WINGSPAN

VOLUME 8 NO. 1 MARCH 1999

MESSAGE FROM THE PRESIDENT

Dear Members,

A few months ago I received copies of two letters that really caught my attention. One letter was from a member who felt that RRF did nothing to start a conservation effort. The other letter was from a former RRF member and director who believed that RRF was losing sight of its "roots" and moving to what is perceived as good science and leaving actions in the "trenches" of conservation battles to someone else.

These letters prompted me to reflect on what RRF's role should be in the conservation of raptors. According to RRF's By Laws, the purpose of RRF is "to stimulate the dissemination of information concerning raptorial birds among interested persons worldwide and to promote a better public understanding and appreciation of the value of birds of prey." This tells me that RRF is a scientific and educational organization. I believe the organization has been notably effective in these arenas. RRF is and has been quite active in the conservation of raptors and has contributed much. As Jim Bednarz reports in this issue of *Wingspan*, RRF's Conservation Committee last year was heavily involved in raptor conservation issues from a global perspective. If last year is any indication, I see RRF's involvement in raptor conservation increasing in the future.

Should RRF be more involved in activism? All parties involved in the conservation of natural resources need objective professional organizations that are independent of biases and agendas. Decision makers need an organization like RRF to provide objective, professional advice including the ecological consequences of their actions. Perhaps activists would accuse RRF of "being afraid to get its feet wet," but RRF has not been hesitant to contact government officials to voice its concerns and offer assistance. I feel that activism has a definite function in the conservation movement; often it is necessary for groups or individuals to "jump into the trenches" to get necessary action on an issue. There are several conservation organizations that are effective as activist because they are organized to influence political decisions. RRF is better organized to serve as the provider of factual, unbiased information to all parties involved in natural resource debates.

Where should RRF be heading in the new millennium? RRF has made exceptional strides in the last three decades. The organization has evolved as a scientific voice for raptor conservation. Should RRF be an activist organization? Should it be in the trenches fighting the conservation battles? Personally, I do not think this is the intent or purpose of RRF. The officers and Board members of RRF and I would like to hear your ideas and opinions on the matter.

On another note, we had a very successful annual meeting in Ogden. I thank Carl Marti, Jeff Smith, Geoff Holroyd, and the local organizing committee for a job well done. And, I wish to thank out going Board members Mike McGrady, Cesar Marquez Reyes, Pat Kennedy, and Karen Steenhof as well as out going Vice President David Andersen for their efforts during their terms.

Mike

RAPTOR RESEARCH FOUNDATION 1998 ANNUAL MEETING
Ogden, Utah, September 30 - October 4

by David Andersen

The 1998 Annual Meeting of The Raptor Research Foundation, Inc., was held from 30 September - 4 October 1998 at the Ogden Egyptian Center and the Marriott Hotel in Ogden, Utah. Meeting sponsors included Weber State University, Utah Division of Wildlife Resources, Utah Division of Parks and Recreation, and several private and charitable organizations. Carl Marti and his local committee put together a well run and interesting meeting, and the meeting facilities were comfortable and spacious. The approximately 255 attendees were treated to Utah's finest hospitality, and a meeting with ample opportunity for scientific exchange and informal interaction. The scientific program, admirably put together by Jeff Smith, consisted of eight general paper sessions, a poster session, and a symposium on Mexican Spotted Owls, preceded by a symposium on Burrowing Owls (organized by Geoff Holroyd). Sixty-eight scientific papers were presented in the general sessions, and 24 posters were presented in the poster session. Nine papers were presented in the Mexican Spotted Owl symposium. Organized social events included a western cookout on Antelope Island in the Great Salt Lake and an Annual Awards Banquet in the ballroom at the Egyptian Center. The banquet was highlighted by announcement and presentation of awards (see description elsewhere in this issue of *Wingspan*), an eloquent tribute to Fran Hamerstrom given by Bob Rosenfield, and an impromptu auction and raffle. Area attractions included hawk migration at the Goshute Mountains and the spectacular scenery of northern Utah. The 1998 meeting will be remembered for being extremely well organized, of significant scientific merit, and conducted in beautiful and spacious accommodations and surroundings. The Local and Scientific Committees (Carl Marti, Jeff Smith, John Bellmon, Robert Brodstein, Keith Evans, Joel Flory, Steve Hoffman, Frank Howe, Jay Hudson, John Martin, Michelle Olmstead, Don Paul, Jimmy Parrish, Nina Thomas, Phil Wagner, and Clayton White) deserve congratulations for planning and conducting such a fine meeting.

Wingspan is distributed twice a year to all RRF members. It is also available to non-members for a subscription rate of $10 per year. *The Journal of Raptor Research* (ISSN 0892-1016) is published quarterly and available to individuals for $33 per year ($18 per year for students) and to libraries and institutions for $50 per year from: Ornithological Societies of North America, P.O. Box 1897, Lawrence, KS 66044 USA. Add $5 for destinations outside of the continental United States. Individual and student memberships renewed before November 15 are $30 and $15, respectively. Persons interested in predatory birds are invited to join The Raptor Research Foundation, Inc. Send requests for information concerning membership, subscriptions, special publications, or change of address to: Ornithological Societies of North America, P.O. Box 1897, Lawrence, KS 66044 USA.

RRF ELECTION RESULTS, 1998

A total of 268 ballots was cast, representing 27.5% of the voting membership. Results are as follows:

Vice-President: **Keith L. Bildstein** (Hawk Mountain Sanctuary, Kempton, PA 19529 USA; *phone:* 1-610-756-6961; *fax:* 1-610-756-4468; *e-mail:* bildstein@hawk mountain.org)

International Director #3: **Beatriz Arroyo** (CNRS/CEBC, 79360 Villiers en Bois, France; *phone:* 33-5-49096111 [work] or 33-5-49767209 [home/answer]; *fax:* 33-5-49096526; *e-mail:* outarde@cebc.cnrs.fr)

North American Director #3: **Robert N. Lehman** (USGS/Forest and Rangeland Ecosystem Science Center, Snake River Field Station, 970 Lusk Street, Boise, ID 83706 USA; *phone:* 1-208-426-5205; *fax:* 1-208-426-5210; *e-mail:* blehman@eagle.idbsu.edu)

Director At Large #1: **Jemima Parry-Jones** (The National Birds of Prey Centre, Newent, Gloucester, GL18 1JJ United Kingdom; *phone:* 44-(0)-1531-821581 or -820286 [dial 100 if you get the answerphone]; *fax:* 44-(0)-1531-821389; *e-mail:* jpj@nbpc.demon.co.uk; *web:* www. nbpc.co.uk)

Director At Large #4: **Miguel Ferrer** (Estación Biológica de Doñana, CSIC, Avd. Maria Luisa, Pabellón del Perú, 41013 Sevilla, Spain; *phone:* 34-954234844 [direct] or -954232340 [general]; *fax:* 34-954621125, *e-mail:* mferrer@cica.es)

RAPTOR RESEARCH FOUNDATION, INC.
RESOLUTION

WHEREAS, the mission of the Raptor Research Foundation, Inc., is to stimulate the dissemination of information concerning raptorial birds among interested persons worldwide and to promote a better public understanding and appreciation of the value of birds of prey,

AND WHEREAS, the Annual Meeting is one of the most important forums for accomplishing that mission,

THEREFORE, BE IT RESOLVED, the Board of Directors, Officers and general membership of the Raptor Research Foundation, Inc., commend Carl Marti and members of the local committee, Jeff Smith, chair of the scientific program, and Geoff Holroyd, organizer of the Burrowing Owl Symposium, for planning, organizing, and conducting a stimulating, well-organized 1998 annual meeting in Ogden.

BE IT FURTHER RESOLVED, that said Board, Officers, and membership commend the local committee for the high quality of meeting accommodations, the high level of efficiency with which the meeting was conducted, and for providing an outstanding forum for dissemination of information concerning raptorial birds.

1998 RRF AWARD RECIPIENTS

by Petra Bohall Wood, Chair, Awards Committee

Dean Amadon Grant (Selection Committee: Clayton M. White, Chair) Recipient: **Sabine Hille**, Vienna University, "Adaptive Divergence Among Populations of Kestrels in the Cape Verde Islands."

Stephen R. Tully Memorial Grant (Selection Committee: Kimberly Titus, Chair; Robert K. Murphy; Robert N. Rosenfield) Recipient: **Nicole Korfanta**, University of Wyoming, "Population Genetics in Resident and Migratory Burrowing Owls."

Leslie Brown Memorial Grant (Selection Committee: Jeffrey L. Lincer, Chair; Dean Amadon; Gary E. Duke; Richard Howard; Alan Kemp) Recipients: $800 to **Suzanne Shultz**, State University of New York/Stony Brook, "Ecology and Conservation of the Crowned Hawk-Eagle, West Africa" and $600 to **Anthony van Zyl**, Transvaal Museum, "Life History Traits of Common Kestrel, Kenya."

William C. Andersen Student Paper Award (Selection Committee: Laurie Goodrich, Co-chair; John A. Smallwood, Co-chair; Oral Presentation Reviewers: Eric Atkinson, Jim Bednarz, Jim Gessaman, Pat Hall, Bob Rosenfield, Ted Swem, John Smallwood; Poster Presentation Reviewers: Tim Breen, Petra Bohall Wood, Reuven Yosef) Recipients: Oral Presentation First Place: $100 to **Brian W. Smith** (with J. R. Belthoff), Boise State University, "Effects of Chamber Size and Tunnel Diameter on Use of Artificial Nest Burrows by Burrowing Owls." Oral Presentation Runners-up: **Brent D. Bibles** (with R. W. Mannan), University of Arizona, "Characteristics of Gray Hawk (*Asturina nitida*) Home Ranges in Southeastern Arizona," and **Julie L. Peterson** (with D. W. Holt and M. T. Maples), Owl Research Institute, "Nest Defense Behavior in Snowy Owls (*Nyctea scandiaca*)." Poster Presentation First Place: $100 to **Pamela Freeman**, North Dakota State University, "Analysis of Variation in Barred Owl (*Strix varia*) Hooting Calls."

James R. Koplin Travel Award (Selection Committee: Patricia A. Hall, Chair; Robert N. Lehman; Joan L. Morrison) The James R. Koplin Travel Award was not presented in 1998.

Fran and Frederick Hamerstrom Award (Selection Committee: David E. Andersen, Chair; Clint W. Boal; Richard L. Knight; Karen Steenhof) Recipient: **Daniel D. Berger**.

Tom Cade Award (Selection Committee: Brian J. Walton, Chair; Steve Sherrod; Jack Barclay; Christian Saar) The Tom Cade Award was not presented in 1998; no nominations were received.

BANQUET EVENTS RAISE $800 FOR RRF !

by Mike Kochert, President

Although there was no planned fund raising event for the RRF meeting in Ogden, nearly $800 was raised in an impromptu raffle and auction at the banquet. The success of these efforts was due to generous vendors and to the volunteers and Board members who quickly came forward to "hawk" raffle tickets. Lenny Young would not let us eat dinner until $500 of raffle tickets was sold. President Mike Kochert volunteered as auctioneer and was told by Past President Mike Collopy "not to quit his day job." Thanks go to Christensen Design, Yale University Press, Arizona University Press, Smithsonian Press, and other vendors who donated auction and raffle items; the Board members and officers for selling raffle tickets; Bob Ritchie, Gary Santolo, Geoff Holroyd, and Denver Holt who bought auction items; and lastly all who bought raffle tickets.

RRF SEEKS NEW EDITOR FOR *THE JOURNAL OF RAPTOR RESEARCH*

by Mike Kochert, President

Marc J. Bechard, current editor-in-chief of *The Journal of Raptor Research*, is stepping down at the end of 1999 after a successful 4-year term. I have asked RRF Vice President Keith Bildstein to chair a search committee to find a capable successor. Jeff Marks and Marc Bechard will serve on the committee. Editing *The Journal of Raptor Research* is the most challenging and rewarding position available in RRF. While working harder and longer for RRF than any other single member, the editor also reaps the benefits of working closely with the Foundation's most active scientists; shepherding worthy manuscripts through the publication process; and developing his or her own writing, editing, and communications skills. If you are ready for a very rewarding challenge, or if you wish to nominate someone who is, please contact Keith Bildstein by mail (Hawk Mountain Sanctuary, 1700 Hawk Mountain Road, Kempton, PA 19529-9449 USA), phone (1-610-756-6961), or e-mail (bildstein@hawkmountain.org).

RRF JOINS NORTH AMERICAN BANDING COUNCIL

by Pete Bloom

The Raptor Research Foundation has joined the North American Banding Council (NABC). The NABC is incorporated in California as a non-profit organization and consists of representatives whose members utilize bird banding as a tool. The RRF representative is Pete Bloom with Buzz Hull and Ed Henckel serving as alternates. The NABC is presently composed of 13 voting ornithological organizations and the nonvoting Canadian and U.S. Banding Offices.

NABC is developing a bander training and certification program to set standards of knowledge, experience, and skills at levels of assistant, permittee, and trainer. The NABC is preparing several focused training manuals to serve as reference materials for trainers and prospective new banders. Each manual will include basic information concerning capture, banding, and handling with a bibliography of the most important literature. One of these, which will hopefully be finished in 1999, will be a Guide to the Banding of North American Raptors. RRF representatives have been present at the last two meetings held in Tucson and St. Louis.

Certification will be voluntary and will require a written test and field evaluation of banding skills. Prospective banders may contact NABC or the Bird Banding Offices for information. Existing banders may also wish to be certified. NABC-certified trainers will certify banders at all levels and may be involved in formal courses. The NABC will issue and register the formal certifications which will probably involve a modest administration fee.

The banding offices will not require NABC certification of new or existing banders but will recommend certification, refer prospective banders to NABC, and recognize certification as evidence of qualifications for a federal banding permit. A proposal justifying banding will continue to be required.

The goal of the NABC is that bird studies will benefit from an increased number of competent banders, more skilled banders, more reliable data and more opportunities for collaborative studies. Ultimately, birds will benefit from a safer, more effective, North American Banding Program.

