

CURRICULUM VITAE

CRAIG ALAN STOCKWELL

PHONE: (701) 231-8449

James A. Meier Associate Professor
Department of Biological Sciences, Stevens Hall
North Dakota State University
Fargo, ND 58108
E-MAIL: Craig.Stockwell@ndsu.edu

EDUCATION

- 1995 **Doctor of Philosophy, Program in Ecology, Evolution & Conservation Biology**
University of Nevada, Reno, Nevada; Advisor – Dr. Gary Vinyard (deceased)
- 1989 **Masters of Science, Biology**, Northern Arizona University, Flagstaff, Arizona;
Advisor – Dr. Gary Bateman
- 1981 **Bachelor of Arts, Anthropology**, University of Colorado, Boulder, Colorado

RESEARCH & TEACHING EXPERIENCE

- 2008- **James A. Meier Associate Professor** - Department of Biological Sciences,
North Dakota State University, Fargo, ND
- 2008- **Director, Environmental & Conservation Sciences Graduate Program.,**
North Dakota State University, Fargo, ND
- 2004- **Associate Professor** – Department of Biological Sciences, North Dakota State
University, Fargo, ND
- 1998-2004 **Assistant Professor** -- Department of Biological Sciences, North Dakota State
University, Fargo, ND
- 2007-2008 **Visiting Faculty** – Department of Fish, Wildlife & Conservation Biology,
Colorado State University, Fort Collins, CO
- 1999-2000 **Visiting Professor** -- University of Nebraska's Cedar Point Biological Station,
Lincoln, NE
- 1995-1997 **Postdoctoral Research Ecologist** -- University of Georgia's Savannah River
Ecology Laboratory, Aiken, SC (Mentor: Dr. Margaret Mulvey)
- 1993-1995 **Research Fellow** -- Bioresources Research Center, Department of Biology,
University of Nevada, Reno, NV
- 1992-1993 **Research Assistant** -- Department of Biology, University of Nevada, Reno,
NV
- 1990-1992 **Teaching Assistant** (Ichthyology, Limnology, Animal Behavior, Introductory
Biology) -- Department of Biology, University of Nevada, Reno, NV
- 1988-1989 **Research Fellow** -- Department of Range, Wildlife & Forestry, University of
Nevada, Reno, NV

PROFESSIONAL SERVICE

- Scientific Panelist – Devils Hole Pupfish Genetics Panel. Organized by National Park Service, Fort Collins, CO, September 2007.
- Scientific Panelist – Devils Hole Panel Review. Organized by National Park Service, Death Valley, CA, 2007-2009
- Workshop Invited Speaker - Assessment and Evaluation of Reintroducing Native Fishes, Oregon Chapter – American Fisheries Society, February 2007
- Scientific Advisor - White Sands Pupfish Conservation Team, 1999-2006
- Scientific Panelist - Conservation genetics of an endangered species, the bull trout, June, 2000
- Symposium Lead-off speaker - Evolution on Ecological Time Scales, Ecological Society of America, 2005
- Symposium organizer - Translocations as a tool in the conservation of native desert fishes. Desert Fishes Council, Reno, NV, November, 1995
- Symposium organizer - Organismal biology of the Northern Plains. North Dakota – South Dakota-Minnesota Academy of Sciences meeting, Moorhead, MN, April 2000.

EDITORIAL AND REFEREE ACTIVITIES

- Associate editor – *Transactions of the American Fisheries Society*, 2001-2003
- Assigning editor - *Conservation Biology* 1998, 2002, 2003, 2010
- Referee Activity - (1997-present) – National Science Foundation, Sea Grants, Animal Conservation, Behaviour, Biological Invasions, Biodiversity and Distributions, Biological Letters - Royal Society, Conservation Biology, Conservation Genetics, Copeia, Evolutionary Applications, Genetica, Great Basin Naturalist, Evolution, New Zealand Journal of Marine & Freshwater Research, North American Journal of Fisheries Management, Reviews in Fish Biology and Fisheries, Transactions of the American Fisheries Society, Trends in Ecology & Evolution

COURSES DEVELOPED AND TAUGHT

North Dakota State University

- Conservation Biology
- Ichthyology
- Wildlife & Fisheries Management Techniques
- Advanced Conservation Biology
- General Biology
- Senior Seminar
- Graduate Seminar

University Of Nebraska, Cedar Point Biological Station

- Prairie Ecology; 1999 & 2000

TEACHING ASSISTANT EXPERIENCE

University of Nevada

- Animal Behavior
- Ecology
- Limnology
- Ichthyology
- General Biology (nominated for TA of the year, 1989)

