

La Kretz Postdoctoral Fellow for California Conservation Science

University of California, Los Angeles

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Google Scholar: <https://scholar.google.com/citations?user=JD4mgHM AAAAJ&hl=en>

Qualifications:

- 2011-2017 **PhD in Ecology**, Dissertation title: *Drivers of bat activity and community structure within floodplains of the Murray-Darling Basin, Australia* (Centre for Ecosystem Science, University of New South Wales, Sydney, Australia).
- 2010 **Graduate study in Spatial Information Science**, Sydney University, Sydney, Australia (Course units completed: spatial analysis and modelling, remote sensing applications, multispectral and hyperspectral image processing and analysis).
- 2003-2004 **BSc (Honours I – equivalent of U.S. research Masters)** Thesis title: *Do salt and heat loads limit the rate of food intake of a migratory shorebird during the non-breeding season?* University of Queensland, Brisbane, Australia.
- 1999-2001 **BSc (Dean’s scholarship) majors: Zoology, Earth Science; minor: Botany**, Monash University, Melbourne, Australia.

Academic Appointments:

- 2019-present **La Kretz Postdoctoral Fellow for California Conservation Science**, Institute of Environment and Sustainability, UCLA.
- 2017-2019 **Postdoctoral Fellow** School of Natural Resources, University of Missouri / Institute for Bird Populations, MI/CA, USA.
- 2016 **Postdoctoral Fellow** College of Natural Resources, University of Idaho, Moscow, ID, USA.
- 2012-2016 **Research Associate/Casual Academic** School of Biological, Earth Environmental Sciences (BEES), University of New South Wales, Sydney, Australia.

Government and Industry Appointments:

- 2012-2013 **Technical Officer** Forest Science Unit, NSW Department of Primary Industries, Sydney, Australia (during PhD candidature).
- 2010-2011 **Environmental Scientist** Rivers and Wetlands unit, Office of Environment and Heritage, New South Wales state government, Sydney, Australia.
- 2009-2011 **Ecologist** Australian Museum Business Services, Sydney, Australia.
- 2009-2010 **Bush Regeneration Supervisor & Consulting Ecologist** Toolijooa Environmental Restoration, Sydney, Australia.
- 2005-2009 **Consulting Ecologist** Biosis Research, Sydney, Australia.

Academic teaching and mentoring experience:

University of Missouri (2017-present)

Postdoctoral Fellow. I produced and delivered a 3-hour Quantitative Skills workshop for graduate students and faculty at the University of Missouri entitled: “Adventures in quantitative ecology double feature: analysis methods for community ecology and an introduction to mixed effects modelling”. This involved a lecture and practical component with an associated hand-out made in *Rmarkdown*. The workshop was targeted to intermediate-level R users. As a result of the workshop and with the encouragement of advisor, I have mentored five University of Missouri graduate research students, with a focus on quantitative skills, including: occupancy modelling, discrete choice analysis, multivariate statistics and machine learning.

University of Idaho (2016)

Masters co-advisor (Climate and water availability contribute to die-off patterns in an endemic Californian Oak – Brittini Brown) (2016), with Blair McLaughlin. As co-advisor to Brittini, my primary responsibility was guiding her quantitative analyses and helping her gain the coding skills she needed to complete a highly sophisticated and novel study on tree dieback. Brittini’s findings were published in *Diversity and Distributions*.

Organization for Tropical Studies (2015)

Native American and Pacific Islander Research Experience (NAPIRE) Research Mentor (Influence of water presence on bat communities and their diet - Natasha Edwin; Analyzing the Relationship Between Stream Structure and Bat Phonic Richness and Activity in a Neotropical Forest Fragment – Aloha Kaponu). I mentored two students in developing their own tropical ecology research projects over 6 weeks: from developing testable hypotheses to presenting their final work orally and in writing.

University of New South Wales - School of Biological, Earth & Environmental Sciences (2011-2015)

Honours co-supervisor (The ecological response of insectivorous bats to coastal lagoon degradation – Bradley Clarke-Wood) (2014), with Brad Law & Kim Jenkins. As a co-supervisor to Bradley, I was responsible for day-to-day supervision including mentoring in field and laboratory techniques, training in statistical analysis, map and graph production (*ArcGIS* and *R/Rstudio*) as well as scientific writing and encouraging leadership and critical thinking. I also mentored Bradley through his first experience with the scientific peer review process and his study has been published in *Biological Conservation*.