ORGANIZATION PROFILE

THE WORLD BIRD SANCTUARY

by Walter C. Crawford, Jr.

The World Bird Sanctuary (WBS), one of North America's largest facilities for the conservation of birds, was founded in 1977. WBS is on the leading edge of public awareness regarding the plight of bird species worldwide. Formerly known as the Raptor Rehabilitation and Propagation Center, the name changed to the World Bird Sanctuary in 1992 to better reflect the organization's focus. WBS's mission is to preserve the earth's biological diversity and to secure the future of threatened bird species in their natural environments. WBS works to fulfill that mission through education, propagation and rehabilitation. Its work also includes habitat restoration, reintroduction of endangered species, monitoring species population levels and enrichment of ecosystems to enhance bird reproduction. The sanctuary has a full time staff of 35 and hires approximately 35 part-time employees yearly. In addition to two year-round and numerous seasonal education programs around the country, WBS currently operates six facilities in the St. Louis area:

WBS Field Station, Breeding and Holding Facility. This 1,200-acre farm sits along the Meramec River west of St. Louis. It includes seven buildings which hold raptors resting from educational programs, an outdoor holding area for Bald Eagles, and a Thick-billed Parrot breeding facility. There are numerous hack sites on the property that WBS utilizes to return American Kestrels, Eastern Screech Owls, Turkey Vultures and Barred Owls to the wild.

The Tyson Research Center is currently headquarters for WBS. On site are propagation and rearing facilities, a rehabilitation hospital, weathering areas and offices. The research center, which originally was an army ordinance depot, contains over 2,100 acres. It now has a large resident population of white-tailed deer, Red-shouldered Hawks, turkey, fox, coyotes and other common Missouri species.

Propagation Facility: This building contains WBS's incubation room and rearing area. Senior staff manage the nutrition, housing and rearing of breeding birds from this facility.

Rehabilitation Hospital: WBS maintains an active program to assist distressed raptors from Missouri and the Midwest. Its temporary hospital, four volunteer veterinarians and dedicated staff treat large numbers of birds each year and release as many as possible back into the wild. Visitors can discuss avian treatment and rehabilitation techniques with WBS veterinarians or rehabilitation team. WBS's innovative parrot rehabilitation program has treated and placed (for free) 573 parrots in the last 10 years.

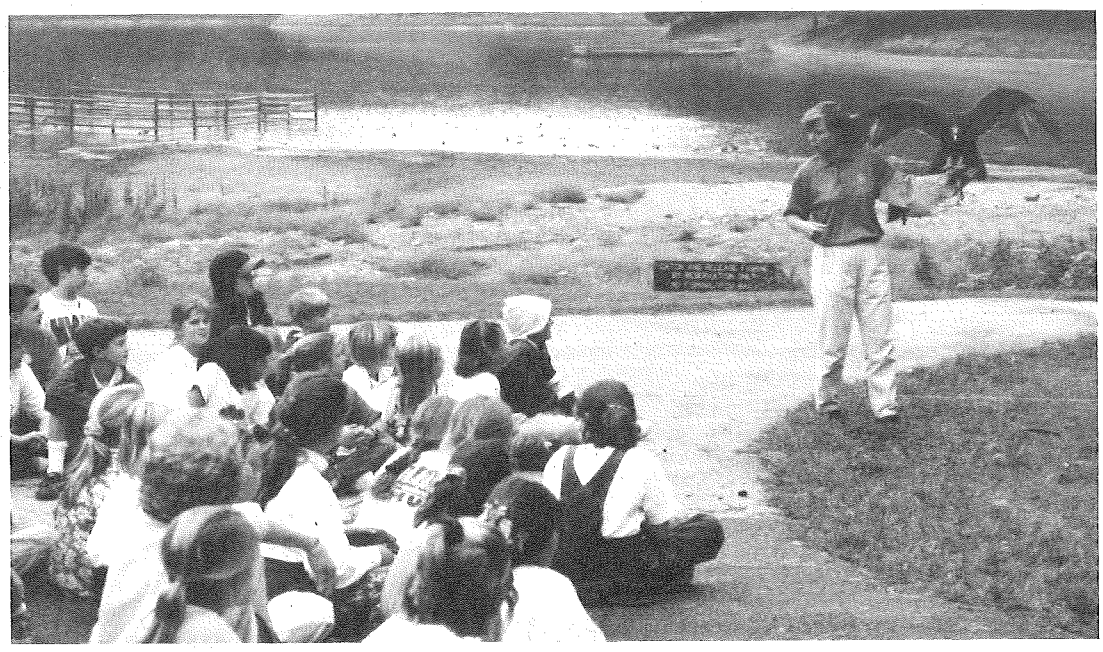
Education Training Center (ETC): This facility contains many of the exotic bird species currently under training and used by WBS in its educational programs. With forty holding cages and nine raptor housing units, this facility allows staff to maintain and train many rare species. The ETC is located in an isolated area of the research center to provide an undisturbed place to train.

Animal Rearing and Commissary: WBS raises thousands of quail and rabbits yearly to augment its food source. Using vitamin supplements, WBS staff follow specific feeding procedures daily.

Housing Units and Weathering Areas: WBS has worked for years experimenting with new ideas for housing raptors, using different perch styles, jump boxes, etc. Three large weathering areas are on site for birds housed here to rest from educational programs.

Parrots: WBS maintains a small collection of parrots for its educational school programs about the rain forest. Each of whom has a story to be told, they help WBS naturalists discuss the importance of the rain forest globally, including Missouri.

ORGANIZATION PROFILE



The Office of Wildlife Learning, located in Lone Elk Park, is the sanctuary's nature centers and educational outreach headquarters. This 405-acre park has free-ranging herds of bison, elk and white-tailed deer. Holding/housing facilities for the sanctuary's education birds are on the premises. These birds carry WBS's message of environmental responsibility to over 111,000 school children in the St. Louis area yearly. There is an annual visitation of 350,000 people to the park; over 150,000 of those visit the center.

Windows to the World of Wildlife. One of the newer educational outreach centers is located 60 miles south of WBS headquarters in Missouri. Windows is a satellite wildlife education center working with seven school systems in the surrounding area. The center provides free programming in schools, including opportunities for students to get a close encounter with the wide variety of birds and reptiles housed at WBS.

Clarksville Eagle Center is a great addition to WBS's educational facilities. Located 70 miles north of St. Louis on the Mississippi River, this facility provides visitors with spectacular views of the largest wintering population of Bald Eagles in the area. Viewing is possible from inside the center or on the deck outside. This center hosts a variety of programs throughout the year, but especially in winter. A gift shop, classroom, exhibits and live raptors enhance each person's visit.

The World Environmental Education Center that WBS has under construction will be a state-of-the-art, innovative center for the preservation of birds. This 130-acre complex will allow WBS to consolidate its facilities in one area for a more economical and focused approach to its mission. Two new breeding facilities, a wildlife hospital, outdoor flight cages for condors and eagles, an educational amphitheater, an animal rearing building, a training center, offices, housing for staff and a large nature center will make it one of a kind in the world. Once completed, an expected 500,000 people will visit yearly.

(*Editor's Note:* Walter C. Crawford, Jr., is Founder and Executive Director of the World Bird Sanctuary. Inquiries about the sanctuary's activities can be directed to Mr. Crawford at: World Bird Sanctuary, P.O. Box 270270, St. Louis, MO 63127, phone: 314-938-6193, fax: 314-938-9464.)

HOW TO ACHIEVE CONSERVATION: SCIENCE VERSUS ACTIVISM

by Jim Bednarz, Chair, Conservation Committee

What is the most effective approach to the conservation of raptor populations? A couple of letters from Raptor Research Foundation, Inc. (RRF) members caused me to reflect on that question for more than a little while this past year. Does one stand in front of the approaching bulldozer that is maneuvering to destroy the last parcel of nesting habitat of some rare bird of prey? Does that act of defiance represent true activism? How does an organization such as RRF address conservation activism? Should we stand arm in arm, shoulder to shoulder, in front of that bulldozer, hoping to bring that rare raptor habitat to the attention of the public in our endeavor to conserve the global populations of raptors? Alternatively, should we bring our science--our data, facts, and best hypotheses; present them in a cognizant and coherent fashion in the policy arena; and argue for appropriate laws, restrictions, and policy to prevent the deterioration of the global raptor resources?

Even though I have worked for the conservation of raptors for over 20 years, I am still not sure what are the correct answers to the questions posed above. I personally believe the conservation of the raptor resource, which is a passion with many of us that belong to RRF, is fundamentally important. If we, who know these unique birds the best, don't pursue conservation, who will? Certainly, during recent RRF Board meetings, officers and board members have made it clear that conservation is an important current mission of the organization and have placed much emphasis on promoting conservation action. So let's go back to the question of how we achieve conservation. My hunch is that for maximum effectiveness, the RRF needs to both take action and use science to achieve conservation progress. Both major political parties in the U.S. advocate science in developing their positions; our lawmakers are demanding more and more that our government agencies use the "best science" in guiding policy on natural resource decisions. Of course the rhetoric is thick, and science can be spun this way or that way and used to advocate one position over the next. But in my view, science is about the search for the truth, and the RRF is a scientific society, so in a sense, we are the current science (the truth) when it comes to raptors. Therefore, the RRF should be able to use the power of information and science to achieve our conservation mission.

However, action is absolutely necessary if RRF wants to achieve its conservation goal as well. Somebody needs to monitor the threats to our raptors, and that takes time. Somebody, one of our members, needs to sound the alarm when there is an ominous force impinging on some raptor resource. To blow that whistle requires action. Then, to attack the conservation problem takes time and effort; research to understand the decision-making process within the bureaucracy, investigation to ascertain how to affect conservation-related decisions, work to determine the rules of the policy game, effort to identify who to contact, more research to find out who actually makes the decision, and more effort to determine how best to achieve the best conservation result. All this clearly takes action: phone calls, e-mails, visiting with key decision makers, research, reading the Federal Register (boring!), reviewing the data and literature, and then writing a convincing and coherent document advocating conservation based on science (the dreaded paper work).

This action might be considered to be "activism," a type of activism that may be even more difficult to implement than standing in front of that bulldozer (which does not require the drudgery of paper work). Certainly, if we do all the right things in the policy arena, bring the best science to bear on the issue, and the wrong decisions are made; I then personally believe we should stand in front of that bulldozer and represent ourselves, good science, truth, and conservation of a one-of-a-kind resource, raptors. Such extreme activism will probably not save the resource, but may bring attention to raptors and their problems and play a role in the decision process during the next raptor conservation battle. YES, in my humble opinion, I think we need to employ both action (that could be defined as activism by some) and science to achieve conservation action with birds of prey. In RRF, the Conservation Committee should and does use both approaches to affect the conservation of birds of prey.

I especially thank those RRF members who have been active or have offered to be active on the Conservation Committee. Because of your efforts, I think we are continuing to have more and more impact on conservation issues related to raptors. I am not saying that we have made great strides in conservation, because we have not! But, I do think we have taken some small steps. We are tackling more conservation issues now than ever before. Also, in my opinion, the use of good science has strengthened our credibility at the conservation bargaining table. In fact, RRF is being invited to the policy-making table more and more frequently, and that gives us an opportunity to have some influence. I find that fighting for conservation takes a tremendous amount of effort and time, and if you gain an inch in the fierce tug-of-war between the conservation and destruction of resources you are doing well. We are starting to gain a few inches here and there. Some of the recent conservation issues we have tackled or are tackling are as follows.

Last spring RRF members researched and evaluated the potential impacts of the development of the National Petroleum Reserve-Alaska (NPR-A) on the unique raptor populations using the Colville River. Our official comments requested that a 2-mile buffer be established along the Colville River, and that surface developments be prohibited within this buffer. This recommended buffer was originally rejected by the Bureau of Land Management (BLM). However, the BLM recently convened a scientific panel of eight ecologists in Fairbanks to review raptor protection guidelines within the NPR-A. Seven of the eight members on that panel were active members in RRF. A significant turning point in the discussions occurred when Ted Swem (a long-time RRF member and contributor to the Conservation Committee) read the well-reasoned RRF letter recommending a 2-mile protection buffer around the Colville River. After hearing RRF's official comments, the scientific panel unanimously recommended that the 2-mile protection buffer be reconsidered by BLM. On that day, raptor conservation gained a mile rather than an inch, and some leg work by RRF members months previously provided the scientific and conservation framework that carried the day. However, the discussions are not over, and policy makers may still ignore the recommendations of the scientific panel.

Also in the spring, the RRF was informed that a helicopter training mission by the Israeli Air Force in Gamla Gorge resulted in a major disturbance to a Griffon Vulture nesting colony. Members of the Conservation Committee quickly established the details of this incident and responded with a letter requesting that the Gamla Gorge be placed off limits to the Israeli Air Force for training missions. Reports from our Israeli members indicate that this guideline has been adopted by the Israeli military.

During the summer, we received several disturbing reports of a poisoning of Griffon Vultures in the Golan Heights in Israel. Again, several RRF members tracked down pertinent details of this incident, and we provided a letter supporting the establishment of a blue-ribbon committee of scientists to investigate this incident. The committee has been established and is in the process of developing recommendations to avoid or minimize future poisonings. RRF continues to monitor this situation. Conservation Committee member Reuven Yosef has been a major contributor in addressing conservation issues in the Middle East.

Within the last couple of months, RRF's Peregrine Committee completed a nearly 3-year review of the data and recommended that the American Peregrine Falcon be removed from the list (delisted) of Endangered Species (copies of RRF's final letter to the U.S. Fish and Wildlife Service and an earlier letter on monitoring follow this article). The Ornithological Council in Washington D.C. adopted the RRF peregrine report as its official position on the proposal to delist the peregrine. This was a difficult issue for our membership. I have personally discussed this issue with members who are vigorously opposed to delisting and other members that are uncompromisingly in favor of complete delisting and the elimination of funds for the protection and monitoring of peregrines. Although I know we will never satisfy all our members on this issue, I am very pleased that RRF used science and the input of many of our members, came to a reasonable consensus, and made a solid stand on this important conservation proposal. The findings of the RRF Committee were recently published in the *Wildlife Society Bulletin* (Vol. 26, pp. 522-538). I encourage all interested members to review this article. I especially thank Brian Millsap and the committee members for all their efforts on behalf of RRF and raptor conservation.

