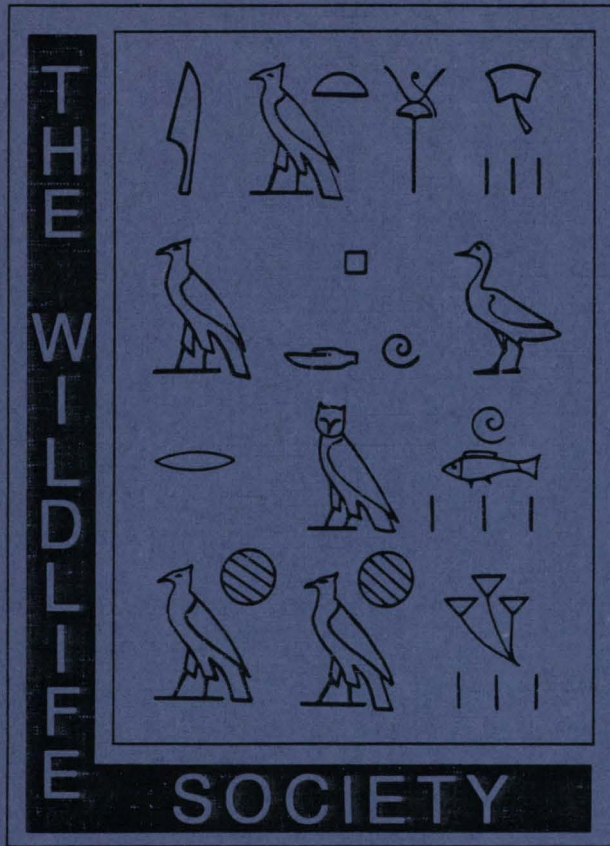


FRANCES CASSIRER



# IDAHO CHAPTER

26TH ANNUAL MEETING  
FEBRUARY 23-24, 1989  
BOISE, IDAHO

IDAHO CHAPTER - THE WILDLIFE SOCIETY

1989 ANNUAL MEETING

ACKNOWLEDGEMENTS

The Idaho Chapter wishes to recognize the substantial efforts of several individuals for making this meeting possible.

CHUCK BLAIR

SIGNE SATHER-BLAIR

JACK CONNELLY

CRAIG GROVES

JEROME HANSEN

CHUCK HARRIS

LISA LANGELIER

BOB MARTIN

SAM MATTISE

PAUL MOROZ

VICKI SAAB

Thanks also to all of those who participated in the meeting and for the generous contribution of \$100.00 each from the following companies in support of this gathering.

CH2M HILL

IDAHO POWER COMPANY

TRUS JOIST



1989 ANNUAL MEETING  
OF THE  
IDAHO CHAPTER OF THE WILDLIFE SOCIETY

RED LION, DOWNTOWNER  
BOISE, IDAHO  
FEBRUARY 23-24, 1989

PARTNERSHIPS IN WILDLIFE--THE GOOD, THE BAD, AND THE FUTURE

THURSDAY MORNING, FEBRUARY 23

BITTERROOT/TETON ROOM

- 7:20 - 8:20 Registration
- 8:20 - 8:30 Opening Remarks - Jack Connelly
- SESSION A - Moderator - Chuck Blair, CH2M Hill
- 8:30 - 8:55 An overview of the Wildlife Congress. JERRY M. CONLEY, Idaho Department of Fish and Game, Boise.
- 8:55 - 9:20 Idaho Fish and Game elk, deer and shotgun hunting survey research. WILLIAM J. MCLAUGHLIN, Department of Wildland Recreation Management, University of Idaho, Moscow.
- 9:20 - 9:45 The Rocky Mountain Elk Foundation - cooperative wildlife conservation. GARY BURNETT, Rocky Mountain Elk Foundation, Bozeman, MT.
- 9:45 - 10:10 The Nature Conservancy's role in wildlife partnerships in Idaho. GUY BONNIVIER, Nature Conservancy, Ketchum.
- 10:10 - 10:30 REFRESHMENT BREAK
- SESSION B - Moderator - Ernest Ables, University of Idaho
- 10:30 - 10:55 Challenge cost share program, agencies at work. ALAN CHRISTENSEN, U.S. Forest Service, Region 1, Missoula, Montana.
- 10:55 - 11:55 Panel Discussion - Perspectives on Interagency Support and Cooperation.
- U.S. Forest Service - STEVE BLAIR  
U.S. Fish & Wildl. Service - SIGNE SATHER-BLAIR  
U.S. Bureau of Land Management - ALAN SANDS  
Idaho Department of Fish and Game - TRACEY TRENT
- 11:55 - 1:15 LUNCH BREAK

THURSDAY AFTERNOON, FEBRUARY 23

Training Session 1 - Bitterroot/Teton Room

1:15 - 3:15 Wildlife population sampling/monitoring techniques. EDWARD (OZ) GARTON, Department of Fish and Wildlife Resources, University of Idaho, Moscow.

