Publications

Neal M Williams

Journals

1. 1992 Lindsay, S., N. Williams, and A.F. Dyer. Wet storage of fern spores: unconventional but far more effective! Fern Horticulture: past, present, and future perspectives, 285-294.

2. 1992 Jeanne, R.L. and N.M. Williams. Age polyethism and defense in a tropical social wasp. Journal of Insect Behavior, 5(2): 211-227.

3. 1996 Waser, N.M., L. Chittka, M.V. Price, N.M. Williams. Generalization in pollination systems and why it matters. Ecology, 77(4): 1043-1060.

4. 1996 Williams, N.M. and K. Goodell. Pollen of the Southeastern United States: with Emphasis on Melissopalynology and Entomopalynology. Quarterly Review of Biology, 30(71): 279-280.

5. 1998 Williams, N.M. and J.D. Thomson. Trapline foraging by bumble bees III, Temporal patterns of visitation and foraging success at single plants. Behavioral Ecology, 9(6): 612-621.

6. 1999 Chittka, L., N.M. Williams, H. Rassmussen, and J.D. Thompson. Navigation without vision: bumblebee orientation in complete darkness. Prod. R. Soc. Lond B, (226) 45-50.

7. 2000 Williams, N.M. and K. Goodell. The association of nesting material and mandible shape in Osmia (Hymenoptera: Megachilidae): a morphometric analysis. Annals Entomol. Soc. Amer, 93(2): 318-325.

8. 2001 Williams, N.M., R.L. Minckley, and F. Silveira.. Demonstrating faunal changes in the face of natural variation in bees: the importance of baseline data. Cons. Ecology, 5(1): 7.

x9. 2002 Kremen, D., N.M. Williams, and R.W. Thorp. Crop pollination from native bees at risk from agricultural intensification. Proc. Nat Acad. Sci, 99: 16812-16816.

10. 2002 Williams N. M. and V.J. Tepedino. Consistent mixing of near and distant resources in foraging bouts by the solitary mason bee Osmia lignaria. Behav Ecol, 14(1): 141-149.

11. 2003 Williams, N.M. Use of novel pollen species by specialist and generalist solitary bees (Hymenoptera Megachilidae). Oecologia, 134: 228-237.

12. 2003 Kremen, C., Bugg, R.L., Nicola, N., Smith, S.A., Thorp, R.W., and Williams, N.M. Native bees, native plants and crop pollination in California. Fremontia, (31) 1.

13. 2004 Kremen, C., N.M. Williams, R.L. Bugg, and J.P. Fay. The area requirements of an ecosystem service, crop pollination by native bee communities in California. Ecology Letters, 7: 1109-1119.

14. 2005 Winfree, R., J. Dushoff, R. Budny, N.M. Williams, and C. Kremen. Testing simple indices of habitat proximity. American Naturalist, 165(6): 707-717.

15. 2005 Larsen,T., N.M. Williams, and C. Kremen. Extinction order and altered community structure rapidly disrupt ecosystem functioning. Ecology Letters, (8) 538-547.

16. 2006 Cane, J.H., R.L. Minckley, T.H. Roulston, and N.M. Williams. Multiple responses of a desert bee guild (Hymenoptera: Apiformes) to urban habitat fragmentation. Ecological Applications, 16(2): 632-644.

17. 2006 Kim, J., N.M. Williams, and C. Kremen. Effects of cultivation and proximity to natural habitat on ground-nesting native bees in California sunflower fields. Journal of Kansas Entomological Society, 79: 309-320.

18. 2007 Kremen, C., N.M. Williams, et al.. Pollination and other ecosystem services produced by mobile organisms: a conceptual framework for the effects of the land use change. Ecology Letters, 10: 299-314.

x19. 2007 Greenleaf, S.A., N.M. Williams, R. Winfree, and C. Kremen. Bee foraging ranges and their relationship to body size. Oecologia, 153: 589-596.

20. 2007 Elliott, S.E., R.E. Irwin, L.S. Adler, and N.M. Williams. Nectar Alkaloids do not affect offspring performance of a native colitary bee, Osmia lingnaria (Megachilidae). Ecology Entomology, 33: 298-304.

21. 2007 Williams, N.M. and C. Kremen. Persistence of bees in fragmented landscapes: Osmia lignaria in agro-natural mosaics. Ecological Applications, 17: 910-921.

22. 2007 Williams, N.M. Restoration of native bee pollinators within the Sacramento River System (California). Ecological Restoration, 25: 67-68.