Recently, we evaluated the Grand Staircase-Escalente National Monument draft management plan and draft Environmental Impact Statement. Thanks to the research efforts and time contributed by ad hoc Conservation Committee member Nikolle Brown, RRF submitted a letter (which follows this article) making recommendations for protection of the raptor populations at that site.

New conservation actions include forming ad hoc committees to address the conservation status of the Northern Goshawk, headed up by David Andersen (see following article), and to address the proposal to delist the Bald Eagle (chair not selected at this time). Right or wrong, RRF is currently in the trenches using science, working hard, and taking action to conserve raptors world wide.

RRF COMMENTS ON PEREGRINE DELISTING

23 November 1998

Ms. Diane Noda
Field Supervisor
U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

Dear Ms. Noda:

The Raptor Research Foundation, Inc., which is the scientific society that represents professional raptor scientists and managers throughout North America and around the world, has completed a thorough review of the proposal to remove the peregrine falcon from the list of endangered and threatened wildlife and the data upon which this proposal is based. This review was conducted by a committee of raptor experts and was chaired by Mr. Brian Millsap. Committee participants include Mr. Brian Millsap, Dr. Pat Kennedy, Dr. Mitchell Byrd, Dr. Gordon Court, Dr. Jim Enderson, and Dr. Bob Rosenfield. I have enclosed a copy of the report from this committee, which has been peer-reviewed and accepted for publication in Wildlife Society Bulletin and where it is tentatively scheduled to appear in Volume 26, issue No. 4. With this correspondence, the Board of Directors of the Raptor Research Foundation, Inc. on behalf of our membership submit the enclosed copy of this report as our comments and recommendations on the proposal to delist the peregrine falcon.

Our overall recommendations are presented on pages 12-17 in the enclosed report and may be summarized as follows:

1) The American Peregrine Falcon should be de-listed range-wide. However, we do have some concerns about the population of peregrines in the Eastern Recovery Region (ERR), and we recommend that the U.S. Fish and Wildlife Service (USFWS) carefully review the most recent available information on the population status of peregrines in this region. If stated recovery goals in this region have not been achieved, we recommend that the USFWS down-list American peregrines in the ERR to threatened status until such time as these goals for the number of pairs are met.

2) Adequate funding and support is required to insure the sufficiency of accurate monitoring during the post-recovery period. Our comments on monitoring are included in the enclosed report and in a letter submitted to your office on 26 October 1998. Importantly, we emphasize that "the 5-year monitoring program" is a **minimum** requirement of Section 4(g) of the Endangered Species Act. Given the difficulties of monitoring peregrine falcon populations in a scientifically-rigorous manner, the duration of the post-recovery monitoring period for this species should be flexible (or adaptive) dependent upon the pattern and the statistical accuracy of the results obtained during the first 5 years of monitoring.

If you have any questions about our recommendations or the enclosed report detailing our comments, please contact Brian Millsap or me. If the Raptor Research Foundation, Inc. can assist further, by providing an expert, peer review of the specific monitoring plan for peregrines, please do contact me. Thank you.

Sincerely,

James C. Bednarz, Ph.D.
Chair of Conservation Committee
Raptor Research Foundation, Inc.

RRF COMMENTS ON PEREGRINE MONITORING

26 October 1998

Ms. Diane Noda
Field Supervisor
U.S. Fish and Wildlife Service

Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

Dear Ms. Noda:

The Raptor Research Foundation, Inc., which is the scientific society that represents professional raptor scientists and managers around the world, has completed a thorough review of the proposal to remove the peregrine falcon from the list of endangered and threatened wildlife and the data upon which this proposal is based. This review was conducted by a committee of raptor experts and was chaired by Mr. Brian Millsap. Committee participants include Mr. Brian Millsap, Dr. Pat Kennedy, Dr. Mitchell Byrd, Dr. Gordon Court, Dr. Jim Enderson, and Dr. Bob Rosenfield. The findings of this committee are included in a paper that has been provisionally accepted for publication in the Wildlife Society Bulletin and will be available shortly. In this letter, we submit some general comments concerning the 5-year monitoring period that will be instituted if the peregrine falcon is delisted.

We suggest that the American peregrine should be managed and monitored under the direction of one group of investigators and one monitoring coordination team. In establishing variables for monitoring populations during the post-recovery period, the U.S. Fish and Wildlife Service and the monitoring coordination team should take the following into account. First, the sampling approach should make the most efficient use of available resources and should avoid making the unrealistic and untested assumption that a complete population census may be accomplished. Second, monitoring parameters with high sampling or measurement error, or which have an uncertain relationship to population status will be of limited value. Third, knowledge attained through monitoring may necessitate modification of recovery criteria (i.e., place recovery criteria in an adaptive management framework). And fourth, funds to implement a monitoring protocol will be limited. In other words, heavy emphasis should be put on selecting monitoring benchmarks that can be measured accurately with available resources, and which are unambiguously linked to population status and cause(s) of decline or endangerment. This requires that the monitoring would be done by some limited group of scientists or managers.

Not every state and federal agency needs to be constantly involved in data collection. Because resources could be consolidated into region-wide monitoring, we predict that such a sampling approach would be very cost-effective compared to existing approaches which rely on mostly independent censuses. For example, monitoring resources could be used to estimate nesting density in sample plots or transects randomly distributed throughout the subspecies range stratified by habitat type and/or other relevant covariates. These density estimates could be based on distance sampling methods or fixed-width plots (assuming all or a high proportion of territories can be located within each plot) as determined by the monitoring coordination team. Productivity could be determined at a random sub-sample of occupied territories within sample sites. Eggshell thickness and DDE levels should be evaluated from single eggs removed from a random sample of nests throughout the range of the subspecies. Finally, we suggest that the monitoring of peregrines may need to proceed longer than 5 years if recovery of the subspecies is not firmly established at the end of the monitoring period.

As federal funds are distributed to and normally spent by states at their discretion, implementation of a cost-efficient and effective monitoring program will require voluntary coordination and cooperation among the states involved. Carrying out such a monitoring program successfully will require a sampling protocol administered consistently by a limited number of investigators using comparable methods.

We plan to submit the complete report of our committee on the proposed removal of the peregrine falcon from the list of endangered and threatened wildlife species to you soon. For now, we would appreciate it if

you would consider our general comments concerning the 5-yr monitoring period. If the Raptor Research Foundation, Inc. can assist further, by providing an expert, peer review of the specific monitoring plan for peregrines, please do contact me. Thank you.

Sincerely,

James C. Bednarz, Ph.D.
Chair of the Conservation Committee
Raptor Research Foundation, Inc.

RRF COMMENTS ON MANAGEMENT OF GRAND STAIRCASE-ESCALANTE NATIONAL MONUMENT

11 February 1999

Mr. Pete Wilkins, Team Leader
Grand Staircase-Escalante National Monument
337 South Main Street, Suite 010
Cedar City, UT 84720

Dear Mr. Wilkins:

I am writing on behalf of the Raptor Research Foundation, Inc., an organization that represents approximately 1200 professional raptor biologists and scientists from more than 55 different countries. Our membership includes the most-recognized scientists and natural resources managers that have special knowledge and expertise of the raptors and their response to human activities in the southern Utah and northern Arizona region. Members of the Conservation Committee of the Raptor Research Foundation, Inc. have recently reviewed the Grand Staircase-Escalante National Monument draft management plan and draft Environmental Impact Statement (EIS). Members of our organization are familiar with the site of this proposed plan and intimately knowledgeable of the extraordinary raptor populations that rely on this area for their existence.

The draft plan and draft EIS suggest that there are 27 species of raptors found within the Monument boundaries. Ten of these 27 are considered 'sensitive' which encompasses half of all sensitive bird species found within the Monument; these species are classified as sensitive by the Utah Division of Wildlife Resources (UDWR) and the Bureau of Land Management (BLM). Of the five federally threatened and endangered species using the Monument, four of these are raptors. In addition, we note that there is one UDWR threatened raptor (Ferruginous Hawk) using the Monument that was not recognized in the EIS.

The Golden Eagle is not considered a sensitive species, yet the desert and mountain population in north-central Utah is showing signs of a possible decline (Keller et al. 1998). The desert Golden Eagle population in northern Utah relies heavily on the black-tailed jackrabbit. This also seems to be true of the eagles at Glen Canyon National Recreation Area (N. Brown, pers. commun.) which borders the Monument to the south and thus is very likely to be the case for the eagles within the Grand Staircase-Escalante National Monument. Therefore, heavy OHV usage could cause a significant impact on prey populations and adversely affect the Golden Eagles and other raptors using the Monument.

In the EIS, there was a reference to separate management plans and review for designating areas for climbing and other similar recreational activities. Because these activities can negatively affect cliff-nesting raptors, such as the Golden Eagle, Peregrine Falcon, Prairie Falcon, Ferruginous Hawk, Red-tailed Hawk, and

possibly the Spotted Owl, we strongly suggest the reviews of impacts on species in these climbing and recreational areas should include all raptors, not just the federally listed species. We recommend that professional raptor biologists knowledgeable about the impacts of human disturbance be involved in the review of these separate plans.

Of the alternatives considered in the draft plan, B, C, and D provide more protection for natural resources (including raptors and other wildlife) than A and E, by restricting the cross-country and motorized vehicle access in the Monument and by including a research program. Alternative D is stated to provide the most protection to threatened species because it involves fewer designated miles of roads. This alternative provides 760 miles of roads designated for street-legal motorized vehicles (including off-highway vehicles [OHV]), prohibits use of non-street legal motorized vehicles or dirt bikes, and designates 30 miles of roads for administrative purposes. Alternative B, the BLM preferred alternative, designates 818 miles of roads to street legal motorized vehicles, of which 591 miles is open to non-street legal, and an additional 229 miles are designated for administrative purposes. Of these three, Alternative C has the most miles (1,187) designated open for street legal vehicles. This alternative prohibits use of non-street legal motorized vehicles or dirt bikes and designates 180 miles for administrative purposes. Because OHV recreational activities and other road traffic and related activities can have substantial adverse impacts upon nesting raptors, we would strongly recommend that the BLM reconsider Alternative D, which limits development of roads.

Cheatgrass and other non-native plants have invaded many areas throughout the Southwest and have become quite invasive in sagebrush habitats in north-central Utah; this may also be true for areas on the Monument. This habitat change is considered to be a threat to desert populations of the Golden Eagle in north-central Utah, because cheatgrass invasion in combination with wild fire results in the reduction of jackrabbit populations (USDI 1996, Keller et al. 1998). Prescribed burns (permitted in Alternatives B and D) may allow for the enhanced invasion of these grasses rather than their control. A careful understanding of the effects of burning on native and exotic plants (including within riparian zones) is required before such management prescriptions are implemented. We recommend that rigorous research on controlling exotic plants and the restoration of native vegetation should be encouraged and supported before any broad scale application of these management methods. Both Alternatives D and B allow for the manipulation of vegetation through a variety of methods, although D is more restrictive on the type of methods and where they can be applied. Because of the limited information available on the ecology of fire in the Monument area we recommend the adoption of the restrictions described in Alternative D.

According to the MP/EIS, the full extent of the Monument's resources is not known. With the exception of the knowledge of some of the "potential" or documented habitats for Mexican Spotted Owls and Peregrine Falcons, information on the other raptors utilizing the area is apparently very limited. Therefore, we advise that the BLM execute or fund the necessary survey work on raptors before any area is designated open to vehicles, or for recreation, new developments (buildings, campgrounds, water, etc.), or administrative purposes.

The Grand Staircase-Escalante National Monument provides outstanding habitat for many rare, highly sensitive, and threatened raptors. Unfortunately, adequate data on the distribution and abundance of these raptors are not available. We urge extreme caution in designating areas for development, which could have adverse impacts on irreplaceable raptor populations, without knowledge of the location and importance of those raptor resources. Until the extent, distribution, and abundance of raptor resources using the Monument in both the nesting and wintering periods is adequately understood, we see no other prudent option except for the adoption of Alternative D, which minimizes potentially damaging developments to raptor populations. In addition, we request that pre-action raptor surveys and impact assessments be required before the implementation of each development component (construction of roads, OHV trails, designation of recreational areas, etc.) of the chosen alternative, including alternative D. Development components should

be adjusted as necessary upon completion of these assessments to minimize any potential impacts of such projects to sensitive raptor populations.

Thank you for considering our comments on Staircase-Escalante National Monument draft management plan and draft Environmental Impact Statement. If the Raptor Research Foundation, Inc. can assist further, by providing expert, peer review for any specific development plan, please do contact me.

Sincerely,

James C. Bednarz, Ph.D.
Chair of the Conservation Committee
Raptor Research Foundation, Inc.

RRF CONVENES GOSHAWK STATUS REVIEW COMMITTEE

The Raptor Research Foundation, Inc. (RRF) has convened an ad hoc committee to review the status of the Northern Goshawk in the coterminous United States. The committee will submit a report summarizing its findings to the RRF Board of Directors for their review and endorsement. Once endorsed by RRF, the report will be submitted to the U.S. Fish and Wildlife Service (USFWS) and generally made available as RRF's position on the population status of Northern Goshawks in the coterminous United States.

In June 1998, USFWS declined to list the Northern Goshawk in the western United States (see Federal Register 63(124):35183-35184). This decision was based on USFWS's findings that: 1) there is no evidence for range contraction, and most historic breeding areas are currently occupied by goshawks; 2) in those areas where intensive survey and monitoring efforts have been recently conducted, goshawks are generally found; 3) there is no evidence that goshawk habitat is currently limiting populations; 4) there is no evidence to support the claim that goshawks are dependent on large, unbroken tracts of old-growth and mature forest; and 5) goshawk habitat in the western United States occurs predominantly (>80%) on federal lands, and habitat conditions relative to goshawks are no longer declining on federal lands.

