

# News Briefs on Boise State Research



A sample of  
medusahead

STEVE NOVAK PHOTO

## Biologist Studies Invasive Species

A Boise State University biologist is studying the genetic relationships between native and introduced populations of a common invasive grass as part of research that could lead to better ways to manage the weed on Western rangelands.

Stephen Novak received a \$99,929 grant from the U.S. Department of Agriculture for his continuing research on medusahead, which infests semi-arid habitats throughout the West. Medusahead grows rampantly, crowding out native species, degrading rangeland and serving as a fuel source for range fires.

Novak's research focuses on the genetic and evolutionary consequences of the introduction of medusahead to new environments. His work will help identify source populations in Eurasia, will shed new light on how medusahead invaded new range in the western United States and will help scientists develop more effective management practices.

Later this year, Novak will travel to Europe to obtain additional samples from native populations of medusahead. He is collaborating with Rene Sforza, a biologist at a USDA laboratory near Montpellier, France, on the project.

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## Grants Target Math, Science Skills

The U.S. Department of Education recently awarded two grants totaling more than \$450,000 to Boise State University for research aimed at increasing the proficiency of Idaho students in math and science.

Education professor Jonathan Brendefur is the principal investigator on a \$261,829 Mathematics Science Partnership grant. The partnership involves four high-need elementary and middle schools in Caldwell, Idaho, and is intended to increase student achievement by providing teachers with additional training in math.

In a separate grant, faculty members Janet Callahan from the College of Engineering and Louis Nadelson from the College of Education were awarded \$191,593 to establish the Idaho SySTEMic Solution – a multi-disciplinary institute and continuing education initiative that prepares K-5 teachers in instructional methods related to science, technology, engineering and math (STEM). Project goals include increasing student knowledge and interest in STEM fields.

## Songbirds, Raptors Studied at Idaho Bird Observatory

Every fall, tens of thousands of migratory birds fly along the Boise Ridge on their journey southward, a seasonal ritual that provides researchers at Boise State's Idaho Bird Observatory (IBO) with unique opportunities for study.

Founded in 1993, IBO is a research unit of the university devoted to monitoring migrating raptors and songbirds and educating the public about their greater ecological significance. Boise State is the only university in the nation that offers a master's degree in raptor biology.

"Because raptors are top-level predators, they are indicators of overall environmental health," said IBO director Greg Kaltenecker. "All migratory birds are good indicators because they depend on many different habitats."

The Boise Ridge is a crucial link in a chain of breeding and wintering areas. It was deemed so crucial, in fact, that it was designated an "Important Bird Area" of international significance by the National Audubon Society. During the 2008 field season, more than 5,000 songbirds were captured, examined, banded and released by IBO researchers at field sites near Lucky Peak, including the first varied thrush ever captured. Nearly 6,000 raptors were counted and close to

Graduate student Matt Stuber holds a peregrine falcon that was captured during the 2008 field season.



IBO PHOTO

1,000 captured and quickly released, including hawks, eagles and owls.

The 2008 totals for raptors and songbirds were generally consistent with long-term data, said IBO research director Jay Carlisle. The results of previous annual counts and other journal articles and background are online at [www.idahobirdobservatory.org](http://www.idahobirdobservatory.org).

Some of this year's data were included in the Raptor Population Index Project's 2008 report, "The State of North America's Birds of Prey." Such exposure distinguishes the science supported by IBO, but Kaltenecker said outreach is paramount.

"The research is important," he said, "but it means nothing if the public doesn't understand what we're doing, why we're doing it and the results." — Erin Ryan

## Himalayan Mountains Focus of a New Study

With funding from the National Science Foundation (NSF), a Boise State geology professor is studying the forces responsible for creating the world's tallest mountains.

Matthew Kohn is the principal investigator on a \$274,969 NSF award to conduct research in the Himalayan Mountains of northwest India. Kohn and his research group are analyzing data

collected last fall during a three-week field trip to the region. Kohn plans to return to northwest India later this year for further studies.

The researchers are examining the effects of pressure and temperature in Himalayan mountain building and will compare rock samples collected in northwest India to samples collected in Nepal. The data will help identify how the continental crust deforms and will increase scientific understanding of how the mountains developed.



India's Yamuna Valley is among Kohn's research sites.

MATTHEW KOHN PHOTO