

# University of Idaho

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## Research



### Undergraduate Research

*Click on name to see complete research project.*

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### 2006 Scholars

**Javan Bauder** - "Movement and habitat selection of prairie rattlesnakes in the Big Creek drainage of the Frank Church Wilderness". University of Idaho. 2006. Faculty advisors: Dr. Chuck Peterson, ISU and Dr. Janet Rachlow, UI.

**Dean Holecek** - "Microhabitat Use and Selection by Age-0 Chinook Salmon in Big Creek, Idaho" 2006. Faculty advisor: Dr. Brian Kennedy, UI.

**Michael Lance** - "The Ecological Significance of Mountain Whitefish in a Central Idaho Wilderness Stream" 2006. Faculty Advisor: Dr. Colden Baxter, ISU.

### Prior Years

**Kate Lambert** - "Effects of weather and elevation on bat relative seasonal abundance and activity in the Frank Church River of No Return Wilderness". University of Idaho. DeVlieg Undergraduate Scholar. 2005.

**Mackenzie Shardlow** - "A survey and habitat evaluation of American marten and fisher in the Frank Church Wilderness, Idaho". University of Idaho. DeVlieg Undergraduate Scholar. 2005.

**Jesse Davis** - "Impacts of food availability on salmonid fish's growth and density in selected streams of similar size in the Big Creek drainage". University of Idaho 2005.

**Patrick Della Croce** - "Use of tributary confluence habitats by westslope cutthroat trout in a wilderness watershed affected by wildfire". Swiss Federal Institute of Technologies, Zurich and Idaho State University. 2005.

**Sarah Malick** - "Distribution of yellow-bellied marmots and their habitat in the Big Creek drainage". University of Idaho. DeVlieg Undergraduate Scholar. 2004

**Bernardo Alvarez** - "Understanding the human dimensions of recreational fishing in Big Creek, Frank Church Wilderness of Idaho". University of Idaho. DeVlieg Undergraduate Scholar. 2004

**Troy Hinck** - "Elk calf survival: Salmon River Mountains, Idaho". University of Idaho. 2004.

**Hati Mvundura** - developed interpretive displays on the lifestyle of indigenous Sheepstealer Indians and the settlement history of Big Creek for the Taylor Ranch Museum. 2004 Winter

**Stephanie Jenkins** - "Assessing Lewis' woodpecker habitat using hyperspectral imagery". University of Idaho. DeVlieg Undergraduate Scholar. 2003.

**Katie Gillies** - "Emergence surveys and foraging activity of central Idaho bats". University of Idaho. DeVlieg Undergraduate Scholar. 2002.

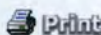
**Crystal Strobl** - "Amphibians within the Big Creek drainage of the Frank Church River of No Return Wilderness Area". University of Idaho. DeVlieg Undergraduate Scholar. 2001

**Samantha Cooney** - "Factors affecting hen blue grouse responses to human disturbance". University of Idaho. DeVlieg Undergraduate Scholar. 2001.

**Chris McDaniel** - "Lamb production and survival in lambing areas and summer ranges of

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### Long-Term Monitoring Research

Dr. Jim Peek, University of Idaho

#### Monitoring of nonforested plant communities from 1988 to present.

Dr. Jim Peek has conducted long term monitoring of nonforested plant communities from 1988 to the present. Permanent transects were established in bunchgrass, sagebrush, mountain mahogany, and ninebark vegetation. Each summer undergraduate students learn plant identification and field techniques using transects and plots to measure annual plant production. The Diamond Point Fire in 2000 burned all transect sites. Post fire vegetation production will be compared with the 13 years of pre fire data.

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Dr. Peek measures vegetation height and cover at Mile High.



Dr. Peek with the 2004 Interns on the bench above Taylor Ranch.

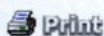


Anna Pierce measuring vegetation in the cliffs.



Jim Peek and Greg Hansen clipping vegetation sample.

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**Jim Akenson and Holly Akenson**

University of Idaho and The Hornocker Institute  
1999-2002

**"Winter Predation and Interactions of Wolves and Cougars in the Central Idaho Wilderness"**

Akenson, J. J., H. A. Akenson, and H. Quigley. 2005. Effects of wolf reintroduction on a cougar population in the central Idaho wilderness. *Proceedings of the Eighth Mountain Lion Workshop* 8:177-187.

Jim Akenson and Holly Akenson are studying the relationship between mountain lions and wolves and the effect of their predation on ungulate populations during winters of 1999, 2000, 2001, and 2002. The objectives are to assess the impact of a recently introduced wolf population on prey populations, evaluate competition between the predators, and compare strategies of mountain lions and wolves in a multiple large carnivore system. Long term mountain lion research will provide a comparison for current data.