Environmental computing project contributor (2015), I prepared 7 tutorials in *Rmarkdown* on data wrangling, working with climate variables, model-based multivariate statistics and time series forecasting, available at environmentalcomputing.net. These tutorials are aimed at building quantitative skills, including statistical literacy and coding (*R*) skills in students and faculty in the field of ecology. The tutorials address both common and emerging methods within ecology and related fields.

Ciencia sem Fronteiras (Science without borders) supervisor (Daniela Tenorio & Caio de Souza Ferreira) (2013-2014), I supervised two students in laboratory-based research projects for one semester, including mentoring in laboratory techniques (insect identification), instruction in GIS software (*ArcGIS*) and spatial analysis techniques.

Lecturer (*Advanced Field Biology*) (2012-2014), I developed and delivered a component of 3rd year *Advanced Field Biology* course: “Bats in terrestrial and aquatic food webs”. Additionally, I designed and delivered two 3-hour statistics workshops (handouts using *Rmarkdown*) using *R* to construct mixed-effects models and to undertake multivariate analyses and assisted in development of course materials and delivery of two 3-hour statistical workshops utilizing *Primer* and *SPSS* to conduct analyses of variance and multivariate ordinations. Finally, I mentored a 6-month group project (4 undergraduate students) in spatial organization of roosting and behavior of the Grey-headed flying fox (*Pteropus poliocephalus*).

Coordinator (*Ecology, Sustainability & Environmental Science*) (2013), I coordinated and guest lectured for 1st year Ecology, Sustainability & Environmental Science (> 200 students).

Casual Academic (other courses) (2011-2014), I prepared course materials, ran practical laboratory classes, computer-based and field activities and guest lectured for other UNSW courses including: 1st year Evolutionary & Functional Biology, 2nd year Ground and Surface water, 2nd year Invertebrate Biology and 3rd year Marine and Freshwater Ecology.

Scientific publications:

*Graduate student author

Blakey, R.V., Siegel, R.B., Webb, E.B., Dillingham, C.P., Johnson, M., Kesler, D.C. (*in review*) Northern Goshawk (*Accipiter gentilis*) home range, movement and forays revealed by GPS-tracking.

Blakey, R.V., Siegel, R.B., Webb, E.B., Dillingham, C.P., Johnson, M., Kesler, D.C. Multi-scale habitat selection by Northern Goshawks (*Accipiter gentilis*) in a fire-prone landscape (*in revision*) *Biological Conservation*.

Hwang, W.-H., **Blakey, R.V.**, Stoklosa, J. (*in revision*) Right-censored mixed Poisson count models with detection times. *Journal of Agricultural, Biological and Environmental Statistics*.

Blakey, R.V., Webb, E.B., Kesler, D.C., Siegel, R.B., Corcoran, D., Johnson, J.M. (2019) Bats in a changing landscape: linking occupancy and traits of a diverse montane bat community to fire regime. *Ecology and Evolution*. ece3.5121.

Blakey, R.V., Siegel, R.B., Webb, E.B., Dillingham, C.P., Bauer, R.L., Johnson, M., Kesler, D.C. (2019) Space use, forays, and habitat selection in California Spotted Owls (*Strix occidentalis occidentalis*): new insights from high resolution GPS tracking. *Forest Ecology and Management*. 432: 912-922.

*Brown B. J., McLaughlin, B.C., **Blakey R.V.** & Morueta-Holme, N. (2018) Future vulnerability mapping based on response to extreme climate events: dieback thresholds in an endemic California oak. *Diversity and Distributions*. 24(9): 1186:1198.

Gonsalves, L., Law, B.S., & **Blakey, R.V.** (2018) Experimental evaluation of the initial effects of large-scale thinning on structure and biodiversity of river red gum (*Eucalyptus camaldulensis*) forests. *Wildlife Research*. 45(5): 397:410.

Blakey, R.V., Law, B.S., Straka, T.M., Kingsford, R.T. & Milne, D.J. (2018) "Importance of Wetlands to bats on a Dry Continent: a Review and Meta-analysis." *Hystrix* Special Section: Maria João Ramos Pereira and Ludmilla Moura Souza Aguiar (Eds.) Out of Forests: Bat Diversity and Ecology in Open Areas. 29(1).