As an organization whose purposes include, "promote a better public understanding and appreciation of the value of birds of prey," RRF has an obvious interest in conservation and management decisions that directly or indirectly affect raptors. Of particular interest is use of the best available scientific information in reaching conservation decisions. And as a professional society whose members include most of the world's leading authorities on raptor ecology and conservation, RRF is able to provide an expert opinion regarding the soundness of USFWS's decision not to list Northern Goshawks west of the 100th meridian.

Accordingly, the RRF goshawk review committee's charge is to: 1) review and evaluate data used to determine whether there is any evidence of a population trend in Northern Goshawks west of the 100th meridian, 2) review available information and evaluate if there is any evidence suggesting that goshawks nesting in the eastern and western United States represent distinctive biological populations (i.e., are genetically unique), 3) evaluate evidence addressing the hypothesis that goshawks are dependent on large, mostly-unbroken tracts of old-growth and mature forest, and 4) if appropriate, make recommendations as to the general type and scope of research that needs to be accomplished before the above tasks may be scientifically addressed.

For more information about the goshawk review committee, please contact: Jim Bednarz, Chair, RRF Conservation Committee, Department of Biological Sciences, Arkansas State University, State University, AR 72467 USA, phone: 870-972-3082, fax: 870-972-2638, e-mail: jbednarz@navajo.astate.edu.

5TH WORLD CONFERENCE ON BIRDS OF PREY AND OWLS
Midrand, Johannesburg, South Africa, August 4-11, 1998

by Bernd-U. Meyburg, Wolfgang Baumgart & R. D. Chancellor

In conjunction with the Raptor Conservation Group (RCG) and Vulture Study Group of the South African Endangered Wildlife Trust, the World Working Group on Birds of Prey (WWGBP) held the V World Conference from 4-11 August 1998 in the splendid setting of the ESKOM Centre at Midrand, Johannesburg. Some 250 participants came from all continents to attend the conference, the emblem of which, lending prominence to South Africa, the host country, was a soaring Bateleur Eagle (*Terathopius ecaudatus*). To commemorate the occasion, a special set of postage stamps was issued depicting different birds of prey and, during the opening ceremony, an official representative of the South African government solemnly presented framed sets of these to the chairmen of the WWGBP and the RCG.

In addition to the faultless organisation of the ESKOM Centre, other noteworthy contributions to the event were a piece of music specially composed for the occasion and a liberal supply of specially pressed "Lesser Kestrel" red wine, making the conference opening a conspicuous success. During the next few days the participants fused into a well-knit community, many new contacts were established, friendships sealed and ways of co-operation agreed on.

Following the formal opening on 4 August, the scientific programme consisted of 14 sessions held concurrently in two separate lecture halls, during which over 130 oral presentations and 35 posters were delivered. Parallel with the World Conference, the 3rd International Raptor Biomedicine Conference was also held at the ESKOM Centre from 9-11 August.

Midway through the conference, so as to make a break and allow participants to relax, an excursion was organised to view a breeding colony of Cape Vultures at Magaliesberg and to visit the De Wildt Cheetah and Wildlife Centre nearby. On this trip it was possible to observe the numerous Cape Vultures and occasional White-backed Vultures (*Gyps coprotheres* and *G. africanus*), together with Black and Fish Eagles (*Aquila verreauxii* and *Haliaeetus vocifer*), Milky Eagle Owl (*Bubo lacteus*) and Pearl-spotted Owlet (*Glaudicium perlatum*), not to mention other characteristic examples of the South African avifauna. That same evening the participants were invited as guests to a splendid banquet held to celebrate the Silver Jubilee of South Africa's Endangered Wildlife Trust.

In the immediate vicinity of the ESKOM Centre, in the undulating grassland, there was a low-lying marsh to which one could pay useful visits in between sessions. Here, in addition to numerous passerines, plovers and water birds, one could see the occasional Lanner Falcon (*Falco biarmicus*), Black-shouldered Kites flying in every evening and, regularly at dusk, the Marsh Owl (*Asio capensis*).

Before and during the conference, which closed on 11 August with the adoption of 15 resolutions and a WWGBP members' meeting, guided tours and individual excursions could be made to many parts of the Republic of South Africa. A number of participants also went on to attend the 22nd International Ornithological Conference, held at Durban from 18-22 August.

On these excursions it was depressingly evident to what a remnant status the formerly rich and abundant fauna of South Africa had been reduced. Those pristine eco-systems that survive are almost exclusively in national parks. Outside of these it is rare to encounter any wild animal larger than a small deer or fox, corresponding forcefully with other densely populated regions of the earth. True, in some localities there is

still a wide variety of raptor species to be seen, but then only at a very low density of individuals, especially in the case of vultures. The Cape and Bearded Vulture (*Gypaetus barbatus*) populations in the Drakensberg mountains are at present still reasonably high in places, but are only maintained at this level by the establishment of artificial feeding places.

On arrival all participants received a booklet containing the abstracts of all oral and poster presentations. The scientific programme and the papers, both oral and poster, in each session will be published in full in the forthcoming proceedings. In the following we give summaries of the most important issues covered, in the chronological order of the sessions.

Current Studies of African Raptors (*conveners: A. Kemp & W. Tarboton*): A large number of the 22 presentations in this session were concerned with individual species (Cape Vulture, Madagascar Fish Eagle, Martial Eagle, Bat Hawk, Taita, Peregrine and Lanner Falcons, etc.), raptor communities in particular regions of the continent (Zimbabwe, West Africa, Kenya, etc.) and Madagascar, together with problems of their protection (measures to prevent birds of prey from drowning in cattle troughs and farm reservoirs). Fortunately attention was also paid to manmade and environmental influences on over-wintering species such as the Hobby (somewhat at risk during the spraying of crops) and Lesser Kestrel (very dependent on weather conditions). On the same lines as with closely-related species in Europe and Asia, taxonomic problems and advances in solving the systematics of selected African raptors (*Falco chiquera, Hieraeetus spilogaster, Circus ranivorus,* etc.) using conventional and molecular genetic methods were outlined.

Biology and Conservation of the Vultures of the World (*conveners: P. Mundy & G. Verdoorn*): One important element of this session was that it brought together working experts from many different parts of the world and so strengthened bonds and enhanced co-operation in vulture research in its many far-reaching aspects. Valuable, too, was debate provoked by the 14 oral and six poster presentations on both theoretical and current practical aspects of vulture conservation. All Old and New World vultures were considered. In addition to individual species (particularly Cape, Egyptian and King Vultures), and the situation of regional vulture communities (South Africa and the African continent, Asia, Mongolia, and North and Latin America), there was discussion in depth of the various threats these birds face, along with problems of their protection and management (the risk of poisoning, establishment of feeding places, re-introduction projects, etc.). Special attention was paid to new findings on the migratory behaviour of certain species (in particular the S.E. European Griffon). Problems of vulture systematics were also addressed in depth in another session, to the solution of which the concept of a system of ecofunctional positioning was promoted. Based on this, functional equivalents between vulture communities in different regions could be objectively determined.

Falcons in Asia and the Middle East Falcon Research Group (*conveners: N. Fox & V. Galushin*): This session, initiated by the Middle East Falcon Research Group, was above all concerned with the situation in recent years of the Saker Falcon in Asia (Kyrgyzstan, Kazakhstan, Mongolia) together with the data obtained from migration studies, presented in nine oral and two poster papers. Beyond this were reports on the species' status in European Russia and fresh developments in mid-central Europe. Other papers concerned particular species (Lugger and Peregrine Falcons), morphometric similarities ("Desert Falcons") and problems of pesticide contamination.

Satellite Telemetry to Study Movements and Habitat Utilisation of Raptors (*conveners: B.-U. Meyburg & M. R. Fuller*): In five papers, not only was the continually improving technique of satellite telemetry described, but also, outstandingly, the fresh insight it has provided into the migrations of Greater Spotted and Steppe Eagles and the Osprey. One Greater Spotted Eagle was tracked as far as Zambia, far south of its hitherto known wintering grounds. With Ospreys it could be confirmed that many of them fly over the Mediterranean at its widest point and then cross the Sahara not, as previously supposed, in a non-stop flight but in daily stages of similar length to those on the rest of their migration. Griffon Vultures from Israel roam

not only to neighbouring countries (Jordan and Syria) but also as far as Turkey. For Peregrine Falcons from the Kola Peninsula in Russia, satellite tracking made it possible to locate the exact area in their European wintering ground where they acquired their pesticide residues.

Conservation Models for Raptors of the World (*conveners: R. Watson & R. Hartley*): Oral papers were given by 13 authors, and a further two papers were presented as posters. Professor Tom Cade presented a comprehensive review of progress in the translocation of raptors, providing the single most thorough source of knowledge to date on this raptor conservation tool. Lloyd Kiff presented a review of lessons learned from saving the Californian Condor, while others presented new ideas for raptor conservation, such as the community-based conservation of the Madagascar Fish Eagle and similar efforts for Black Eagles in the Matopos Hills of Zimbabwe. Public education was a recurring theme in many papers, including the use of falconry as a tool for conservation, particularly in Africa. Research and analytical tools for achieving conservation were presented by several authors, including a revealing analysis of management of the Wedge-tailed Eagle in forestry operations of Tasmania, and the demography of the Imperial Eagle in Kazakhstan. Together, these papers went far toward sharing the lessons learned from achieving conservation of birds of prey in a world where human demands for more fuel, food and other natural resources impact the survival of birds of prey in many complex ways.

Raptors in Urban Environments (*conveners: D. M. Bird & G. Septon*): With the constant expansion of urban areas, so do an increasing number of birds of prey take advantage of it. Here they thrive, building their nests on tall buildings and masts, and preying on synanthropic species such as pigeons, starlings and sparrows. Since Peregrine Falcons are now breeding in over 60 cities in North America, to which two of the seven oral presentations and two posters were devoted, this species is the most deeply studied of all city-dwelling raptors. Circumstances in North America (Red-tailed Hawk *Buteo jamaicensis* nesting on buildings, urban birds of prey and owls in Tucson, Arizona, etc.) not unnaturally received the main consideration. But Palaearctic (Lesser Kestrel, Sparrow-Hawk) and supraregional similarities (e.g., Hobbies moving into town in Europe, Aplomado Falcons *Falco femoralis* doing likewise in South America) were also given close attention.

Understanding Distribution - The Whys and Wherefores of Geographical Ranges of Raptors (*conveners: N. Mooney & D. Pepler*): The distributions of raptors are basic to our understanding of their ecological requirements. Changes in distribution are nearly always indices of ecological changes, in modern times often as a result of man-made influences. Six oral and four poster presentations were devoted at differing levels of the Golden Eagle in the Caucasus, Montagu's Harrier in Spain and France, the Goshawk in Central Europe, the Lesser Kestrel in the steppes south of the Urals, and the distribution patterns of Australian raptors. These opened up a wide diversity of approaches to the subject. As migratory and nomadic species, Ospreys wintering in Costa Rica and sea eagles in Norway received special attention. Shifting and fluctuating distribution ranges linked to various life forms were illustrated by comparisons between Montagu's and Pallid Harriers. The sudden and abrupt drop in the numbers of Lesser Spotted Eagle passing through Israel on migration remains unclear.

Predation and Feeding Ecology (*conveners: I. Newton & R. A. G. Davies*): This session was concerned with the effects of predation by raptors on prey populations and the dependence of the former on food availability. In seven presentations, including two review papers and three posters, the following subjects, among others, were addressed: vultures in northern Spain, Black Eagles and Hyrax in South Africa, the interrelation of birds of prey with domestic pigeons and also rabbits (in Australia) together with the impact of rabbit calicivirus disease, and the situation of the Burrowing Owl (*Speotyto cunicularia*) due to a lack of small mammals in northern South America. Other topics discussed included the effects of predation by Peregrine and Hen Harrier on the Red Grouse in Scotland and the results of brood manipulation in the Kestrel, to test Lack's hypothesis that birds lay a clutch size that optimises the number of offspring they

fledge.

Global Perspectives on the Status and Conservation of Migratory Raptors (*conveners: K. Bildstein & R. Yosef*): At least 192 of the 294 raptor species currently known in the world are wide-ranging, 69 (23%) of these under varying degrees of threat, and 19 (6%) of them exclusively migratory. In eight oral and one poster presentations programmes were put forward for the monitoring and protection of such species which, due to their international links involving substantial expense, appear at present to be realisable only in specific instances. To date the responsible international agencies have scarcely begun to tackle this problem. A few ongoing long-term projects, greatly enhanced by the adoption of telemetry techniques, have produced not only remarkable results but have also shown clearly the growing need for action. In North America declines in captures have indicated a decrease in numbers of Sharp-shinned Hawks (*Accipiter striatus*) and American Kestrel (*Falco sparverius*), whereas in contrast Cooper's Hawk (*Accipiter cooperi*) has increased. The number of raptors migrating from North to South America through Veracruz (Mexico) is reckoned in millions, making this the world's largest known concentration point, with for the seasons 1992-1996 a mean total of 3,296,808 birds of 19 species including 1,453,568 Broad-winged Hawks (*Buteo platypterus*), 510,943 Swainson's Hawks (*B. swainsonii*) and 1,204,263 Turkey Vultures (*Cathartes aura*). Compared with this, the number of raptors of various species migrating annually along the Black Sea Coast in Southern Bulgaria between 10 August and 30 October, averaging 65,020 birds, seems extremely modest. These are predominantly Buzzards and Lesser Spotted Eagles. The number of migrating Steppe Eagles passing through Eilat in Israel has been very variable since the end of the 1970s, with an annual average of 16,023 (between 11,629 and 24,243). Alarm is caused by the fact that in 1996, over a period of 42 days only 2,228 could be counted and in 1997 only 9,283.

