

Theresa M. Crimmins

tmaucrimmins@gmail.com

Research Gate profile: Theresa_Crimmins

ORCID ID: <http://orcid.org/0000-0001-9592-625X>

Twitter: @TheresaCrimmins

EDUCATION

- 2005 Ph.D., School of Renewable Natural Resources, University of Arizona, Tucson, AZ
- 1999 M.A., Geography, Western Michigan University, Kalamazoo, MI
- 1997 B.S., Biological Sciences, Western Michigan University, Kalamazoo, MI

PROFESSIONAL EXPERIENCE

- 2015-present Assistant Director, USA National Phenology Network, Tucson, AZ
- 2008-2015 Partnerships & Outreach Coordinator, USA National Phenology Network, Tucson, AZ
- 2006-present Adjunct Professor and Associate Research Specialist, School of Natural Resources and the Environment, University of Arizona, Tucson, AZ
- 2002-2006 Quantitative Ecologist, Sonoran Desert Network Inventory & Monitoring, National Park Service, Tucson, AZ
- 2002-2004 UA/NASA Space Grant Fellow, University of Arizona, Tucson, AZ

PROFESSIONAL SERVICES & ACTIVITIES

Board and Committee Membership

- 2017-present Member, SciStarter NSF AISL Advisory Board
- 2016-present Member, Editorial Board, *Ecosphere*
- 2014-2017 Member, Editorial Advisory Board, *International Journal of Biometeorology*
- 2010-2015 Member, Phenology Research and Observations of Southwest Ecosystems Symposium Planning Committee
- 2011-2013 Member, Community Cooperative Rain, Hail, & Snow (CoCoRaHS) Network NSF Advisory Board
- 2011-2012 Member, Western Hummingbird Partnership Education Committee

Invited Workshop Participation

- 2016 USA-NPN Phenology Model Workshop. Mar 7-9, Tucson, AZ. **Co-organizer and co-facilitator.**
- 2015 Global Learning and Observations to Benefit the Environment (GLOBE) Program Citizen Science Workshop. Boulder, CO.
- 2012 “Identifying and prioritizing phenological data products and tools for use in science, management, and decision making.” Phenology Research Coordination Network Workshop. Milwaukee, WI.
- 2010-2012 “Forecasting phenology: Integrating ecology, climatology, and phylogeny to understand plant responses to climate change” National Center for Ecological Analysis and Synthesis working group. Santa Barbara, CA.
- 2009 Phenology Research Coordination Network Workshop. Milwaukee, WI.
- 2008 Phenology Research Coordination Network Workshop. Milwaukee, WI.
- 2007 Citizen Science Toolkit Conference. Lab of Ornithology, Cornell University, Ithaca, NY.
- 2005 Global Environmental Change and Biodiversity Workshop, co-sponsored by the Terrestrial Ecosystem Responses to Atmospheric and Climate Change (TERACC) initiative and DIVERSITAS, Dourdan, France.
- 2003 A Knowledge Network for Biocomplexity: Building and Evaluating a Metadata-based Framework for Integrating Heterogeneous Scientific Data. National Center for Ecological Analysis and Synthesis workshop, Santa Barbara, CA.

Community Service

- 2016 Secured funding and led effort to establish a pollinator garden at Gale Elementary School.
- 2010 Led preparation of proposal to designate “Finger Rock Research Natural Area” within the Coronado National Forest. Awaiting final decision.

HONORS & AWARDS

Professional Honors & Awards

- 2018 Distinguished Alumnus, Western Michigan University Department of Geography

- 2017 Renewable Natural Resource Foundation Outstanding Achievement Award for USA-NPN's Start of Spring Maps and Access Tools. Project team member and nomination co-author.
- 2016 USGS Environmental Achievement Award in Climate Champion category. Project team member and lead nomination author.
- Greening the Department of Interior, Honorable Mention.
www.doi.gov/greening/awards/2016 Project team member and lead nomination author.
- 2015 Arizona Chapter of the American Psychological Association's Healthy Workplace Award. Project team member
- 2014 USGS Shoemaker Awards for Communication Product Excellence, Internet Product category for "Connecting People with Nature to Benefit Our Changing Planet: The *Nature's Notebook* website." Project team member and lead nomination author.
- 2005 On-the-Spot Award, Sonoran Desert Network, National Park Service for outstanding job performance

