

BRAD McRAE

National Center for Ecological Analysis and Synthesis
 University of California, Santa Barbara
 735 State Street, Suite 300 · Santa Barbara, CA 93109
 Phone: +1-541-223-1170 · E-mail: mcrae[at]nceas.ucsb.edu
<http://www.nceas.ucsb.edu/~mcrae/>

EDUCATION

Ph.D., Forest Science, Northern Arizona University, May 2004.

M.S., Land Resources, University of Wisconsin-Madison, 1995
 Thesis topic: Effects of landscape composition on forest songbird populations

B.S., Electrical and Computer Engineering, With Great Distinction, Clarkson University, 1989
 (Concentration in Technical Communications)

PROFESSIONAL EXPERIENCE (Excluding graduate assistantships)

2005 –	Postdoctoral Fellow, NCEAS, University of California, Santa Barbara, CA.
2004 – 2005	Visiting Postdoctoral Scholar, US EPA Western Ecology Division, Corvallis OR.
1996 – 1997	Wildlife Ecologist/Spatial Analyst, USDA Forest Service, Wenatchee, WA.
1995 – 1996	Plant Ecologist & Field Crew Leader, USDA Forest Service, Leavenworth, WA.
1995	Field Wildlife Biologist, USDA Forest Service, Lake Wenatchee, WA.
1993	Visiting Research Intern, Oak Ridge National Laboratory, Oak Ridge, TN.
1992	Plant Ecologist & GIS Technician, USDA Forest Service, Leavenworth, WA.
1989 – 1991	Electrical and Computer Engineer, NCR Corporation, Ithaca, NY.
1988	Engineering Intern, Texas Instruments, Dallas, TX.

PUBLICATIONS

McRae, B.H., N.H. Schumaker, R.B. McKane, R.T. Busing, A.M. Solomon, and C.A. Burdick. 2008. Incorporating climate change and land use into wildlife risk assessments. Accepted, *Ecological Modelling*.

McRae, B.H., B.G. Dickson, and T.H. Keitt. 2008. Using circuit theory to predict connectivity in ecology, evolution, and conservation. In press, *Ecology*.

McRae, B.H. and P. Beier. 2007. Circuit theory predicts gene flow in plant and animal populations. *PNAS* 104:19885-19890.

McRae, B.H. 2006. Isolation by Resistance. *Evolution* 60:1551-1561.

Loeser, M.R., **B.H. McRae**, M.M. Howe, and T.G. Whitham. 2006. Litter hovels as havens for riparian spiders in an unregulated river. *Wetlands* 26:13-19.

McRae, B.H., P. Beier, L.Y. Huynh, L. DeWald, and P. Keim. 2005. Habitat barriers limit gene flow and illuminate historical events in a wide ranging carnivore, the American puma. *Molecular Ecology* 14:1965-1977.

McRae, B.H. 2002. Review of Logan, K. and L. Sweanor. 2001. *Desert Puma: Evolutionary ecology and conservation of an enduring carnivore*. In *Journal of Mammalogy* 83(3):913-915.

McKinney, T. and **B.H. McRae**. 2001. Genetic analysis of feces for estimating size of a Sonoran Desert mountain lion population. Proceedings of the 2001 Desert Bighorn Conference, Hermosillo, Mexico.

Harrod, R.J., **B.H. McRae**, and W.E. Hartl. 1998. Historical stand reconstruction in ponderosa pine forests to guide silvicultural prescriptions. *Forest Ecology and Management* 4499:1-14.

McRae, B.H. 1995. Effects of landscape composition on edge-sensitive songbirds in a forest-dominated landscape. M.S. Thesis, University of Wisconsin-Madison.

PRESENTATIONS

- McRae, B.H., B.G. Dickson, and R.A. Hopkins. 2007. Ecological Society of America.
- McRae, B.H. 2007. International Association for Landscape Ecology - US Chapter.
- McRae, B.H., P. Beier, B.G. Dickson, and R.A. Hopkins. 2006. Society for Conservation Biology.
- McRae, B.H., B.G. Dickson, and R.A. Hopkins. 2006. International Association for Landscape Ecology - US Chapter.
- McRae, B.H., P. Beier, L.E. DeWald, and P. Keim. 2005. Eighth Mountain Lion Workshop.
- McRae, B.H. 2004. International Association for Landscape Ecology - US Chapter. (*Winner, best student paper*).
- McRae, B.H. and P. Beier. 2004. Ecological Society of America.
- McRae, B.H., P. Beier, and P. Keim. 2004. Society for the Study of Evolution.
- McRae, B.H. 2003. Society for the Study of Evolution.
- McRae, B.H., L.Y. Huynh, P. Beier, and P. Keim. 2002. Ecological Society of America.
- McRae, B.H. 2001. EPA STAR Fellowship conference, Washington, D.C. (*Winner, best paper in Molecular Approaches to Biodiversity session*).
- McRae, B.H. 2000. Society for Conservation Biology.
- McRae, B.H., C.A. Lopez-Gonzalez, and G. Lorenzana-Piña. 2000. Sixth Mountain Lion Workshop.
- McRae, B.H., T. Wojtowicz, M.R. Loeser, and T.G. Whitham. 1999. Arizona-Nevada Academy of Sciences. (*Winner, best student paper*).

