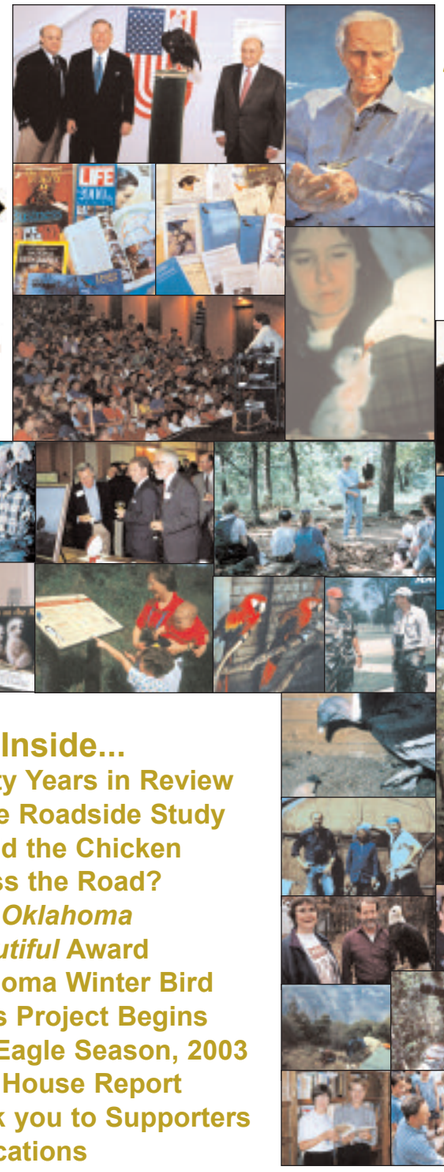
George Miksch Sutton AVIAN RESEARCH CENTER

# The SUTTON NEWSLETTER

*finding cooperative conservation solutions for birds and the natural world through science and education"*

*Volume 21, Spring 2004*

Oklahoma Biological Survey




## Sutton Center Celebrates 20th Anniversary

## What's Inside...


Frank Oberle

**The restoration of the nation's symbol, the Bald Eagle, was the first project undertaken by the Sutton Center. It has been more successful than we ever dreamed. The dedication of countless agencies, corporations and individuals made this dream a reality.**


Frank Oberle

## *Sutton Center's Cooperating Agencies:*

**State: Oklahoma Department of Wildlife Conservation; Florida Game and Freshwater Fish Commission; Georgia Department of Natural Resources; Mississippi Department of Wildlife, Fisheries and Parks; Alabama Department of Conservation and Natural Resources; North Carolina Wildlife Resources Commission; University of Oklahoma; Oklahoma State University, East Central State University, Northeastern State University, Cameron University, Oklahoma Turnpike Authority; Oklahoma Wildlife Society; Oklahoma Biological Society, Oklahoma Ornithological Society, Fort Sill Army Base, Oklahoma Army National Guard.**

**National: U.S. Fish and Wildlife Service, NASA, Army Corps of Engineers, Southeastern Bald Eagle Recovery Team, California Condor Recovery Team, National Park Service, Raptor Research Foundation, Cooper Ornithological Society, American Ornithologists' Union, Wilson Ornithological Society, Association of Field Ornithologists, Arkansas Army National Guard, U.S. Geological Survey, National Range Conservation Society, Institute for Bird Populations.**

**International: Wildlife Institute of India, Direccion Fauna Silvestre (Mexico), All-Union Research Institute of Nature Conservation and Resources (former Soviet Union), China Ornithological Society, Fundacion Vida Silvestre Argentina, International Council for Bird Preservation.**

**Non-profit groups: Fund for Mutual Understanding, National Fish and Wildlife Foundation, Partners in Flight, The Nature Conservancy, Oklahoma Wildlife Federation, Western Governors' Association.**



# *A Look Back 20 Years in Review*

***Steve K. Sherrod, Executive Director***

It seems like a long time ago, and I suppose it was, really…some twenty years. A group of five amateur ornithologists (Warren Harden, John Shackford, John Tomer, Bob Ahlquist, and Professor Jack Tyler) had contacted me a few years prior, while I was finishing up my Ph.D. at Cornell, concerning my interest in becoming involved in an avian conservation effort, the South Prairie Raptor Research Center, based in my home state of Oklahoma. Although the seed money the founding board had counted did not pan out, an impressive dinner hosted by Joe Williams, Bob Lorton, Jack Zink, and Len Eaton on top of the Bank of Oklahoma in Tulsa raised $350,000 to help get things underway. Harold and Sandy Price, who were moving to California, offered their beautiful, expansive redwood home on 40 acres atop Circle Mountain just south of Bartlesville, Oklahoma, to be used as an administration building, and soon the Phillips Petroleum Company had agreed to help support some of the conservation efforts as well.