23. 2007 Winfree, R., N.M. Williams, J. Dushoff, and C. Kremen. Native bees provide insurance against ongoing honey bee losses. Ecology Letters, 10: 1105-1113.

24. 2008 Winfree, R., N.M. Williams, H. Gaines, J. Ascher, and C. Kremen. Wild bee pollinators provide the majority of crop visitation across land use gradients in New Jersey and Pennsylvania, USA. Journal of Applied Ecology, 45: 793-802.

25. 2008 Golet, G.H., T. Gardali, C.A. Howell, J. Hunt, R.A. Luster, W. Rainey, M.D. Roberts, J. Silveira, H. Swagerty, and N. M. Williams. Wildlife response to riparian restoration on the Sacramento River. San Francisco Estuaries and Watershed Science, 6: 1-26.

26. 2009 Golet, G.H., T. Gardali, J.W. Hunt, D.A. Koenig, N.M. Williams. Temporal and Taxonomic variability in response of fauna to riparian restoration. Restoration Ecology, doi: 10.1111/j.1526-100X.2009.00525.x.

27. 2009 Lonsdorf, E., C. Kremen, T. Ricketts, R. Winfree, N.M. Williams, and S.A. Greenleaf. Modeling pollination services across agricultural landscapes. Annals of Botany, 103: 1589-1600.

28. 2009 Richards, S. A., N.M. Williams, and L.D. Harder. Variation in Pollination: Causes and Consequences for Plant Reproduction. American Naturalist, 174: 382-398.

x29. 2010 Williams, N.M., E.E. Crone, T.H. Roulston, R.L. Minckley, L. Packer, and S.G. Potts. Ecological and life history traits predict bee species responses to environmental disturbances. Biological Conservation, 143: 2280-2291.

+30. 2010 Ullmann, K. and N.M. Williams. Bringing native bees and forbs back to agricultural landscapes. Grasslands, 20(3): 10-11.

x31. 2010 Williams, N.M. Restoration of non-target species: Bee communities and pollination function in riparian forests. Restoration Ecology, doi: 10.1111/j.1526-100X.2010.00707.x, 1-10.

*+32. 2011 Williams, N.M., D. Cariveau, R. Winfree, C. Kremen. Bees in disturbed habitats use, but do not prefer, alien plants. Basic and Applied Ecology, 12: 332-341.

33. 2011 Tomich, T. P., S. Brodt, H. Ferris, R. Galt, W.R. Horwath, E. Kebreab, J.H.J. Leveau, D. Liptzin, M. Lubell, P. Merel, R. Michelmore, T. Rosenstock, K. Scow, J. Six, N.M. Williams, and L. Yang. Agroecology: A Review from a Global-Change Perspective. Annual Review of Environment and Resources, 36: 193-222.

*x34. 2012 Williams, N. M., J. Regetz, C. Kremen. Landscape-scale resources promote colony growth but not reproductive performance of bumble bees. Ecology, 93: 1049-1058.

*35. 2012 Klein, A.M., C. Brittain, S.D. Hendrix, R. Thorp, N.M. Williams, and C. Kremen. Wild pollination services to California almond rely on semi-natural habitat. Journal of Applied Ecology, 49: 723-732.

36. 2012 Schleuning, M., J. Fruend, A-M Klein, S. Abrahamczyk, R. Alarcón, M. Albrecht, G.K.S. Andersson, S. Bazarian, K. Böhning-Gaese, R. Bommarco, B. Dalsgaard, D.M. Dehling, A. Gotlieb, M. Hagen, T. Hickler, A. Holzschuh, C.N. Kaiser-Bunbury, H. Kreft, R.J. Morris, B. Sandel, W.J. Sutherland, J-C Svenning, T. Tscharntke, S. Watts, C.N. Weiner, M. Werner, N.M. Williams, C. Winqvist, C.F. Dormann, N. Bluethgen. Specialization of mutualistic interaction networks decreases towards tropical latitudes. Current Biology.