General Paper Session (*convener: R. D. Chancellor*): This session comprised eight oral presentations and one poster covering subjects which lay outside the scope of any of the other sessions yet were of considerable interest within the framework of raptor research. One study was on the complexity of nest-defence in Montagu's Harrier, depending on whether breeding in isolation or colonially. Further studies on this species, and also the likewise semi-colonial nesting of Red Kite and Osprey, concerned the effectiveness of the male's guarding the female prior to egg-laying. In relation to this, breeding Kestrels showed other dependencies: on already established polygamous mate relationships, copulation frequency, distances between nests and food availability. The innocuous Barred Honey Buzzard (*Pernis celebensis*) benefits through "active mimicry" from its similarity to the militantly aggressive *Spizaetus* Hawk-eagle. In another study the suggestion was tested, with American Kestrels, that aversion conditioning to prey treated with a distasteful compound may have a practical application in reducing unwanted predation on some particular species. Another speaker had studied the manner in which different species used their feet when striking small mammal prey; this was variable (Kestrel and Buzzard used either foot indiscriminately), owls use both feet except for the Little Owl, which clearly prefers the right foot only. The status of the still very little known Gurney's Eagle (*Aquila gurneyi*) of the north Moluccan archipelago seems at present to be secure with 800-900 breeding pairs, but this could soon change with further widespread exploitation of the forest. In this connection there was a most interesting study on the effect of ever-extending afforestation with exotic trees on raptors, leading to recommendations to the South African timber industry on various aspects of raptor management.

Islands and Raptors (*conveners: C. White & L. F. Oliveira*): This session was aimed at reviewing the diversity of raptors on islands and specific studies on given single taxa. One paper was general in nature, looking at the distribution and species numbers on islands using the Biological Species Concept, Phylogenetic Species Concept and Evolutionary Significant Units. At each level the number of "species" increases (nearly doubles), and islands become increasingly important at each level by containing proportionally more "species." Islands therefore become increasingly important in the conservation of "species." The remaining papers dealt with single species and reviewed mainly status. A series of three

papers dealt with the Cape Verde Islands, but while the authors dealt with morphology and sexual dimorphism in Cape Verde kestrels, their status was not mentioned. The other two species, Osprey and Peregrine Falcon, were deemed rare or decreasing in numbers, the former perhaps mainly because of human depredation. Decreases in numbers of Tasmanian Gray Goshawks and Christmas Island Hawk-owls were also reported and seemed to be related to habitat loss. These papers elicited some discussion on the conservation issue. Then two papers dealt with dispersal and population movements, one on the Lanyu Scops Owl and one on the Seychelles Kestrel. The session was rounded out by data on the taxonomy and systematics of both the Reunion Marsh-Harrier and Eleonora's Falcon, using both molecular DNA fingerprinting and extensive morphometric data. The question of species level was raised for the harrier. An added attraction was the final discussion on the use of molecular information in the enforcement of laws with raptors and while not specifically on islands it had generated discussion about its uses and abuses.

Impacts of Electricity Utility Structures on Raptors (*conveners: C. van Rooyen & P. Nelson*): Contrary to what was expected, given the relative late scheduling in the programme, the paper session on raptor electrocutions was well attended and featured contributions from South Africa, the United States and Israel. Richard Harness from Electrical Systems Consultants in Colorado gave two presentations. The first gave a review of raptor electrocutions and outages in the western United States over a period spanning 10 years, 1986 to 1996. Electrocutions are still a major cause of mortality in the USA, despite a widely held belief that the problem was largely solved a decade ago, with pole mounted transformers as probably the most lethal structure. His second paper focused on an emerging trend in the USA to use steel poles for electricity distribution purposes, and pointed out the increased risk of raptor electrocution associated with steel distribution structures generally. He also discussed alternative methods of construction aimed at moving away from steel constructions. Anne-Marie Sanches, representing APLIC (the Avian Power Line Interaction Committee), gave a compelling overview of most important milestones achieved during thirty years of research and conservation action on the topic of raptor electrocutions in the United States, with particular emphasis on the work that APLIC had been involved in since its formation. Chris van Rooyen presented an overview of raptor electrocutions in South Africa, with particular focus on the activities of the Eskom-Endangered Wildlife Trust Strategic Partnership. He gave statistics that revealed that vultures, particularly the vulnerable Cape Griffon, are still the most often recorded electrocution victims. He also identified the most structures, and the infamous steel Kite-structure and pole mounted transformers came out top. Rudi Kruger from Eskom presented a paper co-authored with Chris van Rooyen on methods applied to assess the risk that powerlines posed to raptors, systematically outlining the different factors taken into account in assessing the risks, and how the authors arrived at their conclusion. This paper is of particular value to electrical engineers designing and planning new lines. Dr. Ofer Bahat described in his paper the measures that have been taken by the Israeli Electric Corporation, together with the Society for the Protection of Nature in Israel and the Israeli Nature Reserves and Parks Authority, to reduce the impacts of powerlines in Israel, particularly on the critically endangered Eurasian Griffon.

Biology of Owls with Emphasis on Vocalisation and Conservation (*convener: C König*): For identification and intraspecific communication, owls, being nocturnal, rely more on vocalisations than on plumage patterns and colouration. Corresponding research has revealed the existence of over 200 species, many more than were formerly identified merely on the basis of plumage patterns. This in turn leads to new premises regarding plans and methods for their protection. This approach was amplified in five oral and four poster presentations, and also one video film. Along with more faunistic concerns (owls of China, Eagle Owl in Portugal) and studies on individual species such as Tawny, Little and Pygmy Owls, rarities such as *Otus irenae* and *O. insulares* were also discussed in the light of the remarkable advances made of late in acoustic and molecular systematic differentiation. Geographical variations in calls within a species are in general not larger than individual. According to the criteria of molecular systematics the *Tytonidae* and *Strigidae* are separate families. The genus *Bubo* should also embrace the at present separate genera *Nyctea* and *Ketupa*, whilst *Surnia*, *Aegolius*, *Athene* and *Glaucidium* form a monophyletic group.

Taxonomy, Phylogeny, Development in Raptor DNA-Studies and Other Theoretical Aspects (*conveners: M. Wink & A. van Zyl*): The session consisted of five oral and four poster presentations directed towards DNA studies and taxonomic aspects of diurnal raptors. New methods of molecular biology have influenced nearly all fields in biology and opened a window to the evolutionary past of raptors, their phylogeography, population or pedigree structure. The amplification of marker genes, such as cytochrome b, by polymerase chain reaction (PCR) and the analysis of the aligned sequences by powerful tree building programmes has provided insight into the phylogenetic structure of the Falconiformes indicating that Falconidae, Cathartidae and Sagitaridae are distinct evolutionary units which are clearly separated from the "true" Accipitridae. Similarity in lifestyle and morphology in these groups are apparently derived characters which evolved convergently. Results were presented on the phylogeny of booted and sea eagles, vultures, Bateleur, buzzards and falcons. Microsatellite PCR and DNA fingerprinting have become indispensable tools to elucidate the pairing systems of birds, potential hybridisations, population structure, heterozygosity or gene flow. One paper addressed forensic and conservation issues using DNA methods. A new approach used DNA fingerprinting to determine turnover and adult mortality of raptors by analysing the DNA profiles of the young birds in consecutive years. PCR methods have recently been established to determine the gender of individual birds. This approach is especially helpful to study potential sex bias in populations or for the selection of birds which cannot be sexed by morphology alone in captive breeding programmes: results were given for vultures and eagles.

Workshops and round-table discussions were held on 9 August on the following subjects: Co-operative Management of Raptor Electrocutions, convened by C. van Rooyen & P. Nelson; The Role of Satellite Telemetry and Internet in Education towards the 3rd Millennium, convened by Y. Leshem & M. Martell; and Legislation and Trade, convened by J. Parry-Jones & D. Newton. These discussions opened up possibilities for international co-operation, exchange of experience and co-ordination in the field of raptor research.

The closing session on 11 August began, by way of introduction, with an assessment of the results achieved by Resolution 15 of the IV World Conference in 1992, concerned with the protection of migrating birds of prey passing through Syria. This had led to a legal ban on hunting which, however, had induced a wider use of poison in the fight against predatory wild animals and thereby remained a continuing threat to large carrion-eating raptors (vultures, Steppe and Imperial Eagles).

Following this report came the debate on and formulation of Resolutions from the present World Conference, the final versions of which are set out in the pages following this report. On behalf of the WWGBP Council Robin Chancellor, Hon. Secretary and Treasurer, then reported on the Group's activities, during which, at the request of the Chairman, he explained that, for the future operation of the WWGBP it was becoming necessary to find younger members prepared to take over the work and join the Newsletter editorial board and executive committee. In this connection several members (Gero Speer, Dr. Wolfgang Baumgart, Prof. Dr. Kai Graszynski) had given the Chairman active support in preparing the German language version of the Newsletter, but the English language version still remained predominantly the responsibility of Robin Chancellor and Bernd-Ulrich Meyburg. Since that time Nick Mooney from Australia has generously offered to play a major part in preparing and editing the Newsletters.

To end the meeting the officers were re-elected for a further term *nem. con.*, and Nick Mooney proposed Australia as the venue for the VI World Conference. There was also an invitation from Hungary for an international and, if the occasion arose, World Conference.

WWGBP RESOLUTIONS

The following resolutions were passed by the World Working Group on Birds of Prey and Owls at its Fifth World Conference in Midrand, South Africa, August 4-11, 1998.

RESOLUTION 1
RECOGNISING the co-operation existing between the World Working Group on Birds of Prey and Owls (WWGBP) and the Raptor Research Foundation (RRF); REQUESTS the resolutions committee of RRF to submit these resolutions to participating members at the 1998 Fall Meeting in Ogden, Utah, for endorsement and joint submission with WWGBP.

RESOLUTION 2
RECOGNISING that the survival of the globally threatened Lesser Spotted Eagle *Aquila pomarina* is only possible in the last unfragmented and undisturbed areas of Central Europe, and that 80% of the remaining German population of this eagle is concentrated in small parts of Mecklenburg-Vorpommern; REQUESTS the government in Mecklenburg-Vorpommern to protect the areas with a high breeding concentration of Lesser Spotted Eagles from growing fragmentation and disturbance, and; URGES the authorities not to permit the proposed Oltschott wind-farm to be constructed in the most important breeding area for Lesser Spotted Eagles in Germany, and; RECOMMENDS the implementation of the EU Action Plan for this species.

RESOLUTION 3
RECOGNISING that the Lesser Spotted Eagle *Aquila pomarina* is the rarest and most threatened species of eagle that breeds regularly in Germany, and; RECOGNISING that despite intensive protection during the last 40 years the population of this species is not increasing; URGES the authorities of Mecklenburg-Vorpommern to take great care, during the privatisation of the state forests, that the forest ecology necessary for Lesser Spotted Eagles is not prejudiced by insensitive introduction of intensive forestry techniques, and thus that the environment necessary for this and other threatened German raptors is preserved.

RESOLUTION 4
RECOGNISING that recent studies clearly show that the European Griffon Vulture *Gyps fulvus* makes very long movements in their Mediterranean area and that there is a high exchange of individuals between different and distant colonies, and; RECOGNISING that the European Griffon Vulture is particularly threatened by poisoning, electrocution, direct killing and disturbance at the nesting colonies; URGES the Mediterranean countries involved to protect carefully the existing colonies and suitable buffer zones in order to prevent disturbance and habitat deterioration, to enforce legislation forbidding poisoning and to re-introduce Griffon Vultures where appropriate.

RESOLUTION 5
RECOGNISING that anti-poaching patrols by the National Forest Service guards in the Strait of Messina, Italy, and particularly on the Calabrian side, from the end of April to the beginning of June have reduced illegal killing of migrating raptors by about 90% in the last 10 years; COMPLIMENTS the Italian government and the National Forest Service for the very efficient action taken against poaching and; STRONGLY RECOMMENDS that this action will continue in the same way in the future.

RESOLUTION 6
DEEPLY CONCERNED by the recent massive poisoning of Griffon Vultures *Gyps fulvus* in Israel; SUPPORTS the very important decision of the Israeli Minister of the Environment to nominate a committee

to investigate the incident and; STRONGLY URGES the Israeli Minister of the Environment to implement all recommendations of the committee at the earliest.

RESOLUTION 7
NOTES that the activities of the South African Poison Working Group of the Endangered Wildlife Trust have reduced the poisoning of raptors, and; NOTES the importance of focusing attention on education, and co-operation with agrochemicals manufacturers and government departments, and; URGES the European countries and other nations to follow this model by establishing similar Working Groups with assistance from the EWT.

RESOLUTION 8
RECOGNISING that negative interaction between birds and electricity structures remains a problem; URGES: 1. Electricity utility companies to form co-operative management partnerships with recognised ornithological bodies, 2. That all new electricity structures be designed to be safe for raptors and other birds, and 3. That all existing structures be assessed by these partnerships to develop a timetable for the mitigation of those structures causing negative impacts on bird populations.

RESOLUTION 9
RECOGNISING that raptors can drown in farm dams; URGES the organised agricultural sector in countries where this is a problem to alert its members to this situation, and; URGES the members to affect the necessary measures to mitigate raptor mortality in their farm dams.

(*Editor's note:* There is no Resolution 10.)

RESOLUTION 11
RECOGNISING that predation by raptors can create conflicts between owners of livestock, conservers of game and other interests, and; RECOGNISING that human resources, including skills and other contributions, are needed from all possible quarters to conserve wildlife, and; RECOGNISING that conflicts divert attention and resources from issues on which all interests can agree, especially the absolute priority of maintaining health of habitats and raptor prey populations; URGES governments, authorities, NGOs and other interest groups to seek all possible solutions to such conflicts, including if absolutely necessary the selective removal of identified problem raptors, if possible for other conservation programmes.

RESOLUTION 12
RECOGNISING that scientific and veterinary studies on birds of prey play a vital part in the conservation of these birds and that such work often requires the international movement of samples (derivatives) taken from species subject to controls under the Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), and; NOTING that diagnostic and other samples usually need to be examined promptly if meaningful results are to be obtained, and; NOTING that CITES controls on the movement of such derivatives can cause delay in delivery of valuable material, prove excessively time-consuming and are at times impossible to follow, and; NOTING that some countries are not signatories to CITES or lack CITES issuing facilities; THIS CONFERENCE urges the CITES Secretariat and Signatories to the Convention to devise a system which would permit the rapid movement between countries of samples (derivatives), for example, blood smears, biopsies and tissues for DNA studies, for scientific research or veterinary purposes.

