



THE WILDLIFER

May-June 1995

THE WILDLIFE SOCIETY

Excellence in Wildlife Stewardship Through Science and Education

Issue No. 270

Jack H. Berryman Receives 1995 Aldo Leopold Award

Jack H. Berryman of Lake Ridge, Virginia, received The Wildlife Society's most prestigious award, the Aldo Leopold Memorial Medal, for distinguished service to wildlife conservation. The award was presented at the banquet of the North American Wildlife and Natural Resources Conference in Minneapolis, Minnesota, on 28 March 1995 by Dr. Erik K. Fritzell, President of The Wildlife Society.

Mr. Berryman is Counselor Emeritus of The International Association of Fish and Wildlife Agencies, Washington, D.C., and Advisor to the Jack H. Berryman Institute for Wildlife Damage Management at Utah State University, Logan, Utah.



Jack H. Berryman, 1995 Aldo Leopold Award recipient

In diverse arenas, Mr. Berryman has made enormous contributions to wildlife conservation and management. He was responsible for reorganizing and redirecting the predator control program of the Bureau of Sport Fisheries and Wildlife, provided vision and leadership in developing a national program of extension education for the U.S. Fish and Wildlife Service, and his efforts have helped deflect the Sagebrush Rebellion, establish and implement the North American Waterfowl Management Plan, resolve the lead/steel shot issue, obtain new funds for fish and wildlife programs during times of reduced federal budgets, and strengthen the conservation dimensions in federal agriculture programs. He also served on numerous state, regional, and national committees, councils, and task forces dealing with critical natural resource issues.

He was educated at Westminster College in Salt Lake City and his career began with an M.S. degree from the University of Utah and professional employment with the Utah Fish and Game Department as a Big Game Biologist. In 1950 he joined the Bureau of Sport Fisheries and Wildlife as Assistant Federal Aid Supervisor in Albuquerque and then Minneapolis. From 1959 to 1965 he returned

IN THIS ISSUE

- **Draft Position Statement on Livestock Grazing**
- **International Congress Proceedings**
- **Oil Pits Elimination Team Receives Award**

Continued on Page 40

Jack Berryman... Continued from Front Page

to his native Utah as Associate Professor and Wildlife Extension Specialist at Utah State University. His career resumed with the U.S. Fish and Wildlife Service in Washington, DC, until his retirement in 1979. There he served as Chief, Division of Wildlife Services; Acting Deputy Associate Director for Wildlife; Chief, Division of Technical Assistance; and Chief, Office of Extension Education. But upon retirement from the Service, Mr. Berryman immediately became the Executive Vice President of the International Association of Fish and Wildlife Agencies where he served for 10 years.

Mr. Berryman served as president of The Wildlife Society in 1964-65. After receiving the award, Mr. Berryman wished to convey the following message to members of the Society and others: "I am deeply appreciative of and humbled by receiving this most coveted honor. I am profoundly grateful to many, many people over a very long period of time. Thank you very much."



President Erik Fritzell presents award to Jack H. Berryman

Call for Nominations - C.W. Watson Award

Nominations are being sought for the Clarence W. Watson Award. This annual award will be presented at the Southeastern Association of Fish and Wildlife Agencies Meeting in Nashville in September 1995. The Clarence W. Watson Award is the most prestigious award given in the Southeast and is presented to the career individual who, in the opinion of the Award Committee, has made the greatest contribution to wildlife or fish conservation during the previous year or years. Consideration includes research, administration, law enforcement, I&E, wildlife management, fish management, teachers, and students. Preference is given to nominees in the Southeast. The award is presented jointly by the Southern Division of the American Fisheries Society, the Southeastern Section of The Wildlife Society, and the Southeastern Association of Fish and Wildlife Agencies. Nominations should include complete information on the candidate's background, i.e., education, training, noteworthy accomplishments, and particularly, the achievement(s) for which the nomination is being made, application in the state and region concerned, time involved, and the amount of aid received from associates. As much information as possible should be furnished to aid the committee in making the selection. Send nominations to: **Susan Shipman, Chairperson, Coastal Fisheries, GA DNR, 1 Conservation Way, Brunswick, GA 31523-8600, (912) 262-3110, as soon as possible, but not later than July 31, 1995.**

Wildlife Ecology Software Available on the Internet

The Illinois Natural History Survey has opened an internet accessible distribution site for wildlife ecology related software. Software currently found at this site includes home range programs, population-level analysis programs, and some general statistical packages. Some programming language code is also available (i.e. Charles Krebs' companion statistical programs from *Ecological Methodology*). Most was written for PC-based platforms, but some may be compiled on other platforms. We solicit programs within the following categories for inclusion at this site: habitat analysis, diversity indices, simulation, general population dynamics, capture/recapture, survival, energetics, statistics (commonly used in wildlife ecology research), home range, telemetry, data collection, and other wildlife ecology related categories that have not occurred to us. The site may be accessed via FTP at [nhsbig.inhs.uiuc.edu](ftp://nhsbig.inhs.uiuc.edu) and via World Wide Web at <http://nhsbig.inhs.uiuc.edu/>; dial-up access is not supported. This software site continues to develop. As other similar sites come online, we would appreciate being made aware of them. Any input should be sent to **Robert H. Diehl or Ronald P. Larkin, Illinois Natural History Survey, 607 E. Peabody Dr., Champaign, IL 61820; 217/244-0371; email: admin@nhsbig.inhs.uiuc.edu.**

Preliminary Notice 7th North American Caribou Conference

The 7th North American Caribou Conference will be held in Thunder Bay, Ontario, August 19-21, 1996. The theme is "Putting Caribou Knowledge into an Ecosystem Context." If you attended the 6th North American Caribou Conference you are already on the mailing list. If you want to be added to the mailing list for conference information, send your name, mailing address, E-mail address, phone number, and fax number to: **Gerald Racey (RACEYGE)@EPO.GOV.ON.CA, Ontario Ministry of Natural Resources, RR#1, 25th Sideroad, Thunder Bay, Ontario, Canada P7C 4T9, or call 807/939-3102; FAX 807/939-1841 for more details.**

Wetland Identification and Delineation Course

Wetland Resources will be offering a wetland identification and delineation course based on the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual and patterned after the Corps' Regulatory IV training course. This course meets the training requirements needed prior to taking the Corps' Wetland Delineation Certification exam. Sessions will be held in Mobile, Alabama on June 23-25, 1995 and July 14-16, 1995. Class size is limited to 15 participants per session. For further information, contact: **Gena Latham, Wetland Resources, P.O. Box 2694, Daphne, AL 36526; 334/626-3408**

Call for Proposals Grants for Field Research

The Center for Field Research is a private, nonprofit organization established in 1973 to promote significant scholarship and to improve communication between scholars and the public. The following list indicates the breadth of possible topics: Regional and international problems such as deforestation, global warming, sea-level change, desertification, acid rain, population pressures, and food security issues; water resources, polluted and pristine; alternative energy and sustainable agriculture programs; public health problems in developing and developed countries; cultural property and ethnic diversity; biodiversity and the loss of species. Grants range from US \$10,000-\$100,000 annually, averaging \$20,000. Proposals are accepted and reviewed year round. For more information, please contact: **Dr. Andrew Hudson, Acting Executive Director, The Center for Field Research, 680 Mt. Auburn St., Box 403, Watertown, MA 02272, 617/926-8200; FAX 617/926-8532; Email: ahudson@earthwatch.org.**

Colorado Bird Observatory International Workshop: West Mexico for Land Managers

West Mexico for Land Managers, a workshop sponsored by the Colorado Bird Observatory is designed to introduce U.S. land managers and foundations to the birds, habitats, management areas, and land managers of western Mexico. Western Mexico provides winter habitat for the majority of western North America's migratory songbirds. This same area contains most of Mexico's endemic birds species, 25% of which are considered endangered. Many bird species within the region are declining, but opportunities for international cooperative conservation initiatives are not being pursued. The workshop will provide pertinent information on the conservation and management issues of the region, it will cover programs being proposed and implemented by the Mexicans, and it will give managers and foundation representatives the opportunity to begin establishing the personal connections with Mexicans that are vital to successful and meaningful communication. The workshop is being offered on two dates: November 12 - 19, 1995 and January 14 - 21, 1996. For more information please contact: **Colorado Bird Observatory, 13401 Piccadilly Road, Brighton, CO 80601; (303) 659-4348; FAX (303) 659-5489.**

Ecosystem Management: From Theory to Practice A Workshop for Resource Managers

A workshop addressing ecological issues relating to "ecosystem management" will be held at Humboldt State University on 24-28 July 1995. The workshop is particularly targeted for natural resource managers attempting to balance familiar land-use conflicts with new mandates, like the President's Forest Plan, that involve considering entire ecological regions. The objectives are to introduce participants to the theoretical concepts and empirical information pertinent to "ecosystem management" arising from the emerging academic discipline of conservation biology. Through lectures, discussion sessions, and computer applications, the workshop hopes to bridge some gaps between theory and application. Lectures will be presented by the workshop organizers as well as other authorities. For information, contact: **Dr. Steve Zack (916/223-4899) or Dr. T. Luke George (707/826-3430), Dept. of Wildlife, Humboldt State University, Arcata, CA 95521.**



PHOTO CONTEST

UPDATE
TWS Second
Annual
Conference



As announced in the March-April issue of *The Wildlifer*, a photo contest will be held for attendees at the Second Annual TWS Conference in Portland this September. Plan to participate in this event by entering the contest, attending the exhibit, and voting for the winners.

