PROGRAM AND ABSTRACTS

IDAHO CHAPTER

THE WILDLIFE SOCIETY

41st Annual Meeting

7-10 March 2005

THE GROVE HOTEL BOISE, IDAHO

The 41st Annual Meeting of The Idaho Chapter

The Wildlife Society

The Grove Hotel
Boise, Idaho
March 7-10, 2005

WELCOME!

The Local Organizing Committee, The Grove Hotel, and our sponsors are pleased to welcome you to the Idaho Chapter The Wildlife Society's 41st Annual Meeting in downtown Boise, Idaho! If at any time you need assistance during the meeting, please feel free to ask volunteers and local committee members. They will be happy to help you at any time. General information on registration is available on The Landing of The Grove Hotel. Enjoy the meeting!

Sponsors

Idaho Bureau of Land Management
Idaho Chapter National Wild Turkey Federation
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Local Organizing Committee

Gregg Servheen, Co-Chair, Idaho Department of Fish and Game
Rita Dixon, Co-Chair, Idaho Department of Fish and Game, Conservation Data Center

Jon Beals, Registration, Idaho Department of Fish and Game
Diane Evans Mack, Communications, Idaho Department of Fish and Game
Dave Musil, Newsletter Editor and Webmaster, Idaho Department of Fish and Game
Anna Owsiak, Paper Judging, Idaho Department of Fish and Game
Don Kemner, Fundraising, Idaho Department of Fish and Game
Chuck Harris, Awards Committee, Idaho Department of Fish and Game
Chuck Blair, Awards Committee, CH2M HILL

The LOC would like to thank Cort Anderson, Katie Gillies, Greg Kaltenecker, Steve Knick, Chuck Peterson, Rex Sallabanks, Alan Sands, Joel Sauder, Brad Compton, and all of our dedicated volunteers for making the meeting a success!

Idaho Chapter The Wildlife Society Officers

Gregg Servheen, President
Rita Dixon, Vice President
Diane Evans Mack, Secretary
Jon Beals, Treasurer

KEYNOTE SPEAKERS

JOHN FREEMUTH is the Senior Fellow, Cecil D. Andrus Center for Public Policy, and Professor of Political Science and Public Administration, Boise State University. Dr. Freemuth's research and teaching emphasis is in natural resource and public land policy and administration. He is the author of an award-winning book, Islands under Siege: National Parks and the Politics of External Threats (Univ. Of Kansas, 1991) as well as numerous articles on aspects of natural resource policy. He is the author of six Andrus Center white papers on public land policy, which were based on Center conferences in 1998 1999, 2000, 2001, 2002 and 2004. Forest Service Chief Dale Bosworth cited the 2000 Andrus Conference on fire policy as where some of the national fire plan ideas first came together. He has worked on numerous projects with federal and state resource bureaus, including the Forest Service, Bureau of Land Management and National Park Service at the federal level, and the Departments of Fish and Game, Parks and Recreation, and Division of Environmental Quality of the State of Idaho. He was the chair of the Science Advisory Board of the Bureau of Land Management, where he worked on policies to improve the use of scientific information for land managers as well as improved the relationship between science and democratic decision processes. He has also been a high school teacher, and seasonal park ranger. He has a B.A. degree from Pomona College and a Ph.D. from Colorado State University. Dr. Freemuth was named the Carnegie Professor of the Year for Idaho in 2001.

KEITH ALLRED is an Associate Professor of Public Policy at Harvard's Kennedy School of Government where he teaches and conducts research on negotiation and conflict resolution. He will be on leave during 2004-2005 to be the Frank Church Distinguished Professor of Public Policy at Boise State University. An internationally recognized scholar in negotiation and conflict resolution, he has published in leading academic journals and books, including The Handbook of Conflict Resolution, Negotiation Journal, Organizational Behavior and Human Decision Processes, and Research on Negotiation in Organizations. His teaching responsibilities include graduate level courses and senior executive programs that serve various companies, tribes, and levels of government. He is also a faculty member of the Program on Negotiation at Harvard Law School and the Harvard University Native American Program. Professor Allred has significant experience in applying his scholarly knowledge to real world challenges. As a professional mediator, he has helped manage and resolve many disputes, particularly focusing on conflicts unique to the West. He has recently mediated the jurisdictional conflict between the Nez Perce Tribe and local governments and a dispute concerning management of 600,000 acres of federal lands in Utah's red rock country. He is currently mediating a dispute over a series of hydroelectric dams in the Northwest. As a consultant and trainer he has also worked for the Forest Service, IRS, Dow Chemical, Chevron, Hughes Aerospace, and Santa Fe Railway. Professor Allred earned a B.A. from Stanford and a Ph.D. from UCLA in organizational behavior and social psychology. Before joining the faculty at Harvard, he was a professor in social and organizational psychology at

Columbia University. A fifth-generation Idahoan, Professor Allred loves skiing, backpacking, and fly-fishing. Having grown-up working on the family cattle ranch, he now enjoys competing on his cutting horse. He is married to Christine Edwards Allred, who teaches in the writing program at Harvard. Christine and Keith welcomed their daughter, Anna, into the world in October, 2002 and their son, Dan, in May 2004.

CRAIG W. BENKMAN is Professor and Robert B. Berry Chair in Ecology, University of Wyoming. Prior to that, Dr. Benkman was on the Biology faculty at New Mexico State University for 11 years. He received his Ph.D. under Dr. H. Ronald Pulliam at State University of New York at Albany. He has studied the ecology, behavior and evolution of crossbills for over 20 years. His research interests lie within behavior, ecology and evolution. What unites them is his belief that many interesting and important questions can only be answered with an understanding of resource availability. Consequently, much of his research has focused on linking resource availability to various aspects of behavior, ecology and evolution. He mostly studies crossbills (*Loxia*) because resource availability can be quantified in the wild and food resources can be brought into the laboratory where meaningful questions can be answered with captive crossbills. It also allows him to combine his interests in behavior, plant and animal ecology, and evolution. Over the next decade or more he plans to continue such research but with a more explicit focus on avian conservation, especially in the Wyoming region.

Republican Senator GARY SCHROEDER has served in the Idaho State Senate for more than 12 years. He is chairman of the Natural Resources and Environment Committee and past chair of the Senate Education Committee. Senator Schroeder is a resident of Moscow, Idaho. He has a Master's degree in Zoology, is owner of Moscow Hide and Fur, and has been actively interested and involved in Idaho's wildlife all his life.

JIM CASWELL is currently the Administrator for the Office of Species Conservation, under an appointment by Governor Kempthorne. Previously Jim had been with the Forest Service for 33 years with his last position as a Supervisor of the Clearwater National Forest until December 2, 2000 when he retired and took on the new role of administrator for the Office of Species Conservation. Jim graduated from Michigan State University with a B.S. in Forest Management. He is a member of the Society of American Foresters and Rotary. Other than a three-year stint in the army where he served as an American Advisor to Vietnamese combat troops, Jim has spent his entire career working in natural resource management. He has worked for three federal agencies, six national forests within three Forest Service regions, and for two Forest Service regional offices. Jim began his career as a temporary employee on the Umatilla National Forest. From there, he moved on to the Bureau of Land Management and Bonneville Power Administration before returning to the Forest Service in 1974. During those early years, Jim held various positions including District Ranger on the Willamette National Forest and the Regional Appeals and Litigation Coordinator in Portland. In 1986, he was promoted to Deputy Forest Supervisor on the Boise National Forest, and in 1989 assumed the Forest Supervisor

position on the Targhee National Forest. Jim became supervisor of the 1.8 million acre Clearwater National Forest in September 1993. In 1986, he was promoted to Deputy Forest Supervisor on the Boise National Forest, and in 1989 assumed the Forest Supervisor position on the Targhee National Forest. Jim believes strongly in multiple use management and in ecosystem management. His love of hunting, fishing and river running keeps him outdoors in much of his free time.