Blakey, R.V. Law, B.S, Kingsford, R.T. & Stoklosa, J. (2017) Floodplain habitat is disproportionately important for bats in a large river basin. *Biological Conservation*. 215:1-10.

Blakey, R.V. Law, B.S, Kingsford, R.T., & Stoklosa, J. (2017) Terrestrial laser scanning reveals below-canopy bat trait relationships with forest structure. *Remote Sensing of Environment*. 198: 40-51.

*Clarke-Wood, B, Jenkins, K.M., Law, B.S. & **Blakey, R.V.** (2016) The Ecological Response of Insectivorous Bats to Coastal Lagoon Degradation. *Biological Conservation*. 202:10-19.

Blakey, R.V., Law, B.S, Kingsford, R.T., Stoklosa, J., Tap, P. & Williamson, K. (2016) Bats respond positively to large-scale thinning of forest regrowth. *Journal of Applied Ecology*. 53(6):1694-1703.

Blakey, R., Zharikov, Y & Skilleter, G (2006) Lack of an osmotic constraint on intake rate of the eastern curlew *Numenius madagascariensis*. *Journal of Avian Biology* 37(4): 299-305.

Conference proceedings (presenting author):

Blakey, R.V., R.B. Siegel, E.B. Webb, C.P. Dillingham, R.L. Bauer, M. Johnson and D.C. Kesler (2018) Habitat selection and space use by the California Spotted Owls (*Strix occidentalis occidentalis*): new insights from high resolution GPS tracking. Annual meeting of Ecological Society of American, New Orleans.

Blakey, R.V., Webb, E.B., Kesler, D.C., Siegel, R.B., Corcoran Barrios, D., Johnson, J.M. (2018) Bats in a changing landscape: Sierra Nevada habitat influences on bat occupancy. Plumas National Forest Integrated Restoration Symposium, Quincy, California, USA.

Blakey, R.V., Siegel, R.B., Webb, E.B., Dillingham, C.P., Bauer, R.L., Johnson, M., Kesler, D.C. (2018) Using new technology to inform forest biodiversity management: case studies with the California Spotted Owl and the Northern Goshawk on Plumas National Forest. Plumas National Forest Integrated Restoration Symposium, Quincy, California, USA.

Blakey, R.V. Law, B.S., Straka, T, Kingsford, R.T., Milne, D (2016) Importance of wetlands to bats on a dry continent. 17th International Bat Research Conference, Durban, South Africa.

Clarke-Wood, B, Jenkins, K., Law, B.S. & **Blakey, R.V.** (2016) The ecological response of insectivorous bats to coastal lagoon degradation. 17th International Bat Research Conference, Durban, South Africa.

Blakey, R.V. Law, B.S, Kingsford, R.T., Tap, P., Williamson, K. & Stoklosa, J. (2014) Investigating bat response to forest thinning at the community level. Proceedings of the North American Society for Bat Research 44th Annual Symposium on Bat Research, Albany, NY, US.

Blakey, R.V., Jenkins, K., Law, B.S., Kingsford, R. Mazumder, D. (2014) Nocturnal food webs: partitioning of prey resources between terrestrial and aquatic ecosystems by floodplain bats. Proceedings of 16th Australasian Bat Society Conference, Townsville, 2014, (1st Prize, PhD/Masters student poster).

Blakey, R.V., Law, B.S., Kingsford, R. Tap, P., Williamson, K., Stoklosa, J. (2014) A bat's ear view of the forest: the contrasting responses of bats and their insect prey to gap density. Proceedings of 16th Australasian Bat Society Conference, Townsville, 2014.

Blakey, R.V., Jenkins, K., Kingsford, R., Law, B.S. (2013) Nocturnal food webs: partitioning of prey resources between terrestrial and aquatic ecosystems by a high level predator of floodplain habitats. Proceedings of Australian Society for Limnology Congress, 2013, Canberra (1st Prize, PhD/Masters student presentation).

Blakey, R.V., Law, B.S., Jenkins, K., Kingsford, R., Stoklosa, J. (2013) Bats across biomes: bat response to flooding frequency across a large semi-arid floodplain system. 16th International Bat Research Conference, San José, Costa Rica.

Blakey, R.V., Law, B.S., Kingsford, R (2013) Floodplain bats: bat response to flooded habitats of the Murray-Darling. Proceedings of Australian Mammal Society Conference, 2013, Sydney.