Training Session 2 - Albion/Aspen Room

Radio telemetry techniques. STAN TOMKIEWICZ, Telonics, Mesa, Arizona, and FRED REED, Western Air Research, Driggs, Idaho.

3:15 - 3:30 REFRESHMENT BREAK

3:30 - 5:30 IDAHO CHAPTER BUSINESS MEETING - BITTERROOT/TETON ROOM

6:00 - 9:30 SOCIAL, HORS D'OEUVRES - SELWAY/SAWTOOTH ROOM

7:00 EVENING PRESENTATION - SELWAY/SAWTOOTH ROOM

Fires of Yellowstone Park. FRANK SINGER, Yellowstone National Park, Yellowstone Park, Wyoming

8:00 - 9:30 AUCTION AND RAFFLE - SELWAY/SAWTOOTH ROOM

9:30 - 12:00 MUSIC AND DANCING - SELWAY/SAWTOOTH ROOM

FRIDAY MORNING, FEBRUARY 24 (2 CONCURRENT SESSIONS)

SESSION C: Bitterroot Room; Moderator: Linda Saunders, U.S. Forest Service

8:00 - 8:20 U.S. Forest Service sensitive species and challenge cost share programs: An example of interagency cooperation. C.R. GROVES, S.L. CAICCO, R.K. MOSELEY, and W.E. MELQUIST, Idaho Department of Fish and Game, Boise.

8:20 - 8:40 Habitat Improvement Program: First year accomplishments. M.C. TODD, Idaho Department of Fish and Game, Boise.

8:40 - 9:00 South Fork of the Snake River: An update of activities. E.H. ALFORD, Targhee National Forest, Idaho Falls.

9:00 - 9:20 The Friends of Squaw Butte volunteer program. M. DUDLEY, Ola.

9:20 - 9:40 Beaver habitat, then and now. R.M. WILLIAMS, Boise.

9:40 - 10:00 Interagency cooperation essential in using beaver as a tool for riparian improvement. L. PENCE, Soil Conservation Service, Gooding.

10:00 - 10:40 BREAK

SESSION D: Bitterroot Room; Moderator: Lonk Kuck, Idaho Department of Fish and Game

10:40 - 11:00 Mule Deer: Browse? J. SHOLTEN, Idaho Department of Fish and Game, and S. MATTISE, Bureau of Land Management, Boise.

11:00 - 11:20 Projecting illegal mule deer harvest in Idaho game management unit 73 and associated management implications. L.C. JINDRICH, Idaho Department of Fish and Game, Malad.

11:20 - 11:40 Behavioral responses of elk to disturbance by cross-country skiers. E.F. CASSIRER and E.D. ABLES, Department of Fish and Wildlife Resources, University of Idaho, Moscow\*.

11:40 - 12:00 Activity patterns of mule deer (Odocoileus hemionus) in response to hunting in southeastern Idaho. M.J. MCCDONALD and B.L. KELLER, Department of Biological Sciences, Idaho State University, Pocatello, and C.G. BROWN, Idaho Department of Fish and Game, Pocatello\*.

12:00 - 12:20 Efficacy of double-survey population estimation technique on elk in Idaho. T. FERGUSON, Montana State University, Bozeman\*.

12:20 - 12:40 Elk sightability model validation at the National Bison Range, Montana. J. UNSWORTH and L. KUCK, Idaho Department of Fish and Game, Lewiston, and O. GARTON, Department of Fish and Wildlife Resources, University of Idaho, Moscow.

12:40 - 1:00 CLOSING REMARKS AND AWARDS - BITTERROOT/TETON ROOM

SESSION E: Teton Room; Moderator: Michael Kochert, U.S. Bureau of Land Management

8:00 - 8:20 Copulation frequency and timing in the prairie falcon. A.M.A. HOLTHUIJZEN, Idaho Power Company, Boise.

8:20 - 8:40 Post-nesting movements of long-eared owls in southwestern Idaho. H. ULMSCHNEIDER, Biology Department, Boise State University, Boise\*.

