

## AMANDA J. FINGER

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Lead Geneticist, Delta Smelt Refuge Program

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## EDUCATION

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**Postdoctoral Researcher** February 2012-present  
Genomic Variation Lab, University of California, Davis

**Ph.D. Graduate Group in Ecology** February 2012  
“Using genetic tools for the conservation of the Paiute cutthroat trout and the Owens pupfish”  
Genomic Variation Lab, University of California, Davis

**B.S. Ecology and Evolutionary Biology** June 2003  
University of California, Santa Cruz

## CURRENT RESEARCH

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Genetic management of a hatchery population of the Delta smelt (*Hypomesus transpacificus*)

Determining parentage and mating strategies in a natural spawning experiment with Delta smelt (*Hypomesus transpacificus*)

Using next-generation sequencing techniques to inform the reintroduction of the threatened Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*)

Conservation and landscape genetics and sex-determination of white-tailed (*Buteo albicaudatus*) and red-shouldered hawks (*Buteo lineatus*) in North America

Phylogenetics and systematics of Indonesian bats using cytochrome-b sequence data

Current and historical phylogeography of tui chubs (*Gila bicolor*) in the Walker Basin using microsatellites and mitochondrial sequence data

## PUBLICATIONS

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### PUBLISHED

**Finger, A. J.**, Stephens, M. R., Clipperton, N. C. and May B. P. (2009) Characterization of Six Single Nucleotide Polymorphisms Distinguishing Lahontan and Paiute cutthroat trouts. *Molecular Ecology Resources* **9**:759-763.

**Finger, A. J.**, (2010) Fishes of the Tuolumne River, book chapter in *Confluence v1.0* eds. Jeffrey Mount, Sabra Purdy. University of California press, creative commons licensing. (V. 1.0). <http://watershed.ucdavis.edu/tuolumne/resources/ConfluenceTuolumneV1.pdf>.

**Finger, A. J.,** Anderson, E. A., Stephens, M. R., and May, B. P. (2011) Application of a method for estimating effective population size and admixture using diagnostic SNPs: Implications for conservation of threatened Paiute cutthroat trout in Silver King Creek, California. *Canadian Journal of Fisheries and Aquatic Sciences*, **68**:1369-1386.

**Finger, A. J.,** Parmenter, S. P. and May, B. P. "Microsatellites reveal genetic drift and population bottlenecks in refuge populations of the Owens pupfish (*Cyprinodon radiosus*). (in press, Transactions of the American Fisheries Society)

#### **MANUSCRIPTS IN PROGRESS**

Stephens, M. R., **Finger, A. J.,** Clipperton, N. C., and May, B.P. "Conservation genetic status of native Little Kern golden trout using SNP and microsatellite markers."

**Finger, A. J.** and May, B. P. Conservation genetics and evolutionary relationships of Lahontan tui chubs in the Walker, Carson and Truckee River basins.

**Finger, A. J.,** and May, B. P. "Current and historical phylogeography of tui chubs (*Gila bicolor*) in the Walker Basin using microsatellites and mitochondrial sequence data"

**Finger, A. J.,** Fisch, K. M., and May, B. P. "Genetic analysis of a natural spawning experiment of delta smelt (*Hypomesus transpacificus*)."

#### **TECHNICAL REPORTS**

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**Finger A. J.,** May, B. P. 2012. Conservation Genetics of the Owens pupfish (*Cyprinodon radiosus*). Report to California Department of Fish and Game 30 pp.

**Finger, A. J.** 2011 Draft Recovery Plan for the endangered yellow larkspur (*Delphinium luteum*), US Fish and Wildlife Service (*internal review*).

**Finger, A. J.** 2011 Draft Recovery Plan for the endangered Vine Hill Clarkia (*Clarkia imbricata*), US Fish and Wildlife Service. (*internal review*).

**Finger, A. J.** 2010 Genetic Characterization of tui chubs in Walker Lake. Report to Nevada Department of Wildlife. 35 pp.

**Finger, A. J.,** May, B. P. 2010. A Genetic management plan for the Owens pupfish. Report to California Department of Fish and Game. (*in preparation*).

**Finger, A. J.,** May, B. P. 2009 Genetic status of Paiute cutthroat trout and hybrid trout in Silver King Creek, California. Final Report to California Department of Fish and Game. 26 pp.

**Finger, A. J.** 2008. Genetic status of Paiute cutthroat trout and hybrid trout in Silver King Creek, California. Interim Report to California Department of Fish and Game. 21 pp.