Blakey, R.V., Law, B.S., Kingsford, R (2012) Bats across biomes: comparing the value of wetland and dryland habitats within the Murray-Darling. Proceedings of Ecological Society of Australia Conference, 2012, Melbourne.

Blakey, R.V., Law, B.S., Kingsford, R (2012) Bats in the floodplain: how important are the riverine and wetland habitats of the Murray-Darling to its bat communities? Proceedings of 15th Australasian Bat Society Conference, 2012, Melbourne.

Awards and PI/co-PI Grants:

- 2018** Harnessing new technologies to inform management of endangered species: a range-wide decision support tool to inform gray bat (*Myotis grisescens*) recovery, with Maggie MacPherson & Lisa Webb (University of Missouri), funded by US Fish and Wildlife (\$50,255)
- 2015** Distribution of bats across the Great Smoky Mountains National Park, with a focus on two declining *Myotis* (*M. septentrionalis* and *M. sodalis*), with Joy M. O’Keefe and Brianne L. Walters (Indiana State University) funded by National Park Service, (\$100,985)
- 2014** First prize PhD/Masters student poster presentation, 16th Australasian Bat Society Conference
- 2013** First prize PhD/Masters student presentation, Australian Society for Limnology Congress (\$1,000)
- 2013** Mazda Foundation Grant (\$10,000)
- 2013** Ecological Society of Australia Student Research Award (\$1,000)
- 2013** Partnership with Office of Environment and Heritage NSW to support PhD research (\$9,000)
- 2012** Partnership with Forests NSW to support PhD research: “Developing landscape scale biodiversity-forest structure tools for river red gum management” (\$9,800)
- 2012** Australasian Bat Conservation Fund Grant, Australasian Bat Society (\$500)
- 2012** Wildlife Preservation Society of Australia, Wildlife Conservation Grant (\$1,000)
- 2012** Postgraduate Research Forum Species Conservation Prize, UNSW
- 2011** Australian Postgraduate Award for PhD studies, full scholarship
- 1999** Monash University Deans Scholar program and full scholarship

Outreach and Policy:

Organizer of SoCal bat group, a collective of consultants, academics, government employees and wildlife rehabilitators sharing knowledge and taking action to promote and conserve Southern California's bats, as part of the California Bat Working Group.

Contributor to article for Oceana: *This Halloween, meet a fishing bat that hunts at sea* (<http://oceana.org/blog/halloween-meet-fishing-bat-hunts-sea>) (October 2017).

Invited speaker at Sedgwick Reserve, University of California, Santa Barbara *Sedgwick Reserve: Wonderful Bats* (March, 2017).

Invited panellist at Scripps College Forum, *Authentic Leadership: Following your passion*. For Scripps College Laspa Center for Leadership, Claremont, CA (February, 2017).

Invited article on "The status of research on bat response to climate change" for IUCN Bat Specialist Group Newsletter (2017) (<http://www.iucnbsg.org/newsletter.html>).

Blog on forest thinning and bats for The Applied Ecologist's Blog (Journal of Applied Ecology) (November 2016) (<https://jappliedecologyblog.wordpress.com/2016/11/18/forest-thinning-a-bats-friend-or-foe/>).

Foothill Advocate article (Sierra Foothills Conservancy) on bats of Stockton Preserve, CA, US (November, 2016) ([http://sierrafoothill.org/wp-content/uploads/2016/07/66985-SierraFoothill Newsletter LR.pdf](http://sierrafoothill.org/wp-content/uploads/2016/07/66985-SierraFoothill%20Newsletter%20LR.pdf)).

Radio interview involving four of my undergraduate and Honours bat students (June 3rd, 2014) (<http://eastsidefm.org/lifestyle/boilingpoint/>).

Preparation of a submission and appearance at a hearing for *Parliamentary Inquiry into Management of Public Lands in New South Wales* (Australia). (<https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-submission-details.aspx?pk=%2052900>).

Information sheet for Macquarie Marshes Environmental Landholders Association (April, 2013) (<http://www.macquariemarshes.com/community#.VCmQWidoZrs>).

Australian Geographic Outdoor Magazine (Jan-Feb, 2013) on bats of the Murray-Darling, part of *Murray Magic* article.

Australian Wildlife magazine article on bats of the Murray-Darling (Spring #4, 2012).