Contest Rules

- A. Contest is open to anyone registered for the conference
- B. Photos must be taken by the entrant
- C. Color or black and white prints will be accepted
- D. Print size: **5" x 7" minimum - 16" x 20" maximum**
- E. Entries must be mounted on stiff backing or matted (or both)
- F. Photographer's name must not appear on the front
- G. Entries must fit into one of the five following Classes:
 1. **Landscape - Habitats**
 2. **Wild Birds and Mammals**
 3. **Other Wildlife**
 4. **People and Projects**
 5. **Humor** (in Class 2, 3, or 4)
- H. Contestants are limited to five total entries, that can be all one Class or any combination of Classes
- I. Entry fee is \$1 per photo (to help cover contest costs)
- J. Judging by conference attendees for 1st, 2nd, and 3rd place in each Class and one conference favorite
- K. Winners will receive ribbons and prizes

Entries sent by mail should be received by September 5. Send photos to, or for more information contact: **Richard F. Davis, USFS, 46375 Highway 58, Westfir, OR 97492; 503/782-2291 or 782-4710.**

TWS DRAFT POSITION STATEMENT LIVESTOCK GRAZING ON WESTERN RANGELANDS

The Wildlife Society Council intends to consider and adopt a position statement on Livestock Grazing on Western Rangelands at its September 1995 meeting in Portland, Oregon. Council has reviewed the following position statement and now submits it to the membership for review and comments. Comments must be received by August 1, 1995, to be considered in any revision of this draft. Send comments to: Position Statements, TWS, 5410 Grosvenor Lane, Bethesda, MD 20814-2197.

HISTORY AND BACKGROUND

Wildlife and livestock have mutually occupied grazing lands of the western United States for over 130 years. Early in this period, livestock grazing of rangelands was essentially uncontrolled. Today, livestock are no longer uncontrolled, but grazing of public lands has been such a pervasive biological force that speculation about the effects is a continuing controversy.

Federal lands sustain an abundance and diversity of fish and wildlife. Across the West, federal land provides a permanent or seasonal home for more than 3,000 species of mammals, birds, reptiles, fish, and amphibians (USDI 1994). There are more than 1,000 federally listed threatened, endangered and candidate plant and animal species on these lands. These lands provide habitat to 80% of the nation's elk population. There are over 206,000 kilometers of waterways and approximately 810,000 hectares of lakes on National Forest System lands that provide much of the riparian habitats on public lands in the west.

Domestic livestock grazing is permitted on much of the nearly 11 million hectares of federal rangeland administered by the Bureau of Land Management and the Forest Service. This land is concentrated in 11 states west of the 104th meridian (Torell et al. 1992).

In 1987, there were 31.6 million head of beef cows in the United States (Torell et al. 1992 citing 1987 census of agriculture). Of this total, 6.9 million head (22%) were produced in the 11 western states. It was further estimated (Torell et al. 1992) that an estimated 4.7 million head of beef cattle were produced in the 11 western states on ranches with public land grazing allotments. This is 69% of the cattle produced in the 11 western states and 15% of the total 31 million head produced in the United States.

In addition, there were approximately 11 million head of sheep and lambs produced in the United States in 1987 (Torell et al. citing 1987 census of agriculture). About 50% of these animals were produced in the 11 western states. It is further estimated that 4.9 million head (88%) of the sheep and lambs produced in the 11 western states spend time on federal lands (Torell et al. 1992). This equates to 44% of the total United States production of sheep. In 1990, approximately 15.4 million animal unit months (AUM's) were permitted on public lands in these 11 states (Torell et al. 1992). This represents about 3.8% of total AUM's in the United States.

Livestock and livestock grazing are significant components of rangeland wildlife habitats. Long-term and continuous livestock grazing has especially altered the character and composition of western ecosystems. The historical aspects of livestock grazing and its effect on rangeland soils and vegetation have been summarized by several authors (Hormay 1970, Branson 1985, Savory 1988, SRM Public Affairs Committee 1989).

Direct alteration of the habitat can take the form of changes in plant community composition by reducing species that are palatable, and increasing less palatable species. Fleischner (1994) discussed the larger scale ecological costs of livestock grazing. He concluded the ecological costs could be summarized as 1) alteration of species

composition, 2) disruption of ecosystem function, and 3) alteration of ecosystem structure. Specific livestock impacts on wildlife populations have been categorized by some authors as direct, indirect, and operational (Mackie 1978), or as direct competition and indirect biotic effects (Wagner 1978).

Generally, species richness or diversity is directly related to structural diversity of the vegetative community (Knopf 1985, Bock and Webb 1984). Season of grazing has greater impact upon the diversity of species than intensity of grazing (Wiens 1973). Wildlife species that are migratory and adaptable to a large amplitude of habitats are less directly impacted by livestock grazing than less mobile species directly dependent on narrowly defined habitats limited in quantity. Species of wildlife depending on riparian habitats therefore are the most directly impacted by livestock grazing. Riparian ecosystems are sensitive to virtually all grazing systems tested (Sedgwick and Knopf 1987). Riparian zones are especially important to wildlife as they are critical sources of regional diversity (Knopf 1985).

Competition for food and space between wild and domestic ungulates has been a major point of controversy on western rangelands for many years. This controversy has centered around uses of limited rangeland during winter periods. Competition between elk and cattle in Jackson Hole Wyoming was noted as early as 1890 (Preble 1911), and numerous studies reporting forage competition between domestic livestock and wild ungulates have been conducted and reported (McMahan 1964, Wagner 1978, Clary and Beale 1983, Austin and Urness 1986, Dragt and Havstad 1987). A measure of the importance of competition between domestic herbivores and ungulates on rangelands is the large number of models that have been developed to allocate forage on rangelands (Hart 1980, Cooperrider and Bailey 1984, Van Dyne et al. 1984, Jensen 1984, Troxel et al. 1991). In more recent times, awareness of the importance of summer habitat for wild ungulates has increased, and concerns about livestock grazing have broadened.

Impact of grazing on bird species has been investigated widely (Brown 1978;1982, Bock and Webb 1984, Duebber et al. 1986, Knopf et al. 1988). Residual plant cover remaining from the previous growing season is important to breeding birds because this plant material is used for concealing nests. In studies of waterfowl, results suggest that light or rotational grazing by livestock is preferred over moderate or heavy grazing (Gjersing 1975, Duebber et al. 1986).

Livestock grazing and related activities can also impact biological diversity by altering local and regional plant and animal species assemblages. Ecological keystone species such as the prairie dog (*Cynomys* spp.) create habitats for many vertebrate species. However, prairie dogs have declined to only 2% of their original numbers primarily because of prairie dog control for livestock management (Miller et al 1990). Today at least four of the associated native vertebrates with prairie dog populations in prairie ecosystems have declined to the point of threatened or endangered status (Knopf 1992).

Predator control on rangelands has also been a contentious aspect of livestock grazing management. As an example, concern over possible livestock predation within the ranching community has threatened plans

to reestablish wolves in various locations in the west. Grazing management that emphasizes non-lethal protection from predators such as guard dogs (Green and Woodruff 1988; Andelt 1992) may be effective and should be pursued. Fencing used to control livestock may also be detrimental to movement of many wildlife species. Fence designs that allow movement of wild animals should be encouraged.

Disease transmission between domestic livestock and wildlife operate bilaterally and is of considerable concern in some areas. Brucellosis and tuberculosis exchanges among elk, bison, and cattle are two diseases receiving increased attention on western rangelands. Pneumonia outbreaks in bighorn sheep occupying areas near or shared with domestic sheep has heightened this concern (Foreyt and Jessup 1982; Onderaka and Wishart 1988). Interspersed land ownerships, wild animal mobility, inadequate methodologies and money for disease monitoring complicate this issue considerably.

Impacts to western habitats from grazing have been difficult to quantify; however the U.S. Government Accounting Office has reported on riparian habitats and grazing on public lands (USGAO 1988 and 1991). Investigations into rangeland conditions on public grazing lands administered by the Forest Service and the Bureau of Land Management showed that over 50 % were in poor or fair condition (USGAO 1991). In Colorado, for BLM lands, 51 % of the area along 8,500 kilometers of perennial streams was in poor condition due to overgrazing and 39% was in fair condition. In Arizona, riparian areas were less than satisfactory and 80% of the riparian area inventoried in Idaho was degraded. In four BLM districts in Nevada, 68% to 93% of the riparian habitat was in poor to fair condition (USGAO 1988).

