DR AYESHA S. BURDETT

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EDUCATION

- PhD (Environmental Science) 2005: Charles Sturt University, Australia
 - The relationship between habitat and invertebrate community structure in temporary wetlands
- Honours (Zoology) 2000: University of Melbourne, Australia
 - Acute and chronic toxicity of three rice field herbicides to aquatic invertebrate fauna
- BA/BSc (Geography and Biology) 1997: University of Melbourne, Australia

PROFESSIONAL EXPERIENCE

- Research Assistant Professor, 2011-present: University of New Mexico
- Post-doctoral research associate, 2006-2011: University of New Mexico
- Technical assistant, 2005: Charles Sturt University, Australia
- Technical officer, 1998-1999 and 2000-2001: NSW Agriculture, Australia

PUBLICATIONS

- Stevens, M.M., **A.S. Burdett**, E.M. Mudford, S. Helliwell, and G. Doran. 2011. The acute toxicity of fipronil to two non-target invertebrates associated with mosquito breeding sites in Australia. Acta Tropica 117: 125-130
- Turner, T. F., T. J. Krabbenhoft, and **A. S. Burdett**. 2010. Reproductive timing and fish community structure in an arid-land river system. In: Gido, K. and D. Jackson, eds. Community Ecology of Stream Fishes. American Fisheries Society Symposium 73: 427-446

- Burdett, A.S. and R.J.Watts. 2008. Modifying living space: An experimental study of the influences of vegetation on aquatic invertebrate community structure. Hydrobiologia 618: 161-173
- **Burdett, A.S.**, R. J. Watts, and A. Jansen. 2005. Invertebrate fauna of small, temporary wetlands in agroecosystems on the Murrumbidgee floodplain, Australia. Verhandlungen Internationale Vereinigung für theoretische and angewandte Limnologie 29 (2): 961-964
- **Burdett, A.S.**, M.M. Stevens, and D.L. Macmillan. 2001. Laboratory and field studies on the effect of molinate, clomazone and thiobencarb on non-target aquatic invertebrates. Environmental Toxicology and Chemistry 20 (10): 2229-2236

GRANTS

- Survey of aquatic community structure and food web constituents at the Bosque del Apache NWR. PI: **A.S. Burdett**; Co-PI: Thomas F Turner. Tetra Tech, Inc. Total award: \$33,769. 1 Jul 2008 to 30 Dec 2009
- Effects of nutrient availability on periphyton growth and diversity in the Middle Rio Grande: topdown and bottom-up factors. PI: R.J. Bixby; Co-PI: **A.S. Burdett**. US Bureau of Reclamation. Total Award: \$126,077. 1 Jul 2007 to 30 Jul 2010

REPORTS

- Bixby, R.J. and **A.S. Burdett**. 2011. Effects of nutrient availability on periphyton growth and diversity in the Middle Rio Grande: top-down and bottom-up factors. Report to the Middle Rio Grande Endangered Species Act Collaborative Program, USBR Albuquerque NM. 79pp.
- **Burdett, A.S.**, T.F. Turner and R.J. Bixby (2010). Rio Grande Surveys: 2006-2010. Report submitted to Bosque del Apache National Wildlife Refuge. 20pp.
- Bixby, R.J. and **A.S. Burdett**. 2009. Effects of nutrient availability on periphyton growth and diversity in the Middle Rio Grande: top-down and bottom-up factors. Report to the Middle Rio Grande Endangered Species Act Collaborative Program, USBR Albuquerque NM. 51pp.
- T.F. Turner and **A.S. Burdett**. 2009. Community responses to river drying in an arid-land ecosystem: a field and experimental study. Report to National Science Foundation, Washington, D.C. 20 pp.
- Turner, T.F., R.J. Bixby, and **A. S. Burdett**. 2009. Monitoring of aquatic food resources in support of the Channel Realignment Project at the Bosque del Apache Wildlife Refuge. Report to Tetratech, Inc. Albuquerque, NM 24 pp.
- **Burdett, A.S.**, and T. F. Turner. 2008. Community responses to river drying in an arid-land ecosystem: a field and experimental study. Annual report submitted to the National Science Foundation. June 2008. 10pp.
- **Burdett, A.S.** and R.J. Bixby. 2008. Effects of nutrient availability on periphyton growth and diversity in the Middle Rio Grande:top-down and bottom-up factors. Annual report to the U.S. Bureau of Reclamation, December 2008. 60 pp.