#### **ORAL PRESENTATIONS**

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- Finger, A. J.,** Parmenter, S. P., and May, B. P. 2011 “Conservation genetics of the Owens pupfish” American Fisheries Society Annual Meeting, Seattle, WA.
- Finger, A. J.,** May, B. P. 2010. “Conservation genetics of Walker Lake tui chub” Desert Fishes Council, Moab, UT.
- Finger, A. J.,** May, B. P. 2009. “Microsatellites reveal genetic drift and bottlenecks in the Owens pupfish” Desert Fishes Council, Death Valley, CA.
- Finger, A. J.,** May B. P. 2009. “Genetic characterization of a hybrid trout population after stocking events” Western Division of the American Fisheries Society, Albuquerque, NM.
- Finger, A. J.,** May, B. P. 2009. “Conservation genetics and phylogenetics of tui chubs *Siphateles bicolor*” Bay area Students for Conservation Biology Meeting.
- Finger, A. J.,** May, B. P. 2007. “Population genetics of the Paiute cutthroat trout” Threatened Trout Meeting, Davis, CA.
- Finger, A. J.,** May, B. P. 2007. “Population genetics of the endangered Owens pupfish” Desert Fishes Council, Ventura, CA.

## RESEARCH SKILLS

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### LAB

- DNA extraction and quantification
- PCR and real-time PCR
- ABI 3130 and 3730 capillary microsatellite genotyping
- Mitochondrial and nuclear sequence data collection
- AFLP
- SNP optimization and genotyping
- SNP discovery and *TaqMan* assay development
- RAD-SEQ next-generation sequencing

### DATA ANALYSIS

- Population genetics using microsatellites, next-generation sequencing data, and SNP assays
- Parentage analysis and hatchery genetic management
- Phylogenetic analysis using mitochondrial and nuclear sequence data

## TEACHING

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### Adjunct Faculty, American River College

Introduction to Natural Resources	Spring 2012
Introductory course; 23 students	
Fisheries Ecology and Management	Fall 2011
Designed new upper division course with lab and lecture; 25 students	

### Undergraduate mentor in the Genomic Variation Lab

Melanie LaCava	2011-present
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Alyssa Benjamin

2012-present

### Invited Guest lectures

“Genetic tools to manage inbreeding in captive populations”, AVS 123, UC Davis 2012  
“Using genetic tools in the Genomic Variation Lab” Freshman Seminar, UC Davis. 2010  
“Using Molecular tools for Conservation Biology” Undergraduate Seminar, UC Davis 2007

## OTHER EMPLOYMENT

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SCEP (Student Career Experience Program), US Fish and Wildlife Service 2010-2011  
Teaching Assistant, Introduction to Molecular Ecology, UC Davis Winter 2009  
Graduate Researcher, Genomic Variation Lab 2006-2012  
Lab technician, Genomic Variation Lab, UC Davis 2005- 2006  
Seasonal Field Assistant, various projects 2003-2005

## AWARDS AND GRANTS

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Conservation Genetics of the Arroyo Chub (co-P.I.), **\$72,140** 2012  
California Native Trout Genetics Analysis Research Project Phase 6, (co-P.I.), **\$319,812**  
Using next-gen sequencing techniques for the management and reintroduction of the  
Paiute cutthroat trout 2012  
College of Arts and Sciences Programmatic initiatives grant, 2010  
“Conservation of extremely small populations, **\$5000**  
Graduate Group in Ecology Block Grant, **\$5,400** 2010  
Owens pupfish conservation genetics (principal author, Bernie May P.I., Steve Parmenter co-  
P.I.), **\$86,034** 2009  
Travel Award-Western Division of the American Fisheries Society, **\$600** 2009  
Travel Award-Applied Phylogenetics Workshop, **\$650** 2008  
Graduate Group in Ecology Block Grant, **\$8,400** 2007  
Hart, Cole, and Goss fellowship, **\$3,000** 2007, 2009

## MEMBERSHIPS

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American Fisheries Society and Cal-Neva chapter 2006-present  
Desert Fishes Council 2006-present  
Society for Conservation Biology 2006-2009, 2012

## PROFESSIONAL SERVICE AND OUTREACH

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Native fishes of Nevada – coordinated with NDOW, SNWA and Nevada Natural Heritage  
Program to sample infrequently visited habitats (Newark, Hot Creek, Railroad, Big  
Smoky, Fish Creek and Little Fish Lake Valleys) 2010, 2011, 2012  
Mammoth Lakes fly fishermen – outreach and sampling of Paiute cutthroat trout 2011  
Lab meeting coordinator, Genomic Variation Lab 2010-2011  
Admissions Reviewer – Graduate Group in Ecology 2008-2013  
Animal Science Seminar Committee 2007-2009  
SLEWS (Student and Landowner Education and Watershed Stewardship) 2007-2011  
AV volunteer, Western Division of the American Fisheries Society 2009

AV volunteer, American Fisheries Society national meeting 2007  
Class coordinator for Desert Ecology seminar, ECL 290 2007

**MANUSCRIPT AND PROPOSAL REVIEWS**

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Journal of Fish Biology manuscript review 2011  
Canadian Journal of Fisheries and Aquatic Sciences (CJFAS) manuscript review 2011  
Transactions of the American Fisheries Society (TAFS) manuscript review 2009; 2010  
Journal of Molecular Evolution 2007  
Oiled Wildlife Care Network 2007  
NY Sea Grant 2006  
AYKSSI (Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative) 2006