If carefully and properly managed, not all aspects of livestock grazing are detrimental to wildlife habitat. The open space maintained by western ranching enterprises is important to many wildlife species that depend upon large tracts of undeveloped land particularly in areas attractive for human housing and recreational development. In addition, maintenance of water rights for ranch operations is superior to the alternative of selling water rights from the land for human developments.

Several authors have published information suggesting that some historic conflicts between livestock and wildlife can be resolved by implementing planned grazing management strategies. Bryant (1982) reported that managed grazing systems generally had less impact on wildlife when compared to continuous yearlong or season-long grazing. Austin and Urness (1986) studying mule deer diets and nutrition in summer, concluded that grazing effects of cattle on mixed browse communities in the Great Basin, were more beneficial when intensity of cattle use was controlled.

Benefits have also been reported for grazing systems designed around the habitat, and biological and behavioral needs of specified wildlife species. Much of this work involves elk as reported by Anderson and Scherzinger (1975), Frisina and Morin (1991), Frisina (1991), and Alt et al. (1992). In addition, Jourdonnais and Bedunah (1990) indicated grazing by domestic livestock can improve the accessibility, palatability or nutritive quality of forage plants preferred by several wild herbivores.

Grazing systems can also indirectly be a positive influence on waterfowl populations on western ranges when small impoundments are added to provide livestock water (Gjersing 1975, Lokemoen 1973).

Cattle are also helpful when they graze hybrid cattail (*Typha latifolia* x *glauca*) a universal problem in the fresh to slightly brackish wetlands (Kantrud 1990). A seasonal, short-duration grazing system also appeared compatible with breeding densities of selected migratory

species (Sedgwick and Knopf 1987). Brown (1978) reported that a well considered grazing management plan could perpetuate and even increase populations of grassland gamebirds by the interspersing of suitable and sizeable areas of ungrazed climax grassland within pastures managed in a successional grassland stage, by grazing or burning.

POSITION STATEMENT

The Wildlife Society believes that rangelands with stable soils supporting a wide diversity of native plant species, are critically important to sustaining wildlife diversity and productivity in the American West. Scientifically informed management plans and practices are key to restoring lands degraded by many years of grazing that damaged soils, water, and plant diversity. An ecosystem approach to rangeland management as described in the Environmental Enhancement Alternative of the EIS prepared for Rangeland Reform '94 (USDI 1994) is an appropriate starting point for effective restoration and conservation of the nation's rangelands.

This approach accommodates multiple uses and provides opportunity for improved wildlife-livestock interactions while restoring important resource functions and values that will help sustain viable biological and human communities. It also includes provision for declaring certain lands unsuitable for livestock grazing, which is a critical component of rangeland grazing plans.

Considering this background and importance of western rangelands to wildlife, it shall be the policy of The Wildlife Society to:

- Support grazing management that (a) is informed by scientific studies, considers all rangeland resources, trends and interactions, as well as the broad spectrum of human values and needs; (b) provides for adaptive management and continued improvement of programs and practices as new knowledge and understanding of rangeland ecosystems become available; (c) includes strong provisions and criteria for monitoring, and (d) involves effective coordination and cooperation among agencies and affected publics.
- Support grazing management that promotes heterogeneous landscapes comprised of diverse mosaics of plant and animal communities, including native, late successional habitats.
- Support grazing management that is based on grazing plans consistent with local ecosystem characteristics and with habitat objectives for wildlife species.
- Support grazing management that will meet conservation objectives for habitats and populations of threatened and endangered wildlife and plant species.
- Support grazing practices that recognize and guard against the potential for disease transmission between domestic livestock and wildlife.
- Support management to restore and utilize native plant species; the use of exotic plant species, while having conserved soils in some areas in the past and thus preserved future restoration options, should only be used when native species options are not feasible.
- Support implementation of livestock grazing systems that can improve and restore western rangeland ecosystems.
- Support vegetation manipulation alternatives to grazing such as burning or mowing to facilitate rangeland restoration.
- Support agencies in developing and implementing objective and quantifiable criteria for designating lands unsuitable for livestock grazing based on soil productivity, forage distribution and abundance, and other factors.

- Support interagency cooperation in grazing management decisions using inter-disciplinary approaches and increased coordination between public and private sectors.
- Support adoption of public grazing fees that adequately cover public costs for administering and restoring rangeland ecosystems.
- Support research and development of cost effective, long-term habitat monitoring and evaluation procedures for western rangelands.
- Support research evaluating effects of wild herbivore grazing on western rangeland ecosystems.
- Support research on rangeland restoration practices designed to improve degraded plant communities in the West.
- Support research and management that emphasize non-lethal protection of livestock from predators.
- Support further scientific training and career development of professional managers involved in grazing management decisions.
- Support development of strong professional and public education programs that clearly articulate the goals and outcomes of grazing management.

LITERATURE CITED

- Alt, K.L., M.R. Frisina, and F.J. King. 1992. Coordinated management of elk and cattle, a perspective-Wall Creek Wildlife Management Area. *Rangelands*. 14(1):12-15.
- Andelt, W.F. 1992. Effectiveness of livestock guarding dogs for reducing predation on domestic sheep. *Wildl. Soc. Bull.* 20:55-62.
- Anderson, E.W., and R.J. Scherzinger. 1975. Improving quality of winter forage for elk by cattle grazing. *J. Range Manage.* 28(2):120-125.
- Austin, D. D., and P.J. Urness. 1986. Effects of cattle grazing on mule deer diet and area selection. *J. Range Manage.* 39:18-21.
- Bock, C.E., and B. Webb. 1984. Birds as grazing indicator species in southeastern Arizona. *J. Wildl. Manage.* 48:1045-1049.
- Branson, F.A. 1985. Vegetation changes on western rangelands. Society for Range Manage. *Range Monog.* No. 2. 76p.
- Brown, D.E., 1978. Grazing, grassland cover, and gamebirds. *Trans. North Amer. Wildl. and Nat. Resour. Conf.* 43:477-485.
- Brown, R.L. 1982. Effects of livestock grazing on Mearns quail in southeastern Arizona. *J. Range Manage.* 35:727-732.
- Bryant, F.C., 1982. Grazing, grazing systems, and wildlife. Technical article T-9-297 of the College of Agricultural Sciences, Texas Tech Univ. Lubbock. 13p.
- Clary, W.P., and D.M. Beale. 1983. Pronghorn reactions to winter sheep grazing, plant communities, and topography in the Great Basin. *J. Range Manage.* 36:749-752.
- Cooperrider, A. Y., and J.A. Bailey. 1984. A simulation approach to forage allocation. pp. 525-599 in *Developing Strategies For Rangeland Management: A Report*. National Research Council. National Academy of Sciences. Westview Press. Boulder Co.
- Dragt, W.J, and K.M. Havstad. 1987. Effects of cattle grazing upon chemical constituents within important forages for elk. *Northwest Sci.* 61:70-73.
- Duebbert, H.F., J.T. Lokemoen, and D.E. Sharp. 1986. Nest sites of ducks in grazed mixed-grass prairie in North Dakota. *Prairie Nat.* 18:99-108.
- Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. *Cons. Biol.* 8: 629-644.
- Foreyt, W.J., and D.A. Jessup. 1982. Fatal pneumonia of bighorn sheep following association with domestic sheep. *J. Wildl. Dis.* 18:163-169.
- Frisina, M.R. 1991. Cows?! on riparian areas?! pp. 111-116 in *Proc. of the Riparian Workshop*, Univ. Wyoming. Wyoming Coop. Fish and Wildlife Res. Unit, Laramie.
- Frisina, M.R., and F.G. Morin. 1991. Grazing private and public land to improve the Fleece elk winter range. *Rangelands* 13 (6):291-294.
- Green, J.F. and R. A. Woodruff. 1988. Breed comparisons and characteristics of use of livestock guarding dogs. *J. Range Manage.* 41: 249-251.
- Gjersing, F.M. 1975. Waterfowl production in relation to rest-rotation grazing. *J. Range Manage.* 28:37-42.
- Hart, R.H. 1980. Determining a proper stocking rate for a grazing system. pp 49-64 in K.C. McDaniel and C. Allison eds. *Grazing Management Systems for Southwest Rangelands: A Symposium*. New Mexico State Univ. Las Cruces.
- Hormay, A. L. 1970. Principles of rest-rotation grazing and multiple use land management. U.S. Forest Service Training Text No. 4 (2200), U.S. Gov. Printing Office, 0-385-056. 25pp.
- Jensen, J.C. 1984. Perspectives on BLM forage allocation: calculations with special reference to the limiting factor approach. pp 473-490 in *Developing Strategies For Rangeland Management: A Report*. National research Council. National Acad. of Sciences. Westview Press. Boulder Co.
- Jourdonnais, C.S., and D.J. Bedunah. 1990. Prescribed fire and cattle grazing on an elk winter range in Montana. *Wildl. Soc. Bull.* 18:232-240.
- Kantrud, H.A. 1990. Effects of vegetation manipulation on breeding waterfowl in prairie wetlands: a literature review. Pages 93-123 in K.E. Severson, tech. coord. U.S. For. Serv. Gen. Tech. Rep. RM-194.
- Knopf, F.L., 1985. Significance of riparian vegetation to breeding birds across an altitudinal cline. pp 105-111 in R.R. Johnson, C.D. Ziebell, D.R. Patton, P.F. Ffolliott, and F.H. Hamre, tech coords. *Riparian ecosystems and their management; reconciling conflicting uses*. U.S. For. Serv. Gen. Tech. Rep. RM-120.
- Knopf, F.L., 1992. Faunal mixing, faunal integrity, and the biopolitical template for diversity conservation. *Trans. N. Amer. Wildl. and Nat. Resources Conf.* 57:330-342
- Knopf, F.L., J.A. Sedgwick, and R.W. Cannon. 1988. Guild structure of a riparian avifauna relative to seasonal cattle grazing. *J. Wildl. Manage.* 52:280-290.
- Lokemoen, J.T. 1973. Waterfowl production on stock-watering ponds in the northern plains. *J. Range Manage.* 26:179-184.
- Mackie, R.J. 1978. Impacts of livestock grazing on wild ungulates. *Trans. North Amer. Wildl. Nat. Resour. Conf.* 43:462-476.
- McMahan, C.A. 1964. Comparative food habits of deer and three classes of livestock. *J. Wildl. Manage.* 28:798-808.
- Miller, B., C. Wemmer, D. Biggins, and R. Reading. 1990. A proposal to conserve black-footed ferrets and the prairie dog ecosystem. *Environ. Manage.* 14:763-769.
- Onderaka, D.K., and W. D. Wishart. 1988. Experimental contact transmission of *Pasteurella haemolytica* from clinically normal