ACADEMIC SERVICE

AD HOC REVIEWER

- Limnology and Oceanography (1 paper)
- Hydrobiologia (1 paper)
- Marine and Freshwater Research (1 paper)
- NSF Ecosystem Science Cluster (2 proposals)
- Ecological Research (1 paper)
- Delta Science Program (1 proposal)

MEMBERSHIP OF SCIENTIFIC COMMITTEES

- Database Management System Ad Hoc Work Group, Middle Rio Grande Endangered Species Collaborative Program. April 2008 present
- San Acacia Reach Ad Hoc Work Group, Middle Rio Grande Endangered Species Collaborative Program. September 2009 2010

ATTENDANCE AT PROFESSIONAL MEETINGS

- North American Benthological Society 59th Annual Meeting, Providence, RI. 22-26 May 2011
- North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- 94th Annual Meeting of the Ecological Society of America. Albuquerque, NM. August 2009
- International Society for River Scientists, St Pete Beach, FL. 12-17 July 2009
- Festival of the Cranes Research Day, Bosque del Apache National Wildlife Refuge, NM. 19 November 2008
- University of New Mexico Annual Fall Water Forum, Albuquerque, NM. 5 October 2008
- North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- University of New Mexico Third Annual Student Water Symposium, Albuquerque, NM. 28 March 2008
- North American Benthological Society 55th Annual Meeting. Columbia, SC. 3-8 June 2007
- Annual Fall UNM Water Forum. Albuquerque, NM. 5 October 2007
- Middle Rio Grande Endangered Species Collaborative Program: Second Annual Symposium. Albuquerque, NM. 16-17 April 2007

- American Society of Limnology and Oceanography Aquatic Sciences Meeting. Santa Fe, NM. 2-9 February 2007
- Desert Fishes Council 38th Annual Meeting. Death Valley, CA. 15-18 November 2006
- Annual Fall UNM Water Forum. Albuquerque, NM. 31 October 2006
- Middle Rio Grande Endangered Species Collaborative Program: First Annual Symposium. Albuquerque, NM. 11-12 April 2006
- International Society for Limnology XXIX Congress. Lahti, Finland. 8-14 August 2004
- 34th Australian Entomological society / 6th Invertebrate Biodiversity & Conservation Combine Conference, Hobart , Tasmania 2003
- Johnson Centre Biodiversity Forum Thurgoona, NSW, Australia. 2003
- Australian Society for Limnology Annual Conference. Margaret River, WA, Australia. 29 September – 3 October 2002
- Invertebrate Biodiversity and Conservation 5th Conference, Adelaide, SA, Australia. 2001

INVITED TALKS

Turner, T. F., T. J. Krabbenhoft, and A. S. Burdett. *Reproductive timing and the assembly of larval fish communities in a highly variable river system, the Rio Grande in New Mexico*. <u>Invited Symposium</u>: Community Ecology of Stream Fishes: Concepts, Approaches, and Techniques. American Fisheries Society, Ottawa, Ont. Canada. 17-21 August 2008

