TAYLOR RESEARCH FIELD STATION

and

THE DEVLIEG FOUNDATION

2005

The DeVlieg Foundation would like to report on the activities we supported in 2005 at the Taylor Research Field Station, University of Idaho. We like to be involved with activities and have enjoyed meeting each student, and sharing our best photos.

Included are project summaries and thank you acknowledgements from students, professors and professionals participating in programs the DeVlieg Foundation supported at the facility:

Highlights ~

- Two New Graduate Research Programs for U of Idaho and Idaho State University for Master's Degrees
- Two Undergraduate Research Scholars
- Two Undergraduate DeVlieg Wilderness Endowment Award Projects
- Idaho State's Colden Baxter Stream Ecology Field Trip
- Wayne Minshall's and Jim Peak's Monitoring Research

Other Projects of Interest ~

- Colden Baxter River Mapping Project of Big Creek

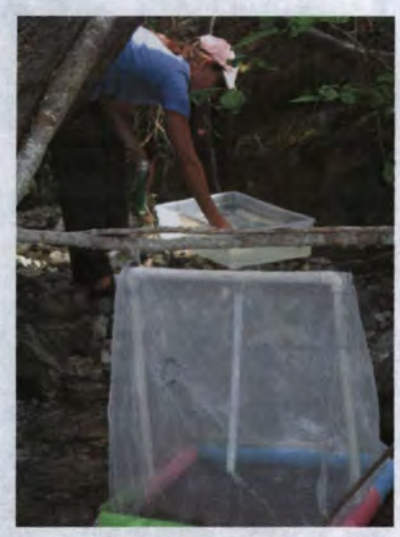
Not funded by DeVlieg ~

"Riparia: Influence of Fire on Streamside Vegetation and Riparian-Stream Food Webs in a Wilderness Setting"

DeVlieg Taylor Graduate Research Assistantship 2005-2006

Breezy Jackson
Master's Candidate
University of Idaho – CNR

Professor:
Jeffrey H. Braatne, PhD
Professor of Floodplain Ecology
University of Idaho



My name is Breezy Jackson. I'm a first year master's student at University of Idaho studying the effects of fire on stream and riparian ecosystems in the Frank Church River of No Return Wilderness. My project focuses on the interactions between aquatic and terrestrial systems, especially the flow of nutrients from terrestrial plants and insects into the stream system. I am currently doing riparian vegetation surveys on twelve tributaries of Big Creek, as well as monitoring the terrestrial plant and insect litter falling into the stream. There is a possibility of adding a nutrient ratio analysis to the project. This might tell us if the plants that grow after fire are more or less vigorous than those in undisturbed drainages.

Working in a wilderness setting is not only pertinent to my research, but also a remarkable opportunity. I am very thankful for the use of Taylor Ranch Field Station and for the DeVlieg – Taylor Ranch Graduate Research Assistantship which has allowed me this remarkable experience.

Stephanie Jenkins
Assistant (left)

"Aquatic-Terrestrial Connectivity in a Wilderness Watershed: Do emerging stream insects fuel riparian food webs following wildfire?"

DeVlieg Taylor Graduate Research Assistantship 2005-2006

Rachel Wilkinson
Master's Candidate
Idaho State University

Professor:
Colden V. Baxter, PhD
Asst. Professor
Stream Ecology Center
Idaho State University
Pocatello, Idaho

My name is Rachel Wilkinson and I am doing my Master's Degree at Idaho State University with Dr. Colden Baxter. My project receives support from the DeVlieg Taylor Ranch Graduate Research Assistantship. This summer I have completed my first field season of data collecting at the Taylor Ranch Field Station. I am studying the effects of fire on the linkages of land and water ecosystems. Both the land and streams contribute food resources to each other and I am investigating how streams provide energy for land ecosystems. I am studying this relationship by placing floating traps on streams to catch insects that are emerging. I am conducting my study on 12 streams in the Big Creek Drainage, all of which vary in the degree that they have been burned. I am trying to find out if fire changes the amount of energy coming out of streams. We hypothesize that more insects will emerge in burned areas, meaning that fire could play an important role in the connectedness of water and land ecosystems. It is important for us to study the connections between land and water in a wilderness area where impacts by humans are minimal and we can better understand the natural processes. I hope to use the information we gather from the wilderness about the relationships between fire and streams to make an impact on the management of fire in areas outside the wilderness. Doing research from Taylor Ranch has been amazing and I am very grateful for the opportunity to do research here both this summer and next.