Academic Honors & Awards

- 2003-2004 University of Arizona/NASA Space Grant Graduate Fellowship, University of Arizona/National Aeronautical Space Administration Space Grant Program
- 1999 Department Graduate Research and Creative Scholar, Western Michigan University Graduate College
- 1999 Outstanding Graduate Research Award, College of Arts & Sciences, Western Michigan University
- 1999 Graduate Student Outstanding Scholastic Achievement Award, Department of Geography, Western Michigan University
- 1997 Clifford and Ella Chapman Distinguished Senior Scholarship, Western Michigan University
- 1996 Frank Hinds Zoology Award, Western Michigan University Department of Biology
- 1993-1997 Excellence Scholarship, Western Michigan University

PUBLISHED WORKS

Peer-reviewed Journal Articles, Book Chapters, Technical Reports and Datasets

- 2018 Posthumus, E.E., L. Barnett, **T.M. Crimmins**, P.L. Warren, E. Stancioff, and J. Einerson. "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*. Eds. P.R. Lachapelle and D.E. Albrecht. New York: Routledge/Taylor & Francis. In press.
- 2017 **Crimmins, T.M.**, M.A. Crimmins, K.L. Gerst, A.H. Rosemartin, and J.F. Weltzin. 2017. USA National Phenology Network's volunteer-contributed observations yield predictive models of phenological transitions. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0182919>
- Crimmins, T.M.** and Crimmins, M.A. 2017. Plant Phenology Site Phenometrics + Accumulated Growing Degree Day Calculations for the continental United States (2009-2016): U.S. Geological Survey data release, <https://doi.org/10.5066/F7XG9Q0X>.
- Ellwood, E., **T.M. Crimmins**, and A.J. Miller-Rushing. 2017. Citizen science and conservation: Recommendations for a rapidly moving field. *Biological Conservation* 208:1-4. <http://dx.doi.org/10.1016/j.biocon.2016.10.014>
- Crimmins, T.M.**, R.L. Marsh, J. Switzer, M.A. Crimmins, K.L. Gerst, A.H. Rosemartin, and J.F. Weltzin. 2017. USA National Phenology Network gridded products documentation. U.S. Geological Survey Open-File Report 2017-1003. DOI: 10.3133/ofr20171003.
- Crimmins, T.M.**, L. Barnett, E.G. Denny, A.H. Rosemartin, S. Schaffer, and J.F. Weltzin. "From tiny acorns grow mighty oaks: what we've learned from nurturing *Nature's Notebook*." In: *Handbook of Citizen Science in Ecology and Conservation*. Eds. C. Lepczyk, T. Vargo, and O.D. Boyle. University of California Press. In press.
- 2015 Wright, K.W., K.L. Vanderbilt, D.W. Inouye, C.D. Bertelsen, and **T.M. Crimmins**. 2015. Turnover and reliability of flower communities in extreme environments: Insights from long-term phenology data sets. *Journal of Arid Environments* 115:27-34.
- Fuccillo, K.K., **T.M. Crimmins**, C. DeRivera, and T.S. Elder. 2015. Assessing accuracy in citizen science-based plant phenology monitoring. *International Journal of Biometeorology* 59:917-926. DOI 10.1007/s00484-014-0892-7
- 2014 **Crimmins, T.M.** 2014. "Finding a climate change signal in unexpected places." Review of *Walden warming: climate change comes to Thoreau's woods*. *Ecology* 95: 3234-3235.
- Crimmins, T.M.**, J.F. Weltzin, A.H. Rosemartin, E.M. Surina, and L. Marsh, E.G. Denny. 2014. Targeted campaign increases activity among participants in *Nature's Notebook*, a citizen science project. *Natural Sciences Education* 43:64-72.
- Crimmins, T.M.**, C.D. Bertelsen, and M.A. Crimmins. 2014. Within-season flowering interruptions are common in the water-limited Sky Islands. *International Journal of Biometeorology* 58:419-426. DOI 10.1007/s00484-013-0745-9.
- Denny, E.G., K.L. Gerst, A.J. Miller-Rushing, G.L. Tierney, **T.M. Crimmins**, C.A.F. Enquist, P. Guertin, A.H. Rosemartin, M.D. Schwartz, K.A. Thomas, J.F. Weltzin. 2014. Standardized phenology monitoring methods to track plants and animal activity for science and resource management applications. *International Journal of Biometeorology* 58:591-601. DOI: 10.1007/s00484-

014-0789-5.