RESOLUTION 13
RECOGNISING that the CITES appendices require regular revision to encompass new understanding of animal demography and changes in patterns of trade, and; RECOGNISING that direct costs to CITES administration authorities and indirect costs, for example, to research workers, should be concomitant with conservation benefits that result from regulations; REQUESTS the CITES Secretariat to review its

appendices with up-to-date recommendations from raptor biologists, taking note of IUCN criteria and with particular emphasis on: 1. Raptor species or sub-species with globally small and vulnerable populations in the wild, 2. Raptor species with population dynamics that cannot sustain a high yield, 3. Raptor species liable to be affected by Trade in the next decade, 4. Reviewing the status of raptor species in appendices on a 5-year basis, 5. Urging the European Union to adopt the same principles, 6. Down-listing species that no longer meet CITES criteria.

RESOLUTION 14
RECOGNISING that captive breeding and reintroduction of endangered species can be important proven conservation methods and that speed and timing of movements are vital for the success of the methods; RECOGNISING that the statistics from TRAFFIC in CITES movements show an increasing preponderance towards captive-bred birds, and consequently a decreasing proportion in the trade of wild birds, and; RECOGNISING that the current situation penalises the movement of captive-bred birds rather than encourages it; REQUESTS CITES to urge all member countries to accelerate the process for issuing export/import permits to meet these conservation efforts.

RESOLUTION 15
RECOGNISING that some bird of prey populations are under pressure from live harvesting; URGES all governments which issue permits to harvest birds of prey on an annual quota system to do so: 1. Only where an adequate monitoring programme of the breeding population shows that such a harvest is sustainable long-term, and 2. Only for juvenile birds, not for adults, in order to minimise impact on the donor population.

RESOLUTION 16
RECOGNISING the important role that the Endangered Wildlife Trust (EWT) is playing in the conservation of African species, especially birds of prey and owls; CONGRATULATES the EWT on its 25th anniversary, and; THANKS the EWT for its generous hospitality in hosting the 5th World Conference and for the high level of patient, dedicated assistance by members during the Conference.

RRF EDUCATION COMMITTEE REPORT

by Nancy Read, Co-Chair, Education Committee

The following is a status update on current projects:

1. Children's Book. Our illustrator recently completed several more drawings for *Owls Are ...* . All of the basic drawings for the coloring-book format are now completed. The artists is now working on some illustrative drawings depicting various species of owls in appropriate habitat settings. Work on layout/composition can now proceed, in collaboration with Dick Clark.

2. Audio-Visual Resources List. A notice went out in the September 1998 *Wingspan* that the list is now available. Several requests for the list have been received. Additional resources are being solicited, and the list will be updated as new information is received.

3. Optical Equipment Donations. Both donors and recipients are needed--we know that both are out there! There was very little response last year, by either donors or potential recipient organizations. Notices will continue to be posted in *Wingspan* and other appropriate forums.

NORTHERN SPOTTED OWL DEMOGRAPHY WORKSHOP

by Daniel E. Varland

A workshop to determine the demographic rates of the Northern Spotted Owl was held December 7-12, 1998 in Corvallis, Oregon. The main impetus of the workshop was a need for population monitoring of this species on federal lands under the Northwest Forest Plan (FEMAT 1993). The last such workshop was convened in Fort Collins, Colorado in 1993. The conclusion at that time was that the Northern Spotted Owl population was in decline on all study areas across its range (Forsman et al. 1996). The overall goal in 1993 and again in 1998 was to determine Spotted Owl population trends for Washington, Oregon, and northern California.

In Corvallis, wildlife biologists gathered with data collected at 14 study areas between 1993 and 1998. Workshop objectives were to use these data to: 1) determine fecundity rates for each study area; 2) estimate survival rates of juvenile, subadult, and adult owls (from capture-recapture data); 3) estimate the rate of population change (lambda) using survival and fecundity rates; and 4) provide a meta-analysis of data from all study areas combined. Analyses were conducted using programs MARK and RELEASE; these are Cormack-Jolly-Seber open population models. Results of the analyses will be presented in a report due April 1, 1999.

Forest Ecosystem Management Assessment Team (FEMAT). 1993. Forest Ecosystem Management: an ecological, economic, and social assessment. Interagency Task Force and Funding Group. 1000+p.

Forsman, E. D., S. DeStefano, M. G. Raphael, and R. J. Gutierrez (Eds.). 1996. Demography of the Northern Spotted Owl. Studies in Avian Biology 17:1-122.

1999 ANNUAL MEETING

The Raptor Research Foundation's 1999 annual meeting will be held on 3-7 November at the Araiza Inn and/or the Los Arcos Hotel in La Paz, Baja California, Mexico. For further information about the meeting contact Ricardo Rodriguez Estrella, Local Chair, Centro de Investigaciones Biologicas del Noroeste, km 1 Carretera San Juan de la Costa, P.O. Box 128, La Paz, Baja California Sur, 23000 MEXICO, phone: 112-536-33, fax: 112-553-43 or 112-536-25, e-mail: estrella@cibnor.mx. A probable associated symposium is related to "GIS, Ecology and Conservation of Raptors." For information about this symposium contact Ricardo Rodriguez Estrella or Javier Bustamante at the address or numbers given above. Information about the meeting will appear soon on the Raptor Research Foundation's web site: http://catsis.weber.edu/rrf/rrfg.htm.

INCUBATION DATABASE
(http://www.avian.mcmail.com)

by David LeMesurier

Whilst compiling data on pip periods and Kw values for a wide variety of species for inclusion into a computer program I wrote for the management of avian incubation, I was horrified to discover the lack of real data available, even for common species. This despite the fact that many thousands of eggs are incubated every year around the world by both private breeders and zoos. A mail shot was sent to many zoos around the world, but the response to this was very disappointing, with only a handful of zoos returning data forms, and even then the data were very limited.

To assist breeders and conservationists I have compiled the data from my own research and placed them on the Internet (http://www.avian.mcmail.com) so that everyone may have access to them. The data consist of egg measurements, Kw values and incubation periods to pip. The largest amount of data is for birds of prey and so should be of interest to many RRF members. I hope shortly to add a form to the page so that visitors can submit their own data. Until that is completed, if you have any data that you would like to submit please contact me for the data submission forms: David LeMesurier, Avian Management Services, P.O. Box 119, Hereford, HR4 7YB, United Kingdom, phone: 44-1981-500110, fax: 44-1981-500106, e-mail: avian@mcmail.com.

3rd EURASIAN CONFERENCE
of the RAPTOR RESEARCH FOUNDATION

The Czech Society for Ornithology - Working Group on Protection of Birds of Prey and Owls will host the Raptor Research Foundation's 3rd Eurasian Conference in Tøeboò, Czech Republic, on 21-26 September, 1999. The conference follows RRF's two previous Eurasian conferences held in Canterbury, England in 1993 and in Urbino, Italy in 1996. The conference will feature oral and poster sessions, and a field excursion. The official language of the conference will be English. Abstracts of oral and poster presentations will be published; participants can also offer their papers for publication in *The Journal of Raptor Research* or *BUTEO*. Tøeboò is situated about 140 km south of Prague, near the Austrian border, and has direct train connections with Prague and Vienna. General inquiries about the conference may be directed to the Chair of the Organizing Committee: Petr Voríšek, Czech Society for Ornithology, Hornomìcholupská 34, Praha 10 - Hostivaø, CZ - 102 00 Czech Republic, phone/fax: 420-2-7866700, e-mail: cso.vorisek@bbs.infima.cz. Inquiries about oral and poster presentations may be directed to the Chair of the Scientific Program: Keith L. Bildstein, Hawk Mountain Sanctuary, 1700 Hawk Mountain Road, Kempton, PA 19529-9449, USA, phone: 1-610-756-6961, fax: 1-610-756-4468, e-mail: bildstein@hawkmountain.org.

ANNOUNCEMENTS

WINGSPAN GOES ELECTRONIC !

Starting with the September 1999 issue, RRF members will have the option of receiving *Wingspan* by e-mail, as a PDF (Portable Document Format) file. To view, navigate, and print PDF files, you must download and install Adobe Acrobat Reader® from Adobe's web site (http://www.adobe.com/prodindex/acrobat/readstep.html). The Reader is free and will allow you to view (and print) *Wingspan* exactly as it appears, including photographs and graphics. Adobe's web site includes easy-to-follow instructions for downloading and installing the Reader. Advantages of receiving *Wingspan* by e-mail are: 1) you will receive each issue one to two weeks earlier because there will be no mailing delay; 2) you will help RRF reduce its costs (i.e., printing and postage) and paper consumption; and 3) you will be able to save back issues on disk, thereby reducing your literature storage requirements. To receive *Wingspan* by e-mail, contact the editor, Leonard Young, at wingspan@msn.com. Remember that it will be your responsibility to keep the editor informed of your current e-mail address. At any time, you may cancel electronic format and revert to receiving *Wingspan* as a paper newsletter.

UPCOMING MEETINGS

1999

September 21-26
3rd EURASIAN CONFERENCE of the RAPTOR RESEARCH FOUNDATION
Tøeboò, Czech Republic
Contact: Petr Voríšek, Czech Society for Ornithology, Hornomìcholupská 34, Praha 10 - Hostivaø, CZ-102 00 Czech Republic, phone/fax: 420-2-7866700, e-mail: cso.vorisek@bbs.infima.cz

November 3-7
RAPTOR RESEARCH FOUNDATION
La Paz, Baja California Sur, Mexico
Contact: Ricardo Rodriguez Estrella, Centro de Investigaciones Biologicas del Noroeste, Division de Biologia Terrestre, km 1 Carretera San Juan de la Costa, La Paz 23000 B.C.S. MEXICO, phone: 112-536-33, fax: 112-553-43, e-mail: estrella@cibnor.mx

2000

January 19-23
OWLS 2000
Canberra, Australia
Contact: Owls 2000, P.O. Box 238, Deakin West ACT 2600, Canberra, Australia, fax: 61-2-6285-3001, e-mail: office@con-sol.com, web: http://www.tasweb.com.au/owls2000/index.htm

April 1-8
RAPTORS 2000
Eilat, Israel
Contact: Reuven Yosef, Raptors 2000, IBCE, P.O. Box 774, Eilat 88106, Israel, phone: 972-7-6335339 or -6374276, fax: 972-7-6335319, e-mail: ryosef@aquanet.co.il or raptors@ortra.co.il

June 8-11
HAWK MIGRATION ASSOCIATION OF NORTH AMERICA (25th Anniversary Meeting)
Split Rock Resort, Pennsylvania
Contact: Laurie Goodrich, Hawk Mountain Sanctuary, 1700 Hawk Mountain Road, Kempton, PA 19529, phone: 610-756-6961, fax: 610-756-4468, e-mail: goodrich@hawkmountain.org

POSITIONS AVAILABLE

VOLUNTEER POSITION available to monitor the breeding population of Hen Harriers in Orkney. Work will include locating territorial birds and monitoring their feeding rates and

breeding sucess. Help is required between April - June 1999. Please send a CV and two letters of recommendation to: **Arjun Amar, ITE, Glassel, Banchory, Kincardineshire, Scotland, U.K.**

VOLUNTEERS are needed for conducting observations of Griffon Vulture breeding behavior at the Gamla Nature Reserve in Israel. Interested persons should contact: **Dr. Reuven Yosef, IBCE, P.O. Box 774, Eilat 88106, Israel, phone: 972-7-6335339 or -6374276, fax: 972-7-6335319, e-mail: ryosef@aquanet.co.il**

WORKING INTERNS We will have some positions for working interns from approximately May - September 1999. The positions entail working alongside our permanent staff helping to rear, hack and train falcons at our facility in West Wales. We have a staff of seven who handle about 200 falcons. We provide board and lodging and a small salary. Applicants must be 18 or over and non-smokers. Applicants should send a CV and photograph to: **Dr. Nick Fox, National Avian Research Center, Penllynin Farm, College Road, Carmarthen, SA33 5EH, Wales, U.K., email: office@falcons.co.uk**

PUBLICATIONS AVAILABLE

"BIOLOGY AND CONSERVATION OF OWLS OF THE NORTHERN HEMISPHERE: PROCEEDINGS OF THE SECOND INTERNATIONAL SYMPOSIUM" The North Central Research Station, the Manitoba Department of Natural Resources, the Washington Department of Fish and Wildlife, and 36 other symposium sponsors are pleased to announce the publication of Proceedings of the Second International Owl Symposium on Biology and Conservation of Owls of the Northern Hemisphere. The publication is a collection of papers based on some of the most noteworthy owl research that has been accomplished in the northern hemisphere during the past 10 years. The symposium was held in 1997 in Winnipeg, Manitoba. Its proceedings contains 91 papers authored by 143 people from 13 countries covering 33 owl species as well as general topics related to owl conservation and management. Topics covered include natality, mortality, migration, conservation, status, habitat, home range, population and habitat modeling, genetics, toxicology, physiology, diet, and general ecology. Four workshops were held dealing with owls in education, Burrowing Owl conservation, owl population monitoring, and owl habitat modeling. Information presented in the 635-page proceedings will be useful in owl conservation, management, identification of research needs, and definition of global owl conservation priorities.

Copies of the publication are available from the **North Central Station Distribution Center, 1 Gifford Pinchot Drive, Madison, WI 53705-2398, phone: 608-231-9248**. The supply is limited. For those that need a full set of the scientific papers for their work, single copy requests will be filled on a first-come first-served basis. For those interested in particular papers or owl species, you are encouraged to use the North Central Station's web site (**www.ncfes.umn.edu**) to get the information needed.