8:40 - 9:00 Idaho's nesting bald eagle population: on the way to recovery. W.E. MELQUIST, Idaho Department of Fish and Game, and R.P. HOWARD, U.S. Fish and Wildlife Service, Boise.

- 9:00 - 9:20 The role of urban release in peregrine recovery. B.A. HAAK and W.E. MELQUIST, Idaho Department of Fish and Game, Boise.
- 9:20 - 9:40 Eight years of data on the relative density of rodent populations at the Idaho National Engineering Laboratory Site. B. KELLER, Department of Biological Sciences, Idaho State University, Pocatello.
- 9:40 - 10:00 Small mammal activity and edge use on the sub-surface disposal area, Idaho National Engineering Laboratory Site. J. BOONE and B. KELLER, Department of Biological Sciences, Idaho State University, Pocatello\*.
- 10:00 - 10:20 BREAK

SESSION F: Teton Room; Moderator: Vicki Saab, U.S. Fish and Wildlife Service

- 10:20 - 10:40 Control of sprouting corn depredation by ring-necked pheasants. B. HELMICH, Department of Fisheries and Wildlife, Oregon State University, Corvallis\*.
- 10:40 - 11:00 Composition, distribution, and movements of bats in southern Idaho. M.C. WACKENHUT and B.L. KELLER, Department of Sciences, Idaho State University, Pocatello\*.
- 11:00 - 11:20 Sage grouse nest locations and their relevance to current habitat management guidelines. W.L. WAKKINEN and K.P. REESE, Department of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow; and J.W. CONNELLY, Idaho Department of Fish and Game, Pocatello\*.
- 11:20 - 11:40 Sanitation management for grizzly bear on the Island Park Ranger District of the Targhee National Forest in Idaho. T. CONTRERAS, Targhee National Forest, Island Park.
- 11:40 - 12:00 GAP analysis of bio-diversity protection in Idaho. J.M. SCOTT, Idaho Cooperative Fish and Wildlife Research Unit, University of Idaho, Moscow; H.A. ANDERSON, Idaho Department of Water Resources, Boise; and C.R. GROVES, Idaho Department of Fish and Game, Boise.
- 12:00 - 12:20 An overview of Idaho's wildlife management areas - T. PARKER, Idaho Department of Fish and Game, Boise.
- 12:20 - 12:40 Summer habitat use by translocated sage grouse. D.D. MUSIL and K.P. REESE, Department of Fish and Wildlife Resources, University of Idaho, Moscow; and J.W. CONNELLY, Idaho Department of Fish and Game, Pocatello\*.
- 12:40 - 1:00 CLOSING REMARKS AND AWARDS - BITTERROOT/TETON ROOM

\* Denotes student paper.

IDAHO CHAPTER  
OF  
THE WILDLIFE SOCIETY

Business Meeting Agenda

Old Business

1. 1988 Business Meeting Minutes - Signe Sather-Blair
2. Treasurer's Report - Paul Moroz
3. Membership Update - Kerry Reese

New Business

1. Summer Meeting - Jack Connelly
2. ISU Scholarship - Sam Mattise/Paul Moroz
3. Northwest Section News - John Ratti
4. Trumpeter Swan Situation - Chuck Blair
5. Other New Business

AUCTION ITEMS FOR THE IDAHO CHAPTER OF THE WILDLIFE SOCIETY 1989 AUCTION/RAFFLE

<u>AUCTION ITEMS</u>	<u>DONOR</u>
1. 1 Day Pheasant/Quail Hunting Trip Near Moscow	Kerry P. Reese
2. 1 Handmade Belt Buckle	Dwight Kilgore
3. Sage Grouse Hunting Trip Near Idaho Falls	Jack Connelly
4. Bobcat Print - Signed and Numbered	Erica Craig
5. Drift Boat Fishing Trip For Steelhead	Rich Howard
6. Grouse Hunting Trip For Two Near Boise	Gene De Reus
7. Mountain Goat Print	Edson Fichter
8. Bass/Crappie Fishing Trip on Lake Owyhee	Al Lagosz
9. "Idaho" Book Signed By Author and Gov. Andrus	John Marshall
10. South Fork Boise River Float Trip for Four	Chuck Blair/Bill Mullins
11. Waterfowl Print Signed and Numbered	Sam Mattise
12. 1 Day Steelhead Fishing Trip for 1 Person	Bill Bernt
13. 1st N.A. Wildl. & Nat. Res. Conf. Print	Wildlife Mgnt. Inst.
14. California Bighorn Sheep Spring Trip for Two	Matt McCoy
15. Cooper's Hawk Print - Signed and Numbered	Erica Craig
16. Snake River Duck Hunting Trip	Jay Gore
17. Raccoon Print	Edson Fichter
18. Sharptail Grouse Dancing Photo Trip Near Weiser	Alan Sands
19. "Yellowstone Fires" Book by George Wuerthner	Roger Rosentreter
20. Buffleheads Ltd. Edition Signed Print	Erica Craig
21. Scotch pine Christmas tree 5'-7' tall	Roger Williams
22. Nongame Montage Print by Edson Fichter	Nongame Program, IDF&G
23. Elk bugling Lessons & Outing Near Bear Valley	Paul Moroz
24. Butchering/Processing For 1 Elk	Louie Tharp
25. 50th Anniversary TWS Framed Poster Print	TWS