domestic sheep causing pneumonia in rocky mountain bighorn sheep. *J. Wildl. Dis.* 24:663-667.

Preble, E.A. 1911. Report on condition of elk in Jackson Hole, Wyoming in 1911. Bull. 40. Washington, D.C.: USDA Bur. Biol. Surv. 23pp.

Savory, A. 1988. *Holistic Resource Management*. Island Press. 564pp.

Sedgwick, J.A., and F.L. Knopf. 1987. Breeding bird response to cattle grazing of a cottonwood bottomland. *J. Wildl. Manage.* 51:230-237.

Society for Range Management Public Affairs Committee, 1989. *Assessment of Rangeland Condition and Trend in the United States*. 12pp.

Torell, L.A., J.M. Fowler, M.E. Kincaid, and J.M. Hawkes. 1992. The importance of public lands to livestock production in the U.S. Range Improvement Task Force, Agric. Exp. Sta., Coop. Ext. Serv., Rept. No. 32, College of Agric. and Home Econ., New Mexico State Univ., Las Cruces. 21 pp.

Troxel, T.R., L.D. White, and T.G. Welch. 1991. Planning methods for effective forage allocations. *J. Animal Sci.* 69 (supl). 468-469.

U.S. Department of Interior. 1994. *Rangeland Reform '94-draft Environmental Impact Statement*. Bureau of Land Management, Washington, D.C.

U.S. General Accounting Office. 1988. *Public rangelands: some riparian areas restored but widespread improvement will be slow*. U.S. Government Accounting Office, GAO/RCED-88-105, Washington, D.C.

U.S. General Accounting Office. 1991. *Rangeland management: Comparison of rangeland condition reports*. GAO/RCED-91-191. U.S. General Accounting Office, Washington, D.C.

Van Dyne, G.M. P.T. Kortopates, and F.M. Smith. 1984. *Quantitative frameworks for forage allocation*. PP 289-416 in *Developing Strategies For Rangeland Management: A Report*. National Research Council. National Academy of Sciences. Westview Press. Boulder Co.

Wagner, F.H. 1978. *Livestock grazing and the livestock industry*. pp 121-145 in H.P. Brokaw, ed. *Wildlife and America*. Council on Environmental Quality. U.S. Gov. Printing Office, Washington, D.C.

Wiens, J.A. 1973. *Pattern and process in grassland bird communities*. *Ecol. Monog.* 43:237-270.

Please send comments by **August 1, 1995**, to Position Statements, TWS, 5410 Grosvenor Lane, Bethesda, MD 20814-2197.

Professional Development Program Update

The Wildlife Society is pleased to add the following individuals to the list of those who have completed the requirements of the Professional Development Program and have been awarded a Certificate of Recognition. These individuals completed at least 150 hours of wildlife or wildlife-related coursework and professional development during a 4-year period.

William Bergh - Maitland, MO
Gary Allen Burns - Crockett, TX
Colin G. Leingang - Naches, WA

Wayne R. Marion - Olympia, WA
Robert J. Schmidt, Jr. - Reno, NV
Tom Swan - Mound City, KS

Those who participate in and fulfill the requirements of the program demonstrate a commitment to support and enhance professionalism through continuing efforts in learning and professional development.

Information and applications for the Professional Development Certificate may be obtained by contacting: **Executive Director, TWS, 5410 Grosvenor Lane, Bethesda, MD 20814-2197.**

For Sale

JWM Vols. 28-57 (1964-1993) complete. **W. Monos.** and **WSB.** Complete set **Proc. S.E. Assn. of Game and Fish Comm.** Best offer for one or both. **Carlton Chappell, 2031 Hill N Dale North, Tallahassee, FL 32311; 904/878-3955.**

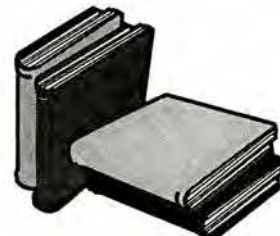
Wildlife Monographs 1-74, JWM 1937-1977 (24 mixed issues). **California Fish and Game Journal 1950-62** (52 issues) plus **4 Deer Bull. & The Auk 1951-54** (11 issues). \$60.00 plus shipping (90 lbs). **Bob Fischer, 1202 NE 110 St., Vancouver, WA 98685; 360/573-6004.**

JWM Vols. 33-44 complete. **Wildlife Monographs** issues 17-74 complete. Best offer plus shipping. Will also consider donation to educational institution or bona fide conservation organization for cost of shipping only. **Doug Harr, P.O. Box 65, 1223 Dement Street, Larchwood, IA 51241; 712/477-2798.**

WSB complete set except missing Vol. 1, No. 4 (1973); **Wildlife Review**, 1956 to present, complete except missing 1956 No. 86 & 1975 No. 159; **Wildlife Abstracts Bibliographies & Indexes**, 1935-1984, complete. Best offer plus shipping. Upon request a list of 371 wildlife research/management & natural history publications that are for sale. **Gerry Atwell, HC-81, Box 350, Liberty, ME 04949.**

Wild Turkey References: Schorger, A.W., 1966. **The wild turkey, its history and domestication.** Univ. of Oklahoma Press, Norman. 625 pp.; and Hewitt, O.H., ed. 1967. **The wild turkey and its management.** The Wildlife Society, Washington, DC, 589 pp. Both in excellent condition without dust jackets. \$40.00 each ppd. **George Hubert, Jr., P.O. Box 728, Hinckley, IL 60520; 815/286-7434.** Part of proceeds to TWS Furbearer Working Group.

FREE to University in Central or South America: 20 issues (Vols. 4-8, 1990-94) of *Conservation Biology*. I can help with postage if necessary. **Tom Paragi, Box 108, Galena, AK 99741**



REPORTS FROM SECTIONS, CHAPTERS, WORKING GROUPS, COMMITTEES, AND MEMBERS

Ohio Chapter Gearing Up for 1996 TWS Annual Conference

The 1996 TWS Conference Steering Committee Co-Chairs attended the TWS meeting at the North American in Minneapolis to report on progress on the 3rd Annual Conference which is scheduled for Cincinnati on 1-6 October, 1996. Nearly all steering sub-committee chairs have been filled and a Program Chairperson was identified and tentatively agreed to serve.

We contacted selected members of Congress on two issues: support for implementing State Technical Committees as required by the 1990 Farm Bill and continued funding for the Cooperative Fish and Wildlife Research Units in FY 1996. In addition we registered our concern with the members of the Agriculture and Natural Resources Committee of the Ohio House of Representatives over legislation that would have removed management capability from the State Division of Forestry on one of our State Forests. Finally, we identified several desired revisions in the chapter bylaws. The membership will consider these at the next annual meeting.