BANQUET SPEAKER

JENNIFER M. BELCHER has had a long and diverse career in government, private consulting, and active community service. She served as the Commissioner of Public Lands, State of Washington from 1993 through 2001. As an elected official she administered the activities of 1500+ employees of the Department of Natural Resources and was responsible for the management of 5.8 million acres of land, including timber, agricultural, and submerged land, and commercial properties. As part of this responsibility, Ms. Belcher guided the management of 111,000 acres of sensitive lands designated as Natural Area Preserves and Natural Resource Conservation Areas. Among her many achievements was changing state policies to foster sound and sustainable land management practices, and creating and adopting a 70-year Habitat Conservation Plan to ensure protection of multiple species. From 1980 to 1993, she was the Owner/President of Management Dynamics, an organizational development company specializing in developing and implementing strategic plans for businesses in growth transition. She served as Special Assistant to two Washington state governors during the 1970s, and was elected to five two-year terms as a member of the Washington State House of Representatives from 1982 to 1992, serving as Assistant Majority Whip. In addition to Ms. Belcher's participation on the NatureServe Board, she is on the Bullitt Foundation Board of Trustees, a member of The League of Women Voters, and on the Editorial Advisory Board of Conservation Biology in Practice, among others. A small sampling of past involvement includes Board membership with The Nature Conservancy and the Center for International Trade in Forest Products. Ms. Belcher attended Bethany College, West Virginia, and is a graduate of the Program for Senior Executives in State and Local Government, John F. Kennedy School of Government, Harvard University. She is the recipient of numerous awards and recognition, many related to her achievements and leadership advancing conservation during her tenure as the Commissioner of Public Lands.

SCIENTIFIC PROGRAM

POSTER SESSION

The poster session will be held in the Aspen Room of The Grove Hotel from 5:30 PM – 9:00 PM on Tuesday evening and will be open for viewing throughout the rest of the meeting through 12:00 PM Thursday. We ask that you set your poster up as close to 1:00 PM as possible on Tuesday.

BUSINESS SESSION

The Idaho Chapter The Wildlife Society Annual Business Meeting will be held on Wednesday, March 9, from 5:00 PM – 5:45 PM in the Cedar Room.

SOCIAL EVENTS

The Poster Session will be held in the Aspen Room on Tuesday evening from 5:30 – 9:00 PM. There will be a no-host bar with pretzels and spicy snack mix. On Wednesday evening, there will be a no-host bar, hors d'oeuvres, and salon in the Aspen/Evergreen Rooms from 5:30 – 6:30, immediately followed by the banquet in the Evergreen Room.

BANQUET, AWARDS CEREMONY, AND PRESENTATION

The Banquet (6:30 – 7:30 PM) and Awards Ceremony (7:30-7:45 PM) will be held in the Evergreen Room on Wednesday evening, March 9. The Chapter will present two awards. The **Special Recognition Award** is intended to honor any person or group who has made an outstanding contribution within the state of Idaho to wildlife conservation, management, science, conservation education, the wildlife profession or to an area of endeavor species, community, ecosystem or region. Any person or group who has made such a contribution in the last 3 years is eligible for this award. The **Professional Wildlifer Award** honors professionals in wildlife management. It is given to demonstrate outstanding contributions to Idaho's wildlife resources as appreciated by one's peers. The award is meant to recognize outstanding professional contribution and promote public understanding of significant wildlife management accomplishments in Idaho. Following the Awards Ceremony, we will have an evening presentation by **Jennifer Belcher** from 7:45 – 8:45 PM.

INFORMATION FOR PRESENTERS AND SESSION MODERATORS

SPEAKER PREPARATION

Please check your presentation before presenting! Label your CD with the presenter's LAST name and your presentation TIME. We will have labels, pens, and a program available at the Registration Table on The Landing. Please let your session moderator know you are present and coordinate with the projectionist at least 30 minutes BEFORE the start of your session to make sure both parties are familiar with how the equipment is operated.

SESSION MODERATORS

As a courtesy to all speakers, session moderators will signal speakers when five minutes remain, again when two minutes remain, and will walk to the podium and interrupt presentations that run over their allotted time (20, 30, or 50 minutes). In order to keep on schedule, we ask that all session moderators adhere strictly to the posted time schedule for all talks.

POSTERS

Posters may be set up in the Aspen Room any time after 1:00 PM on Tuesday afternoon, March 8 and **MUST** be removed no later than 12:00 PM (noon) on Thursday, March 10.

SCIENTIFIC PROGRAM

WORKSHOP DESCRIPTIONS

Workshop: IDAHO BAT WORKING GROUP, Organizers: Chuck Harris and Katie Gillies, Idaho Department of Fish and Game

Monday, March 7, 1:00 PM – 5:00 PM, Aspen Room

1:00 PM **Chuck Harris**, Introductions and agenda review

1:10 PM **Katie Gillies**, "*Idaho Bat Conservation Plan*"
Review of what's been going on with it in the past year
Where it's going in the coming year (NABCP review, CWCS incorporation)

1:30 PM **Rita Dixon**, "*Idaho Comprehensive Wildlife Conservation Strategy (CWCS) Update*"
What is CWCS? How does it involve IBWG? What does it mean for Idaho bats? Review of CWCS bat species (COTO, EUMA, MYTH, MYCA) – copies of summaries for participants.

Past and Current Bat Projects

2:00 PM **Brain Moser**, "*University Of Kentucky Forest Bat Study*"

2:15 PM **Martha Wackenhut**, "*Bat Conservation International Bat Acoustic Workshop*"
Review of Taylor Ranch bat acoustic workshop

2:25 PM **KATIE GILLIES, Scott Earl, and April Earl**, "*Idaho Cave Survey Bat Hibernacula Surveys*"

Number of bats found in caves, fluctuation, etc.
Tie into upcoming ISU Townsend's study

2:35 PM **Katie Gillies**, "*Wyoming Bat Surveys*"
Methods, bat key, and GIS model

2:50 PM **Miriam Austin**, "*A Field Methodology for predicting chiropteran roost site selection at the local and regional watershed scales of southeastern Idaho*"

3:00 PM BREAK

Proposed Bat Projects for 2005

3:30 PM **Kate Lambert**, "*Taylor Ranch Bat Study*"

3:40 PM **Katie Gillies**, "*Idaho State University Townsend's Big-eared Bat Study*"

3:50 PM **Katie Gillies and Lauri Hanauska-Brown**, "*South Fork Surveys In Upper Snake*"

4:00 PM Any other upcoming bat projects for 2005?

Administration

4:10 PM **Chuck Harris**, "*Western Bat Working Group*"
Election results
WBWG Biennial Meeting in Portland
Other upcoming bat meetings, workshops, etc.

4:40 PM **Chuck Harris**, "*Idaho Bat Working Group Discussion"*
Organization?
Should we elect officers?

Appoint/elect a person for communications?
How can we better network/communicate?

Workshop: IDAHO PARTNERS IN AMPHIBIAN AND REPTILE CONSERVATION, Organizer: Chuck Peterson

Tuesday, March 8, 8:30 AM – 12:00 PM, Aspen Room

The overall goal of the workshop is to discuss the Idaho Comprehensive Wildlife Conservation Strategy (CWCS) as it relates to amphibians and reptiles.

