROFESSIONAL MEMBERSHIP**

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The Wildlife Society (2010-Present)

Society for Ecological Restoration (2018-Present)

Citizen Science Association (2017-Present)

Tucson Cactus and Succulent Society (2016-Present)

## **CERTIFICATIONS AND TRAININGS**

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Defensive Driving (2015)

Hunter Safety Education, AZ Game and Fish (2013)

High Occupancy Vehicle Training (2010)

PADI Rescue Scuba Diver (2010)