CONTRIBUTED TALKS

- **Burdett, A.S.**, and T.F. Turner. *Of droughts and flooding rains: aquatic invertebrate community ecology in a dryland river (Rio Grande, New Mexico)*. North American Benthological Society 59th Annual Meeting, Providence, RI. 22-26 May 2011
- Bixby, R.J., A.S. Burdett, and N. Lopez-Brody. Role of desiccation periodicity in shaping algal community heterogeneity in an aridland river. North American Benthological Society 59th Annual Meeting, Providence, RI. 22-26 May 2011
- **Burdett, A.S.**, and T.F. Turner. *Biotic assemblages and wetland-river interactions in an aridland riverine system.* North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- Bixby, R.J., and **A.S. Burdett**. *Non-uniform inputs from tributaries shape periphyton patchiness in an aridland river*. North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- Bixby, R. J. and **A. S. Burdett**. *Nutrient and water quality influences on algal biomass and community composition in an aridland river*. Ecological Society of America 94th Annual Meeting, Albuquerque, NM. August 2009

- Burdett, A. S. and T. F. Turner. A study of temporal dynamics in a dryland river: the middle Rio Grande, New Mexico. International Society for River Science 1st Annual Meeting, St. Pete Beach, FL. July 2009
- Bixby, R.J., **A.S. Burdett**, and N. Daves-Brody. *Preliminary diatom biodiversity in an arid-land river, Southwestern United States.* International Diatom Symposium, Dubrovnick, Croatia. 7-13 September 2008
- Burdett, A.S, T.F. Turner, and M.K. Tellez. Community responses to variable flows in an arid-land river. North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- Bixby, R.J., **A.S. Burdett**, and N. Daves-Brody. *Nutrient availability on periphyton biomass and diversity in the Middle Rio Grande*. North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- Turner, T. F., A.S. Burdett, and M.S. Edwards. A comparative stable isotope study of fish communities in the Rio Grande and Murray-Darling basins: What are the effects of intensive river regulation? North American Benthological Society 56th Annual Meeting Salt Lake City, UT. 25-30 May 2008
- Burdett, A. S. and T. F. Turner. *River food webs during summer dry-down in the Middle Rio Grande: a study using stable isotope analysis.* North American Benthological Society 55th Annual Meeting. Columbia, SC. 3-8 June 2007
- **Burdett, A.S.** Aquatic invertebrate faunal assemblages in small, temporary wetlands on the *Murrumbidgee floodplain, Australia*. International Society for Limnology XXIX Congress. Lahti, Finland. 8-14 August 2004
- **Burdett, A.S.** 34th Australian Entomological society / 6th Invertebrate Biodiversity & Conservation Combine Conference, Hobart , Tasmania 2003
- **Burdett, A.S.** *Biodiversity of aquatic invertebrates on the Murrumbidgee floodplain*. Johnson Centre Biodiversity Forum Thurgoona, NSW, Australia. 2003
- Burdett, A.S. Temporary wetlands on the Murrumbidgee River floodplain: can invertebrate community structure be predicted by habitat structure? Australian Society for Limnology Annual Conference. Margaret River, WA, Australia. 29 September 3 October 2002

POSTER PRESENTATIONS

- Love, C.A., A.S. Burdett, and T.F. Turner. The feeding habits of larval fishes: abiotic influences and food web impact. UNM Department of Biology 20th Annual Research Day Albuquerque, NM April 2011
- Peralta, M.F., **A.S. Burdett**, C.A. Love, and T.F. Turner. *Influences of habitat and predatory fish on mosquito abundance in a mesocosm experiment*. UNM Department of Biology 20th Annual Research Day Albuquerque, NM April 2011
- Sayre, K.R., **A.S. Burdett**, R.J. Bixby and T.F. Turner. *Dynamics of bottom-up and top-down effects on biotic assemblages during drydown in the Rio Grande: A mesocosm experiment*. UNM Department of Biology 20th Annual Research Day Albuquerque, NM April 2011