"HOLARCTIC BIRDS OF PREY" This book comprises the proceedings of the International Conference on Holarctic Birds of Prey and Owls, held by the World Working Group on Birds of Prey and Owls (WWGBP) and the Spanish nature conservation organisation ADENEX, in April 1995 at Badajoz, Extremadura, Spain. The volume contains 680 pages, with 59 original papers. Titles include: *Migration Patterns in West Palaearctic Raptors*; *Utility Structures as Mortality Factor for Raptors and Owls*; *Census Techniques for Birds of Prey in Large Areas*; *Electrical Transmission Pylons as Nesting Sites Used by Kestrels*; *Organochlorine Pesticides, PCBs & Mercury in Osprey Eggs*; *Morphometric Features Characterising Flight Properties of Palaearctic Eagles*; *Molecular Systematics of Holarctic Raptors*; *Dependence and Emancipation in Juvenile Marsh Harriers*; *Captive Breeding and Releases of Peregrines in North America*; *Phylogenetic Relationships in Holarctic Owls*; *Use of Logistic Regression Models to Predict Consumption of Carcasses by Griffon Vultures*; *Toxic Chemicals and Birds of Prey in the mid-1990s*; *Effects of the Feeding*

Station Establishment on the Egyptian Vulture in NE Greece; *Analysis of the Relation between Land Cover and Golden Eagle Ranging Behaviour*; *Anti-Poaching at the Straits of Messina*; *Modelling Establishment of a Reintroduced Population of Griffon Vultures*; and *The Role of the Individual Bird and the Individual Territory in the Population Biology of Sparrowhawks*. The book can be ordered from: **WWGBP, P.O. Box 52, Towcester NN12 7ZW, England** (£ 20, $US 35, DM 55, FF 170).

NEWS OF MEMBERS

RRF Secretary **Patricia A. Hall** has a new address: 5937 E Abbey Road, Flagstaff, AZ 86004, phone: 520-526-6262 or -6222, fax: 520-523-1080 (use only when absolutely necessary and send messages c/o Ernest Kurmes), e-mail: pah@alpine.for.nau.edu

REQUESTS FOR ASSISTANCE

A CELEBRATION! The Peregrine Fund, Santa Cruz Predatory Bird Research Group, The Raptor Center, and our Canadian friends announce the North American Peregrine Falcon celebration to be held at The Peregrine Fund's World Center for Birds of Prey, Boise, Idaho on 20-21 August 1999. Everyone who has participated in the species recovery in North America is invited. This is a celebration, not a scientific conference, and families are invited. The Peregrine Fund is trying to contact, and seeking names and addresses of, those who may wish to attend. Please write, call, or e-mail names and addresses to **Peregrine Celebration, 566 W Flying Hawk Lane, Boise, ID 83709, phone: 208-362-3716, fax: 208-362-2376, e-mail: tpf@peregrinefund.org**. Information will be sent to you. Please pass the information on to others you know who helped with the Peregrine Falcon restoration.

ALBINISTIC RED-TAILED HAWKS Henry Kendall is researching albinism in Red-tailed Hawks. Assistance would be greatly appreciated. Reports that include date, location, type of observation (i.e., mounted specimen, captive bird, or wild sighting), and a complete description are most helpful, and a color photo would be great! Please contact: **Henry C. Kendall, 1638 Timberlake Manor Parkway, Chesterfield, MO 63017, phone: 314-532-0658, e-mail: hawkhak5 @aol.com**

BARBARY FALCON BLOOD LINES We are currently in the process of establishing an international stud book for Barbary Falcons, *Falco pelegrinoides*. The captive population of this species is relatively small, and we hope to be able to trace the blood lines of all birds back to the wild. The final stud book will be published in both paper and electronic format. This will allow breeders to look at the inbreeding coefficients of any potential pairs that they are considering establishing. We currently have 109 birds on file from the UK, but need to trace some of these birds' lines as they were imported. We need to contact as many holders outside the UK as possible. If any readers have this species, or have had it in the past, please would they contact me for a form. All information will be treated in the strictest confidence, and no details of your name or address will be published without your written consent. We are registered under the UK data protection act. For forms or further information please contact: **David LeMesurier, Avian Management Services, P.O. Box 119, Hereford HR4 7YB, UK, phone: 44-1981-500110, fax: 44-1981-500106, e-mail: avian@mcmail.com, web: http://www.avian.mcmail.com**

BINOCULAR DONATIONS REQUESTED For several years, the RRF Education Committee has been providing donated binoculars and spotting scopes to researchers in need in many regions of the world. Presently, there is a shortage of donated equipment. Please think of RRF when you change or upgrade your optics! Equipment should be in good working condition, not in need of repair. To send donations, or to request a donation for your organization, contact: **Nancy Read, RRF Education Committee Co-chair, P.O. Box 714, Los Alamos, CA 93440-0714 USA, email: readn@comm2.vafb. af.mil**

BIRD PARK DEVELOPMENT International Projects Group, Inc. (IPG) is working on behalf of a party in Germany to identify potential participants in a large, commercial nature park in the State of Sachsen-Anhalt, Germany. The project has been pre-designed by IPG's client, who has negotiated favorable terms with public authorities including a purchase agreement for 434 acres on which the park is to be built. The park is designed to provide natural habitats for birds from four continents, housed in large free-fly aviaries and other facilities similar to the birds' native surroundings. Endangered bird species will also be included; these birds will be nurtured and studied by full-time medical and scientific staff. Reproduction programs will also be on-going to encourage the survival and increased numbers of presently endangered birds. Financial guarantees, concessionary credits and other benefits may be available to the project from the European Community and/or the German government, which could significantly reduce the risks and equity exposure assumed by the developers of the park. Total project cost is estimated at $US 200,000,000. To date, IPG's client has funded work with his own resources; he now requires a majority development/ownership group to assume responsibility for the project. IPG anticipates that the park will become one of the premier bird exhibition facilities in the world, drawing an estimated 2,000,000 visitors each year. IPG would like to hear from potential development/ operator groups interested in pursuing this project. The project could also be carried forward through an alliance between non-profit nature organizations and private sector operators. Those interested may contact **W. Earl McClure, President, International Projects Group, Inc., 1803 Briar Ridge Court, McLean, VA 22101 USA, phone: 703-237-8249, fax: 703-237-7837, e-mail: projint@erols.com**.

RAPTOR ELECTROCUTION VIDEO A group has been formed to produce a video to educate the public, electric utilities, and resource management agencies regarding the continuing problem of the electrocution of birds of prey on electric utility structures. Partners in this effort are a diverse mixture including Raptor Research Foundation members, the North American Falconers Association, the National Audubon Society, the USDA/Rural Utility Service, the USDI/ Fish and Wildlife Service, several investor-owned and public electric utilities, environmental consulting firms, and the USDE/Western Area Power Administration. The video will consist of three parts. The first will develop an appreciation for birds of prey and illustrate their importance in the ecosystem. The second part will discuss the raptor electrocution problem. Design problems, including the location of facilities which entice the birds to perch and/or nest, and the continued design of structures causing electrocutions will be covered. Violations of federal laws and regulations and associated penalties will also be addressed. The third video section will focus on solutions. The group is looking for existing film footage and additional partners. They anticipate completion of the video in the summer of 1999. Please contact: **Richard Harness, ESC, Inc., 212 W Mulberry, Fort Collins, CO 80521, phone: 970-224-9100, fax: 970-224-9137, e-mail: harness@electsys. com**.

FOR SALE

RAPTOR RESEARCH Vol. 6-9 complete (including Vol. 6, Suppl. A-D of Special Conference on Captive Breeding of Raptors); Vol. 10, #1&2. Best offer for the entire set. Contact: **John Maestrelli, 561 Harvest Lane S, Sun Prairie, WI 53590, phone: 608-837-2727 (work) or 608-825-2848 (home)**.

RRF ITEMS Several items are available. Logo pins ($5); decals ($3); T-shirts from the 1995 (Duluth) and 1997 (Savannah--Swallow-tailed Kite on back) annual meetings ($5); coffee mugs from the 1995 annual meeting ($5); and abstract packets from all conferences except the 1996 annual meeting ($10 each). To purchase, contact: **Jim Fitzpatrick, 12805 St. Croix Trail, Hastings, MN 55033, phone: 612-437-4359, fax: 612-438-2908, e-mail: jmfitzpatrick@aol. com**. Payment may be via check or credit card; prices include shipping. For T-shirts, be sure to specify size (S, M, L, XL).

RENEWAL CHANGE: HAVE YOU NOTICED?

by Jim Fitzpatrick, Treasurer

It has been brought to my attention that some RRF members with little exposure to the group called OSNA (Ornithological Societies of North America) are not aware that OSNA is the new host for renewal. Subscriptions for RRF's *The RRF Journal of Raptor Research* are now done on the OSNA renewal form that everyone receives in September. You should also be aware that a $3 late fee is due if you renew after November 15. This is a large change from our previous date of March of the enrollment year. The change helps RRF correspond with other OSNA society schedules. RRF does not have its own renewal form anymore. In fact, folks who contact the RRF Treasurer for membership are directed to the OSNA Office at Allen Press. That office is acting as a subscription service for all members of OSNA Societies. And, as crazy as this sounds, I have been asked to remind everyone that there are two sides to the OSNA renewal form. RRF is usually on the back side. Make sure you read both sides of this form.

You should also be aware that RRF's newsletter, *Wingspan*, is sent via third-class mail within the United States. Third-class mail is not forwarded by the US Postal System so if you move, you must let the OSNA office know as soon as possible or you simply will not receive some of your RRF mail. If you know people who are still having trouble getting RRF mail, please direct them to our web site (www.weber.edu/rrf).

RECENT THESES ON RAPTORS

Cockerel, B. L., Jr. 1997. PREY PREFERENCES OF THE NORTHERN SAW-WHET OWL (*AEGOLIUS ACADICUS*) IN THE SOUTHERN APPALACHIAN MOUNTAINS. M.S. Thesis, Appalachian State Univ., Boone, N.C. 91pp.

Saw-whet owls are common throughout much of North America, but only a small, disjunct population exists in the southern Appalachian Mountains. The diet of this owl is well known from some areas of its range, but prey preferences have not yet been addressed; moreover, little research has been done on the isolated southeastern population.

The main habitat of the disjunct southeastern population is the high elevation spruce-fir forests above 1524 m (5000 ft). These forests have declined tremendously since the 1800's due to the combined effects of fire, logging, and insect pests. This habitat decline, coupled with a lack of research on saw-whet owls from the region, has led North Carolina, Virginia, and Tennessee to list this disjunct population of saw-whet owls as a "species of special concern."

The diet of the saw-whet owl has not been determined in the southern Appalachian Mountain population, although it might be assumed to be similar to that of saw-whet owls from other areas. To determine whether this assumption is borne out, 15 saw-whet owls were fitted with radio-transmitters in 1993 and 1994. Owls were tracked to their day roosts, where pellets were collected. The diet of southern Appalachian saw-whet owls was determined from 143 pellets collected from beneath these day roosts and from two habitual roost sites. Ninety pellets were collected in 1993 and 53 in 1994. Pellets were analyzed by soaking them in water before carefully teasing out bones and other identifiable remains. Prey were keyed to species based on skull and dental characteristics. Most pellets (n = 132) were collected from the Mt. Mitchell, N.C., area (MMA); the rest were from Roan Mountain, N.C., or the Great Balsam Mountains, N.C. A total of 129 prey items

representing eight species were found in these pellets. *Sorex cinereus* (n = 36), *Peromyscus maniculatus* (n = 30), *Sorex fumeus* (n = 25), and *Clethrionomys gapperi* (n = 15) comprised 82% of the diet by frequency. The diet differed greatly between the two years. In 1993 the diet was 70% shrews (*S. cinereus*, *S. fumeus*, *Blarina brevicauda* and *Sorex* spp.), 23% mice (*P. maniculatus*, *C. gapperi*, and *Napaeozapus insignis*), and 7% birds (*Junco hyemalis*). In 1994 the diet was 48% shrews, 44% mice, and 8% birds.

Prey preferences for the MMA were determined by comparing proportions of prey species in the diet with estimates of small mammal abundances in the environment. Small mammal abundance in the MMA was determined from the literature for 1993 and from trapping in 1994. The most common species trapped in 1993 was *S. cinereus* (5.1 per 100 pitfall nights), and in 1994 it was *P. maniculatus* (6.5 per 100 ShermanTM trapnights). Shrew trap rates differed little between 1993 and 1994, (5.7 vs. 5.3), while trap rates of mice increased (4.9 vs. 12.0). Three different preference tests generally found shrews to be preferred over mice. However, when mice trap rates increased, so did the proportion of mice in the diet. A concomitant drop was observed in the proportion of shrews in the diet, even though shrew abundance changed little between the years. This suggests that mice may actually be preferred, or that saw-whet owls take prey according to their availability.

The food niche breadth was higher for saw-whet owls in this study than in 14 other such studies. It is possible that small mammal densities are lower in the southern Appalachian Mountains than elsewhere in the saw-whet owl's range. Low prey abundance may force southern Appalachian saw-whet owls to have broad diets. Dietary evenness in the present study was also among the highest found. Several prey species appear to be important saw-whet owl food items in the southern Appalachian Mountains, in contrast with one or two dominant prey species in other areas.

Profitable (i.e., larger) prey were taken more often when available; less profitable smaller prey were more common in the diet when larger prey were less abundant. This might indicate that owls are optimal foragers which select prey based on energetic considerations. Alternatively, dietary prey proportions may be a reflection of the owls' sit-and-wait foraging strategy. Diets may be determined by relative abundances of prey, and not according to optimal foraging theory. The increase of mice in both the environment and the diet in 1994, coupled with similar shrew abundances in both years, is consistent with both hypotheses.

Each of the three preference methods employed showed shrews to be the preferred prey. This may be due to inherent biases in the trapping methods used to determine small mammal abundances. Indeed, if shrews were really preferred, the frequency of shrews in the diet should have been similar between years, since little change in their abundance was found between years. Shrews decreased greatly in the diet from 1993 to 1994. Thus, shrews are probably not preferred prey. Furthermore, the relative abundances of mice most likely determines the diet of saw-whet owls in the southern Appalachian Mountains.