Northern Arizona University

- General Zoology

TEACHING ACTIVITIES AND TRAINING

Co-Developed new Ph.D. program in Environmental & Conservation Sciences
 Workshop participant; Curricular and Pedagogical Development of a Conservation Biology
 Program —Reform for the 21st Century – Session I. May, Session II, July 2001
 Biological Sciences Senior Seminar mentor: 2000-2010
 Advised undergraduates (30-45 students each year) 1999-2010
 Graduate Advisory Committee member (~10 students each year including 2-4 students in my
 laboratory, see list of graduate students below) 1998-2010
 Attended Faculty Institute for Excellence in Learning (FIEL) Luncheons 2001-2002
 Participated in *Peer-Review-of- Teaching* Program, 2002-2003

POSTDOCTORAL RESEARCHERS / TECHNICIAN

Mr. Sujan Henkanaththegedara Conservation Ecology 2011-
 Dr. Kevin Purcell Conservation Genetics 2009-2011
 Dr. Yongjiu Chen Native fish conservation and genetics 2006-2008
 Dr. Jeffrey Heilveil Pupfish conservation and genetics 2005-2006
 Mr. David Layfield Native fish conservation genetics 2001-2004

GRADUATE STUDENTS

Mike Collyer	Zoology Masters	2000
Kelly Miller	Zoology Masters	2001
Deborah Harstad	Zoology Masters	2003
Mike Collyer	Zoology Ph.D.	2003
David Rogowski	Zoology Ph.D.	2004
Jason Vinje	Zoology Masters	2007
Ali Tackett	Environmental & Conservation Sciences Masters	2008
Sujan Henkanaththegedara	Environmental & Conservation Sciences Ph.D.	2006-
David Mushet	Environmental & Conservation Sciences Ph.D.	2006-
Brandon Kowalski	Environmental & Conservation Sciences Ph.D.	2008-
Justin Fisher	Environmental & Conservation Sciences Ph.D.	2009-
Shawn Goodchild	Environmental & Conservation Sciences Ph.D.	2010-

UNDERGRADUATE RESEARCH EXPERIENCE

Mr. Troy Noraker	Pupfish Life history Research	1998
Mr. Cody Hertz	Pupfish Life history Research	1998
Mr. Noah Johnson	Mosquitofish Life history Research	1998
Mr. Jeremy Alm	Pupfish Life history Research	1999
Ms. Kelly Johnson	Conservation Genetics Research	1999
Castle Award		
Mr. Jeff Sell	Pupfish Parasitism Research	2000
McNair Award		
Mr. Thor Eppler	Pupfish Life history Research	2000
Mr. Scott Ralston	Pupfish Life history Research	2000
Mr. Dan Moen	Pupfish Parasitism Research	2001
NSF EPSCor Award		
Mr. John Bauer	Yellowstone Trout Research	2001
Ms. Tonya Krebs	Zoo Internship	2002
Ms. Sarah Beck	Zoo Internship	2003

UNDERGRADUATE RESEARCH EXPERIENCE (continued)

Ms. Stephanie Fisher	Zoo Internship	2003
Ms. Renae Williams	Conservation Genetics Research	2006
Ms. Stephanie Fisher	Prairie Dog Research	2004
Ms. Chelsey Wongjirad	Conservation Genetics Research	2006-2009
Mr. Justin Fisher	Aquatic Ecology Research	2007
Castle Award		
Mr. Jesse Amos	Conservation Genetics Research	2007-2010
Castle Award		
Mr. Tony Nelson	Conservation Genetics Research	2008-
Ms. Cailyn Settlemeier	Zoo Internship	2008
Ms. Bobbi Carpenter	Conservation Genetics Research	2008
Mr. Steven Burdick	Conservation Ecology Research	2009-2010
Mr. Joshua Melhorne	Conservation Ecology Research	2010
Ms. Samantha Skinner	Conservation Genetics Research	2010-

FUNDING (Extramural funding: ~ \$1,000,000)