RAFFLE ITEMS FOR THE IDAHO CHAPTER OF THE WILDLIFE SOCIETY 1989 AUCTION/RAFFLE

<u>RAFFLE ITEM</u>	<u>DONOR</u>
1. Great Gray Owl Print	Wayne Patton
2. 1 Free Brunch	Red Lion Downtowner
3. Cooper's Hawk Print by Erica Craig	Alan Sands
4. "We Care" T-Shirt	Nongame Program - IDF&G
5. 1 "Gone Fishing" Mobile	3 C's Gift Gallery
6. Subscription to Idaho Wildlife	IDF&G
7. "Deerslayer" Signed and Numbered Print	Erica Craig
8. 1 Dozen Flat Water Flies	Gene DeReus
9. Bighorn Sheep Numbered Print	Signe Sather Blair
10. Waterfowl Ecology & Mgnt. Book	Chuck Blair
11. 50th Anniversary TWS Poster	TWS
12. Subscription to Idaho Wildlife	TWS
13. Great Horned Owls Signed Print	Erica Craig
14. 1 Dozen Flat Water Flies	Gene DeReus
15. "Join The Rush" T-Shirt	Nongame Program - IDF&G
16. "Gone Hunting" Mobile	3 C's Gift Gallery
17. Mountain Goat Print	Edson Fichter
18. Handmade Belt Buckle	Dwight Kilgore

**ABSTRACTS**

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SESSION C: BITTERROOT ROOM

U.S. FOREST SERVICE SENSITIVE SPECIES AND CHALLENGE COST SHARE PROGRAMS: AN EXAMPLE OF INTERAGENCY COOPERATION.

CRAIG GROVES, STEVE CAICCO, BOB MOSELEY, & WAYNE MELQUIST. Nongame and Endangered Wildlife Program, Idaho Department of Fish and Game, Box 25, Boise ID 83707.

In 1985 Region 1 of the Forest Service began work to establish a Sensitive Species Program. In cooperation with the Natural Heritage Program, candidate Sensitive Species were quantitatively screened, and in 1986 a subset of these candidates was officially designated by the Regional Forester as Sensitive Species. Funded in part by Challenge Grants, Natural Heritage Program personnel have been conducting status surveys and initiating monitoring programs for selected Sensitive plant and animal species. Examples of progress in implementing this program will be given and the prognosis for its future will be discussed.

HABITAT IMPROVEMENT PROGRAM: FIRST YEAR ACCOMPLISHMENTS.

M.C. TODD. Idaho Department of Fish and Game, Jerome, ID. 83338.

During the first fiscal year (July 1, 1987 through June 30, 1988) of the Habitat Improvement Program (HIP) a total of 126 projects were signed to develop habitat for upland birds and waterfowl. These projects directly improved or enhanced 3,866 acres. One-hundred and eleven (88%) of the projects were related to upland birds, primarily pheasants. These included the establishment of woody winter cover, grass-legume mixes for nesting cover, food plots, fencing, and guzzlers. Land acquisitions consisted of 1,802 acres of wetlands at Hill City Marsh in Camas County. One-hundred and sixteen (92%) of all projects were on private land. A total of \$68,908 was expended on these projects from HIP dollars; cooperators contributed \$79,263 toward habitat efforts. Biologists contacted 340 people regarding cost-sharing and gave technical advice to 181 others.

SOUTH FORK OF THE SNAKE RIVER: AN UPDATE OF ACTIVITIES

ALFORD, E.H. Asst. District Ranger, Wildlife. Palisades Ranger District, Targhee National Forest, Idaho Falls, ID. 83401

In the past 5-8 years there has been considerable controversy on the South Fork of the Snake River below Palisades Reservoir. FWS identifies it as the most important fish and wildlife site in Idaho. The Bald Eagle resource is significant. Activities in the most remote part is controlled by the BLM and FS, but the mixture of private land ownership is a potential problem for wildlife. Some of the problems include: proposed housing developments, increased recreationists and low flow effects. Proposals and actions to resolve issues have included: county zoning, court actions, land and easement acquisition plans, congressional action to exchange land and research of cumulative effects on Bald Eagles. The BLM and FS are now using a citizens task force to produce a joint agency Activity/Operations Plan.