Alan Jenkins left the United States Fish & Wildlife Service in Colorado to serve as Assistant Director of the fledgling organization, and Don Wolfe, who had just earned his B.S. in biology, came to work raising Japanese quail and helping with maintenance. (Incidentally, both of these dedicated individuals are with the Center today, Alan still serving as Assistant Director, but Don is now senior biologist in charge of our prairie-chicken studies. Other key employees are recognized later in this article.) Barns and outbuildings were constructed, and we submitted our rather unconventional proposal to the Florida Game and Freshwater Fish Commission, the Oklahoma Department of Wildlife Conservation, and the USFWS. This involved how we hoped to remove eggs from Florida Bald Eagle nests and incubate them in captivity, raise the resulting eaglets with adult eagle puppets from behind one-way mirrored observation ports, and hack these young back in five southern states in order to establish wild nesting pairs. The adult Florida eagles from which we borrowed eggs were predicted to recycle, laying a second clutch, and indeed they did! The entire story is much too long to relate in this article (although you can see it in the November 1992 ***National Geographic***), but the process was extremely stressful, to say the least, with skepticism and criticism running rampant regarding "two guys in a house" using untried, theoretical techniques.

And the rest is history. Although no Bald Eagles were successfully nesting in Oklahoma in 1984 and a return of only 10 nesting pairs was the target according to the Northern Bald Eagle Recovery Plan of the USFWS, over 41 occupied territories existed in 2003, from which 51 young were produced. Similar numbers are nesting in other states where our reintroductions took place. In addition, some of our released eagles failed to recognize borders and ended up nesting in nearby states. Although all of these eagles in every state concerned are probably not an exclusive result of our releases, the eagles now nesting in Oklahoma most likely are because few neighboring states harbored large numbers of nesting eagles from which to recruit. We were honored to be invited to a special ceremony at the White House in 1999 and recognized by then President Clinton for the contribution made by the Center to the recovery of our national symbol.

Early on during the eight years of the Bald Eagle reintroduction project, the name of the Center was changed to honor a great ornithologist, bird artist, and professor emeritus from the University of Oklahoma who, when I was an undergraduate there, happened to be a wonderful friend and role model with a magical, charismatic personality. The Sutton Center's efforts continued toward sound, long-term avian studies with significant sample sizes, and with a special emphasis on cooperative conservation solutions (see our mission statement byline on the front of this newsletter) and education resulting from these projects. As the Sutton Center is located on the edge of the tallgrass prairie, our work continues to focus in large part on avian species of this region, for grassland birds are declining at a greater rate than birds in any other ecoregion.

Among long-term studies (5 years or more) undertaken by the Sutton Center are work on declining prairie songbirds and roadside nesting songbirds in relation to land management treatments (considering over 5000 nests of various species), studies of Greater Prairie-Chickens in Oklahoma in relation to land management treatments, studies of Lesser Prairie-Chickens in Oklahoma and New Mexico in relation to land management treatments (prairie-chicken studies collectively involved trapping and radiotagging over 1000 individuals), comprehensive surveys of 600 10-sq. mile blocks across the state of Oklahoma for nesting birds, resulting in the ***Oklahoma Breeding Bird Atlas,*** to be published by the (University of Oklahoma Press) in April 2004, comprehensive surveys of the same 600 10-sq. mile blocks for wintering birds, which will result in a trendsetting book called the ***Oklahoma Winter Bird Atlas*** (see article Page 9), MAPS (Monitoring Avian Productivity and Survivorship) mistnetting studies , and annual surveys by land, air, and water of all nesting Bald Eagles in Oklahoma.