- Esquibel, J.M., A.S. Burdett, and R.J. Bixby. Effects of nitrogen as a limiting resource on aquatic abundance and richness. UNM Department of Biology 20th Annual Research Day Albuquerque, NM April 2011
- Peralta, M.F., A.S. Burdett, and T.F. Turner. The biological control of mosquito larvae populations using larvivorous fish: An eco-friendly approach. Desert Fishes Council 42nd Annual Meeting, Moab, UT. 18-21 November 2010
- Kraus, J.S., **A.S. Burdett**, and T.F. Turner. *Aquatic food web structure in drying pools using isotope data from a mesocosm experiment and surveys in the Rio Grande, New Mexico*. Desert Fishes Council 42nd Annual Meeting, Moab, UT. 18-21 November 2010
- Peralta, M.F., **A.S. Burdett**, and T.F. Turner. *The biological control of mosquito larvae populations using larvivorous fish: An eco-friendly approach.* 2010 Summer biomedical Research Symposium. University of New Mexico. 10 August 2010
- Bishara, R.K., A.S. Burdett, and T.F. Turner. Comparison of community structure in a controlled mesocosm experiment and natural freshwater systems in the middle Rio Grande, New Mexico. North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- Johnson, E.L., A.S. Burdett, and T.F. Turner. Larval fishes as predators during river drydown: Diet and stable isotopes reveal important spatial and temporal effects on meiofauna. North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- Kraus, J.S., A.S. Burdett, and T.F. Turner. Aquatic food web structure in drying pools using isotope data from a mesocosm experiment and surveys in the Rio Grande, New Mexico. North American Benthological Society 58th Annual Meeting (joint meeting with American Society for Limnology and Oceanography), Santa Fe, NM. 6-11 May 2010
- Bishara, R. K., C. A. Love, E. L. Johnson, A. S. Burdett, and T. F. Turner. Aquatic invertebrate ecology in the Rio Grande, New Mexico: a comprehensive undergraduate training program. Desert Fishes Council 41st Annual Meeting, Death Valley National Park, CA.18-22 November 2009
- **Burdett, A.S.** and R.J. Bixby. *Bottom-up and top-down effects on algal community dynamics in an aridland river: the Middle Rio Grande, New Mexico*. Ecological Society of America 94th Annual Meeting, Albuquerque NM. August 2009
- Fencl, J. S., A. S. Burdett, T. F. Turner. Comparison of invertebrate sampling methods in the Middle Rio Grande. Ecological Society of America, 94th Annual Meeting Albuquerque, NM. August 2009
- M. K. Tellez, **A. S. Burdett**, T.F. Turner. *Allometric relationships between linear body dimensions and dry mass for some freshwater macroinvertebrates in the Middle Rio Grande, NM*. Ecological Society of America, 94th Annual Meeting Albuquerque, NM. August 2009
- Fencl, J. S., A. S. Burdett, T. F. Turner. Comparison of invertebrate sampling methods in the Middle Rio Grande. North American Benthological Society, 57th Annual Meeting Grand Rapids, MI. May 2009