2010 – 2013	Investigation of refugial fish genetic structure and local adaptation for the Pahrump poolfish (<i>Empetrichthys latos latos</i>). Nevada State Wildlife Grant – \$100,000
2010 – 2013	Population status of the Northern Leopard Frog in North Dakota North Dakota State Wildlife Grant - \$100,000
2009 -	Reciprocal predation and co-persistence of non-native and native fishes Western National Parks Association - \$7,500
2008-2010	Hybridization of endangered Mohave tui chub and non-native arroyo chub Western National Parks Association - \$7,500
2006-2009	Lake ecology and population dynamics of the Endangered Mohave tui chub (<i>Siphateles bicolor mohavensis</i>). National Park Service - \$150,000.
2005-2007	Conserving Integral Units of Chihuahuan Desert Biodiversity. Phase V. Department of Defense Legacy Grant -- \$98,000.
2004-2005	Conserving Integral Units of Chihuahuan Desert Biodiversity, Phase IV. Department of Defense Legacy Grant -- \$157,718.
2003-2004	Conserving Integral Units of Chihuahuan Desert Biodiversity, Phase III. Department of Defense Legacy Grant -- \$134,784.
2001-2002	Conserving Integral Units of Chihuahuan Desert Biodiversity, Phase II. Department of Defense Legacy Grant -- \$126,000.
2000-2002	Conserving Integral Units of Chihuahuan Desert Biodiversity-Supplemental Holloman Air Force Base -- \$18,364.
2000-2001	Conserving Integral Units of Chihuahuan Desert Biodiversity, Phase I. Department of Defense Legacy Grant -- \$87,500.
1995-1998	Population genetic structure and life history of the White Sands pupfish (<i>Cyprinodon tularosa</i>). Holloman Air Force Base, NM -- \$200,000. (Stockwell was co-PI with Mulvey).
1991-1992	Rapid evolution in recently established populations of mosquitofish (<i>G. affinis</i>). Sigma Xi Scientific Research Society (two grants) -- \$845.00.

FUNDING (continued)

- 1984 Environmental Conservation Fellowship. National Wildlife Federation
-- \$1,000.00.
- 1984-1986 Effects of helicopter overflights on desert bighorn foraging behavior at Grand Canyon National Park. Grand Canyon Natural History Association, Grand Canyon, AZ -- \$13,800.00.

NDSU INTERNAL GRANTS (~\$207,000.00)

- 2010-2011 Experimental approach to the study of the constaining effects of gene flow on evolutionary divergence. North Dakota EPSCoR - \$24,000.
- 2003 Automated Sequencing Analysis Facility, ND EPSCoR Infrastructure Improvement Program (IIP) – Equipment Grant. -- \$92,567.58.
- 2003 Environmental & Conservation Sciences Book Acquisition Grant for NDSU Library. CoPI -- \$4,000.00
- 2002-2004 Development and application of microsatellites for the genetic management of a protected species, the White Sands pupfish (*Cyprinodon tularosa*). ND EPSCoR – EPA – STAR grant -- \$40,000.00
- 1999 Molecular assessment of hybridization between western mosquitofish (*Gambusia affinis*) and the Endangered Clear Creek gambusia (*G. heterochir*). NDSU Development Foundation -- \$2,000.00
- 1998-1999 An experimental assessment of the costs of parasitism in the White Sands pupfish (*Cyprinodon tularosa*). Grant-in-Aid, North Dakota State University, Fargo, ND -- \$12,845.
- 1998 Gene Expression and Genome Analysis Center, National Science Foundation. EPSCoR. CoPI -- \$32,000.00

PUBLICATIONS

- Purcell, K.M., Ling, N. and **C. A. Stockwell** In Review. Evaluation of the introduction history and genetic diversity of a serially introduced fish population in New Zealand. *Biological Invasions*.
- Henkanaththegedara, S. M. and **C. A. Stockwell**. In Review. Reciprocal Predation Mediates Coexistence of Native and Non-native Fish. *Conservation Biology*
- Mushet, D. M., N. H. Euliss, Jr., and C. A. Stockwell. In Review. Mapping anuran habitat suitability to estimate effects of grassland and wetland conservation programs. *Copeia*
- Mushet, D. M., N. H. Euliss, Jr., and C. A. Stockwell. In Review. Complex spatial dynamics maintain northern leopard frog (*Lithobates pipiens*) genetic diversity in a temporally varying landscape. *Herpetological Conservation and Biology*
- Mushet, D. M., N. H. Euliss, Jr., and C. A. Stockwell. In Press. A conceptual model to facilitate amphibian conservation in the northern Great Plains. *Great Plains Research*
- Stockwell, C.A., K. M. Purcell, M.L. Collyer and J. Janovy. In press. Effects of salinity on *Physa acuta*, the intermediate host for the parasite *Posthodiplostomum minimum*; implications for the translocation of the protected White Sands pupfish. *Transactions of the American Fisheries Society*.
- Collyer, M. L., C.A. Stockwell and J. S. Heilveil. 2011. Contemporary evolutionary divergence for a protected species following assisted colonization. *PLoS ONE*.