- Species Abstracts
- Species rankings

- State of knowledge
- Species - Threat Matrix
- Species - Conservation Actions Matrix
- PNW PARC Habitat Management Guidelines
- Using Great Basin Collared Lizard as a model species for developing an integrated approach to gathering information needed for management

TUESDAY, MARCH 8

GENERAL SESSION SCHEDULE

Location: Cedar Room	Moderators: Gregg Servheen (1:00 PM), Rita Dixon (3:20 PM)
1:00 PM Welcome	**Gregg Servheen**, ICTWS 2005, Co-Chair
1:20 PM Keynote Address	**John Freemuth**, Boise State University; "*Reconciling Science and Politics: Thoughts from an Observer and Friend of Both*"
1:50 PM Keynote Address	**Keith Allred**, Harvard University, Kennedy School of Government, "*Conflict Resolution*"
2:20 PM	**Rob Brooks**, Montana, Fish, Wildlife, and Parks, and **SKIP KOWALSKI**, USFS Reg 1, Missoula; "*The Montana Challenge*"
2:50-3:20 PM	BREAK
3:20 PM Keynote Address	**Craig W. Benkman**, University of Wyoming, Laramie; "The Ecology and Evolution of Crossbill Diversity with Emphasis on a Crossbill Endemic to Idaho"
4:10 PM	**CORT ANDERSON, Steve Brunsfeld, and Lisette P. Waits**; "Bridging the Gap between Scientists and Managers: Integrating Research, Education and Outreach, and Building Partnerships between University Scientists, Government and Private Land Management Agencies"
4:40 PM	**BEUCLER, MICHELE, Larry Gigliotti, and Steve McMullin**; "Idahoans' Opinions of Wildlife and Wildlife Management"
5:30 PM	Poster Session, No-host Bar, Salon in the Aspen Room

WEDNESDAY, MARCH 9

Contributed Papers Session

Location: Cedar Room	**Moderators: Steve Knick (8:00 AM), Greg Kaltenecker (10:20 AM)**
8:00 AM Keynote Address	**Senator Gary Schroeder**, Chair, Senate Resources and Environment Committee, State of Idaho Legislature; "*Perspectives on Important Idaho Wildlife Issues*"
8:30 AM	Communicating Biological Information in the 21st Century: The GBIP/ SAGEMAP/ Science Locator Model. **FINN, SEAN P., Thomas J. Zarriello, and Steven T. Knick.**
8:50 AM	Mid-scale Mapping of Sagebrush and Shrubland Landcover: The Columbia Plateau Region and Southwestern States. **HANSER, STEVEN, Steven Knick, Jon Hak, and Jimmy Kagan.**
9:10 AM	Prioritizing Restoration Efforts in Sagebrush Ecosystems of the Intermountain West. **MEINKE, CARA, Steven Knick, and David Pyke.**
9:30 AM	Habitat Associations of Shrubsteppe Songbirds in southern Idaho. **KALTENECKER, GREGORY S., and Laura Bond.**
9:50 AM	BREAK
10:20 AM	Sagebrush Bird Population Changes in Laidlaw Park, Blaine County, Idaho – 1980-2004. **RICH, TERRELL D.**
10:40 AM	Sage Grouse: Are They a Good Umbrella Species for Management of Other Shrubsteppe Bird Species? **KALTENECKER, GREGORY S., and Laura Bond.**
11:00 AM	Working Together to Provide a Broadscale Habitat Planning Map for Greater Sage-Grouse in Idaho. **COMMONS-KEMNER, MICHELLE L., and Signe Sather-Blair.**

11:20 AM	Greater Sage-Grouse Nest Habitat in Idaho: Preliminary Results. **DAVID MUSIL**.
11:40 AM	LUNCH
Location: Cedar Room	**Moderators: Rex Sallabanks (1:00 PM), Chuck Harris (3:30 PM)**
1:00 PM	Responses of Nesting Golden Eagles and Prairie Falcons to Loss of Shrub Habitats in the Snake River Birds of Prey National Conservation Area. **KOCHERT, MICHAEL N., and Karen Steenhof**.
1:20 PM	Long-range Movements and Breeding Dispersal of Prairie Falcons from Southwest Idaho. **STEENHOF, KAREN, Mark R. Fuller, M. N. Kochert, and Kirk K. Bates**.
1:40 PM	Northern Goshawk Foraging Habitat Selection in South Central Idaho. **HASSELBLAD, KRISTIN, and Marc Bechard**.
2:00 PM	The Idaho Bird Inventory and Survey (IBIS). **SALLABANKS, REX, and Colleen E. Moulton**.
2:20 PM	Idaho's Important Bird Area (IBA) Program. **MOULTON, COLLEEN E., and Rex Sallabanks**.
2:40 PM	Teton Regional Land Trust: Conserving Priority Natural Elements in the Upper Snake River Watershed. **CAVALLARO, ROBERT**.
3:10 PM	BREAK
3:30 PM	Monitoring Pygmy Rabbits: Progress and Information Needs. **RACHLOW, JANET, and Jim Witham**.
3:50 PM	A Field Methodology for Predicting Chiropteran Roost Site Selection at the Local and Regional Watershed Scales in Southeastern Idaho. **AUSTIN, MIRIAM L**.
4:10 PM	Idaho Panhandle Bat Program 1995 – 2005. **TAYLOR, JENNY**.
4:30 PM	Nutrition and Habitat Selection in a Declining Bighorn Sheep Population: Is Quality Equivalent to Quantity? **BERKLEY, REGAN, and Janet Rachlow**.

5:00 PM	ICTWS Annual Business Meeting BUSINESS
5:30 PM	No-host Bar, Hors d'oeuvres, Salon in Aspen/Evergreen
6:30 PM	Banquet and Silent Auction
7:30 PM	Awards Ceremony
7:45 PM	**JENNIFER BELCHER**, former Commissioner of Public Lands, State of Washington; and NatureServe Board Vice-Chair; "*Charting a Cooperative Future: Next Steps*"

THURSDAY, MARCH 10

Contributed Papers Session

Location: Cedar Room	**Moderator: Cort Anderson (8:00 AM), Alan Sands (10:20 AM)**
8:00 AM Keynote address	**Jim Caswell**, Office of Species Conservation; "Achieving Wildlife Conservation in the 21st Century"
8:30 AM	State Management of Wolves in Idaho. **NADEAU, STEVE**.
8:50 AM	West Side Story: Genetic Population structure of Elk Gangs in the Northern Rocky Mountains. **AYCRIGG, JOCELYN L., and Edward O. Garton**.
9:10 AM	Assessing the occurrence and genetic characteristics of fisher (*Martes pennanti*) in northern Idaho with non-invasive genetic methods. **CUSHMAN, SAMUEL A., Michael K. Schwartz, Kevin McKelvey, Bob Ralphs, James Claar, Wayne Melquist, and Jim Hayden**.
9:30 AM	Modeling black-bear gene flow in complex landscapes: Confronting models with data. **CUSHMAN, SAMUEL A. Michael, K. Schwartz, Kevin McKelvey, and Jim Hayden**.
9:50 AM	BREAK

10:20 AM	Detecting Top-down Versus Bottom-up Regulation of Ungulates by Large Carnivores: Implications for Management. **BOWYER, R. TERRY, David K. Person, and Becky M. Pierce**.
10:40 AM	The Effects of Coyote and Mountain Lion Removal on Mule Deer Populations. **HURLEY, MARK A., James W. Unsworth, Pete Zager, Edward O. Garton, and Debra M. Montgomery**.
11:00 AM	Land Tenure and Game-Management Strategies among the Dolgan of Northern Siberia: Points for Comparison. **ZIKER, JOHN P**.
11:20 AM	Lava Lake's Management for Sheep Grazing and Wildlife at a Landscape Scale in Central Idaho. **O'SULLIVAN, TESS**.
11:40 AM	DISCUSSION
12:00 PM	MEETING ENDS

ABSTRACTS OF PAPERS PRESENTED AT THE 41ST ANNUAL MEETING OF THE IDAHO CHAPTER THE WILDLIFE SOCIETY

ANDERSON, CORT, Steve Brunsfeld, and Lisette P. Waits. Center for Research on Invasive Species and Small Populations, Department of Fish and Wildlife Resources (CA, LPW) and Department of Forest Resources (SB), University of Idaho, Moscow ID 83844-1136.