## SESSION C: BITTERROOT ROOM

### THE FRIENDS OF SQUAW BUTTE VOLUNTEER PROGRAM

M. Dudley, Boise District Bureau of Land Management, Boise, ID 83705

Lightning caused fires burned over 200,000 acres in the Cascade Resource Area, Boise District BLM, during August 1986. The Idaho Department of Fish & Game describes these fires as one of Idaho's biggest wildlife disasters. Eighty to eighty five percent of crucial winter range for over 5,000 mule deer was destroyed. The Friends of Squaw Butte volunteer group was born in October 1986 when it began planting shrubs in efforts to restore critical wildlife habitat. Since 1986, over 900 volunteers, people from various sportsmen's, conservation, professional, school and church groups, and the Cub, Boy and Girl Scouts have planted shrubs throughout the burn, assisting the BLM in rehabilitation efforts. The Friends of Squaw Butte volunteer program has offered citizens the opportunity to become involved in the management of public lands.

### BEAVER HABITAT; THEN AND NOW

ROGER M. WILLIAMS, IDFG, Retired, Meridian, Idaho

Seven beaver colony sites on small streams in southern Idaho were photographed at various intervals between 1953 and 1984. Comparisons of 35mm slides taken from the same point show changes in habitat components and beaver structures, which reflect suitability and durability of the sites for beavers

### INTER-AGENCY COOPERATION ESSENTIAL IN USING BEAVER AS A TOOL FOR RIPARIAN IMPROVEMENT.

L. PENCE, SCS, Gooding, Idaho

Riparian areas in the Wood River Resource Area are in poor condition. Structures and changes in grazing systems are being used to improve riparian areas. Frequently these failed, were ineffective, or are uneconomical. Beaver are being used as an additional tool. The intermingled land pattern of private, state, and federal lands and Idaho's statutory responsibility for managing wildlife species, made a well coordinated program essential. In order to accomplish this, a Beaver Management Committee was established with the various interests represented. A program was developed outlining objectives, problems, opportunities and plan implementation procedures. The program is in its third year of implementation with encouraging results.

ABSTRACT

MULE DEER-----BROWSE ?????

G. Scholten. Idaho Dept. of Fish and Game, Boise, Idaho, S. Mattise. Boise District - BLM, Boise, Idaho.

Generally, mule deer have been considered primarily "browsers". Due to this belief, primary concerns in the rehabilitation of mule deer winter range is the reestablishment of browse species. Physiology and dietary research have indicated that grass and forbs species make up a large part of the diets of mule deer throughout the year. Mule deer are more of an "intermediate feeder" utilizing grasses, forbs and shrubs in almost equal amounts. As much emphasis should be given to the reestablishment of healthy stands of grasses and forbs as there is for the reestablishment of shrubs on mule deer winter ranges.

PROJECTING ILLEGAL MULE DEER HARVEST IN IDAHO GAME MANAGEMENT UNIT 73 AND ASSOCIATED MANAGEMENT IMPLICATIONS.

L.C. JINDRICH. Idaho Department of Fish and Game, Malad, Idaho 83252.

Past research in New Mexico, California, Alberta and Idaho has indicated that 1% to 3% of illegal big game kills are detected by Wildlife Enforcement Officers. This detection rate, in conjunction with the number of actual violations detected by Officers, was used to project/estimate the number of illegally harvested mule deer in game management Unit 73 in southeastern Idaho for the period 1985 to 1987. Illegal harvest estimates for this period range from 26% to 114% of the estimated legal harvest. These figures need to be taken into consideration when planning management strategies, seasons, regulations and harvest levels.

BEHAVIORAL RESPONSES OF ELK TO DISTURBANCE BY CROSS-COUNTRY SKIERS

E. FRANCES CASSIRER and ERNEST D. ABLES, Dept. of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843

We monitored responses of radio-collared elk in northern Yellowstone National Park to disturbances by cross-country skiers during the winters of 1987 and 1988. Results of 47 disturbance trials indicated that flight distances averaged 575 meters, the elk moved an average of 1,865 meters in immediate response to skiers, and it took an average of 1.7 hours for them to resume their predisturbance activity. These and other responses are compared to elk activity and movements in the absence of disturbance. Energetic costs of skier disturbances and implications for management of skier activity on elk winter ranges are discussed.