INVITED SEMINARS

- Department of Fish and Wildlife Resources, University of Idaho, November 2006.
- National Center for Ecological Analysis and Synthesis, March 2006.
- Department of Fisheries and Wildlife, Oregon State University, February 2005.
- Department of Wildlife and Fisheries Science, University of Arizona, October 2004.
- Department of Biology, University of New Mexico September 2004.
- Section of Integrative Biology, University of Texas at Austin, September 2004.
- Hatfield Marine Science Center, Oregon State University, June 2004.
- Department of Fishery and Wildlife Biology, Colorado State University, March 2004.
- Department of Biological Sciences, University of Notre Dame, November 2003.

TEACHING EXPERIENCE

- Classroom Scientist, *Kids Do Ecology* (5th grade classrooms with high minority representation), Spring 2007.
- Completed FOR 693, Graduate Teaching Practicum, Northern Arizona University, Spring 2002.
- Guest Lecturer, FOR 250, *Arizona Forests and Wildlife*, Northern Arizona University, Spring 2002.
- Guest Lecturer, ENV 330, *Environmental Ecology: Synthesis and Applications*, Northern Arizona University, Fall 2001.
- Guest Lecturer, FOR 311, *Forest Science*, Northern Arizona University, Fall 2001.
- Guest Lecturer, BIO 190, *Animal Biology*, Northern Arizona University, Spring 2000.
- Graduate Teaching Assistant, WL ECOL 360, *Extinction of Species*, Department of Wildlife Ecology, University of Wisconsin-Madison, Fall 1994.

FUNDING

- 2007 Cougar Fund grant for connectivity software development, \$3,500
- 2005 NCEAS Fellowship (3 yrs): \$150,000.
- 2004 International Association for Landscape Ecology travel grant: \$500.
- 2002 Merriam-Powell Center for Environmental Research Fellowship (1.5 yrs): \$22,500.
- 2000 US EPA STAR Fellowship (3 yrs): \$90,000.
- 1998 McIntyre-Stennis Grant (4 yrs): \$45,000.
- 1992 US Department of Energy Global Change Fellowship (3 yrs): \$60,000.
- 1991 UW-Madison University Fellowship: \$24,000.

HONORS AND AWARDS

- Best student paper, 2004 International Association for Landscape Ecology Annual Meeting.
- Merriam-Powell Center for Environmental Research Fellowship (2002-2003).
- US EPA STAR Fellowship (2000-2002).
- Best paper, *Molecular Approaches to Biodiversity* session. 2001 EPA STAR Conference.
- Best student paper, 1999 Arizona-Nevada Academy of Sciences Annual Meeting.
- US Department of Energy Global Change Fellowship, (1992-1995).
- UW-Madison University Fellowship (1991-1992).

PERTINENT SKILLS

- Extensive field work experience in Northwest, Midwest, and Southwest USA and Mexico
- Computer programming (R, Matlab, Mathematica, Java, FORTRAN, Python)
- GIS and remote sensing (ArcView, ArcGIS, GRASS, ERDAS Imagine)
- Carnivore census using noninvasive DNA and photographic networks
- Small mammal and herp trapping, plant taxonomy, field ornithology
- DNA extraction, PCR, and genetic data analysis
- Spatially-explicit animal population modeling
- Excellent public speaking skills

PROFESSIONAL SOCIETIES & SERVICE

Society Memberships:

Ecological Society of America
Society for Conservation Biology
Society for the Study of Evolution
International Association for Landscape Ecology

Referee for:

Landscape Ecology
Molecular Ecology
Biological Conservation
National Science Foundation

Outreach and Leadership:

Kids Do Ecology Classroom Scientist (5th grade classrooms with high minority representation)
NAU Graduate Student Organization co-organizer and representative (2000-2001)
Forestry Graduate Student Association co-organizer and representative (1999-2000)
UW-Madison Land Resources Graduate Program student representative (1994-1995)

PROFESSIONAL REFERENCES

- Dr. Paul Beier (Ph.D. supervisor), NAU School of Forestry
+1-928-523-9341, Paul.Beier[at]nau.edu.
- Dr. Nathan Schumaker (Postdoc co-supervisor), US EPA Western Ecology Division
+1-541-754-4658, Schumaker.Nathan[at]epa.gov.
- Dr. Bob McKane (Postdoc co-supervisor), US EPA Western Ecology Division,
+1-541-754-4631, McKane.Bob[at]epa.gov.
- Dr. Tad Theimer, NAU Department of Biological Sciences
+1-928-523-8374, Tad.Theimer[at]nau.edu.
- Dr. Thomas Whitham, NAU Department of Biological Sciences
+1-928-523-7215, Thomas.Whitham[at]nau.edu.