Rosemartin, A.H., **T.M. Crimmins**, C.A.F. Enquist, K.L. Gerst, J.L. Kellermann, E.E. Posthumus, J.F. Weltzin, E.G. Denny, P. Guertin, and L. Marsh. 2014. Organizing phenological data resources to inform natural resource conservation. *Biological Conservation* 173:90-97.

<http://dx.doi.org/10.1016/j.biocon.2013.07.003>

Czech, B., S. Covington, **T.M. Crimmins**, J.A. Ericson, C. Flather, M. Gale, K. Gerst, M. Higgins, M. Kaib, E. Marino, T. Moran, J. Morton, N. Niemuth, H. Peckett, D. Savignano, L. Saperstein, S. Skorupa, E. Wagener, B. Wilen, and B. Wolfe. 2014. *Planning for Climate Change on the National Wildlife Refuge System*. U.S. Fish and Wildlife Service, National Wildlife Refuge System, Washington, DC.

<http://www.fws.gov/refuges/vision/pdfs/PlanningforClimateChangeontheNWRS.pdf>

- 2013 Davies, T.J., E.M. Wolkovich, N.J.B. Kraft, N. Salamin, J.M. Allen, T.R. Ault, J.L. Betancourt, K. Bolmgren, E.E. Cleland, B.I. Cook, **T.M. Crimmins**, S.J. Mazer, G.J. McCabe, S. Pau, J. Regetz, M.D. Schwartz, S. Travers. 2013. Phylogenetic conservatism in plant phenology. *Journal of Ecology* 101: 1520-1530. doi: 10.1111/1365-2745.12154.

Crimmins, T.M., M.A. Crimmins, and C.D. Bertelsen. 2013. Spring and summer patterns in flowering onset, duration, and constancy across a water-limited gradient. *American Journal of Botany* 100(6):1-11.

Posthumus, E.E., L. Barnett, **T.M. Crimmins**, G. Kish, W. Sheftall, E. Stancioff, and 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): 1IAW1. Online:

<http://www.joe.org/joe/2013february/iw1.php>.

Schwartz, M.D., E. Beaubien, **T.M. Crimmins**, and J.F. Weltzin. 2013. "North America." In: *Phenology: An Integrative Environmental Science*. 2nd edition. Dordrecht: Kluwer Academic Publishers. Online: <http://www.springer.com/life+sciences/ecology/book/978-94-007-6924-3> pp 67-89.

- 2012 Cook, B.I., E.M. Wolkovich, T.J. Davies, T.R. Ault, J.L. Betancourt, J.M. Allen, K. Bolmgren, E.E. Cleland, **T.M. Crimmins**, N.J.B. Kraft, L.T. Lancaster, S.J. Mazer, G.J. McCabe, B.J. McGill, C. Parmesan, S. Pau, J. Regetz, N. Salamin, M.D. Schwartz, S.E. Travers. 2012. Sensitivity of spring phenology to warming across temporal and spatial climate gradients in two independent databases. *Ecosystems* DOI: 10.1007/s10021-012-9584-5.

Wolkovich, E.M., B.I. Cook, J.M. Allen, **T.M. Crimmins**, S. Travers, S. Pau, J. Regetz, T.J. Davies, J.L. Betancourt, N.J.B. Kraft, T.R. Ault, K. Bolmgren, S.J. Mazer, G.J. McCabe, B.J. McGill, C. Parmesan, N. Salamin, M.D. Schwartz, and E.E. Cleland. 2012. Warming experiments underpredict plant phenological responses to climate change. *Nature* 485: 494-497.

Crimmins, T.M. and M.A. Crimmins. 2012. Appreciating and archiving present-day naturalists' contributions to science. *BioScience* 62:531-532.

Deiz, J.M., I. Ibañez, A.J. Miller-Rushing, S.J. Mazer, **T.M. Crimmins**, M.A. Crimmins, C.D.