Activity patterns of mule deer (Odocoileus hemionus) in response to hunting in southeastern Idaho.

M.J. McDonald & B.L. Keller, Dept. of Biological Sciences, Idaho State University, Pocatello, ID 83209

C.G. Brown, Idaho Department of Fish and Game, Pocatello, ID 83204

Activity patterns of 13 radio-collared mule deer (5 males and 8 females) in southeastern Idaho were documented from 1 October to 14 November, 1987.

Daily activities of males vs. females were significantly different during every sampling category except the five-day either-sex season (October 28–November 1). A reduction in male diurnal activity was evident during the first week of hunting season (October 21–October 27) but thereafter increased (October 28–November 14). Female diurnal activity decreased throughout the hunting and into the posthunting season.

#### EFFICACY OF DOUBLE-SURVEY POPULATION ESTIMATION TECHNIQUE ON ELK IN IDAHO

T. FERGUSON. Montana State University, Bozeman, MT 59717

The double-survey population estimation technique was investigated on elk (Cervus elaphus) inhabiting winter/spring range in westcentral Idaho during 1988. The LORAN-C navigation instrument was used to record elk group positions. The single estimate of Game Management Unit 31 was  $932 \pm 917$  elk. Two consecutive estimates of Unit 22 resulted in estimates of  $1447 \pm 1727$  elk and  $1722 \pm 2206$  elk respectively. Radio-collared elk were used to determine sightability. Cover, grassland ( $P < .005$ ) and timber ( $P < .05$ ), significantly influenced visibility. Observer skill also affected sightability. An average difference of 11 groups and 92 elk were seen by primary observers. A major source in this discrepancy was the difference in numbers of groups with 1-5 individuals seen by each observer. The mean probability of sighting elk was 67% (cows 70%, bulls 61%). LORAN-C error between aircraft was  $0.27 \pm 0.14$  km. The average distance elk moved between locations was  $0.85 \pm 0.70$  km. Increased precision is probable with an accurate timing of surveys with spring greenup.

#### ELK SIGHTABILITY MODEL VALIDATION AT THE NATIONAL BISON RANGE, MONTANA.

JAMES W. UNSWORTH. Idaho Department of Fish and Game, Rt. 2, Box 12, Kamiah Idaho 83536. LONN KUCK. Idaho Department of Fish and Game, 1540 Warner Avenue, Lewiston, Idaho 83501. EDWARD O. GARTON. Department of Fish and Wildlife, University of Idaho, Moscow, Idaho 83843.

We estimated the elk population on the National Bison Range (NBR), Montana using aerial surveys corrected with a sightability model. Four surveys were flown during winter and spring 1988. Our estimates were compared with independent ground counts conducted by NBR personnel. We estimated  $159 \pm 11$  and  $117 \pm 26$  elk on the first and fourth surveys, respectively. These compare to NBR estimates of 160 and 125 elk for the same dates. Animals were removed from the population between surveys and we were able to statistically detect an 11% reduction in population size.

J. Wildl. Manage. 00(0):000-000

COPULATION FREQUENCY AND TIMING IN THE PRAIRIE FALCON.

A.M.A. HOLTHUIJZEN. Idaho Power Company, Environmental Affairs Department, P.O. Box 70, Boise, ID 83707.

To determine the temporal pattern and duration of mate guarding in prairie falcons (*Falco mexicanus*) we observed 52 pairs for 9380 h in southwestern Idaho during 1984-87. Territorial males were absent for a larger percentage of almost every hour of the day during pre-incubation than during incubation. However, males showed high presence rates in the early morning and late afternoon/early evening hours when copulation rates peaked, coinciding with optimal timing for egg-fertilization. Extra-pair copulations were not observed. Aggressive interactions between territorial males and intruding falcons were similar between pre-incubation and incubation. In both stages the number of aggressive interactions per hour did not show a strong daily trend. Prairie falcons copulated throughout the nesting season, which suggests that copulations are important for pair-bonding and -maintenance; sperm competition may play a distant secondary role.

POST-NESTING MOVEMENTS OF LONG-EARED OWLS IN SW IDAHO.