Jason Beck
Assistant

September 2005

Dear Janet,

Thank you so much for your support of research at Taylor Ranch this 2005 summer….and your support of ISU's stream ecology project.

I was impressed with the partnership that you maintained with each of the student scientists that you support. As we continue to depend on private support in these times of decreased government funding, it is my hope that as a scientist, I can foster similar relationships with donors.

I really meant a lot for researchers – who are used to being alone in much of their work – to see your interest in what they were doing in the field.

I have included a "cd" with a lot of my photographs from the summer. Use them as you wish. If you need any additional information about any of them, just send me an email. They are all dated and referenced to my field journals, so it doesn't take much to look it up. Since I can't draw like Lewis & Clark, I use photos to illustrate my field notes.

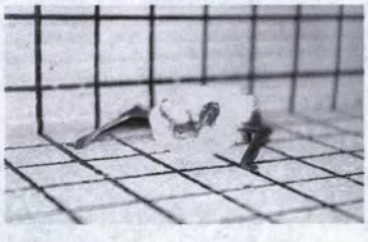
Remember, if you are in Pocatello in the next few years and need someone to go to lunch, dinner….I'm a willing accomplice. Thank you again.

Jason Beck
PhD Candidate Biology
Department of Biological Sciences
Idaho State University
Pocatello, ID

Jason was the assistant during the summer research period to:

Rachel Wilkinson
Idaho State University
DeVlieg Taylor Graduate Research Assistantship

He is currently working on his PhD in Biology specializing in bats.



"Effects of Weather and Elevation on Bat Relative Seasonal Abundance and Activity in the Frank Church River of No Return Wilderness."

DeVlieg Taylor Undergraduate 2005 Research Scholar

KATE LAMBERT

University of Idaho - CNR

The main objective of my research project is to explore how bat activity and abundance changes throughout the summer and at different elevations. To do this, I conducted emergence surveys at four different mines and caves, two at low and 2 at high elevation. I also surveyed 8 different feeding sites at different elevations using the Anabat II echolocation device to count the number of fly-by's. I visited each site three times within two months. While conducting all surveys, I recorded the temperature, relative humidity, wind speed, and barometric pressure every 30 minutes to see what effect different weather conditions have on bat activity. At the end of the summer I will mist net some of the caves and mines to determine if they include any maternity colonies. With the data collected, I will be able to determine what species are located at each site, estimate abundances of bats using the mines and caves, estimate bat activity at each site, and see if there are any correlations between the four different weather variables and bat activity.

"A Survey and Habitat Evaluation of American Marten and Fisher in the Frank Church Wilderness, Idaho"

DeVlieg Taylor Undergraduate 2005 Research Scholar

MACKENZIE SHARDLOW

University of Idaho - CNR

My summer project was to test a survey method used for American marten (*Martes americana*) and fisher (*Martes pennanti*). This method consisted of collecting tracks and hair samples using enclosed, sooted track-plates containing hair snares. I wanted to test the feasibility of this method during a summer survey effort and in a remote, wilderness area. I (along with help from other researchers, interns, and Taylor Ranch managers) surveyed 4 areas near the Big Creek drainage: Golden Meadows, Black Butte, Cabin Creek, and Bear Trap Saddle.