- Bertelsen, D.W. Inouye. 2012. Forecasting phenology: from species variability to community patterns. *Ecology Letters* 15:545-553.
- Cleland, E.E., J.M. Allen, **T.M. Crimmins**, S. Pau, S.E. Travers, E.M. Wolkovich. 2012. Phenological tracking enables positive species responses to climate change. *Ecology* 93: 1765-1771.
- 2011 **Crimmins, T.M.**, M.A. Crimmins, and C.D. Bertelsen. 2011. Onset of summer flowering in a 'Sky Island' is driven by monsoon moisture. *New Phytologist* 191:468-479. **Featured in a Commentary in the same issue of the journal: "Broadening the study of phenology and climate change",** R.B. Primack and A.J. Miller-Rushing, 191:307-309.
- 2010 **Crimmins, T.M.**, M.A. Crimmins, and C.D. Bertelsen. 2010. Complex responses to climate drivers in onset of spring flowering across a semi-arid elevation gradient. *Journal of Ecology* 98:1042-1051.
- Crimmins, T.M.** and C.L. Rupprecht. 2010. Testing Online learning modules for an extension program – useful and utilized? *Journal of Natural Resources and Life Sciences Education* 39:102-108.
- 2009 **Crimmins, T.M.**, M.A. Crimmins, and C.D. Bertelsen. 2009. Flowering range changes across an elevation gradient in response to warming summer temperatures. *Global Change Biology* 15:1141-1152.
- 2008 **Crimmins, T.M.** and G.R. McPherson. 2008. Vegetation and seed bank response to *Eragrostis lehmanniana* removal. *Weed Research* 48:542-551.
- Crimmins, M.A.** and **T.M. Crimmins**. 2008. Monitoring plant phenology using digital repeat photography. *Environmental Management* 41:949-958.
- Crimmins, T.M.**, M.A. Crimmins, D. Bertelsen, and J. Balmat. 2008. Relationships between flowering diversity and climatic variables along an elevation gradient. *International Journal of Biometeorology* 52:353-366.
- Crimmins, T.**, M.S. Mauzy, and S.E. Studd. 2008. Assessing exotic plant distribution, abundance, and impact at Montezuma Castle and Tuzigoot National Monuments in Arizona, USA. *Ecological Restoration* 26:47-53.
- 2007 **Crimmins, M.A.**, G. Zaines, N. Haas, C.K. Jones, G. Garfin, and **T.M. Crimmins**. 2007. Changes on the range: A novel exercise to explore interactions between range management decision making and climate change. *Journal of Natural Resources and Life Sciences Education*. 36:76-86.
- Mau-Crimmins, T.** 2007. Effects of removing *Cynodon dactylon* from a recently abandoned agricultural field. *Weed Research*. 47:212-221.
- 2006 Schussman, H.R., E.L. Geiger, **T.M. Mau-Crimmins**, and J. Ward. 2006. Spread and current potential distribution of an alien grass, *Eragrostis lehmanniana* Nees, in the southwestern USA: comparing historical data and ecological niche models. *Diversity and Distributions* 12:582-592.
- Mau-Crimmins, T.**, H.R. Schussman, and E.L. Geiger. 2006. Can the invaded range of a species be predicted sufficiently using only native-range data?: Lehmann lovegrass (*Eragrostis lehmanniana*)

in the southwestern United States. *Ecological Modelling* 193:736-746.

- 2005 **Mau-Crimmins, T.**, J.E. de Steiguer, and D. Dennis. 2005. The Analytic Hierarchy Process and public participation in forest planning: A pilot study involving natural resource students. *Forest Economics & Policy* 7(4):501-514.
- 2003 **Mau-Crimmins, T.** and D.S. Lemberg. 2003. Reserve site selection at a non-profit educational nature center. *The Great Lakes Geographer*. 10(1): 34-45.
- 2002 de Steiguer, J.E. and **T. Mau-Crimmins**. 2002. Economic analysis in watershed management planning: Methods, applications and education. *Annals of Arid Zone* 41: 343-357.