H. ULMSCHNEIDER. Biology Dept., Boise State Univ., Boise, Id.83725

Long-eared Owls nest in the Snake River Birds of Prey Area from March to June, and then disappear from the area. 6 adult and 5 juvenile owls were radio-tagged in mid-May 1988 to find out where they go. Most of the owls left their nest groves abruptly and apparently went a long way at once. Over 18 hr of aerial searches and over a month of searching from the ground failed to locate them. Females left first, on 8-9 June; 10 out of 12 juveniles left between 22-30 June, and 2 left during 10-21 July; one male left on 26 June and one on 24-27 July. One male left his failed nest on 22 May, and was followed until 3-9 Sept., when he also disappeared. When the females left, the juveniles were still actively food begging, though they had begun making flights of 5-20 minutes away from the nest groves.

IDAHO'S NESTING BALD EAGLE POPULATION: ON THE WAY TO RECOVERY

W. Melquist, and R. Howard. Idaho Department of Fish and Game, and U.S. Fish and Wildlife Service, Boise, Idaho.

Historical records of bald eagles are contained in the journals of Lewis and Clark. These explorers reported sightings of juvenile bald eagles in the spring of 1806. Bald eagles apparently nested in the Boise River area of SW Idaho and the Coeur d'Alene area of N Idaho in the late 1800's. The first successful nesting pair in recent times was reported in 1969 near Irwin in eastern Idaho. In 1985, 22 territories were reported occupied by bald eagles in Idaho. That figure more than doubled to 45 occupied territories in 1988. The recent increase in the number of nesting bald eagles in Idaho is discussed.

THE ROLE OF URBAN RELEASE IN PEREGRINE RECOVERY

B.A. Haak and W. E. Melquist. Nongame Prog., Idaho Dept. Fish & Game  
P.O. Box 25, Boise, ID 83707

The biological significance of reintroducing endangered peregrine falcons into urban situations is discussed. Characteristics of urban release sites and the adaptation of released peregrines to these sites are examined. The future role of urban release sites within recovery plans and the potential contribution of urban-hatched or urban-reared peregrines to overall recovery goals are explored.

EIGHT YEARS OF DATA ON THE RELATIVE DENSITY OF RODENT POPULATIONS AT THE IDAHO NATIONAL ENGINEERING LABORATORY SITE.

B. KELLER. Department of Biological Sciences, Idaho State University, Pocatello, Id 83209.

In 1980, a two-season study of changes in relative density of 11 species of rodents was initiated by snap trapping permanent stations located on distant areas. During the past 17 sampling seasons, 8,779 specimens have been collected over 66,963 snap-trap nights. Mean numbers of rodents at four study sites achieved a high of  $222.2 \pm 51.1$  (S.E.) per 1000 trap nights and a low of  $63.4 \pm 9.0$ . A grand pooled mean relative density of 131.1 rodents per 1000 trap nights is obtained all areas sampled during the past 8 years. Considerable variation is documented in species collected among areas both seasonally and among years but the pattern of change in the total density of rodents is largely consistent except in amplitude.

SMALL MAMMAL ACTIVITY AND EDGE USE ON THE SUBSURFACE DISPOSAL AREA, IDAHO NATIONAL ENGINEERING LABORATORY SITE.

J. BOONE and B. KELLER. Department of Biological Sciences, Idaho State University, Pocatello, Idaho 83209.

Small mammals were live trapped on a 36 ha site used for shallow land burial of transuranic, activation, and fission products. Information on the effect of additional soil cover, modifications of the perimeter water-diversion dike, and edge used by small mammals was collected for contrast against data published earlier. The minimum number of Peromyscus maniculatus, Microtus montanus and Dipodomys ordii on grids and trapping lines was significantly lower than found previously. The dike, enlarged and reinforced with large chunks of lava rock, supported a higher density of small mammals than the interior surface. Small mammals preferentially use the SDA edge, a condition that may enhance colonization of empty areas.



CONTROL OF SPROUTING CORN DEPREDATION BY RING-NECKED PHEASANTS

B. HELMICH. Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97330.

Four damage control practices were evaluated on Fort Boise Wildlife Management Area in southwestern Idaho during the spring and summer of 1988. Bird Scaring Reflective Tape®, Isotox Seed Treater (F)®, Miller Hot Sauce Animal Repellent®, and provision of alternate food did not significantly reduce the number of sprouts disturbed. The study will continue through the summer of 1989.

COMPOSITION, DISTRIBUTION, AND MOVEMENTS OF BATS IN SOUTHERN IDAHO.

M.C. WACKENHUT and B.L. KELLER. Department of Biological Sciences, Idaho State University, Pocatello, ID 83201.