BRIDGING THE GAP BETWEEN SCIENTISTS AND MANAGERS: INTEGRATING RESEARCH, EDUCATION AND OUTREACH, AND BUILDING PARTNERSHIPS BETWEEN UNIVERSITY SCIENTISTS, GOVERNMENT AND PRIVATE LAND MANAGEMENT AGENCIES.

We recently established the Center for Research on Invasive Species and Small Populations (CRISSP) with the goal of using interdisciplinary scientific research to identify appropriate management actions for addressing the biological and economic challenges of invasive species and small and declining populations. CRISSP has assembled a team of 17 participating faculty from diverse disciplines in biological sciences, and social sciences and an advisory board of regional land managers. The mission of CRISSP is to integrate research, education and outreach efforts, in order to facilitate innovative research, graduate and undergraduate education and training programs, and collaboration with regional government and private land management efforts. This presentation will review the organizational structure of our Center and current research, education and outreach efforts. We describe collaborative efforts in invasive species management with The Nature Conservancy and the Idaho Governor's Council on Invasive Species. We also discuss new partnerships for statewide wildlife conservation planning with Idaho Fish and Game and the Idaho Governor's Office for Species Conservation.

AUSTIN, MIRIAM L.. (Prescott College), Red Willow Research Inc., 780 Falls Ave #390, Twin Falls,ID 83301.

A FIELD METHODOLOGY FOR PREDICTING CHIROPTERAN ROOST SITE SELECTION AT THE LOCAL AND REGIONAL WATERSHED SCALES IN SOUTHEASTERN IDAHO.

My research has been specifically designed to assist local biologists and resource managers with the identification and prediction of chiropteran (bat) roosting habitat in southeastern Idaho. Selective and random sampling efforts carried out within eleven study units (representing distinct mountain ranges or watersheds) found recent bat use at 145 of 634 potential roost sites. Both random and selective sampling indicate that approximately 25 percent of available roosts are likely to be occupied by bats at any one time. This has very important management implications. Statistical analysis applied to random survey results indicates that aspect, plant community, and season/type of bat use significantly affect bat roost site selection in southeastern Idaho. Comparison of my research results with other western bat roosting studies has facilitated development of a methodology to predict where bat roosting is likely to occur. This predictive methodology provides natural resource managers with a cost-effective tool to consider the life history needs of bats during resource planning and other management activities. It is likely that this methodology can be adapted for prediction of bat roosting habitat within other western regions.

AYCRIGG, JOCELYN L., and Edward O. Garton. Department of Fish and Wildlife Resources, P.O. Box 441136, University of Idaho, Moscow, ID 83844-1136.
WEST SIDE STORY: GENETIC POPULATION STRUCTURE OF ELK GANGS IN THE NORTHERN ROCKY MOUNTAINS.

Large mammals, such as Rocky Mountain elk (*Cervus elaphus nelsoni*), exemplify the challenge of managing and conserving populations over large spatial areas because they have seasonal and annual ranges covering watersheds and sub-basins, respectively. To meet this challenge, we performed spatial analysis of elk populations at the landscape level using the metapopulation concept and a genetic analysis approach. We collected tissue samples of individual elk from across the northern Rocky Mountains and genotyped individuals using microsatellites at multiple loci. We examined genetic population structure with 5 approaches. Individuals were assigned to sample locations based on their relative similarity or dissimilarity to each sample location using genotypes. Our results indicated little genetic differentiation between sample locations. Understanding the genetic population structure of elk from a metapopulation perspective provides both theoretical and practical benefits for managing this species.

BENKMAN, CRAIG W. Department of Zoology and Physiology, University of Wyoming, Laramie, WY 82071.
THE ECOLOGY AND EVOLUTION OF CROSSBILL DIVERSITY WITH EMPHASIS ON A CROSSBILL ENDEMIC TO IDAHO.

I will provide an overview of the ecology and evolution of crossbills (*Loxia*), and in particular discuss a red crossbill (*L. curvirostra* complex) that is endemic to the lodgepole pine forests in the South Hills and Albion Mountains in southern Idaho. This crossbill is in a coevolutionary arms race with lodgepole pine, which is causing the "South Hills crossbill" to diverge morphologically and to become reproductively isolated from other crossbills.

BERKLEY, REGAN, and Janet Rachlow. University of Idaho, Department of Fish and Wildlife Resources, P.O. Box 441136, Moscow, Idaho 83844-1136.
NUTRITION AND HABITAT SELECTION IN A DECLINING BIGHORN SHEEP POPULATION: IS QUALITY EQUIVALENT TO QUANTITY?

Reintroduced populations often face the hazard of insufficient or inadequate habitat in their new range. Bighorn sheep herds in the Jacks Creek area of Owyhee County, Idaho, increased steadily from initial releases in the late 1960s until the early 1990s, but have recently exhibited a precipitous decline. Habitat deficiencies, specifically inadequate forage or escape terrain, have been implicated as potential causes for this decline. We assessed the extent to which variation in use and availability of habitat resources across three drainages in the study area were correlated with variation in lamb production and ewe and lamb survival. Radio-telemetry indicated that females in each drainage represented distinct herds. Sheep in the herd exhibiting the highest lamb survival were more often located feeding at sites dominated by cliffs and shrubs, while sheep in the herd exhibiting the lowest lamb survival fed at sites dominated by loose rock and grass. Availability of rugged terrain did not differ between those two drainages. In 2003, fecal nitrogen content also differed significantly among herds; the highest mean value was obtained from the herd exhibiting the highest lamb survival. Analyses of arrangement, size, and interspersion of habitat patches are currently underway. Preliminary results suggest that selection of habitat features is related to lamb survival, and therefore may play a role in this population's decline.

BEUCLER, MICHELE, Larry Gigliotti, and Steve McMullin. Idaho Department of Fish and Game, Boise, Idaho 83707.
IDAHOANS' OPINIONS OF WILDLIFE AND WILDLIFE MANAGEMENT.

The Idaho Department of Fish and Game manages the wildlife of Idaho in trust for the people of the state. Therefore, its programs must be aligned with the values and expectations of Idaho citizens. Here, we present information from 2 mail surveys of randomly selected Idaho households following Dillman's tailored design method. Results from the *2002 Idaho Citizen Survey* (n=3156) and the

pilot phase of the *Wildlife Values in the West* project (n=404) indicate that wildlife issues are very important to most Idahoans, that participation in wildlife-based recreation remains high compared to other states, and that 85% of Idahoans agree on a general approach to wildlife management. A model based on Idahoans' attitudes towards wildlife and wildlife management was developed using cluster analysis procedures. The analysis revealed 5 clusters: Enthusiasts (44%), Active Supporters (23%), Passive Supporters (18%), Greens (9%), and Utilitarians (7%). Trends in participation and values are briefly described.