- M. K. Tellez, A. S. Burdett, T.F. Turner. Length-mass relationships for freshwater macroinvertebrates of the Middle Rio Grande, NM. North American Benthological Society 57th Annual Meeting Grand Rapids, MI. May 2009
- Fencl, J. S., A. S. Burdett, T. F. Turner. Comparison of invertebrate sampling methods in the Middle Rio Grande. UNM Department of Biology 18th Annual Research Day Albuquerque, NM April 2009
 - Awarded Best Undergraduate Student Poster Presentation
- M. K. Tellez, A. S. Burdett, T.F. Turner. Allometric relationships between linear body dimensions and dry mass for some freshwater macroinvertebrates in the Middle Rio Grande, NM. UNM Department of Biology 18th Annual Research Day Albuquerque, NM. April 2009
- Bixby, R.J., **A.S. Burdett**, and N. Daves-Brody. *Preliminary diatom biodiversity in an aridland river, Southwestern United States.* Festival of the Cranes at the Bosque del Apache National Wildlife Refuge, San Antonio, NM, 18-23 November 2008
- Burdett, A.S, Turner, T. F., Tellez, M. K. and Fencl, J.S. *Aquatic food web studies at Bosque del Apache.* Festival of the Cranes at the Bosque del Apache National Wildlife Refuge, San Antonio, New Mexico, 18-23 November 2008
- Llewellyn, D., D. Hathaway, W. Kuhn, M. Marcus, B. Bussetter, T. Caplan, T., C. Jones, T.F. Turner, and **A.S. Burdett**. *Should we move the Rio Grande?* Festival of the Cranes at the Bosque del Apache National Wildlife Refuge, San Antonio, NM. 18-23 November 2008
- Daves-Brody, N., R.J. Bixby, and A.S. Burdett. Seasonal effects on water chemistry and algal growth and diversity in the Rio Grande. North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- Tellez, M. K., **A.S. Burdett**, and T.F. Turner. *Length-mass relationships for freshwater macroinvertebrates in the Middle Rio Grande, New Mexico.* North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- Daves-Brody, N., Bixby, R.J., and **A.S. Burdett**. *Seasonal effects on water chemistry and algal growth and diversity in the Rio Grande*. University of New Mexico, Department of Biology Student Research Day Albuquerque, NM. 11 April 2008
- Tellez, M. K., **A.S. Burdett**, and T.F. Turner. *Length-mass relationships for freshwater macroinvertebrates in the Middle Rio Grande, New Mexico.* University of New Mexico, Department of Biology Student Research Day Albuquerque, NM. 11 April 2008
- Daves-Brody, N., R.J. Bixby, and **A.S. Burdett**. *Seasonal effects on water chemistry and algal growth and diversity in the Rio Grande*. University of New Mexico Third Annual Student Water Symposium, Albuquerque, NM. 28 March 2008
- Tellez, M. K., **Burdett, A.S**, and Turner, T. F. *Length-mass relationships for freshwater macroinvertebrates in the Middle Rio Grande, New Mexico.* University of New Mexico Third Annual Student Water Symposium, Albuquerque, NM 28 March 2008

STUDENT MENTORSHIP

RESEARCH EXPERIENCE FOR UNDERGRADUATES (REU)

- summer 2010: Kayla R. Sayre
- summer 2009: Corey A. Love and Erica L. Johnson
- summer 2008: Jane S. Fencl
- summer 2007: Nathan Daves-Brody and Monica K. Tellez
- summer 2006: Aimee Mareck

REU STUDENT INTERNS AT THE SEVILLETA NATIONAL WILDLIFE REFUGE

- summer 2010: Harmony Lu (Brown University)
- summer 2009: Lian Liu (University of Michigan)

UNDERGRADUATE NURTURING OPPORTUNITIES (UNO)

- 2010-present: Matthew F. Peralta
- 2009-10: Raphaelita K. Bishara
- 2007-08: Monica K. Tellez

UNDERGRADUATE SENIOR RESEARCH PROJECT

- 2010-11: Jessica M. Esquibel
 - o Effects of nitrogen as a limiting resource on aquatic abundance and richness
- 2008-2009: Jane S. Fencl
 - Comparison of aquatic invertebrate sampling methods in the Middle Rio Grande
 - Summa Cum Laude

UNDERGRADUATE RESEARCH ASSISTANT

- 2011: Sarah Sasek
- 2010-11: Jessica M. Esquibel
- 2010-present: Kayla R. Sayre
- 2009-present: Jennifer S. Kraus
- 2009-10: Corey A. Love
- 2008-09: Jane S. Fencl
- 2007-10: Nathan Lopez-Brody

SUMMER STUDENTS AT CHARLES STURT UNIVERSITY

- 2003-04: Kate Lightfoot
- 2002-03: Robert deLigt

UNDERGRADUATE VOLUNTEERS

• 2001-04: Chris Coombes, Tobi Edmonds, Daniel Francis, Jess Newton, Andrew Burl, Roger Nye, Jodi Chapman, Sascha Healey, Omar Annaiz and Skye Healey