Peer-reviewed Conferences Proceedings

- 2013 **Crimmins, T.M.**, M.A. Crimmins, and C.D. Bertelsen. Temporal patterns in species flowering in Sky Islands of the Sonoran Desert ecoregion. 2013. Pages 33-39 *in*: Gottfried, Gerald J.; Ffolliott, Peter F.; Gebow, Brooke S.; and Eskew, Lane G., compilers. 2012. Merging science and management in a rapidly changing world: biodiversity and management of the Madrean Archipelago III. 2012 May 1-5, Tucson, AZ. Proceedings RMRS-P-67. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Online: http://www.fs.fed.us/rm/pubs/rmrs_p067/rmrs_p067_033_039.pdf.
- 2011 Luvall, J.C., W.A. Sprigg, E. Levetin, A. Huete, S. Nickovic, G.A. Pejanovic, A. Vukovic, P.K. Van de Water, O.B. Myers, A.M. Budge, A.P. Zelicoff, L. Bunderson, **T.M. Crimmins**. 2011. Use of MODIS satellite images and an atmospheric dust transport model to evaluate *Juniperus* spp. pollen phenology and dispersal. Proceedings of the 34th International Symposium on Remote Sensing of Environment. Sydney, Australia. Online: <http://www.isprs.org/proceedings/2011/ISRSE-34/211104015Final00129.pdf>.
- Schwartz, K, **T. Crimmins**, and J. D'Agostino. An Online Innovation to Enhance Instruction and Assess Learning. Learning It by Living It: A Wild Ride through the Water Cycle. Proceedings of the North American Association for Environmental Education, 37th Annual Conference. 15-18 October 2008, Wichita, Kansas. Online: http://www.allacademic.com/meta/p240856_index.html
- 2005 **Mau-Crimmins, T.M.** and B.J. Orr. 2005. Monitoring nonnative plants using hand-held GIS technology. 2005. Pages 298-301 *in*: Gottfried, Gerald J.; Gebow, Brooke S.; Eskew, Lane G.; and Edminster, Carl, compilers. Biodiversity and Management of the Madrean Archipelago II. Proceedings RMRS-P-36. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Online: <http://www.treesearch.fs.fed.us/pubs/23218>
- Stitt, E.W., **T. Mau-Crimmins**, and D.E. Swann. 2005. Biogeography of Amphibians and Reptiles in Arizona. 2005. Pages 140-144 *in*: Gottfried, Gerald J.; Gebow, Brooke S.; Eskew, Lane G.; and Edminster, Carl, compilers. Biodiversity and Management of the Madrean Archipelago II. Proceedings RMRS-P-36. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky

Mountain Research Station. Online: <http://www.treesearch.fs.fed.us/pubs/23185>

Swann, D.E., **T. Mau-Crimmins**, and E.W. Stitt. 2005. In Search of the Madrean Line: Biogeography of Herpetofauna in the Sky Island Region. 2005. Pages 149-153 *in*: Gottfried, Gerald J.; Gebow, Brooke S.; Eskew, Lane G.; and Edminster, Carl, compilers. Biodiversity and Management of the Madrean Archipelago II. Proceedings RMRS-P-36. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Online: <http://www.treesearch.fs.fed.us/pubs/23187>

2003 **Crimmins, M.** and **T. Mau-Crimmins**. Climate Variability and the Spread of Non-native Plant Species at the Santa Rita Experimental Range, Arizona. *Proceedings of the Santa Rita Experimental Range: One-Hundred Years of Accomplishments and Contributions*, 30 Oct-1 Nov, 2003, Tucson, Arizona, p. 111-115.

Geiger, E., **T. Mau-Crimmins**, and H. Schussman. Predicting Lehmann Lovegrass Spread in Southeastern Arizona, USA. *Proceedings of the Santa Rita Experimental Range: One-Hundred Years of Accomplishments and Contributions*, 30 Oct-1 Nov, 2003, Tucson, Arizona, p. 116-120.

Popular Press and Trade Journals

2018 **Crimmins, T.M.** 2018. "Cumulative Growing Degree Day (GDD) Maps Pinpoint Management Windows for Tree Pests." *City Trees*. Jan-Feb 2018.

2014 **Crimmins, T.M.** and M.D. Schwartz. 2014. "Scientists love lilacs almost as much as you do." *Lilacs*.

Crimmins, T.M. and D. Hartel. 2014. Timing is Everything: Phenology as a Tool for City Foresters. *City Trees*. Mar-Apr 2014. <http://read.dmtmag.com/i/271060>

2011 Enquist, C., **T. Crimmins**, and L. Marsh. 2011. "The USA National Phenology Network: A Partner for Tracking the Impacts of Climate Change on Natural Resources in the Southwest and Beyond." *Sky Islands Alliance Newsletter*, Summer 2011.