I distributed five track plates approximately half mile apart per survey area, checked, and then pulled the plates 8-12 days later. Ultimately, I was only able to located one marten track left in the snow. I also measured habitat components of canopy cover, ground cover, downfall abundance, and tree stand characteristics to compare areas with detections to those without.

I am planning to resurvey these areas in the winter season and am planning to also produce a historical write-up of these species in the area.

"Impacts of food availability on salmonid fish's growth and density in selected streams of similar size in the Big Creek drainage."

DeVlieg Taylor Undergraduate Wilderness Endowment Grant 2005

JESSE DAVIS
University of Idaho - CNR

Mentor: Brian Kennedy, PhD
Professor of Fishery – CNR
University of Idaho

Throughout the summer of 2005 I have been night snorkeling small tributary streams of Big Creek to sample diets. Night snorkeling has proven to be effective because fish are seen more often and are easier to catch. By using a waterproof headlamp fish are shined and generally remain still which allows for them to be captured by a net easily. The fish are then anesthetized followed by weight and length measurements. After measurements are recorded diets are sampled non-lethally by gastric lavage. Gastric lavage involves pumping water into a fish's stomach causing to regurgitate their food. Diet samples are then preserved for future analyses. I have also collected some macro-invertebrate samples using drift nets. I will be receiving other maco-invertebrate abundance data from Rachel Wilkinson, the DeVlieg graduate student, to provide more food availability data. In addition to my personal project, I have had many great experiences by helping around the Taylor Ranch Field Station and being involved with other research projects conducted this summer. I received my funding partially from the DeVlieg Wilderness Research Award, the Berklund Scholarship and an Award of Excellence from the Fish and Wildlife Department.

"Movement and Habitat Selection of Prairie Rattlesnakes in the Big Creek Drainage of the Frank Church Wilderness"

DeVlieg Taylor Undergraduate Wilderness Endowment Grant 2005

JAVAN BAUDER
Sophomore
University of Idaho - CNR

Mentor: Dr. Charles Peterson
Professor of Zoology
Idaho State University

Chuck Peterson and Javan Bauder working with prairie rattlesnakes at Taylor Research Field Station

I am very excited about undertaking this project and have been working closely with Dr. Charles Peterson of Idaho State University to prepare for the study. I started my field work in August 2005. I will use radio telemetry and mark-recapture to study the movement and habitat selection of these snakes and also how their behaviors are influenced by landscape characteristics, such as mountains and ridges. **This study will be one of the first studies of rattlesnake movement and habitation selection in a designated wilderness!.... as well as one of the first studies of prairie rattlesnakes in Idaho!** Data from this study will aid in the future management of this species within the state of Idaho.

I have always had an intense interest in wildlife. Having been home-schooled for the last eight years, I have been able to volunteer or work on a variety of research studies and even had the privilege of being able to conduct a few small scale research projects during high school. I am currently completing two previous undergraduate research projects. The first was studying amphibian colonization of manmade wetlands near Moscow, Idaho and the second has been study the genetic similarities of coastal and inland populations of rough-skin newts. These projects have been an incredible learning experience and I look forward in being able to apply what I have learned to my rattlesnake study.

I am looking forward to the next few years as I work to earn my degree. As wildlife research has been a huge part of my life, I plan to continue pursing this interest. Following my education at U of Idaho, I plan on enrolling in graduate school and earning a Master's and Ph.D. My career goal is to become a wildlife research biologist working on reptiles and amphibians. Thank you once again for helping me achieve my goals.

IDAHO STATE UNIVERSITY

College of Arts & Sciences

Department of Biological Sciences

Campus Box 8007
Pocatello, ID
83209-8007

August 15, 2005

Taylor Ranch Wilderness Field Station
University of Idaho
HC 83 Box 8070
Cascade, ID 83611

Dear Jim, Holly, and Janet,

Attached below are a series of three short reports by students describing a few of the main projects conducted last spring by the ISU advanced stream ecology class during our field trip to Taylor Ranch. I apologize for having taken so long to follow up on my promise to send you these. I did not get them until the end of the semester, as they were written up as part of the students' final project, and one thing after another has driven it from the top of my pile this summer. However, I want to take the time now to emphasize to you just how important this field trip was to these students, and to me.