Montana Chapter Copublishes New Journal

The Intermountain Journal of Sciences will begin publication during Spring 1995. Manuscripts accepted for this initial, single issue volume are primarily from presentations at 1994 annual meetings of the co-publishers--*Montana Academy of Sciences, Montana Chapter of The Wildlife Society, and The Montana Chapter of The American Fisheries Society*. The co-publishers welcome original manuscripts with a regional focus dealing with the sciences of biology/ecology, environmental engineering, mathematics/statistics, pharmacology/toxicology and the physical and social sciences. The editorial board intends to expand publication to a quarterly, depending upon available funding and numbers of manuscripts received. IJS provides an opportunity to publish papers presented at annual meetings of the co-sponsoring organizations that will replace printed proceedings of the respective annual meetings. Editorial policy requires that presenters at annual meetings of the co-sponsors be given priority in allocation of space and time of publication. However, the editorial board encourages submission of other manuscripts related to research and application of the sciences in the intermountain region without regard to the author's affiliation.

Annual subscriptions to the journal are: Students \$6, Regular \$15, and Library \$25. Life Member is \$150 and Patron \$25 minimum. Page charges for accepted manuscripts are \$25 per printed page. Manuscripts and inquiries may be sent to John P. Weigand, Managing Editor, at the following address: IJS, P.O. Box 3014, Bozeman, MT 59772-3014. Telephone inquiries

may be directed to John at 406/586-7578 or Editorial Board Chair, Terry Lonner 406/994-6361.

Central Mountains and Plains Section Meeting

The Nebraska Chapter of The Wildlife Society will host the Central Mountains and Plains Section meeting on 18 and 19 August 1995 at Fort Robinson State Park, Crawford, Nebraska. The annual meeting will be held in conjunction with a symposium, Biodiversity on Native Rangelands to be held on 17 August and sponsored by Chadron State College and the U.S. Forest Service. The symposium will feature selected speakers. The technical session of the CMPS meeting is open to general papers on wildlife management and research. For abstract information contact Len McDaniel at Fort Niobrara-Valentine NWR Complex, HC 14 Box 67, Valentine, NE 69201; 402/3876-3789. For meeting information contact Mark Lindvall at the above address or 402/376-3789.

Idaho Chapter Active on Various Fronts

The Idaho Chapter of The Wildlife Society held its annual meeting at Idaho Falls, March 9-10. The highlight of the meeting was a special, one-half day symposium on Wolf Recovery. Interest as well as controversy is running high on this issue in Idaho, Montana, and Wyoming. The Idaho Chapter activated its Conservation Affairs Committee with the charge to increase chapter visibility and influence on wildlife issues in the state. The chapter also expanded its university scholarship program and created a new award for Special Recognition of an individual, group, or organization that makes significant contributions to wildlife conservation or management.

International Wildlife Management Working Group Establishes Electronic Discussion Group on Internet

The International Wildlife Management Working Group has established an electronic discussion group or "listserv" called Wildlife on the Internet. It is coordinated by John Sidle (jsidle@unlinfo.unl.edu). The purpose of the discussion group is to explore international wildlife management issues and to reach TWS members and non-members throughout the world. An immediate objective is to receive advice and suggestions about the contribution the International Wildlife Management Working Group can make to wildlife management. Improving worldwide communications among TWS members and communicating the mission of TWS is a major objective of the Working group and the Internet should facilitate this objective. Here's how to subscribe to *Wildlife*: send only the following message to listserv@unl.edu: subscribe wildlife firstname lastname (for example: subscribe wildlife Sarah Williams);

leave the subject line blank; after a short time you will receive a welcome message with further instructions. If you have any problems contact jsidle@unlinfo.unl.edu.

Gordon R. Batcheller, Furbearer Unit Leader at the New York State Department of Environmental Conservation's Delmar Wildlife Resources Center, received the New York Chapter's Outstanding Professional Award.

Patrick W. Brown, formerly Department Head of Biology and Chemistry at Lake Superior State University, is the new Director for the Center for Wildlife Ecology with the Illinois Natural History Survey, Champaign, IL.

Brian D. Moyer, a student at Murray State University, was the recipient of the Best Student Paper Award given at the annual meeting of the Kentucky Chapter of The Wildlife Society. The title of his presentation was "A Survey of Bat Species in Tennessee Valley Authority's Land Between the Lakes."

Lee Nelson was named the recipient of the Kentucky Chapter's Lauren E. Schaaf Memorial Award. The award is given to recognize an individual who has made a significant contribution to the profession of wildlife management in Kentucky.

Allen J. Schacht, recently retired from the USDA Forest Service as Northeast Area Director, State and Private Forestry, received the 1994 National Association of Conservation District's Professional Service Award.

Thomas Warren, Colorado Springs has been elected Chair of the Board of Directors of the National Wildlife Federation.

Michael D. Zagata is the new Commissioner of the New York State Department of Environmental Conservation.

Farm Bill Technical Review...Continued from Page 39

- 3) Swampbuster and the Wetland Reserve Program, should be funded fully and strengthened through better enforcement and accurate inventories.
- 4) The sodbuster and conservation compliance provisions, which specify that new, highly erodible land cannot be brought into production without a conservation plan or subsidies will be lost, must be continued and strengthened.
- 5) State Technical Committees should be established and should have significant authority as defined by the 1990 Farm Bill.

Copies of *1995 Farm Bill: Wildlife Options in Agricultural Policy, Technical Review 95-1*, are available to members for \$4.00 each (\$6.00 for nonmembers) from: The Wildlife Society, 5410 Grosvenor Lane, Bethesda, MD 20814-2197; FAX (301) 530-2471.

Oil Pits Elimination Team Wins Special Recognition Service Award

The Wildlife Society recently announced that a Special Recognition Service Award was given the Oil Pits Elimination Team for its substantial contributions to migratory bird conservation. In making the announcement The Wildlife Society president-elect Rollin D. Sparrowe stated, "The work of this team has a continuing and overwhelmingly beneficial impact on migratory bird resources and other wildlife on the North American Continent."

Many thousands of migratory birds and other wildlife were being lost each year in the unprotected oil sludge pits, ponds and tanks in the oil fields of the southwestern U.S. Wildlife is attracted to these facilities which they mistakenly believe to be clean water associated with abundant insect life. Ironically, the carcasses of previously trapped insects and wildlife act as an additional lure.

An intensive program was launched in late 1988 and continued into the 1990's to solve this natural resource dilemma by developing a "spirit of cooperation" with the oil and gas industry and state, federal, and private conservation interests. Oil field regulations were improved, netting was found to be effective in keeping wildlife out of oil facilities and law enforcement was pursued after a reasonable "grace period." As a result, migratory bird resources and other wildlife are now afforded protection from the fatal attraction to oil sludge pits.

Team leader Jim Hubert, U.S. Fish and Wildlife Service-retired, said, "Not only were there tremendous benefits to wildlife resources by the work of this team but the achievement resulted from unselfish teamwork by private, state, and federal people." Included on the team were, **State of Texas:** Wayne Armstrong, Big Spring; Winston Bishop, Fritch; **Department of Justice:** Vickie Howard, Amarillo; Edward Kumiega, Oklahoma City; Roger McRoberts, Lubbock; **Private:** Midge Erskine, Midland, Texas; **U.S. Fish & Wildlife Service:** Jesus Bustamante, Laredo; Robert Germany, Tulsa; Steven Hamilton, Fort Worth; Thomas Healy, Victoria; Thomas Lane, Houston; Robert C. Lee, Jr., Lubbock; Thomas Mason, Corpus Christi; Thomas McKay, Oklahoma City; Kash Schriefer, Monroe, Louisiana; Frank Shoemaker, Mesa, Arizona; Gregory Stover, Tucson, and Team Leader Jim Hubert, Albuquerque, NM.

Ask the Membership Department

Q. How do I qualify for retired membership status?

A. You must have been a member of TWS for 25 years or more and have retired from full-time employment.

Please make your request on your membership renewal form.