BOWYER, R. TERRY, David K. Person, and Becky M. Pierce. Department of Biological Sciences, Idaho State University, Pocatello, ID 83209 (TRB), Alaska Department of Fish and Game, 2030 Sea Level Drive, Ketchikan, AK 99901 (DKP), California Department of Fish and Game, 407 West Line Street, Bishop, CA 93514 (BMP).

DETECTING TOP-DOWN VERSUS BOTTOM-UP REGULATION OF UNGULATES BY LARGE CARNIVORES: IMPLICATIONS FOR MANAGEMENT.

We set forth prediction for determining whether populations of ungulates are regulated primarily via top-down or bottom-up processes. We contend that existing models of predator-prey dynamics are not well suited for understanding those processes. Such models do not make realistic predictions, do not cope with carrying capacity (*K*), and do not consider that some mortality of prey may be compensatory. We demonstrate that except at very low density of prey relative to *K*, the population density of prey is most important in determining potential points of equilibria, and thereby whether regulation is strongest from above or below. We construct a conceptual framework to make predictions about whether populations of ungulates are regulated by top-down or bottom-up processes, and propose criteria to assess whether predator control would be effective in releasing ungulate populations form low-density equilibria. Understanding such processes is a necessary step in managing habitat for ungulates, and correctly interpreting their dynamics.

CAVALLARO, ROBERT. Teton Regional Land Trust, P.O. Box 247, Driggs, ID 83422.

TETON REGIONAL LAND TRUST CONSERVING PRIORITY NATURAL ELEMENTS IN THE UPPER SNAKE RIVER WATERSHED.

The Teton Regional Land Trust (TRLT) works to conserve important natural lands in the Upper Snake River Watershed by working with willing landowners to protect private lands via conservation easement agreement and with implementation of long-term stewardship. Through conservation planning we have identified priority natural elements within our service area. They are rare plant communities, native fish, big game winter range, large carnivores and all birds. With regard to conservation of priority elements our most advanced effort to date is waterbird conservation in Teton Basin. Critical parameters for our model in Teton Basin include ongoing collaborative conservation planning, selected resource surveys/ecological monitoring, targeted habitat restoration and enhancement, and long-term stewardship. The products of our conservation efforts are conservation easements and increased resource knowledge and data; however, our desired outcome is maintenance and/or enhancement of priority resources.

COMMONS-KEMNER, MICHELLE L., and Signe Sather-Blair. Idaho Department of Fish and Game, 3101 S. Powerline Rd., Nampa, ID 83686 (MCK), U.S. Bureau of Land Management, 1387 S. Vinnell Way, Boise, ID 83709 (SSB).

WORKING TOGETHER TO PROVIDE A BROADSCALE HABITAT PLANNING MAP FOR GREATER SAGE-GROUSE IN IDAHO.

For the past 10 years, the greater sage-grouse (*Centrocercus urophasianus*) has become the forefront of conservation planning for both state and federal agencies. Therefore, to better facilitate conservation efforts, we developed a broadscale habitat planning map for sage-grouse in Idaho. The original purpose of the map was to help fire managers develop initial attack plans for fires in sage-grouse habitats dominated by sagebrush. It has since evolved to include habitat restoration

potential in areas currently or previously occupied by sage-grouse. State and federal wildlife biologists initially drew polygons of known sage-grouse occurrence on 1:100,000 scale maps. Once the polygons were digitized, they were separated into specific habitat types, key habitat, restoration potential 1 (perennial grassland dominated), restoration potential 2 (annual grassland dominated), and restoration potential 3 (conifer encroachment areas). The population layer was developed incorporating the state's lek data. The population layer is made up of 2 sub-layers, stronghold (areas with stable sage-grouse populations) and isolated (areas with decreasing sage-grouse populations). The maps are updated on a yearly basis as fires occur, restoration efforts change the classification of a sub-layer, or new information is obtained. The maps are a useful visual tool to help biologists, fire managers, private landowners, ranchers, and others develop appropriate conservation measures for sage-grouse across Idaho.

CUSHMAN, SAMUEL A., Michael K. Schwartz, Kevin McKelvey, and Jim Hayden. Rocky Mountain Research Station, P.O. Box 8089, Missoula, MT 59801 (SAC, MKS, KM), Idaho Department of Fish and Game, 2750 Kathleen Ave., Coeur d'Alene, ID 83815 (JH).

MODELING BLACK-BEAR GENE FLOW IN COMPLEX LANDSCAPES: CONFRONTING MODELS WITH DATA.

The factors that influence animal movements and the rates and patterns of gene flow in complex landscapes are poorly understood. Habitat connectivity, metapopulation dynamics, demographic rescue, inbreeding depression and a host of other processes important to the conservation and management of wildlife populations all depend on movement of individuals and genetic material. Thus quantifying the factors that drive population connectivity and gene flow are centrally important questions in ecology. We investigated the influences of a large variety of ecological gradients on gene flow in black bears in the Selkirk and Purcell Mountains of northern Idaho. We used non-invasive genetic sampling methods to identify 146 individual black bears across a 500 square mile landscape. We computed genetic distances among all 146 bears, and associated the patterns of these distances with 110 hypothetical models of landscape resistance using least cost path analysis and partial mantel tests. The 110 models each present a hypothesis about resistance to movement in relation to roads, slope, elevation, and landcover. Our results indicate that a substantial number of the landscape resistance models performed significantly better than the null model based on distance alone, and almost all performed better than a null model based on a barrier effect. The models that are most highly supported represent the best information to date on the factors that influence gene flow of black bears through complex landscapes. Such understandings provide a quantitative empirical basis for managers and conservationists to address habitat connectivity of black bears in a fine-scale, spatially explicit context.

CUSHMAN, SAMUEL A., Michael K. Schwartz, Kevin McKelvey, Bob Ralphs, James Claar, Wayne Melquist, and Jim Hayden. Rocky Mountain Research Station, P.O. Box 8089, Missoula, MT 59801 (SAC, MKS, KM), Idaho Panhandle National Forest, 3815 Schreiber Way, Coeur d'Alene, ID 83815-8363 (BR), USFS Northern Region, P.O. Box 7669, Missoula, MT 59807 (JC), University of Idaho, Department of Fish and Wildlife Resources, Moscow, ID 83844-1136 (WM), Idaho Department of Fish and Game, 2750 Kathleen Ave., Coeur d'Alene, ID 83815 (JH).

ASSESSING THE OCCURRENCE AND GENETIC CHARACTERISTICS OF FISHER (MARTES PENNANTI) IN NORTHERN IDAHO WITH NON-INVASIVE GENETIC METHODS.

The distribution, abundance and genetic origins of fisher in northern Idaho are poorly understood. We used non-invasive hair-snaring devices and genetic analysis to document the occurrence and characterize the genetics of fisher in the Selkirk Mountains of Northern Idaho over the winters of 2004 and 2005. Results from the current year are not yet available. In the 2004 survey, we set out over 180 hair snare stations in 18 watersheds throughout the Priest and Kootenai watersheds of the Selkirk Mountains. These snares produced over 300 hair samples. Of these samples, 22 were

identified as fisher, and 24 as marten. We identified four individual fishers from the 22 samples identified as fisher. We characterized these individuals in terms of their mitochondrial haplotypes, both cytochrome B and control region. The haplotype analysis indicated that the fishers sampled had mixed genetic characteristics, with some individuals apparently derived from reintroduced populations, probably from the Cabinet Mountains, and other individuals derived from native, non-reintroduced populations. Importantly, the native haplotypes identified here represent a combination that has not previously been seen. This suggests that the native fishers of Northern Idaho have been isolated from other populations in western Montana and British Columbia for a relatively long period of ecological time until the relatively recent introduction of fishers from British Columbia to the Cabinet Mountains.