Notations:
** = Publication included in the packet. x = Most significant works. + = Major mentoring role. = Refereed.*

Journals Submitted

1. 2012 Winfree, R., N.M. Williams, J. Dushoff, and C. Kremen. Community disassembly preferentially retains stabilizing species in plant-pollinator networks. Proceedings of the Royal Society Series B. ** SUBMITTED **

2. 2012 Rosenheim, J.A., N.M. Williams, and S. Schreiber. Pollen limitation: how common should we expect it to be? American Naturalist. ** SUBMITTED **

+3. 2012 Brittain, C.A., N.M. Williams, C. Kremen, A-M Klein. Synergistic effects of non-Apis bees and honey bees pollinating California almond. Proceedings of the Royal Society Series B. ** SUBMITTED **

4. 2012 Williams, N. M., and R. Winfree. Pollinator visitation but not landscape urbanization drives native plant pollination. Biological Conservation. ** SUBMITTED **

+5. 2012 Kennedy, C. M., E. Lonsdorf, M.C. Neel, N.M. Williams, T.H. Ricketts, R. Winfree, R. Bommarco, C. Brittain, A.L. Burley, D. Cariveau, et al.. A global quantitative synthesis of local and landscape effects on native bee pollinators in agroecosystems. Ecology Letters. ** SUBMITTED **

6. 2012 Cariveau, D. P., Williams, N. M., Benjamin, F., Winfree, R. Response diversity to land use stabilizes ecosystem services provided by native pollinators. Ecology Letters. ** SUBMITTED **

Notations:
+ = Major mentoring role.

Book Chapters

1. 2001 Williams, N.M. and J.D. Thomson: Pollinator quality in native bees and honey bees: comparing pollen removal and deposition on Phacelia tanacetifolia, Strickler and Cane, (ed), Whence the pollinators of the future, Symp. Proceed. Entomol. Soc. Amer..

2. 2001 Harder, L.D., N.M. Williams, C.Y. Jordan, W. Nelson: The effects of floral design and display on pollinator economics and pollen dispersal, Chittka, L. and Thomson, J.D., (ed), Cognitive Ecology of Pollination, Cambridge University Press,, Cambridge. 297-317.

3. 2006 Ricketts, T. , N.M. Williams, and M.M. Mayfield: Connectivity and ecosystem services: crop pollination in Agricultural landscapes, Crooks and Muttulingam, (ed), Connectivity Conservation, Cambridge University Press,, Cambridge.

#4. 2011 Lonsdorf, E., T.H. Ricketts, C. Kremen, R. Winfree, S. Greenleaf, and N.M. Williams: Crop Pollination Services, Kareiva, P., Tallis, H., Ricketts, T. H., Daily, G., Polasky, S., (ed), Natural Capital:The Theory & Practice of Ecosystem Service Valuation in Conservation, Oxford University Press, Oxford UK. 168-184.

Footnotes:
#4. in press last action.

Limited Distribution

1. 2009 Winfree, Rachael; Emily McGlynn, Neal Williams. How to increase native bee pollination on your farm in several simple steps (For Pennsylvania and New Jersey Farmers). Native Bee Benefits, (May 2009) 1-8.

2. 2012 Williams N.M. and K.I. Ward. Development of wildflower mixes to promote native pollinators in agriculture. Proceedings of the 2012 California Plant and Soils Conference, 115-119.

Presentations

1. 2009 March 20,Bee diversity and biology: implications for management in the urban landscape
   Invited Speaker, Park supervisors, San Francisco Parks Department Training, San Francisco.

2. 2009 July 7, Citizen Scientist Bee Monitoring Training Session Invited speaker, NRCS State and regional bioloigsts, Center for Land-based Learning, Winters, CA.

3. 2009 August 20,The role of native bees in sustainable pollination
   Invited Speaker, beekeepers, researchers, Western Apicultural Society Meeting (100 Attendees), Healdsberg, CA.

4. 2009 August 21,Naive bees in sustainable pollination
   Invited Speaker, NRCS employees, NRCS-APIO Annual Training Session, Sacramento, CA (120 Attendees).

5. 2009 October 20,Response of wild bees to landscape change and its implications for pollination service
   Invited Speaker, researchers, applied entomology professionals, Entomological Society of Canada (55 Attendees), Winnipeg, MB.

6. 2009 November 17,Toward sustainable agricultural pollination
   Invited Speaker, Professional Bee keepers, farmers, extension specialists, consultants, students and researchers from California and around the world (100+ Attendees), California State Beekeepers Association Meeting, San Diego, CA.

7. 2009 December 16,Responses of bees to changing landscapes: The role of life history traits
   Invited Speaker, researchers, students and professional entomologists, Symposium "Pollinator Diversity in Urban, Agricultural and Native Landscapes.: Entomological Society of America, Indianapolis, IN.