Good teaching is often about creating the right environment for learning to occur. Taylor Ranch was more than just right—it was extraordinary. First, the extended time at Taylor Ranch was just what the class needed to work through the problem-solving and deep-thinking required to tackle some of the most advanced methods and concepts in our field. A few of these are reflected in the two short reports describing our class studies of stream metabolism and conservative solute dynamics. Second, Taylor Ranch provided an ideal setting to teach the natural history of streams while turning over rocks, hiking along the river, or during our underwater surveys of Rush Creek. Finally, the class experienced much more than stream ecology during our visit. We had an amazing series of wildlife experiences, from watching otters fishing in Big Creek and encountering herds of bighorn sheep and elk, to listening to the wolves howling in the night and watching them on the bench across the river the next morning. These encounters were integrated with many other unique but unplanned activities, such as impromptu stories of the history of ecology with Doc Minshall, and learning from Jim some of the history of Big Creek, or how to use a cross-cut saw.

During our class visit to Taylor Ranch, I knew that what we were doing was special, but it has been in the months since that I have fully recognized what a profound and memorable experience it was for the class. I have received many comments from the students about the trip—and all of them have stressed not only how much they learned, but how much they valued the uniqueness of the overall experience. I am very grateful to all three of you, and to the DeVlieg Foundation, for making the trip possible and a success. Taylor Ranch Field Station is a special place for field education, and I look forward to similar trips with students in the future.

Sincerely,

Colden V. Baxter
Assistant Professor
Department of Biological Sciences
Idaho State University

Idaho State University
Department of Biological Sciences

Spring 2005 Advanced Stream Ecology Class Seminar at Taylor Research Field Station

Colden Baxter
Assistant Professor
Dept. of Biolgical Sciences - ISU

Student Reports submitted:

- Conservative Solute Dynamics of Pioneer Creek, Idaho – **Meredith Seiler**
- Stream Ecosystem Metabolism in a Headwater Stream in the Frank Church River of No Return Wilderness, Central Idaho – **Bryan Stowe**
- Report of a Qualitative Underwater Survey Conducted on a Headwater Stream in the Frank Church River of No Return Wilderness – **Sarra Moller**

2005 August

Hello Janet,

I'm writing to thank you for the opportunity to work and stay at Taylor Ranch in late July- early August. I apologize for the delay in getting this note to you -- I've been mostly in Wyoming, working on other field projects. The stay at the beautiful cabin far exceeded anything that I expected for a remote field station; as I mentioned to Holly and Jim, I brought a solar shower and thought that I would be camping the entire time. I was very impressed by the facilities, which provide an excellent and supportive 'base camp' for ecological research. I was also impressed by the DeVlieg- sponsored students, who assisted us for several days on

Colden Baxter's River-Mapping Project.

The students were very capable field assistants, interested in the research effort, and contributed considerably.

Taylor Ranch is a truly remarkable research facility in a remote wilderness area. I am grateful for the opportunity to collaborate on Colden Baxter's mapping project. and the chance to work at Taylor Ranch. I hope that we'll be able to expand the project and return to the Field Station. I'm interested in continuing work on the mapping project and perhaps developing related research projects on riparian vegetation. I'll be visiting with Dr. Jeff Braatne, Univ. of Idaho, in late September to discuss potential collaboration, including ideas to track post-fire recovery of riparian vegetation along Big Creek and its tributaries.

Please let me know if there is anything that I can do as a Forest Service researcher to benefit the Field Station. Thank you again for everything. It was a pleasure meeting you and working along Big Creek.

With warm regards, Kate

Kate Dwire, Ph.D.
Research Riparian Ecologist
USDA Forest Service
Rocky Mountain Research Station
240 West Prospect
Fort Collins, Co 80526-2098