MEETINGS OF INTEREST

- June 20-24 **Seventy-Fifth Annual Meeting of the American Society of Mammalogists**, University of Vermont, Burlington, VT. For information contact: Dr. William Kirkpatrick, Department of Zoology, Marsh Life Science Building, Univ. of Vermont, Burlington, VT 05405-0086, 802/656-0453; E-mail: WKILPATR@MOOSE.UVM.EDU
- Aug. 6-9 **Soil and Water Conservation Society's 50th Annual Meeting and Anniversary Celebration**, Des Moines, Iowa. (Soil and Water Conservation Society, 7515 Northeast Ankeny Road, Ankeny, IA 50021-9764, 515/289-2331 or 800-The Soil; FAX 515/289-1227).
- Aug. 12-16 **Second International Martes Symposium**, University of Alberta, Edmonton, Alberta, Canada. (Gilbert Proulx, Alpha Wildlife Research and Management Ltd., 9 Garnet Crescent, Sherwood Park, Alberta, Canada T8A 2R7; 403/464-5228.
- Aug. 13-17 **2nd International Arctic Ungulate Conference**, University of Alaska, Fairbanks, AK. Incorporating the International Reindeer/Caribou Symposium and the International Muskox Symposium. (Program: Dr. David Klein, Chair, Organizing Committee, Alaska Cooperative Fish & Wildlife Research Unit, University of Alaska Fairbanks, Fairbanks, AK 99775-7020. Phone: 907/474-6674; E-Mail fnkrp@aurora.alaska.edu. Registration: Conference and Special events, 104 Eielson Building, P.O. Box 747800, Fairbanks, AK 99775-7800. Phone: 907/474-7800; Fax: 907/474-5592; E-mail: fyci@aurora.alaska.edu. Housing: UAF Housing Office, University of Alaska Fairbanks, P.O. Box 756860, Fairbanks, AK 99775-6860. Phone: 907/474-7247; Fax: 907/474-6423.)
- Aug. 28-31 **4th Annual Governor's Symposium on North America's Hunting Heritage**, Green Bay, WI. (Governor's Symposium Registration, Bureau of Wildlife Management, Wisconsin Dept. of Natural Resources, P.O. Box 7921, Madison, WI 53707).
- Aug. 29-31 **21st International Meeting of the Prairie Grouse Technical Council**, Medora, ND. (Jerry Kobriger, North Dakota Game & Fish Dept., 225 30th Avenue, SW, Dickinson, ND 58601, 701/227-2343; FAX 701/227-2344).
- Sept. 2-6 **World Heritage Tropical Forests: Science for Better Conservation Management Conference**, Cairns, North Queensland. (Conference Secretariat: Tel (07) 369 0477, Fax (07) 369 1512.)
- Sept. 14-16 **The Role of Restoration in Ecosystem Management Symposium**, sponsored by the Northwest Chapter of the Society for Ecological Restoration, Seattle, WA. (Tim White, CH2M Hill, 206/453-5000 or Sono Hashisaki, Springwood Associates, 206/545-1117.)
- Sept. 18-20 **Versatility of Wetlands in the Agricultural Landscape**, Hyatt Regency, Tampa, FL. (Jon Hiler, ASAE, 2950 Niles Road, St. Joseph, MI 49085-9659.)
- Sept. 19-23 **4th Annual National Watchable Wildlife Conference**, Estes Park, CO. (Centennial Conferences, 4800 Baseline Road, Suite A-112, Boulder Colorado 80303; 1-800-499-6336; FAX 303/499-2599).
- Sept. 22-24 **1995 Western Bird Banding Association Meeting**, Rio Grande Nature Center, Albuquerque, NM. (Catherine I. Sandell, 8101 N. Main, Las Cruces, NM 88012. Papers for presentation should be sent to: Thomas Pogson, Alaska Bird Observatory, P.O. Box 80505, Fairbanks, AK 99708.)
- Sept. 26-29 **Oak Savanna and Woodland Ecosystem Conference**, University Plaza Hotel, Springfield, MO. (Dr. Ernie P. Wiggers, School of Natural Resources, 112 Stephens Hall, Univ. of MO, Columbia, MO 65211; 314/882-9423; FAX 314/884-5070; E-mail ernie_wiggers@muccmail.missouri.edu.)
- Oct. 8-11 **Annual Conference of the Society for Vector Ecology**, Holiday Inn University Park, Fort Collins, CO. (Justine Keller, Society for Vector Ecology, PO Box 87, Santa Ana, CA 92702; 714/971-2421; FAX 714/971-3940.)
- Oct. 16-18 **Rocky Mountain Symposium on Environmental Issues in Oil and Gas Operations: Practical Solutions for the 90's**. (Office of Special Programs and Continuing Education, Colorado School of Mines, Golden, CO (303) 273-3321 or fax (303) 273-3314.)
- Oct. 9-13 **Perdix VII: Symposium on Partridges, Quails, and Pheasants in the Western Palearctic and Nearctic**, Dourdan (Essonne), France. (Secretariat Perdix VII, Office national de la Chasse, B.P. 236, 75822 Paris Cedex, France; +44 15 17 17; FAX +47 63 79 13.)
- Oct. 26-28 **Grassland Birds - Ecology and Conservation International Conference and Training Workshop**, Tulsa, Oklahoma. (Conference info: Dan Reinking, Sutton Avian Research Center, 918/336-7778. Call for papers, Peter Vickery, 207/737-2550; e-mail: PVICKERY@IGC.ORG; or Jim Herkert, 217/785-8687.
- Nov. 5-8 **Seventh Eastern Wildlife Damage Management Conference**, Holiday Inn North, Jackson, MS. (Phil Mastrangelo, USDA/APHIS/ADC, P.O. Drawer FW, Mississippi State, MS 39762; 601/325-3014; FAX 601/325-3014.)
- Dec. 3-6 **57th Midwest Fish and Wildlife Conference: "Restoration: Reality or Delusion,"** Westin Hotel, Detroit, MI. (George E. Burgoyne, Jr., 57th Midwest Co-Chair, Wildlife Division, MI Dept. of Natural Resources, PO Box 30444, Lansing, MI 48909-7944; 517/373-1263; FAX 517/373-6705.)



The Wildlife Society 2nd Annual Conference

September 12-17, 1995
Portland, Oregon

REGISTRATION AND PROGRAM INFORMATION
MAILED TO ALL TWS MEMBERS MID-MAY 1995

- ◆ Take advantage of an unmatched educational opportunity
- ◆ Choose from dozens of technical sessions
- ◆ Students: meet potential employers and graduate advisors
- ◆ Participate in the Members Forum
- ◆ Develop and expand your professional network
- ◆ Attend the Trade Show and Exhibition
- ◆ Enjoy the Rendezvous Northwest evening activities
- ◆ Tour local attractions

REGISTER EARLY!

The Wildlife Society
5410 Grosvenor Lane
Bethesda, MD 20814
(301) 897-9770 Fax (301) 530-2471

■ Positions Available

ASSISTANT OR ASSOCIATE PROFESSORS- 12 Month Research. Salary commensurate with qualifications and experience - available July 1, 1995; closing date: September 1, 1995. Ph.D. in wildlife or animal science or closely related area. Capability to conduct meaningful research; ability and desire to publish research in recognized technical outlets; ability to produce contract and grant funding; provide leadership in developing foraging theory; interact and cooperate with Extension Specialists and area producers influencing management practices; develop an active graduate student research program; plan and conduct research in the areas of habitat ecology and herbivory, focusing primarily on large vertebrate herbivores (ungulates). Health coverage, optional insurance, tax save plans, retirement programs, supplemental retirement plans, annual leave and longevity pay. For more information: **Texas Agricultural Experiment Station, 1619 Garner Field Road, Uvalde, TX 78801, 210/278-9151; Fax: 210/278-1570.**

BIOLOGIST I: WILDLIFE OPTION (935188) - \$25,833-\$35,401/yr for Maine Dept. of Inland Fisheries and Wildlife. Position in Bangor, ME. Responsibilities will include researching and determining coastal wildlife areas and resources that may be threatened by oil spills; collecting necessary information to support related oil spill planning and response initiatives; developing wildlife rehabilitation plans; developing and maintaining related GIS databases utilizing ARC/INFO (version 7.0) in a UNIX environment. Need a Bachelors Degree in Wildlife Management, Biology, Natural Resources Planning, or a related field and two years experience at the professional level in performing field and/or laboratory work related to wildlife research and management; substantial knowledge of GIS technology (preferably ARC/INFO) necessary. Knowledge of UNIX operating systems, experience in oil spill response planning, and experience in developing wildlife rehabilitation programs preferred. For application materials please contact: **State of Maine, Bureau of Human Resources, State House Station #4, Augusta, ME 04333, 207/287-4421. Closing date: June 23, 1995.**

CONSERVATION SCIENTIST I-IV - Jasper, TX. \$2,161-3,064 per month depending on years of experience and degree level. Under the immediate supervision of the District Leader (District 6). Responsible for planning and conducting assigned surveys; writing progress reports; analyzing and compiling survey data and presenting recommendations to appropriate supervisory personnel; supervising two wildlife technicians; assisting landowners with habitat recommendations on private lands, presenting programs, and disseminating information; planning and

operation of three assigned Wildlife Management Areas. Responsible in assigned area for public relations, public extension/education/input effort to involve private citizens and organizations in support of TPWD programs. **Clayton Wolf, District 6 Wildlife Office, 1342 S. Wheeler, Jasper, TX 75951; 409/384-6894. Closing date: June 7, 1995.**