Eight caves in Lincoln and Gooding Counties were identified as bat hibernacula for Mvotis leibii, Plecotus townsendii, and M. yumanensis during winter 1987-88. Summer residents of this area included, Pipistrelles hesperus, Antrozous pallidus, M. lucifugus, Lasionycteris noctavagans, M. evotis, and P. townsendii. Five caves on the Idaho National Engineering Laboratory contained hibernating M. leibii and P. townsendii during winter 1987-88. One-hundred twenty bats were banded at three INEL caves and 417 at caves in Lincoln and Gooding Counties. Limited exchange of bats to adjacent caves occurred at both areas, but no exchange was documented between the two study sites. A fall 1988 survey of 5 caves showed, 19% of the P. townsendii present were banded, and 95% of the banded bats were using the same cave as the previous winter.

SAGE GROUSE NEST LOCATIONS AND THEIR RELEVANCE TO CURRENT HABITAT MANAGEMENT GUIDELINES

WAKKINEN, W.L. and K.P. REESE. Dept. of Forestry, Wildlife, and Range Science, Univ. of Idaho. Moscow, Id. 83843.  
CONNELLY, J.W. Idaho Dept. of Fish and Game. 1345 Barton Road, Pocatello, Idaho. 83204.

Sixty-eight female sage grouse were radio-marked on leks in 1987-88 on the Big Desert of southeastern Idaho. Nest location was determined for 40 birds. Mean distances from lek of capture ( $\bar{X}=4.59\text{km}$ ,  $s=4.87$ ,  $n=36$ ) and the nearest lek ( $\bar{X}=1.55\text{km}$ ,  $s=1.04$ ,  $n=37$ ) were used to evaluate current guidelines regarding the protection of leks and nesting areas. Under current guidelines, 92% of all nests would be protected, but given the movements from the lek of capture, guidelines should be applied with caution. Theories of nest location in relation to leks are compared to this data.

SESSION F: TETON ROOM

SANITATION MANAGEMENT FOR GRIZZLY BEAR ON THE ISLAND PARK RANGER DISTRICT OF THE TARGHEE NATIONAL FOREST IN IDAHO.

T. CONTRERAS, U.S. Forest Service, Targhee National Forest, Island Park Ranger District, Island Park, ID. 83429

Sanitation Management Action Plans for grizzly bear were developed and implemented in 1988 and 1989 for consistent sanitation standards in the Island Park area for improved public safety and grizzly bear conservation.

GAP ANALYSIS OF BIODIVERSITY PROTECTION IN IDAHO.

J. M. SCOTT. U.S. Fish and Wildlife Service, Idaho Cooperative Fish and Wildlife Cooperative Research Unit, University of Idaho, Moscow Idaho 83843. H. A. ANDERSON. Idaho Department of Water Resources, Boise, Idaho. C. GROVES. Idaho Department of Fish and Game, Boise, Idaho

There is no way to assess if existing management and preserve areas in Idaho are adequate to protect existing biodiversity into the 22nd century. Using vegetation maps, ranges of vertebrates, and locations of existing preserves and land ownership, we are asking what percent of existing vegetation types and areas of high species richness (e.g. endemic taxa, game animals, threatened, endangered, and sensitive species etc.) are protected by existing preserves. Findings will be used to identify gaps in our existing preserve network. If the method proves effective it will be used in other areas.

AN OVERVIEW OF IDAHO'S WILDLIFE MANAGEMENT AREAS

TOM PARKER. Bureau of Wildlife, Idaho Department of Fish and Game, Boise, Idaho 83707

A brief look at the Idaho Department of Fish and Game's program for managing state owned Wildlife Management Areas (WMA's) is presented. The importance of the WMA's to the state's wildlife resources and the hunting and fishing public is discussed.

SUMMER HABITAT USE BY TRANSLOCATED SAGE GROUSE

D. D. Musil, and K. P. Reese. Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843, and J. W. Connelly. Idaho Department of Fish and Game, Pocatello, ID 83204

Habitat use by translocated sage grouse was studied for 17 radio-marked birds in the Sawtooth Valley, Idaho, during the summers of 1986 and 1987. Grouse used sites with steeper slopes closer to habitat edges in 1986, and greater shrub canopy cover, shrub height, and litter cover in 1987 than was available  $\leq 300\text{m}$  from the use sites ( $P < 0.05$ ). Also in 1987, grouse used sites with flatter slopes further from habitat edges with more litter, less bare ground, and denser sagebrush than was available in randomly selected sagebrush habitat throughout the study site ( $P < 0.05$ ). The importance of heterogeneous sagebrush habitat for Sage grouse is also discussed.