FINN, SEAN P., Thomas J. Zarriello, and Steven T. Knick. USGS Snake River Field Station, Boise, ID 83706.

COMMUNICATING BIOLOGICAL INFORMATION IN THE 21ST CENTURY: THE GBIP/ SAGEMAP/ SCIENCE LOCATOR MODEL.

The need for efficient communication of biological data has never been greater. To contribute to informed management of natural resources in the Intermountain West and eliminate redundancy of effort among scientists and managers, we have developed 3 communication tools: the Great Basin Information Project (GBIP), SAGEMAP, and the Science Locator, which use current and developing technologies to enhance the efficiency and productivity of end-users. The Great Basin Information Project (http://greatbasin.nbii.gov) is the regional site of the National Biological Information Infrastructure, an electronic network that provides access to biological information about our Nation's plants, animals, and ecosystems. GBIP currently provides a metadata server that identifies and documents spatial and non-spatial datasets from diverse sources, a bibliography that focuses on Great Basin issues, and an educational internet mapper that helps visualize the wildlife, vegetation and water resources in the region. SAGEMAP (http://sagemap.wr.usgs.gov) is a GIS data portal that serves over 3200 thematic data layers describing factors affecting sage-grouse and sagebrush habitat. The data are easily searchable and the functionality provides users direct links to hundreds of unique data sources allowing them to access the most current versions of each data layer from a central location. The Science Locator uses ArcIMS to deliver information about the biologists and managers themselves. Conceptually, the Science Locator allows users to quickly elucidate the location, subject matter, progress, and key players of any research or management project occurring in the western U.S. In practice, the Locator requires (one-time) participation from contributors who must deliver the elements of their project(s) to be included on the Science Locator.

HANSER, STEVEN, Steven Knick, Jon Hak and Jimmy Kagan. USGS-SRFS, Boise, ID (SH, SK), Oregon Natural Heritage Program, Portland, OR (JH, JK).

MID-SCALE MAPPING OF SAGEBRUSH AND SHRUBLAND LANDCOVER: THE COLUMBIA PLATEAU REGION AND SOUTHWESTERN STATES.

Sagebrush-dominated landscapes have undergone changes due to impacts of human activities, spread of invasive plants, and altered disturbance regimes. Consequently, the quantity, composition, and configuration of shrublands have undergone changes in recent years. Land and wildlife managers need an accurate, large-scale map of landcover characteristics to develop conservation and management plans, particularly for widely distributed species, such as greater sage-grouse (*Centrocercus urophasianus*). We have modeled the current distribution of sagebrush (*Artemisia* spp.) and shrubland habitats in the Pacific Northwest using multi-season satellite imagery and digital elevation models. Input data for the decision tree classification models was derived from field surveys and existing vegetation data provided by individual state heritage programs. By coordinating our efforts with the SW ReGAP project, we have produced a detailed, seamless GIS map of shrubland habitats covering approximately 160 million ha across 8 states in the western United States. This map will form an integral component in future large-scale regional analyses to identify habitat characteristics important to species distributions and biodiversity.

HASSELBLAD, KRISTIN, and Marc Bechard. Boise State University, 1910 University Dr., Boise, ID 83725.

NORTHERN GOSHAWK FORAGING HABITAT SELECTION IN SOUTH CENTRAL IDAHO.

To assess northern goshawk (*Accipiter gentilis*) habitat selection at two scales in south central Idaho, we radio-tracked six breeding males throughout the breeding seasons of 2001 and 2002. We acquired a mean of 54 (± 3.3) independent locations per bird. Average linear error associated with triangulated locations was 130 m. Habitat variables measured included: distance from used and available locations to the nearest seedling (< 2.5 cm dbh) stand, sapling/pole (2.6-12.9 cm dbh) stand, "small tree" (13-34 cm dbh) stand, road/trail, and camp area. We used logistic regression to identify those features that may be important in predicting individual goshawk use of a perching site. Five out of six males selected perching sites closer to "small tree" habitat and camp areas than expected. Two males selected perching locations closer to roads/trails than expected, and two males selected higher or lower elevations than expected. At the home range scale, goshawks selected for less sapling/pole habitat, and greater habitat diversity as measured by Shannon's diversity index, similar to results from other studies.

HURLEY, MARK A., James W. Unsworth, Pete Zager, Edward O. Garton, and Debra M. Montgomery. Idaho Department of Fish and Game, PO Box 1336, Salmon, ID 83467 (MAH), Idaho Dept. of Fish and Game, P.O. Box 25, Boise, ID (JWU), Idaho Dept. of Fish and Game, 1540 Warner Ave., Lewiston, ID (PZ), University of Idaho (EOG, DMM).

THE EFFECTS OF COYOTE AND MOUNTAIN LION REMOVAL ON MULE DEER POPULATIONS.

We tested the effects of removing coyotes and mountain lions on mule deer populations in 8 game management units in southern Idaho 1997-2002. We used aerial surveys in Dec. and Mar. to monitor changes in the composition and size of deer populations. We radio-collared 200 deer, adults, neonate fawns, and 6 month-old fawns annually in one removal and one non-removal area to monitor rates and causes of mortality. Cox's proportional hazards survival models were ranked with AIC to determine the best competing models. Important factors influencing survival of neonate fawns were small mammal and lagomorph abundance, coyote removal, and weather conditions. Coyote removal increased mule deer survival only when deer were apparently needed as alternate prey. Coyote removal did not influence the survival of 6-month-old fawns or adults. Mountain lion removal increased the survival of adult females in the winter season. Weather variables were the most significant factor in the majority of the competing survival models. Fawn:doe ratios were significantly influenced by mountain lion removal across all study units. Coyote removal had no significant effect on fawn:doe ratios. No significant effect was found with coyote or mountain lion removal on total population trend of mule deer, although populations with increased mountain lion harvest indicated positive population trends. The lack of fawn:doe ratio or population response indicates that increased neonate survival due to coyote removal is partially compensatory. Mountain lion removal appears to have a minimal population effect at higher levels of removal.

KALTENECKER, GREGORY S., and Laura Bond. Boise State University, Boise, Idaho 83725.

HABITAT ASSOCIATIONS OF SHRUBSTEPPE SONGBIRDS IN SOUTHERN IDAHO.

We studied shrubsteppe songbirds in southwest and southcentral Idaho during 2002, 2003, and 2004 to determine which habitat characteristics are associated with changes in the probability of occurrence of each bird species. We conducted point counts at a total of 74 sites. Each site consisted of 3 plots placed across a gradient of habitat quality to capture the variability of habitat conditions present at each site. Each plot consisted of 8 points, located at least 250 m apart, where point counts were conducted and vegetation was measured using the step-point intercept technique developed and used widely by the Bureau of Land Management. To model the probability of presence, we used logistic regression modified with generalized estimating equations methodology. Results are in the form of odds ratios, which identify the ratio between the odds of the species being present for a given unit in the explanatory variable, and the odds of the species being present for a

one-unit change in that explanatory variable. For example, with each one percent increase in sagebrush cover, the odds of Brewer's sparrows (*Spizella breweri*) being present increase by 25%. Likewise, as diversity in shrub height increases by one unit, the odds of Brewer's sparrows being present at that site decrease by 13%. As elevation and diversity in shrub height increase, the odds of sage sparrows (*Amphispiza belli*) being present decrease, but as percent sagebrush cover and sagebrush height increase, the odds of sage sparrows being present increase. These data will be useful to land managers to understand the habitat requirements of shrubsteppe bird species other than sage grouse (*Centrocercus urophasianus*).