FIELD BOTANIST - Pacific Southwest Biological Services, Inc. Two to four years experience in southern California/southwestern US. The ideal candidate will have a BS/MS in botany and strong field identification skills in diverse habitats. Impact and mitigation analytical skills are highly desired, as are strong professional writing and problem solving abilities, and NEPA/CEQA experience. Knowledge of wetland plants and systems, state and federal wetland delineation and jurisdictional determination procedures would be beneficial. Must be able to withstand rigorous field conditions including rough terrain and hot weather. Please respond with resume to: **Attn: Adam Koltz, Pacific Southwest Biological Services, Inc., P.O. Box 985, National City, CA 91951-0985.**

FIELD TECHNICIAN - \$8.50/hr, 40 hrs/week. Will conduct surveys and collect demographic data on wildlife populations in Florida. Target taxa will include nongame avian, mammalian, and herptofaunal species. Preference will be given to applicants with experience in capturing and banding wildlife; collection of observational, behavioral, and radio telemetry data; and data maintenance, but anyone seriously interested in an opportunity to gain intense practical experience should apply. This is a full-time, temporary position renewed annually with adequate legislative funding. Employee will work out of the Joe Budd Wildlife Field Station in Midway, FL; some in-state travel required. This position is funded and available immediately, but will remain open until a suitable applicant is found. To apply, submit a letter of interest and a current resume, including the names and telephone numbers of three references to: **Dr. David Cobb, Florida Game and Fresh Water Fish Commission, Rt. 7, Box 3055, Quincy, FL 32351; (904) 627-9674; FAX (904) 875-4897.**

LOYOLA CHAIR FOR ENVIRONMENTAL COMMUNICATIONS - Dept. of Communications, Loyola University, New Orleans. Duties include teaching graduate and undergraduate courses, research that will focus on environmental communications, and service to the communications needs of private industry, state government and the public at large. Review of applications begins January 9, 1996. Letters of application, complete curriculum vitae and at least three letters of reference should be sent to: **Dr. William M.**

Hammel, Environmental Chair Search Committee, Box 219, Loyola University, 6363 St. Charles Avenue, New Orleans, LA 70118. For further information contact: **Larry Lorenz, Department of Communications, Loyola University, New Orleans, LA 70118, 504/865-2012, FAX: 504/865-2666, E-mail: lorenz@beta.loyno.edu.**

MARYLAND WETLAND BIRD SURVEY. One-year contractual biologist to conduct analyses of a significant data set collected during 1990-92 as a survey of the distribution and relative abundance of obligate wetland breeding birds throughout the tidal wetlands of eastern Maryland. Duties will be primarily statistical analysis of the data set to test questions related to survey design, efficiency, and precision. Analyses directed towards describing the relative abundance and distribution of the 9 species in Maryland. Responsible for drafting of refereed papers and a final report to the Webless Migratory Game Bird Research program. A strong interest in field ornithology and biometrics is essential. MS in wildlife ecology/biology with a strong background in biometrics or MS in biometrics with an emphasis on wildlife ecology/biology required. Substantial experience with personal computers, relational databases, SAS and word processing. Begins Oct/Nov 1995. Salary \$25,000/year. Send letter indicating interest, resume, and names and telephone numbers of three references to: **David F. Brinker, Wetland Nongame Project Manager, Wildlife Division E-1, MD Dept. of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401; (410) 974-3195; FAX 410/974-3587; Internet AEL5@UMDD.UMD.EDU. Deadline: 15 July 1995.**

RESEARCH AND MANAGEMENT CONSERVATION COORDINATOR - National Wild Turkey Federation, Wild Turkey Center, Edgefield, SC. To help administer projects, including but not limited to, administration and implementation of the Wild Turkey Super Fund, state and federal agency relationships, conservation publications program development, TARGET 2000, private lands initiatives, and Project HELP. The Wildlife Society certified wildlife biologist required with a M.S. degree preferred. Requires experience, a team player with good communication skills and a strong management and/or research background. Salary based on credentials. Send resume and 3 letters of recommendation to: **Dr. James Earl Kenamer, Director of Research and Management, P.O. Box 530, Edgefield, SC 29824-0530; 803/637-3106; Fax: 803/637-0034 or 0784.**

STATE WETLAND STRATEGY COORDINATOR & BIOLOGIST, 18-month term positions with the State of Arkansas through the Game & Fish Commission.

Positions contingent upon award of an Environmental Protection Agency (EPA) grant.

STRATEGY COORDINATOR: Coordinate the development of a state wetland conservation strategy through an EPA grant. Formulate strategy components under the direction of an interagency planning team and according to grant requirements. Research, write, and review strategy components and supervise a biologist assistant. Facilitate team and public meetings and serve as liaison with the EPA and Governor's Office on grant requirements and strategy development. Responsible for grant budget and submission of timely progress reports as per EPA requirements. Offered on a contract basis or as a temporary Grade 25 position (\$30,470-\$58,836) with the Commission. Bachelor's degree in biology or related field, plus five years experience in natural resource management field required. Strong verbal, written, and interpersonal communication skills and extensive experience in wetland conservation and strategic planning preferred. **STRATEGY BIOLOGIST:** Assist the Coordinator in the development of state wetland conservation strategy, with emphasis on synthesis of technical information into a comprehensive planning document. Research, write, and review strategy components and prepare timely grant progress reports. Grade 19 position (\$20,901-\$38,974) with the Commission. Bachelor's degree in biology or related field, plus two years experience in natural resource management field required. Basic knowledge of wetland ecology, status, trends, and regulation, especially as related to Arkansas and palustrine emergent wetlands is preferred. Closing date is 15 June 1995 and positions start sometime in July. Call 501/873-4651 for more information and applications. To apply, send a letter of interest, Commission application, resume, and transcripts to: **Personnel Office, Arkansas Game and Fish Commission, No. 2 Natural Resources Drive, Little Rock, AR 72205.** *As an equal opportunity employer, the commission will make any reasonable accommodations necessary to ensure equal employment opportunities.*

WILDLIFE BIOLOGIST - Pacific Southwest Biological Services, Inc. BS/MS and three to five years of field experience in Southern California/Southwestern United States. The ideal candidate will have field identification and sampling skills with all five vertebrate classes. Impact and mitigation analytical skills are critical, as are strong professional writing and problem solving abilities, and NEPA/CEQA experience. The candidate must be able to withstand rigorous field conditions including rough terrain and hot weather. Additional skills and permits desired include small mammal and fish trapping, permits and MOU's; bird banding experience and permit; California Gnatcatcher and Desert Tortoise permits; wildlife corridor/movement assessment experience; scientific collecting permit. Please respond with resume to: **Attn: Adam Koltz, Pacific**

Southwest Biological Services, Inc., P.O. Box 985, National City, CA 91951-0985.

WILDLIFE BIOLOGIST - Southern Forestry Research, Hot Springs, AR. MS or Ph.D. in Wildlife Biology or related field (Ph.D. preferred). Conduct research and provide technical support in the development and implementation of landscape-scale planning and management processes for wildlife habitat on industrial forest lands. Assist in the development of a research program on wildlife-habitat relationships in managed southern forests. Act as communications focal point for technical communications on wildlife topics to public and private organizations on management and research efforts. Qualifications: Professional experience or graduate research in forestry-wildlife field and habitat-wildlife modeling; working knowledge of wildlife relationships in managed forests; demonstrated research capability, including development of sampling methodology and monitoring techniques; strong team orientation; ability to work closely with research and management personnel in private and public sectors; willing to work under sometimes harsh field conditions. Proficiency in basic computer applications. Job-related physical, including drug screen. Desire: Biometrics and modeling skills; experience in developing strategies for wildlife habitat management in forested environment. Send resume/cover letter to: **Weyerhaeuser Technology Center (Job No. 8411-288) Staffing Coordinator, Weyerhaeuser Company, WTC 1G42, Tacoma WA 98477, by 6/30/95.** (Internal and external candidates will be considered.)