Posthumus, E. and **T. Crimmins**. 2011. "Nature's Notebook: A Tool for Education and Research." *Bulletin of the Ecological Society of America* 92:185-187. doi:<http://dx.doi.org/10.1890/0012-9623-92.2.185>

Crimmins, T. and E. Posthumus. 2011. "Join the USA National Phenology Network in Tracking Plants and Animals in Your Own Backyard!" *The Plant Press*, Winter 2010/11. Online: <http://www.aznps.com/documents/2011.02.PP.pdf>.

2010 Rosemartin, A., E. Posthumus, and **T. Crimmins**. 2010. "A National Observation and Information Management Network for Phenology." *LTER Network News*, 21 December. Online: <http://news.lternet.edu/article2263.html>.

2009 **Crimmins, T.** and K. Waser. "Making Simple Rainwater Harvesting Strategies Accessible: An

- Online Learning Module Unveiled." *Backyards & Beyond*, Fall 2009.
- 2008 **Crimmins, T.** and M. Crimmins. "The Critical Role that Citizen Scientists Can Play in Identifying Adaptation Strategies." *Arid Lands Newsletter*, June 2008. Online: <http://ag.arizona.edu/OALS/ALN/aln60/crimmins.pdf>
- 2007 **Crimmins, T.** "Five Miles & Twenty Years Later... Dave Bertelsen's Amazing Data Set." *Sky Islands Alliance Newsletter*, Summer 2007.
- 2001 **Mau-Crimmins, T.** and M. S. Kieser. 2001. "Revegetation of urban, industrial sites using native grasses and wildflowers." *Land & Water* Nov/Dec: 18-20.

Media Engagement

- 2014 Appearance in "Flower Power" episode of PBS Kids show, *SciGirls*. <http://pbskids.org/video/?guid=52df8cf2-7ef7-4529-9067-8b12a11704e2>
- 2013 Puckett, C. and **T. Crimmins.** "Tick-Tock, Nature's Clock Out of Sync?" USGS Science Features: Top Story, Mar 20, 2013. http://www.usgs.gov/blogs/features/usgs_top_story/tick-tock-natures-clock-out-of-sync/?from=title.

Online Learning Modules

- 2009 Simple Techniques for Backyard Water Harvesting: An Online Instruction Module. University of Arizona, Technology and Research Initiative Fund (TRIF), Water Sustainability Program. Online: <http://rwh.arid.arizona.edu>
- Managing Rangelands Before, During, and After Drought. National Learning Center for Private Forest and Range Land Owners. Online: <http://www.forestandrange.org>
- Watershed Function and Water Conservation for Range Management. National Learning Center for Private Forest and Range Land Owners. Online: <http://www.forestandrange.org>
- 2008 Arizona Project WET. Living It by Learning It: A Wild Ride Through the Water Cycle. Online: <http://projectwet.arid.arizona.edu/>
- 2007 Arizona Master Watershed Stewards online learning module series. Online: <http://ag.arizona.edu/watershedsteward/resources/index.html>

Reports

- 2017 USA-NPN National Coordinating Office. 2017. *USA National Phenology Network 2016 Annual Report*. USA-NPN Programmatic Series 2017-001. www.usanpn.org. **Primary author.**