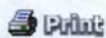


Holly Akenson uses radio telemetry to search for the wolf pack and cougars on Big Creek.



Jim Akenson, with dead cougar C-7. She died of malnourishment, 2002.

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## Holly Akenson and Jim Akenson Bighorn Sheep Movements

Holly Akenson and Jim Akenson investigated the summer movements of bighorn sheep in 1988, 1989, and 1990. They documented a pneumonia caused bighorn die-off. Ewes radio collared on the Big Creek winter range migrated to 1 of 3 summer ranges. The 2 alpine summer ranges were on Monumental Creek and Marble Creek, over 25 miles away, while the low elevation summer range was within the bighorns' winter range. Bighorn lambs in high elevation and low elevation summer ranges suffered extreme mortality from pneumonia due to Pasteurella bacteria spread by ewes surviving a disease caused die-off.

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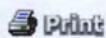
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**Dr. Chuck Peterson**

**Amphibian Population Monitoring of Big Creek**

Started in 1994

is a professor in the [Dept. of Biological Sciences](#) at Idaho State University. Chuck performs research in the ecology and conservation of amphibians and reptiles.

See Dr. Peterson's [website](#).

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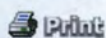
Dr. Chuck Peterson with a spotted frog.



Students search a pond for salamander larvae

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Long Term Monitoring

Monitoring the migrations of wild Snake River spring/summer Chinook salmon smolts

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**Steve Achord**

NOAA Fisheries Service  
National Marine Fisheries Service

Research funded by Bonneville Power Administration and NOAA Fisheries Service.

Long Term Monitoring  
1988 - present

NOAA Fisheries Service crew

electrofishing for the wild fish PIT-tagging study on Big Creek at Taylor Ranch Field Station.

**Steve Achord and field crew members of the NOAA Fisheries Service have been collecting and PIT tagging wild Chinook salmon parr in several streams of the Salmon River basin, annually since 1988.** The overall study objective is to monitor the migration timing and parr-to-smolt survival of these ESA-listed wild fish populations to downstream traps, in-stream PIT-tag monitors, and dams; and examine how water quality parameters, weather, and climatic influences affect fish movement and survival rates. Taylor Ranch Field Station provides NOAA Fisheries Service a unique opportunity to collaborate with the University of Idaho on fisheries and ecosystem studies within a large wilderness drainage. In-stream PIT-tag monitoring systems scheduled for deployment in Big Creek at the ranch in 2006 will provide additional valuable information on movement and survival of ESA-listed fish in this drainage and allow opportunities for the University of Idaho and other agencies to do studies on other fish species in this system.

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(left

photo) Patrick Della Croce, undergraduate research student at TRFS, Lanesa Hodge and Steve Achord, NOAA Fisheries, are shown tagging and recording biological information on tagged fish in 2005.

(right photo) Steve Achord preparing for the initial installation of a water quality monitoring device at Taylor Field Station.



### Long Term Monitoring Research

Dr. Wayne Minshall, Idaho State University

**Monitoring of aquatic invertebrates on 6 streams around Taylor Ranch from 1988 to present.**

Dr. Wayne Minshall and Idaho State University graduate students have monitored aquatic invertebrates annually on 6 streams around Taylor Ranch from 1988 to the present. Sampling was also conducted following the 1988 Golden Creek Fire and 2000 Diamond Point Fire. One objective of the monitoring is to assess the effect of fire on aquatic invertebrate communities. These fires have provided an opportunity to compare pre and post fire aquatic invertebrate diversity and abundance and compare adjacent burned and unburned drainages.

"Monitoring Wilderness Stream Ecosystems"

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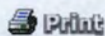


Dr. Wayne Minshall taking photo point during summer 2004.  
(right) Amanda and Judy sort out aquatic invertebrates.



Amanda using the Surber stream bottom sampler to collect aquatic invertebrates.  
(right) Greg, intern, and Jess measuring stream cross section.

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## **Steve Achord**

**Northwest Fisheries Science Center  
National Oceanic and Atmospheric Administration (NOAA)  
Research Biologist**

### **Research focus:**

- Migration timing, growth, and parr-to-smolt survival rates of wild Snake River Chinook salmon. 15-year monitoring dataset
- Density dependent mortality of wild Snake River Chinook salmon

Research equipment installed at TWRS in 2006: PIT tag antenna arrays monitor migration of tagged fish and send data to PTAGIS website; Sonde water quality monitor

1994 - present