Fernie, K. J. 1998. EFFECTS OF ELECTRIC AND MAGNETIC FIELDS ON SELECTED PHYSIOLOGICAL AND REPRODUCTIVE PARAMETRES OF AMERICAN KESTRELS. Ph.D. Diss., McGill Univ., Montreal, Quebec. 110pp.

Birds nest under electric and magnetic fields (EMFs) generated by transmission lines, which may affect their reproductive success and/or melatonin governing their circadian and circannual cycles. Over two years, captive kestrels were used to determine whether EMFs affect their plasma melatonin concentrations and their reproductive success. EMFs were equivalent to that which wild kestrels are exposed to while nesting under 735 kV transmission lines, and daily exposure used in the captive study (88 - 98% time budget) was potentially equivalent to that of wild kestrels (90% ♀, 80% ♂). Captive kestrels were housed in control or EMF conditions to determine short-term (one season; S-EMF) and longer-term EMF (two seasons; L-EMF) effects.

Plasma melatonin in adult EMF males was suppressed at 42 d and elevated at 70 d of EMF exposure compared to controls. Melatonin levels in EMF males at mid-season were similar to controls at season's end, suggesting a seasonal phase-shift. Melatonin was suppressed in L-EMF fledgling birds but not in adult females or males (1995) at 70 d. Plasma melatonin, higher in adult males than females at 70 d post-pairing, was not directly associated with body mass changes in kestrels.

Captive EMF birds were more active and alert but groomed less often than controls. EMF exposure affected reproductive success of kestrels. Fertility and fledging success were higher, and hatching success lower in S-EMF clutches. Hatching success was higher, but fledging success lower in L-EMF clutches. In S-EMF clutches, mean egg volume and mass were greater, eggs had slightly more albumen but thinner eggshells, and embryos were larger than controls. L-EMF hatchlings were heavier than controls.

The melatonin results for male kestrels indicate that kestrels perceive EMFs as light, thus altering their photoperiod. Photoperiodic manipulations advance molt onset, which is associated with increased body mass in male kestrels. S-EMF males were heavier at 56 d of exposure when molt began, but this was unlikely related to feed intake which was unchanged. EMF exposure had no effect on body mass and pectoral muscle scores of reproducing females. The sexually-dimorphic response in body mass and melatonin concentrations suggests that male kestrels may be more sensitive to EMF exposure than females.

Matz, A. C. 1998. ORGANOCHLORINE CONTAMINANTS AND BALD EAGLES *HALIAEETUS LEUCOCEPHALUS* IN MAINE: INVESTIGATIONS AT THREE ECOLOGICAL SCALES. Ph.D. Diss., Univ. Maine, Orono. 120pp.

Maine Bald Eagles have relatively high organochlorine contaminant concentrations, in spite of few industrial sources within the state. I investigated possible causes or sources at the ecosystem level, and effects on the population and individuals. Biomagnification was investigated by comparing trophic status and contaminant concentrations. There were no significant differences in nestling whole blood DDE concentrations from freshwater and marine habitats (which are trophically elevated compared to freshwater), but total PCBs were higher in marine habitats. There were no significant relationships between DDE or total PCBs and trophic status as indexed by stable isotope ratios (d15N), within marine nestlings. Potential point sources in a six-bay area of coastal Maine were indicated by differences in contaminant concentrations in biota from Frenchman Bay and adjacent Gouldsboro Bay compared to other bays. Atmospheric deposition is also a potential source because Maine is subject to other atmospherically deposited pollutants and because Maine eagles have similar DDE and PCB concentrations to other North American eagles from industrially polluted areas. At the population level, productivity (fledglings per occupied territory) is lower in Maine than other populations, and below recovery goals. There was no significant relationship between DDE or PCB concentrations and mean annual number of fledglings per occupied territory for eight watersheds within Maine, but contaminant concentrations found in Maine eagles have been associated with decreased productivity elsewhere. Additionally, there were significant relationships between productivity and spring weather variables, indicating that harsh spring weather decreases yearly productivity. In individual eagles, no significant relationships between blood parasite levels and contaminants were found; overall parasitemias in Maine eaglets were low. Few significant relationships were found between contaminants and sex-specific circulating estradiol and testosterone. This preliminary analysis used incomplete sexing methods; genetic sex analysis is currently underway.

Miller, M. J. R. 1999. EXPOSURE OF MIGRANT BALD EAGLES TO LEAD AND LEAD SHOTSHELL PELLETS IN SOUTHWESTERN SASKATCHEWAN. M.S. Thesis, Univ. Saskatchewan, Saskatoon. 184pp.

I present the results of a four year investigation (1992-1995) into exposure of Bald Eagles (*Haliaeetus leucocephalus*) to lead shotshell pellets in Saskatchewan, Canada. Exposure was examined through analyses of blood-lead, assessing the presence of shotshell pellets in the digestive tract of captured eagles and in tissues of prey animals, and determining the prevalence of shot in regurgitated castings. The study area in southwestern Saskatchewan is a migratory stop-over for Bald Eagles and a staging area for up to 700,000 waterfowl; the area also attracts large numbers of waterfowl hunters, ranking it as one of the most heavily hunted areas in Canada. Based on 103 blood samples, 8% of eagles had levels of lead (>0.200 µg/ml) in their blood suggestive of recent exposure. Presence of consumed shot was determined with fluoroscopy; 9% (6 of 66) eagles had shot present in their digestive tract. Based on prey remains, observations of eagles foraging and examination of castings, prey items consisted primarily of waterfowl and to a lesser extent of fish and

mammals. Of 123 waterfowl carcasses that were collected, 47% contained shotshell pellets, ranging from 1 to 7 pellets per bird. Of 509 castings, 1.5% contained a single lead shotshell pellet. Minimum residency estimates of radio-tagged eagles in the study area ranged from 5 to 7 days. Given the hunting intensity in the study area, the presence of shot in prey items, and evidence of recent exposure to lead, eagles were likely obtaining lead through the consumption of lead shotshell pellets embedded in the tissues of waterfowl injured or killed through hunting activity. Prevalence of lead exposure was low in comparison to other areas in North America. Nevertheless, this investigation further substantiates exposure of raptors to lead from lead ammunition in Canada.

Solensky, M. J. 1997. DISTRIBUTION, PRODUCTIVITY, AND NEST-SITE HABITAT OF TAIGA MERLINS (*Falco columbarius columbarius*) IN NORTH-CENTRAL WISCONSIN. M.S. Thesis, Univ. Wisconsin-Eau Claire, Eau Claire. 68pp.

This study showed that Merlins responded to playback recordings throughout north-central Wisconsin, though most detections of breeding Merlins occurred in several locations. These sites included areas near the towns of Mercer (Iron Co.), Minocqua (Oneida Co.), Eagle River (Vilas Co.) and Three Lakes (Oneida Co.). Variables that were consistent with responses by Merlins included large (≥ 1 km^2) lakes and/or lakes with numerous (≥ 5) closely situated (within 10 km^2) small lakes (≤ 1 km^2) in their vicinity. In addition to lake size, it was found that responses occurred on lakes with shoreline habitat that was largely (>34%) comprised of conifers, specifically red and white pines.

Examination of nest-site habitat revealed that understory vegetation may not be an important correlate of nest-site habitat used by Merlins in north-central Wisconsin. However, consistent patterns of nest tree height, canopy cover, position of nest, and nest tree species indicate that these variables may be important in nest-site use by Merlins in north-central Wisconsin.

Results of the playback recordings indicated that females presumably responding alone or with a mate were more indicative of a successful nest-site than a male apparently responding alone. A female responding alone while eliciting a food begging whine suggested her anticipation of the delivery of prey by her mate. Despite a few instances where responses did not occur and a pair may have been present, playback recordings appeared to be an effective method of locating breeding Merlins in north-central Wisconsin. It was found in this study that transects conducted from a boat improved the accessibility to many sites. Boat surveys appeared to be superior to land surveys by the increased visibility and mobility of the observer.

The first observed pairs of Merlins in the study area were detected in the first week of April. Based on documented averages and age estimates at banding, egg laying occurred from mid - late May. Incubation occurred during mid May - mid June, with hatching in mid - late June, brooding during mid June - early July. The nestling stage occurred during mid June - late July, with fledging mid - late July, and dispersal of young from late July to mid August. The period prior to egg laying (approx. early May) appears to be an important time in the chronology of the breeding pair. The ability of the male to catch prey and quench the presumably high nutrient requirements of the female may be important for determining the success of the site.

The average number of fledglings per successful site (3.6) is comparable to regions where it is believed that the Merlin population is increasing. Depredation of nestlings does not appear to be a major factor influencing the success of Merlins in this study area.

The potential for this population of Merlins to expand its range throughout the remainder of the study area appears to be good. However, yearly checks of nesting sites during the breeding season and surveys throughout the study area every three to five years may be necessary to continue the monitoring of this species.

Presently, there is a paucity of data concerning the breeding densities, breeding behavior, prey selection, and hunting habitat use of Merlins in Wisconsin. Information regarding these factors may assist in the assessment and management of the Merlin population in Wisconsin.

Tamashiro, D. A. A. 1996. GENETIC AND MORPHOLOGICAL VARIATION IN NORTHERN SAW-WHET OWL POPULATIONS IN EASTERN NORTH AMERICA. M.S. Thesis, Appalachian State Univ., Boone, N.C. 112pp.

Allozyme and morphological data were collected to elucidate the relationships among eastern North American populations of Northern Saw-whet Owl (*Aegolius acadicus acadicus*). In the east, Northern Saw-whet Owls are distributed in an archipelago-like manner. There is a large, main-range population inhabiting boreal forests of the northern US-southern Canada and two smaller, potentially disjunct populations further south: one on the Allegheny Plateau (West Virginia and Maryland) and another in the southern Appalachian Mountains of North Carolina, Tennessee, and Virginia. These two populations may be glacial relicts, isolated by the retreat of spruce (*Picea* spp.) and fir (*Abies* spp.) northward following the Wisconsin glacial maximum (glacial relict hypothesis). Alternatively, given the placement of the Allegheny Plateau and southern Appalachian populations on the periphery of their breeding range, these populations may be marginal populations, characterized by low genetic and phenotypic variation, and consequently, of low conservation priority (central-marginal hypothesis). Since Northern Saw-whet Owls are highly vagile and may exhibit low breeding philopatry, the three eastern populations might form a large, randomly mating population in eastern North America (current ecology hypothesis).

Little support, either genetic or morphological, exists for the central-marginal hypothesis. The data provide better support for the two other hypotheses. Low genetic distances, low population genetic differentiation, and high estimated rates of gene flow all support the current ecology hypothesis. However, significant morphological differences among populations, marked morphological differentiation of the southern Appalachian population from other eastern populations as defined by Amadon's (1949) seventy-five percent rule for subspecific delimitation, and patterns of decreasing genetic variability with increasing latitude all support the glacial relict hypothesis.

Existing literature on southeastern US flora and fauna show that a diverse array of taxa, ranging from amphibians to flowering plants, exhibit similar trends of decreased genetic variation with increasing latitude. This provides independent support for the glacial relict hypothesis. The patterns exhibited by these taxa might be explained by founder events associated with post-glacial dispersal out of a southeastern refugium and suggests that southeastern populations may harbor significant levels of variation.

Based on genetic and morphological data, the southern Appalachian population of Northern Saw-whet Owls does not appear to be a marginal population meriting low conservation priority. Rather, this population may be a genetic "reservoir"; the incorporation of plans for the continued presence of southern Appalachian saw-whet owls into regional management strategies is strongly urged.

Thomas, P. W. 1999. THE EFFECTS OF LOW-LEVEL FLYING MILITARY AIRCRAFT ON THE REPRODUCTIVE OUTPUT OF OSPREY IN LABRADOR AND NORTHEASTERN QUÉBEC. M.S. Thesis, McGill Univ., Montreal, Quebec. 93pp.

The objective of this study was to determine whether low-level flying military aircraft affected the reproductive success of Osprey (*Pandion haliaetus*), and if so, to determine the optimal avoidance distance to minimize these effects. I studied 49 nests in 1995, and 68 nests in 1996 within the military low-level flying zone. Nest occupancy, clutch size, number of hatchlings, and number of young at 41 days of age were assessed at each nest. GIS flight track records provided frequency of aircraft at given distances and altitudes from the nest. Logistic regression analysis assessed the impact of flight frequency in four distance categories and four altitude categories on Osprey reproduction. The frequency of flights within each category were not accurate predictors of Osprey reproductive output. Nests were then randomly assigned to a buffer-zone radius of either 0, 1.85, 3.7, or to a control of 7.4 km, and reproductive output was compared among treatments, and between years. No significant differences were discovered among the reproductive parameters within either 1995 or 1996, but reproductive output was significantly higher in 1995, likely due to adverse weather conditions experienced in 1996.

1999 RRF ELECTIONS !!!

The Raptor Research Foundation, Inc. invites nominations for the following positions: **North American Director #1**, **International Director #1**, and **Directors-At-Large #3 and #6**. In accordance with their designations, the North American directorship must be filled by someone residing on the North American continent, and the International directorship must be filled by someone not residing in North America. The At-Large directorships may be filled by anyone regardless of residency. RRF's Directors supervise the Foundation's affairs, make rules and regulations, control and manage Foundation funds, and meet at least yearly to discuss Foundation business. Directors are expected to attend annual Board meetings and respond to issues that emerge during the interim. Persons interested in making a nomination may contact Pat Hall (pah@alpine.for.nau.edu, 520-526-6222); Lloyd Kiff (lkiff@aol.com, 208-362-3716); or Brian Millsap (millsab@mail.state.fl.us, 850-488-3831). Nominees will be contacted to verify their willingness to run and to serve should they be elected.

WINGSPAN CONTRIBUTIONS

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Wingspan welcomes contributions from RRF members and others interested in raptor biology and management. Articles and announcements should be sent, faxed, or e-mailed to the editor: Leonard Young, 1640 Oriole Lane NW, Olympia, WA 98502-4342 USA (phone/fax: 1-360-943-7394, e-mail: wingspan@msn.com). The deadline for the next issue is August 7, 1999.

WINGSPAN
1640 Oriole Lane NW
Olympia, WA 98502-4342 USA

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