PUBLICATIONS (continued)

- Stockwell, C. A. and S. M. Henkanathgedara. 2011. Conservation biology of poeciliids. **Invited book chapter**, Editors, I. Schlupp, A. Pilastro and J. Evans, *The evolutionary ecology of the Livebearing Fishes*". University of Chicago Press
- Henkanathgedara, S. M. and **C. A. Stockwell**. 2011. Melanism in endangered Mohave tui chub *Siphateles bicolor mohavensis* Snyder 1918 (Cypriniformes: Cyprinidae). ***Western North American Naturalist* 71:127-130.**
- Purcell K.M., S. L. Lance, K. L. Jones and **C.A. Stockwell**. 2011. Ten novel microsatellite markers for the western mosquitofish *Gambusia affinis*. ***Conservation Genetics Resources* 3:361-363**
- Kinnison, M. T., A. P. Hendry and **C. A. Stockwell**. 2007. Contemporary evolution meets conservation biology II. Impediments to integration and application. *Ecological Research* 22:947-954. (Invited)
- Collyer, M. L., **C. A. Stockwell**, D. C. Adams and M. H. Reiser. 2007. Phenotypic plasticity and contemporary evolution in introduced populations: evidence from translocated populations of white sands pupfish (*Cyprinodon tularosa*). ***Ecological Research* 22:902-910. (Invited)**
- Stockwell, C. A., M. T. Kinnison and A. P. Hendry. 2006. Evolutionary Restoration Ecology. Pages 113-138 in D. A. Falk, M. A. Palmer and J. B. Zedler, Editors, ***Foundations of Restoration Ecology***, Island Press.
- Stockwell, C. A. and M. L. Collyer. 2006. Rapid adaptation and conservation. Pages 192-194 in F. Allendorf and G. Luikart, editors, ***Conservation and the Genetics of Populations***. Blackwell Press.
- Rogowski, D., H. Reiser and **C. A. Stockwell**. 2006. Fish habitat associations in a spatially variable desert stream. ***Journal of Fish Biology* 68:1473-1483.**
- Rogowski, D. and **C. A. Stockwell**. 2006a. Parasites and salinity: costly tradeoffs in a threatened species. ***Oecologia* 146:615-622.**
- Rogowski, D. and **C. A. Stockwell**. 2006b. Assessment of the potential impacts of exotic species on populations of White Sands pupfish, *Cyprinodon tularosa*. ***Biological Invasions* 18:79-87.**
- Moen, D. S. and **C. A. Stockwell**. 2006. Specificity of the monogenean *Gyrodactylus tularosae* Kritsky and Stockwell 2005, to its Natural Host, the White Sands Pupfish (*Cyprinodon tularosa* Miller and Echelle 1975). ***Comparative Parasitology* 73:278-281.**
- Collyer, M. L., J. M. Novak and **C. A. Stockwell**. 2005. Morphological Divergence of Native and Recently Established Populations of White Sands Pupfish (*Cyprinodon tularosa*). ***Copeia* 2005:1-11.**
- Kritsky, D. C. and **C. A. Stockwell**. 2005. New species of *Gyrodactylus* (Monogenoidea, Gyrodactylidae) from the White Sands pupfish, *Cyprinodon tularosa*, in New Mexico. ***Southwestern Naturalist* 50:312-317.**
- Collyer, M. L. and **C. A. Stockwell**. 2004. Experimental evidence for costs of parasitism for a threatened species, White Sands pupfish. ***Journal of Animal Ecology* 73:821-830.**
- Iyengar, A., **C. A. Stockwell**, D. Layfield and P. A. Morin. 2004. Characterisation of microsatellite markers in White Sands pupfish (*Cyprinodon tularosa*). ***Molecular Ecology Notes* 4:191-193.**
- Stockwell, C. A. and M. V. Ashley. 2004. Rapid adaptation and conservation. ***Conservation Biology* 18:272-273.**

PUBLICATIONS (continued)