8. 2010 June 9,Citizen Science Bee Monitoring Training
   Invited Speaker, NRCS and RCD staff biologists, Center For Landbased Learning, Winters, CA.

9. 2010 August 2,Landscape change does not drive disassembly of pollinator communities or pollination of spring wildflowers
   Presenter, Researchers, students, professional ecologists, Annual Meeting of the Ecological Society of America, Pittsburgh, PA.

10. 2010 November, Linking landscape resources, pollinator foraging and population persistence, Invited speaker, Department of Entomology, UC Riverside.

11. 2011 March, Resource complementarity and spatial correlation influence bee communities in mosaic landscapes, European Union STEP Meeting, Novi Sad, Serbia.

12. 2011 May, Native bee responses to anthropogenic landuse change, Invited Speaker, Symposium "Pollinator Biodiversity and Pollination Services" Annual Meeting of the Canadian Society for Ecology and Evolution. Banff, Alberta, Canada.

13. 2011 June, 2011 Species traits and the sensitivity of bees to environmental change. Symposium "Conservation Issues in Pollination" 10th International Symposium of Pollination., Cholula, Mexico.

14. 2011 September, Life history, resources complementarity and the sensitivity of pollinators to land use change, Invited opening talk, Symposium "Drivers of Pollinator Loss in Europe"). European Ecology Federation Conference. Ávila, Spain 25 September.

15. 2011 November,2011 Quantifying the links between pollinator biodiversity, pollination and landscape change.
Symposium "Biodiversity, Global Change and Insect-Mediated Ecosystem Services.", Annual Meeting of the Entomological Society of America. Reno, NV.

16. 2012 January 28, Bee life history and resource distributions determine population and community responses to agricultural landscape change, Inivited Speaker, Symposium "Conservation and Sustainable Use of Pollinators: towards Global Assessments" Kyushu University Japan.

17. 2012 February 8, Development of wildflower mixes to promote native pollinators in agriculture, Invited Speaker, 2012 California Plant and Soil Conference Visalia, CA.

18. 2012 February 13, Pollinator responses to anthropogenic land use change, Dartmouth College, Hanover, NH.

19. 2012 September 11, Promoting native pollinators in California Agriculture. Native Pollinators in Agriculture Field Day, Irvine Great Park., Irvine, CA.

20. 2012 September 29, Selecting plant materials for pollinator restoration plantings. Pollination & Land Rehabilitation Workshop, CANPOLIN, Columbus, OH.

21. 2012 October 1, The assembly of pollinator communities and pollination interactions in targeted and non-targeted restoration, Invited Speaker, Symposium "Biological basis for pollinator habitat manipulations: Population regulation and plant restoration", 4th International EcoSummit.

Publications: Additional Information

Neal M Williams

Presented Papers and Posters

1995 Williams, N.M. & Thomson, J.D. Flocking in bumble bees: periodic foraging at focal Penstemon strictus plants. Annual Meeting, Ecological Society of America, Snowbird, UT

1996 Chittka, L. & Williams, N. M. Orientation of bumble bees without vision: foraging in total darkness. Annual Meeting, Animal Behavior Society, Flagstaff, AZ

1997 Williams, N.M. & Goodell, K. The association of nesting material and mandible shape in Osmiine bees: a morphometric approach. Annual Meeting, Society for the Study of Evolution, Boulder, CO (poster session)

1997 Williams, N.M. Pollen preferences and larval performance in two solitary bees (Hymenoptera: Megachilidae). Annual Meeting, Ecological Society of America, Albuquerque, NM

1998 Williams, N.M. Pollen collecting preference and larval performance in Osmia lignaria (Hymenoptera Megachilidae). Gordon Research Conference on Herbivore-Plant Interactions, Ventura, CA (poster session)

1998 Williams, N.M. Pollen-collecting flexibility and larval performance in a generalist versus a specialist Osmiine bee (Hymenoptera: Megachilidae). Annual Meeting, Society for the Study of Evolution, Vancouver, BC, Canada (poster session)

1998 Williams, N.M. Diet composition in a solitary bee (Hymenoptera: Megachilidae) is influenced by adult preference, larval performance and resource ecology. Annual Meeting, Ecological Society of America, Baltimore, MD

1998 Williams, N.M. and J. D. Thomson. Pollinator quality of native bees and honey bees: comparing pollen removal and deposition. Annual Meeting, Entomological Society of America, Las Vegas, NV

2000 Williams, N.M. Nectar requirements affect pollen foraging of a solitary bee: exploration using linear-programming models. Annual Meeting, Ecological Society of America, Snowbird, UT.