- 2016 USA-NPN National Coordinating Office. 2016. *USA National Phenology Network 2015 Annual Report*. USA-NPN Programmatic Series 2016-001. www.usanpn.org. **Primary author.**
- USA-NPN National Coordinating Office. 2016. *USA National Phenology Network Phenology Model Workshop Report*. USA-NPN Programmatic Series 2016-002. www.usanpn.org. **Co-author.**
- USA-NPN National Coordinating Office. 2016. *Review Implementation Plan*. USA-NPN Programmatic Series 2016-003. www.usanpn.org. **Primary author.**
- 2015 USA-NPN National Coordinating Office. 2015. *USA National Phenology Network 2014 Annual Report*. USA-NPN Programmatic Series 2015-001. www.usanpn.org. **Primary author.**
- Gerst, K.A., A.H. Rosemartin, E.G. Denny, C.A.F. Enquist, R.L. Marsh, D.J.P. Moore, **T.M. Crimmins**, J.F. Weltzin. 2015. *USA National Phenology Network data product development framework and data product catalog*, v 1.0. USA-NPN Technical Series 2015-001. www.usanpn.org.
- 2014 USA-NPN National Coordinating Office. 2014. *USA National Phenology Network 2013 Annual Report*. USA-NPN Programmatic Series 2014-001. www.usanpn.org. **Primary author.**
- 2013 USA-NPN National Coordinating Office. 2013. *USA National Phenology Network 2012 Annual Report*. USA-NPN Programmatic Series 2013-001. www.usanpn.org. **Primary author.**
- Kellermann, J.L., **T.M. Crimmins**, E.G. Denny, C.A.F. Enquist, K.L. Gerst, A.H. Rosemartin, and J.F. Weltzin. 2013. *Nature's Notebook: 2012 State of the Data*. USA-NPN Technical Series 2013-001. www.usanpn.org.
- 2012 Rosemartin, A.H., **T.M. Crimmins**, and the USA-NPN National Coordinating Office development team. 2012. *An Evaluation of Observer Engagement Strategies for Nature's Notebook*. USA-NPN Technical Series 2012-002. www.usanpn.org.
- Kellermann, J.L., **T.M. Crimmins**, E.G. Denny, C.A.F. Enquist, R.L. Marsh, A.H. Rosemartin, J.F. Weltzin. 2012. *USA National Phenology Network 2011 Data & Participant Summary*. USA-NPN Technical Series 2012-001. www.usanpn.org.
- USA-NPN National Coordinating Office. 2012. *USA National Phenology Network 2011 Annual Report*. USA-NPN Programmatic Series 2011-001. www.usanpn.org. **Primary author.**
- 2011 USA-NPN National Coordinating Office. 2011. *USA National Phenology Network 2010 Annual Report*. USA-NPN Programmatic Series 2011-003. www.usanpn.org. **Primary author.**
- 2010 **Crimmins, T.M.**, A.H. Rosemartin, R.L. Marsh, E.G. Denny, C.A.F. Enquist, J.F. Weltzin. 2010. *USA National Phenology Network 2010 Data & Participant Summary*. USA-NPN Technical Series 2011-001. www.usanpn.org.
- Crimmins, T.M.**, A.H. Rosemartin, K.A. Thomas, R.L. Marsh, E.G. Denny, J.F. Weltzin. 2010. *USA National Phenology Network 2009 Data Summary*. USA-NPN Technical Series 2010-002.

www.usanpn.org.

Thomas, K.A., J.F. Weltzin, E. Denny, A. Miller-Rushing, **T.M. Crimmins**, and A Rosemartin. 2010. *The National Phenology Monitoring System, v0.1*. USA-NPN Technical Series 2010-001. www.usanpn.org.

USA-NPN National Coordinating Office. 2010. *USA National Phenology Network 2009 Annual Report*. USA-NPN Programmatic Series 2010-001. www.usanpn.org. **Primary author**.

Crimmins, T.M., A.H. Rosemartin, A. Lincicome, J.F. Weltzin. 2010. *USA National Phenology Network 2009 Observer Survey Report*. USA-NPN Technical Series 2010-003. www.usanpn.org.

- 2007 **Mau-Crimmins, T.** and E. Porter. 2007. *Air Quality Monitoring Protocol and Standard Operating Procedures for the Sonoran Desert Network*. Natural Resource Report NPS/SODN/NRTR-2007/003. National Park Service. Tucson, AZ. NPS D-60, April 2007.
- 2006 **Mau-Crimmins, T.** 2006. *Saguaro National Park Exotic Plant Early Detection Predictive Modeling – Final Report*. U.S. Department of the Interior, National Park Service. Tucson, AZ.
- Mau-Crimmins, T.M.** 2006. *Evaluating Management of Lehmann lovegrass (Eragrostis lehmanniana) at Coronado National Memorial – Final Report*. Technical Report NPS/IMR/SODN-006. National Park Service. Denver, CO.
- Studd, S.E., **T.M. Mau-Crimmins**, and J. Welborn. 2006. *Invasive Plant Mapping Inventory for Tonto National Monument*. Technical Report NPS/IMR/SODN-004. National Park Service. Denver, CO.
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