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SAGE GROUSE: ARE THEY A GOOD UMBRELLA SPECIES FOR MANAGEMENT OF OTHER SHRUBSTEPPE BIRD SPECIES?

No abstract available.

KOCHERT, MICHAEL N., and Karen Steenhof. USGS Forest and Rangeland Ecosystem Science Center, Snake River Field Station, 970 Lusk Street, Boise, ID 83706.

RESPONSES OF NESTING GOLDEN EAGLES AND PRAIRIE FALCONS TO LOSS OF SHRUB HABITATS IN THE SNAKE RIVER BIRDS OF PREY NATIONAL CONSERVATION AREA.

Wildfires, livestock grazing, military training activities, and drought have interacted to cause extensive habitat changes in the Snake River Birds of Prey National Conservation Area (NCA). Predictions were that shrub loss would cause declines in prey and raptor populations. The number of eagle pairs in the NCA, showed a slight, but significant negative trend between 1971 and 2004. The decline in number of occupied eagle nesting territories, combined with the apparent decline in black-tailed jackrabbits (the eagle's major prey) suggests a reduced carrying capacity for Golden Eagles in the NCA. Neighboring pairs subsumed 4 of 6 territories vacant for $\geq$15 consecutive years. Eagle productivity has shown no significant trend over time. We suggest that the less productive territories in the NCA became vacant and that a core of pairs in productive territories produced most young for the population. We observed no significant trend in the number of falcon pairs between 1976 and 2003, and the number of Prairie Falcon pairs in 2002 (217) was highest ever observed in the NCA. Falcon productivity in 2003 was lower than in any years except 1982 and 1993. Changes in falcon abundance and productivity seem to reflect changes in ground squirrel abundance. Piute ground squirrel populations show more variability in altered exotic annual grass communities than in native shrub habitats. It is likely that habitat and climatic changes have resulted in greater year-to-year fluctuations in falcon abundance and productivity.

MEINKE, CARA, Steven Knick, and David Pyke. US Geological Survey, Forest and Rangeland Ecosystem Science Center, Boise, Idaho 83706

PRIORITIZING RESTORATION EFFORTS IN SAGEBRUSH ECOSYSTEMS OF THE INTERMOUNTAIN WEST.

The ecological integrity of many sagebrush (*Artemisia* spp.) ecosystems in the Intermountain West has been compromised due to synergistic relationships among human activities, spread of invasive plants, intensified wildfires, and altered disturbance regimes. Consequently, many sagebrush landscapes now exist in ecological states past thresholds from which natural recovery is likely. Restoration can facilitate establishment of desired vegetation and restore essential ecosystem functions. However, logistic, personnel, and financial resources available limit the extent of restoration activities. We prioritized regions in the Intermountain West based on (1) favorable abiotic and biotic conditions for achieving successful revegetation, (2) location of vegetation, wildlife, or biodiversity strongholds, (3) potential to increase habitat connectivity in the landscape, and (4) regional management objectives. Using hierarchical spatial models based on these criteria, we identified areas in southwestern Idaho, northern Nevada, and eastern Oregon where restoration

success was most probable. We then applied additional filters relative to landscape connectivity and sage grouse population strongholds to further refine our selection and identify site or project level areas at which specific restoration plans can be applied. Using this triage approach, managers can integrate site-specific efforts into restoring sagebrush landscapes throughout the Intermountain West.

MOULTON, COLLEEN E., and Rex Sallabanks. Idaho Department of Fish and Game, 600 S. Walnut, P.O. Box 25, Boise, ID 83707.

IDAHO's IMPORTANT BIRD AREA (IBA) PROGRAM.

The Important Bird Area (IBA) Program was initiated in Europe in the 1980's by BirdLife International and introduced to the United States, via the National Audubon Society, in 1995. The following year, Idaho Partners in Flight and the Idaho Audubon Council launched the IBA Program in Idaho. This global program is designed to identify those places that are critical to maintaining bird populations, recognizing that habitat loss and fragmentation are the most serious, worldwide threats that bird populations face. Currently, IBAs are being identified on every continent on the planet. The IBA Program consists of a three-phase process: 1) identify essential areas, 2) monitor for changes in bird populations and habitat, and 3) conserve for long-term protection of biodiversity. To date, the Idaho IBA Technical Committee has identified 55 IBAs, representing 3.8 million acres of wetland and upland habitat throughout the state, and including a variety of land ownerships. All six National Wildlife Refuges in Idaho have been identified as IBAs, as well as 13 Idaho Dept. of Fish and Game (IDFG) Wildlife Management Areas. As Idaho moves toward the second phase in the IBA Program, the monitoring phase, IDFG has initiated monitoring at five wetland IBAs and anticipates greatly expanding this monitoring effort in Spring/Summer 2005 under the newly-established Idaho Bird Inventory and Survey (IBIS) Program. In our paper we will review the progress of Idaho's IBA Program, provide details on the criteria used to identify IBA sites in Idaho, present an overview of IBAs that have been identified in the state, and outline our objectives for the program in the upcoming year.

MUSIL, DAVID. Idaho Department of Fish and Game, Jerome, ID 83338.

GREATER SAGE-GROUSE NEST HABITAT IN IDAHO: PRELIMINARY RESULTS.

We sampled 164 greater sage-grouse nests of radio-marked hens on 13 study areas in Idaho during 2002-2004. During 2003-2004, 100 random locations were also sampled within the study areas. Comparing our results with the sage-grouse guidelines for breeding habitat, preliminary results indicate habitat in Idaho is lacking forb cover and has less residual grass height than what is recommended. More nest sampling in low sage and 3-tip sagebrush habitat will occur this coming Spring. Multivariate statistical analysis is also continuing on the data set.

NADEAU, STEVE. Idaho Department of Fish and Game, P.O. Box 25, Boise, ID 83707.

STATE MANAGEMENT OF WOLVES IN IDAHO.

The US Fish and Wildlife Service (USFWS) reintroduced fifteen wolves into Idaho in 1995. At that time, the Idaho Legislature strictly limited Idaho Department of Fish and Game (IDFG) involvement with wolves and wolf recovery. The USFWS proceeded with recovery and contracted with the Nez Perce Tribe to implement wolf management in Idaho. In 1996 an additional 20 wolves were reintroduced. Since that time, the number of wolves in Idaho has increased, and by December 2004 Idaho had approximately 420-500 wolves well distributed from I-90 south to I-84 in central Idaho. Legislation was passed in 2003 to allow IDFG to become reinvolved in wolf management. Since that time the state has hired biologists, trained regional staff, purchased equipment and began conducting wolf monitoring and management in coordination with the other agencies. The new 10(j) rules govern the way wolves will be managed in most of Idaho, and the State plans on assuming increased authorities under the rule. The impacts of recent legal challenges, court rulings, and MOAs will be discussed, as well as how the IDFG plans on managing wolves into the future.