2001 Williams N.M. and Harder L.D. Pollen dispersal by bumble bees and butterflies visiting Brassica napus. Annual Meeting, Ecological Society of America, Madison, WI. (poster session)

2002 Kremen, C., Williams, N.M. and Thorp, R. W. Pollination function and bee diversity in an agro-natural landscape. Annual Meeting, Ecological Society of America, Tucson AZ.

2004 Williams, N.M. and C. Kremen. Annual Meeting Society for Conservation Biology New York, NY

2006 Winfree, R., Williams, N.M., Kremen, C. Ecosystem services provided by wild bees in NJ and PA, US. Annual Meeting, Ecological Society of America

2007 Miteva, D.* and Williams N.M. Comparison of visitation patterns and pollen deposition in a "pollination" web. Annual Meeting Ecological Society of America, Mid-Atlantic.

2007 Rahi, A.* and Williams, N.M. Contributions of generalist and specialist bees the reproduction of desert mallow, Sphaeralcea angustifolia. Annual Meeting Ecological Society of America, Mid-Atlantic.

2007 Malfi, R.* and Williams, N.M. The impact of urbanization on bumble bee (Bombus spp.) communities in southeastern PA. Annual Meeting Ecological Society of America, Mid-Atlantic.

2007 Williams, N.M. and Kremen, C. Native bee communities at restored riparian habitats: response of a non-target group to vegetation restoration. Sacramento River Restoration Science Conference.

2007 Winfree, R. Williams, N.M., Dushoff, J. and Kremen, C. Wild bees provide insurance against ongoing honey bee losses. Annual Meeting of the Ecological Society of America, San Jose, CA.

2007 Goodell, K. Williams, N.M. and Miteva, D.*. Predicting pollen transfer in a restored eastern US prairie community using a plant-pollinator interaction web. Annual Meeting of the Ecological Society of America, San Jose, CA.

2007 Williams, N.M. Native Bee Communities at Restored Riparian Habitats. Sacramento River Conference, Chico CA.

2007 Williams, N.M. Response of non-target species to habitat restoration: Pollinator communities and pollination function along the Sacramento River. Annual Meeting of the Ecological Society of America, San Jose, CA.

2007 Moyer, C.* and Williams, N. M. Relating to floral accessibility to proboscis length of visiting insects. Research Symposium, Ursinus College, Collegeville, PA.

2008 Williams, N.M., Rahi, A.* & Minckley, R. L. Insights gained from viewing specialist pollinators as "pollen-eaters" Pollination Symposium, Annual Meeting of the Ecological Society of America, Milwaukee, WI.

2010 Winfree, R. Williams, N.M. Pollinator community change along human disturbance gradients. Botanical Society of America Annual Meeting, Providence, RI.

2010 Williams, N.M., Winfree, R. & Kremen, C. Landscape Change does not drive disassembly of pollinator communities or pollination of spring wildflowers. Annual Meeting of the Ecological Society of America, Pittsburgh, PA.

2011 Winfree, R., Kremen, C., Dushoff, J. & N.M. Williams. Pollinator community disassembly across land use gradients. Annual Meeting of the Ecological Society of America, Austin TX.

2011 Ullmann, K.# & N.M. Williams. Population persistence in dynamic landscapes: The role of spatiotemporal connectivity. Annual Meeting of the Ecological Society of America, Austin TX.

2011 Williams, N.M., Kennedy, C., Lonsdorf, E. & Kremen C. Modeling pollinators across agricultural land-scapes.10th International Symposium of Pollination. Cholula, Mexico

2011 Winfree, R. Kremen, C. & Williams N.M. Pollinator biodiversity and pollination services: a multiyear study. Annual Meeting of the Entomological Society of America. Reno, NV.

2011 Gillespie, S., Long, R.F. & Williams, N.M. Honey bee (Apis mellifera) pollination affects onion seed set in California Central Valley. Annual Meeting of the Entomological Society of America. Reno, NV.

2011 Rosenheim, J.A. Williams, N.M. & Schreiber, S.J. Pollen limitation: how common should we expect it to be? Annual Meeting of the Entomological Society of America. Reno, NV.

2012 Williams, N. M. Lonsdorf, E. and Forrest, J. Life history and resource distribution determine bee sensitivity to land use change. Annual Meeting of the Ecological Society of America, Portland OR

Legend

Graduate Advisee
* Undergraduate Advisee