WILDLIFE ECOLOGIST - The Wilderness Society, Washington, DC. Level VII Specialist. Starting Salary \$40,000-\$50,000. Background in the conservation of biological diversity in the forests of the eastern United States, particularly the Southern Appalachians and the Northern Forests of New England. The candidate will play a lead role in the Society's efforts to identify and protect sustainable wildland ecosystems in these regions. Duties will include reviewing and compiling inventories of key ecological data, including old-growth forest, roadless areas, and critical wildlife habitat; developing scientifically credible approaches to the conservation of threatened elements of biodiversity, especially neotropical migratory birds and other forest-dependent species; preparing reports and technical comments; preparing and delivering testimony and public speeches; responding to requests for information and advice; and collaborating with regional and federal policy staff on efforts to improve public policy in eastern forests. Must be prepared to travel for meetings and other key events. Graduate degree in wildlife biology, zoology, ecology, or related field (Ph.D. preferred). Minimum of three years research experience pertinent to the conservation of woodland species, especially population viability analysis and assessment of

the effects of fragmentation and land-use change on biodiversity. Demonstrated record of accomplishment in research and written and oral communication. Flexibility, interest, and ability to work as a member of an interdisciplinary team. Excellent skills in personal computing. Submit cover letter, resume, and writing samples to: **Dr. Gregory H. Aplet, The Wilderness Society, 900 17th St., N.W., Washington, DC 20006.**

WILDLIFE ECOLOGIST OR AQUATIC BIOLOGIST - University of Maine, Dept. of Wildlife Ecology, Orono, ME. This is an academic year, tenure-track faculty position. We are particularly interested in candidates who would expand faculty expertise into new areas. We encourage individuals with expertise beyond terrestrial vertebrates to apply, including those with expertise in applied freshwater ecology, wetland-freshwater systems as habitat, and or wildlife policy; however, the search is not being restricted to those focus areas. The successful candidate will have a strong commitment to graduate and undergraduate education (50%) and will develop a research program in areas of specialization (50%). Teaching expectations will include a required undergraduate course, a graduate course in an area of expertise, participation in field and laboratory experiences, and undergraduate and graduate advising. Review of applications will begin July 1 and continue until a suitable candidate is found. Send a letter of application, resume, and three reference letters to: **Dr. James R. Gilbert, Dept. of Wildlife Ecology, 5755 Nutting Hall, U. of Maine, Orono, ME 04469-5575, 207/581-2866; FAX 207-581-2858, E-mail: Gilbert@apollo.umenfa.maine.edu.**

WILDLIFE TECHNICIAN to assist with behavioral observations and determining timing of antler breakage in Tule Elk in the Owens Valley, eastern California. BS/BA required; knowledge of behavioral sampling methods essential; applied experience preferred. Salary approximately \$1,300/month, 15 July - 1 November 1995. Letters with statement of qualifications (no phone calls please), CV, and names of 3 references to: **Dr. V. C. Bleich, Calif. Dept. of Fish and Game, 407 W. Line Street, Bishop, CA 93514, by 15 June 1995.**

GRADUATE RESEARCH ASSISTANTSHIP - Ph.D. \$13,000 + tuition. Study survival and mortality of adult male white-tailed deer. Study includes final three years of data collection and analysis of eight years of telemetry monitoring of over 200 adult males and analysis of tag return data from over 1,500 deer captures. A computerized data base from a separate study involving 24 hour automatic activity monitoring of over 30 deer, for greater than one year also will be analyzed. Student must be adept at field work involving capture and telemetry and also have good analytical skills. Position to begin as soon as a suitable candidate can be identified. Send letter of application, statement

of professional goals, transcripts, reprints of publications and phone numbers of 3 references to: **Dr. Harry Jacobson, Department of Wildlife and Fisheries, Box 9690, Mississippi State, MS 39762-9690; 601/325-2618; Fax 601/325-8726.**

M.S. GRADUATE ASSISTANTSHIP available in Animal Ecology Department, Iowa State University. Project involves model-based estimation of duck production in northern Iowa. Opportunity for field work (counting breeding pairs), GIS work, and computer simulations. Field and GIS technician support provided. Stipend is \$14,000/yr plus waiver of non-resident tuition. Available summer or fall, 1995. Send letter of interest, statement of goals, transcript(s), GRE scores, and 3 letters of recommendation to: **Dr. Rolf R. Koford, Iowa Coop. Fish & Wildlife Research Unit, Science Hall II, Iowa State Univ., Ames, IA, 515/294-3057; e-mail: rkoford@iastate.edu.**

Ph.D. ASSISTANTSHIPS - \$12,000/year plus tuition paid. Available in the Department of Fisheries and Wildlife, Utah State University to study the impact of predation on populations of pheasants and other ground-nesting birds. Send letter of interest, GRE scores, and transcripts to: **Dr. Michael Conover, Department of Fisheries and Wildlife, Utah State University, Logan, UT 84322-5210.**

RESEARCH ASSISTANTSHIP - Northern Arizona Univ. Dept. of Forestry. A Ph.D. research assistantship is currently available in the area of riparian forest ecology beginning fall 1995. Principals on the project are Drs. Tom Kolb and Steve Hart. The project is currently funded for 2 years, with a high probability of continued funding. The focus of the project is relationships between water resources and plant ecophysiology/growth in riparian forest ecosystems of the Southwest. Background in soils, hydrology, plant ecophysiology is desired. Send letter of interest and any relevant material to: **Dr. Tom Kolb, Northern Arizona University, Department of Forestry, Box 15018, Flagstaff, AZ 86011-5018 or tek@alpine.for.nau.edu.**

GRADUATE FELLOWSHIP AND ASSISTANTSHIPS in Ecology at William Paterson College. (M.A. Biology degree program) for the 1995-1996 academic year. Current faculty interests include (but are not limited to): lake management, freshwater ecology, ecology of Lyme disease, ecology of forest canopies, mathematical modeling, insect-plant interactions, and conservation biology. For more information, contact Dr. Lance S. Risley, Department of Biology, William Paterson College, Wayne, NJ 07470, 201/595-3438; FAX 201/595-2338; E-mail: risleyl@smtplink.wilpaterson.edu.

VOLUNTEERS. Caribbean Conservation Corporation is looking for paying volunteers for the 40th annual green turtle tagging project at Tortuguero, Costa Rica, July 15 - Sept. 2, 1995. Research and monitoring activities consist of daily beach surveys, tagging, collection of biometric data and determination of egg clutch survival. One and two week openings are available, costing \$1,570 and \$1,890 respectively. The fee covers round-trip airfare from Miami, food, accommodations and the cost of the research project. For more information, reservations and group discounts, please contact: **Caroline Reiners, Tortuguero Coordinator, Caribbean Conservation Corporation, P.O. Box 2866, Gainesville, FL 32602, 904/373-6441; E-mail creiner@ccc.org.**



First International Wildlife Management Congress PROCEEDINGS AVAILABLE

ORDER FORM First International Wildlife Management Congress Proceedings

The Proceedings of the first International Wildlife Management Congress, *Integrating People and Wildlife for a Sustainable Future*, held in San Jose, Costa Rica, September 1993, and edited by John A. Bissonette and Paul R. Krausman is available. The Proceedings contain 697 pages plus a list of participants, and includes 174 original papers from more than 70 countries. The Proceedings are arranged into 16 chapters including: Strategies to sustain human and wildlife communities; Human population considerations in wildlife management; Education and effective technology transfer; Ecotourism; Incorporating wildlife into development; Wildlife products; Legal structures for managing wildlife; Landscape linkages and restoration ecology; and Techniques for implementing wildlife management programs. The format is 7" by 10" and is handsomely softbound with a blue laminated cover for durability.

Full registrants at the Congress will be receiving a copy of the Proceedings as part of the registration fee. Members may purchase a copy of the Proceedings for \$25.00 (\$29.00 for addresses outside the U.S.); the cost to nonmembers is \$30.00 (\$34.00 for addresses outside the U.S.).

Quantity _____

_____ Member price @ \$25.00* U.S.	\$ _____
_____ Nonmember price @ \$30.00* U.S.	\$ _____
_____ Shipping outside US @ \$4.00/book	\$ _____
	TOTAL \$ _____

* MD resident add 5% sales tax

Check enclosed (in U.S. Dollars drawn on a U.S. bank)
 Charge my credit card: Visa MasterCard Amex

Account No. _____

Exp. Date _____

Signature _____

Name: _____

Address _____

City _____ State _____

Postal Code _____ Country _____

Phone: _____

TWS Announces Internet Discussion Group

The Wildlife Society and the Cornell University Department of Natural Resources have established a listserv called the **Wildlife Information Network**. This is an internet discussion group. All members are invited to subscribe (its free) and participate. Once you subscribe, any message you send to the list will be redistributed to all other list members instantly over e-mail. We hope that discussions of techniques, resources, and policy, as well as job and educational opportunities, will allow members to work together, share ideas, and facilitate their work.

From Bethesda, we will use the network to keep you informed of meetings, happenings in Washington, calls for action, and resources on the Net. We encourage you to join the network. The more people involved, the more useful it is to everyone.

Any member can subscribe to the listserv at Cornell by sending the following e-mail message with no subject line to:

listproc@cornell.edu: SUBSCRIBE TWS-L yourfirstname yourlastname
For example: SUBSCRIBE TWS-L Ruth Goldstein

When you subscribe you will receive guidelines on using the discussion list as well as instructions on how to post messages and unsubscribe. If you have any questions, please contact twswildlife.org Subj: Listserv.

The Wildlife Society would like to thank Cornell's Department of Natural Resources and USNET for their generosity and help establishing this system.



THE WILDLIFER (ISSN 0463-6359)
THE WILDLIFE SOCIETY, INC.
5410 Grosvenor Lane
Bethesda, MD 20814-2197

Second Class Postage Paid
at Bethesda, MD
and additional entry office

18749 RJ 95
MICHAEL W GRATSON
1540 WARNER AVENUE
LEWISTON ID 83501

N0395