O'SULLIVAN, TESS. Lava Lake Land & Livestock, L.L.C., P.O. Box 2249, Hailey, ID 83333.

LAVA LAKE'S LANDSCAPE SCALE MANAGEMENT FOR WILDLIFE AND SHEEP GRAZING IN CENTRAL IDAHO.

Lava Lake Land and Livestock was organized in 1999 to (i) achieve landscape-scale conservation in the Pioneer and Boulder Mountains and in the Craters of the Moon area and (ii) establish an ecologically-sound and financially-viable business that supports our conservation activities. The Company's business is currently focused on livestock production, primarily sheep. Our grazing and conservation activities take place on 24,000 acres of private lands and 730,000 acres of lands administered by the Bureau of Land Management, the U.S. Forest Service, and the Idaho Department of Lands. We are pursuing our conservation mission through the establishment of a comprehensive scientific program, private lands protection, habitat restoration, predator-friendly livestock management, participation in public lands management, and careful livestock management including the use of GPS collars on our sheep bands. Our scientific program has involved inventory and assessment work, conservation planning, monitoring focusing on aspen, sagebrush steppe, and riparian ecosystem habitat, and research.

RACHLOW, JANET, and Jim Witham. Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83844-1136.

MONITORING PYGMY RABBITS: PROGRESS AND INFORMATION NEEDS.

Pygmy rabbits are both elusive and uncommon, characteristics that make estimation of population parameters challenging. The complete distribution of the species in Idaho is not yet known, although biologists have recently identified new locations occupied by pygmy rabbits. We review efforts and methods to provide information about distribution, detection of presence/absence, population indices, and estimates of abundance. Recently completed aerial surveys for tracks in snow present a technique for rapidly and efficiently surveying broad areas for presence/absence. Patch-occupancy models are a relatively new approach to long-term monitoring of population trends that may be suitable for this species.

RICH, TERRELL D. U. S. Fish and Wildlife Service, 1387 S. Vinnell Way, Boise, ID 83709.

SAGEBRUSH BIRD POPULATION CHANGES IN LAIDLAW PARK, BLAINE COUNTY, IDAHO – 1980-2004.

In 1980, I established line transects in Laidlaw Park to assess densities of breeding birds in three habitat types - big sagebrush (*Artemisia tridentata tridentata*), three-tip sagebrush (*A. tripartita*), and cheatgrass (*Bromus tectorum*). Data were collected 1980-1984. In 2002, 2003, and 2004, I reread these transects to examine possible changes in the breeding bird community over time. There were few differences in bird species and or vegetation. Differences largely were within what I would consider to be normal ranges. The clearest bird trend was the decline of Brewer's Sparrow (*Spizella breweri*) which is consistent with the long-term decline of the species across its range and, thus, does not necessarily point to a cause-effect relationship in the Laidlaw Park area. The movement of Grasshopper Sparrows (*Ammodramus savannarum)* into seedings is also noteworthy.

SALLABANKS, REX, and Colleen E. Moulton. Idaho Department of Fish and Game, 600 S. Walnut, P.O. Box 25, Boise, ID 83707.

THE IDAHO BIRD INVENTORY AND SURVEY (IBIS).

The Idaho Bird Inventory and Survey (IBIS) is a plan to monitor all birds (waterbirds, shorebirds, waterfowl, and landbirds) throughout the state in a coordinated, standardized manner. Included in IBIS will be a description of high priority management issues, associated bird species, and how IBIS can be used to address each issue. Phase I of IBIS will emphasize aquatic species and habitats, and will focus on determining the distribution and abundance of waterbirds at Idaho's wetland Important Bird Areas (IBAs) and Idaho Department of Fish and Game Wildlife Management Areas (WMAs). Phase II will address terrestrial species and habitats. Restricted habitats that have previously been

underrepresented in landbird monitoring will be targeted, such as alpine systems, aspen communities, and pinyon-juniper woodlands. A third component of IBIS will describe species-specific protocols for priority species that would otherwise be inadequately sampled using the general methods proposed for aquatic and terrestrial birds. Examples include black swifts, long-billed curlews, harlequin ducks, and forest owls. Ultimately, IBIS will establish permanent surveys at Idaho's IBAs, generate much-needed inventories of WMAs, yield baseline data for statewide population trend monitoring, and address high priority management issues using short-term species assessments. Phase I of IBIS will be fully implemented during 2005–2007 using a combination of regional coordinators, hired technicians, and volunteer "citizen scientists."

STEENHOF, KAREN, Mark R. Fuller, M. N. Kochert, and Kirk K. Bates. U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center, Boise, ID (KS, MRF, MNK), Raptor Research Center, Boise, ID (KKB).

LONG-RANGE MOVEMENTS AND BREEDING DISPERSAL OF PRAIRIE FALCONS FROM SOUTHWEST IDAHO.

From 1999-2003, we tracked movements of adult female Prairie Falcons (*Falco mexicanus*) using satellite telemetry. We radio marked 40 falcons on their nesting grounds in the Snake River Birds of Prey National Conservation Area (NCA). All falcons with functioning transmitters left the NCA from late June through mid-July. Most headed northeast across the Continental Divide en route to summering areas in Montana, Saskatchewan, Alberta, and the Dakotas. Falcons stayed at their northern summer areas for 1-4 months before heading to the southern Great Plains or to southwest Idaho. The Great Plains was a key migration pathway. Important wintering areas included southwest Idaho and the Texas Panhandle. One falcon dispersed to a new nesting area 124 km south of her NCA breeding area. Use of widely separated nesting, summering, and wintering areas appears to be a strategy to exploit seasonally abundant prey resources.

TAYLOR, JENNY. U.S. Forest Service, Coeur d'Alene River Ranger District, Coeur d'Alene, ID 83815

IDAHO PANHANDLE BAT PROGRAM: 1995-2005.

The Forest Service and its partners surveyed bats at 118 mines in Idaho's 5 northern counties between 1995 and 2004. Two hundred thirty-five site visits captured: 138 *Myotis* spp., 74 little brown bats (*Myotis lucifugus*), 56 western long-eared bats (*Myotis evotis*), 24 long-legged bats (*Myotis volans*), 22 Townsend's big-eared bats (*Corynorhinus townsendii*) and 1 fringed bat (*Myotis thysanodes*). Eleven previously unknown Townsend's big-eared bat roosts were found. Four Townsend's big-eared bat hibernacula were verified. Bat habitat has been improved by installing bat gates on more than 80 mines on the Idaho Panhandle National Forests. Bat use of gated mines was similar to open mines. Observed bat use was much less at mines closed with culverts. A statewide grid will focus future bat survey efforts.

ZIKER, JOHN P. Boise State University, Boise, ID 83725-1950.

LAND TENURE AND GAME-MANAGEMENT STRATEGIES AMONG THE DOLGAN OF NORTHERN SIBERIA: POINTS FOR COMPARISON.

Since the 1991 collapse of the Soviet Union, a range of land tenure arrangements have developed in rural and remote areas. The land and waters of northern Siberia provide important biotic resources for indigenous people and local economies, as is the case in other Arctic regions. Access to these resources among the Dolgan is imperative for local communities and is usually defined both through land claims, historic use, and titles, as well as through kinship identities, and traditional knowledge of the resources and how to use them. The particulars vary, but one common recent influence on property relations across the Arctic is state-level society and development. State concepts and procedures for administering access to land and resource management may be superimposed upon local concepts and practices, which are longstanding local strategies of access and allocation. How these two levels of land tenure and resource management operate together is one of the major questions I addressed in my research.