- Epifanio J., G. Haas, K. Pratt, B. Rieman, P. Spruell, **C. A. Stockwell**, F. Utter and W. Young. 2003. Integrating conservation genetic considerations into conservation planning: a case study of bull trout (*Salvelinus confluentus*) in the Lake Pend Oreille – Lower Clark Fork River System. *Fisheries* 18:10-24.
- Stockwell, C. A., A. P. Hendry, and M. T. Kinnison. 2003. Contemporary evolution meets conservation biology. *Trends in Ecology and Evolution* 18:94-101. *****Thomas Reuters Essential Science Indicators as the highest cited paper in the research area of rapid climate change. Reviewed in Science-Watch as “Fast Moving Front”:** <http://sciencewatch.com/dr/fmf/2008/08julmf/08julmfSockwl/>
- Stockwell, C. A. and P. L. Leberg. 2002. Translocations as a tool in the conservation of native fishes: emerging research directions. *Western North American Naturalist* 62:32-38.
- Stockwell, C. A. 2002. Threatened fishes of the world: *Cyprinodon tularosa* Miller & Echelle, 1975 (Cyprinodontidae). *Environmental Biology of Fishes* 63:404
- Hershler, R., H-P. Liu and **C. A. Stockwell**. 2002. *Juturnia*, a new Genus of aquatic Gastropods (Rissooidea: Hydrobiidae) from the North American Southwest: Phylogenetic Relationships and Biogeography. *Proceedings of the Washington Biological Society* 115:171-188.
- Stockwell, C. A. and G. L. Vinyard. 2000. Life history variation in recently established populations of western mosquitofish (*Gambusia affinis*). *Western North American Naturalist* 60:273-280.
- Stockwell, C. A. and S. C. Weeks. 1999. Translocations and rapid evolutionary responses in recently established populations of the western mosquitofish (*Gambusia affinis*). *Animal Conservation* 2:103-110.
- Stockwell, C. A. and M. Mulvey. 1998. Phosphogluconate dehydrogenase polymorphism and salinity in the White Sands pupfish. *Evolution* 52:1856-1860.
- Stockwell, C. A., M. Mulvey and A. G. Jones. 1998. Genetic evidence for two evolutionarily significant units of White Sands pupfish. *Animal Conservation* 1:213-226.
- Jones, A. G., **C. A. Stockwell**, D. Walker and J. C. Avise. 1998. The molecular basis of a microsatellite null allele from the White Sands pupfish. *Journal of Heredity* 89:339-342.
- Stockwell, C. A., M. Mulvey and G. L. Vinyard. 1996. Translocations and the preservation of allelic diversity. *Conservation Biology* 10:1133-1141.
- Stockwell, C. 1994. The biology of Walker Lake. Report to University of Nevada, Biological Resources Research Center, Reno.
- Stockwell, C. A. 1994. Current nomenclature and status of fishes of Nevada. Pages 5-6n in I. LaRivers, *Fishes and Fisheries of Nevada*. University of Nevada Press, Reno, NV.
- Stockwell, C. A. 1991. Behavioural reactions of desert bighorn sheep to avian scavengers. *Journal of Zoology (London)* 225:253-256
- Stockwell, C. A., G. C. Bateman and J. Berger. 1991. Conflicts in National Parks: A case study of helicopters and bighorn sheep at Grand Canyon. *Biological Conservation* 56:317-328.

BOOK REVIEWS

- Stockwell, C. A. 2004. Conservation biology for biologists. *Conservation Biology* 18:284-285.

INVITED SEMINARS

Stockwell, C. A. 1997-2011

Twenty-two invited seminars

PROFESSIONAL PRESENTATIONS

American Fisheries Society

- 2010 - 2 presentations (Minnesota Chapter)
- 2008 – 1 presentation (Minnesota Chapter)
- 2007 – 1 presentation (**Invited**; Oregon Chapter)
- 2001 – 1 presentation (**Invited**; National Meeting)
- 1998 – 1 presentation (Dakota Chapter; **Best Paper**)

American Society of Ichthyologists and Herpetologists

- 2011 – 4 presentations
- 2009 1 presentation
- 2007 – 1 presentation
- 2002 – 1 presentation
- 1996 – 1 presentation

Society for Conservation Biology

- 2011 – 2 presentations
- 2008 - 1 presentation
- 2006 – 1 presentation
- 2003 – 3 presentations
- 2000 – 3 presentations (Student won graduate student competition)
- 1991 – 1 presentation

Desert Fishes Council

- 1992 – 2009 - 20 presentations (Student won graduate student competition, 2003)

North American Benthological Society

- 2006 – 1 presentation

Ecological Society of America

- 2005 – 1 presentation (Invited)
- 1995 – 1 presentation

Society of Wetland Scientists

- 2008 - 1 presentation
- 2010 - 1 presentation
- 2011 - 1 presentation

Society for the study of Evolution

- 2008 - 1 presentation
- 1999 – 1 presentation (Invited)
- 1998 – 1 presentation
- 1997 – 1 presentation

The Wildlife Society

- 2011 – 1 presentation (North Dakota Chapter)
- 2010 - 2 presentations (North Dakota Chapter)
- 2009 – 1 presentation (North Dakota Chapter)
- 2002 – 1 presentation