UNDERGRADUATE STUDENT TEACHING

- Guest lecture for Biology 495 (<u>Limnology</u>), *Stable Isotopes and Food Web Ecology*. 23 April 2010, 18 April 2011
- Guest lecture for Biology 495 (<u>Limnology</u>), *Benthic Invertebrates* and *Benthic Insects*. 15-17 April 2009
- Guest lecture for Biology 514 (<u>Ecosystem Studies</u>), *Stable Isotopes and Food Web Ecology*. 5 November 2008
- Guest lecture for Biology 203 (Ecology and Evolution) at UNM. 16 October 2007
- Teaching assistant in Biology and Ecology, Charles Sturt University (2002-05)

WORKSHOPS AND COURSES

- Systematic Evaluation of Ecological Literature to Support Causal Inference: Tools and Methods. North American Benthological Society 59th Annual Meeting, Providence, RI. 22 May 2011
- 31752 The Keys to Effective Editing. Division of Continuing Education and Community Services, Continuing Education at UNM. 20 October –10 December 2010
- Aquatic Craneflies (Tipulidae): Taxonomy Workshop. May 25 2008. North American Benthological Society 56th Annual Meeting, Salt Lake City, UT. 25-30 May 2008
- 53601 FBA Beginning Access. Division of Continuing Education and Community Services, Continuing Education at UNM. 4-11 September 2007
- Crayfishes: A Workshop. June 3 2007. North American Benthological Society 55th Annual Meeting. Columbia, SC. 3-8 June 2007
- From Ship to Shore to the Newspaper: workshop on science journalism. 7 February 2007. American Society of Limnology and Oceanography Aquatic Sciences Meeting. Santa Fe, NM. 2-9 February 2007

PRIZES AND AWARDS

- Best Undergraduate Student Poster Presentation: Fencl, J. S., A. S. Burdett, and T. F. Turner. Comparison of invertebrate sampling methods in the Middle Rio Grande. UNM Department of Biology 18th Annual Research Day Albuquerque, NM April 2009
- Student travel grant, 2005. Ecological Society of Australia: Attend Science Meets Parliament March 8-9 2005
- Postgraduate Student Travel Grant, 2004. The Johnstone Centre (CSU), Albury NSW: Attend XXIX Congress of the International Association of Applied and Theoretical Limnology
- CSU Postgraduate Association Mike King Award for Academic Excellence, 2003. Charles Sturt University, Wagga Wagga NSW

• Student Prize for Oral Presentation, 2002. Australian Society for Limnology, Margaret River WA: "Temporary wetlands on the Murrumbidgee River floodplain: can invertebrate community structure be predicted by habitat structure?"

COMMUNITY INVOLVEMENT

JUDGING AT HIGH SCHOOL SCIENCE FAIRS

- Judge at Amy Biehl High School Science Fair: 2010
- Regional judge for Central NM Science and Engineering Research Challenge: 2007, 2008, 2010, 2011
- Regional judge representing NABS at Intel International Science and Engineering Fair (ISEF) May 13-19 2007, Albuquerque NM

JUDGING FOR UNIVERSITY AND NATIONAL SCIENTIFIC MEETINGS

- Judge for Research Day, UNM Biology Department 2007, 2008, 2010, 2011
- Judge at North American Benthological Society Annual Meeting, 2007, 2008, 2010, 2011

PRESENTATIONS TO A GENERAL AUDIENCE

- Burdett, A.S., and C.A. Love. Finding nematodes: Food web ecology in the Rio Grande, New Mexico. Albuquerque BioPark. 2 October 2010
- Aquatic invertebrate collection, identification, and ecology. Rio Grande Nature Center GK12 students, Albuquerque NM. 21 February 2009
- Fish and invertebrate ecology, mesocosm experimental site at the Sevilleta National Wildlife Refuge. GK12 students, Albuquerque NM. 1 July 2009

PROFESSIONAL MEMBERSHIPS

- North American Benthological Society
- Ecological Society of America
- Ecological Society of Australia
- Australian Society for Limnology
- Australian Conservation Foundation