Shorter term studies have included or supported work on Henslow's Sparrow, Loggerhead Shrike, Swainson's Warbler, Long-billed Curlew, Mountain Plover, Golden Eagle, Prairie Falcon, Ferruginous Hawk, Mississippi Kite, Andean Condor, various wintering buteos, Lesser Prairie-Chicken brood survival, shortgrass prairie nesting birds, nesting bird inventories at Camp Gruber, Ft. Sill, and Camp Robinson, Nicaraguan parrot species conservation, wintering Dickcissels in Venezuela, Peregrine Falcons in Mexico, Saker/Altai Falcons in Khazakstan and Russia, captive raptor breeding feasibility in India, and incubation temperature studies in cooperation with NASA.

Approximately 100 scientific papers have been produced from these studies with many more still in preparation, and a multitude of official reports have been submitted to agencies for which studies have been conducted. Just as important, Sutton Center results have been shared with scientific parties all over the country and the world at a variety of meetings, both formal and informal, and the Sutton Center serves as a reference for hundreds of calls annually regarding bird conservation and management.

Sutton works have been presented for the general public too in a variety of popular magazines over the years to include ***Reader's Digest, National Geographic, Life, Southern Living, American Scientist, Oklahoma Today, Outdoor Oklahoma, OKAPI, Alabama Conservation, Florida Wildlife, Oklahoma Business Magazine, OK Magazine, Simbrah World, Telegraph Weekend Magazine,*** **and** ***American Way*****.** Of course, ***The Sutton Newsletter***, published semi-annually, reports news regarding current projects and items of interest to all our supporters.

Televised programs, both national and local, have featured the efforts of the Sutton Research Center including **NBC's Today Show** (3 times), **CBS's New Explorers-Flight for Survival, CBS's Sunday Morning Show with Charles Kuralt, CNN's Science News, Eagles of the World, KOTV's On a Wing and a Prayer, KOTV's Oklahoma's Last Great Places--Rebirth of the Prairie, OETA's Prairie Birds Research, OETA's Outdoor Oklahoma, KOTV's Songs of the Prairie,** and the **CBS Morning Show** in combination with *National Geographic.*


Craig Koppie


John Shackford


Bill Horn

**The Center has been involved in or supported numerous shorter term studies including work on the Long-billed Curlew (*above left*) and the Swainson's Warbler (*bottom left*). It has monitored the nests of many birds including the Brown Thrasher (*above right*) and Bell's Vireo (*bottom right*).**


David Youngman


Bill Horn

## *Another special group that has helped the mission of the Center significantly are the long-term volunteers.*

**They include: Greg Alberty, Jim Bredy, pilot, Jim and Peggy Clark, David Delahay, Melinda Droege, Dr. David Eslicker, Michael P. Evanson, CPA, Bonnie Gall, Dr. Harriet Gleaton, Tamar Griggs, pilot Bob Guess, Dodie Hildabrand, CPA, Sally A. Jenkins, Kris Koepsel, Kloma Laws, Jean Little, Judy Lorg, Dr. Brenda Masters, Kim Mauch, Joane Mallette-Eagen, Carolyn Mock, Jan Martin McGuire, Gary Neal, Jerry Parkhurst, Robert Rees, Dr. Ken Riddle, DVM, Lisa Rietfors, Sara Seaman, Linda Sherrod, Bill and Berta Snell, Deedie Standridge, Betsy Stewart, Vicki Summers, Steve Trent, David Turner, Doug & Sandra Van Zandt, K. Vasudevan, Vicki Williams, and Sally Wurmley.**

## *Field Techs...*

## *To these individuals, we owe a great debt of gratitude.* They include: Amy A. Adams, Rod D. Adams, Fredrick D. Allen, Michael S. Allen, Lotus P. Altman, John M. Antonelli, James S. Armstrong, Kristine N. Arruda, Carrie A. Aymer, Sarah Bagshaw, Lisa G. Ball, David L. Barrett, Jason P. Beason, Luke A. Bell, Shea M. Bergman, Alan E. Beske, Venice N. Beske, Kristy Bethune, Jeannette Bider, Gregory M. Biggins, Richard J. Blaha, Dr. William H. Blenko, III, Michael W. Blondin, Jessica S. Bolis, David C. Bostock, Elise A. (Boeke) Peterson, Mark E. Bradford, Barbara B. Bresson, Melanie E. Bucci, Colleen Burgess, Jennifer A. Burley, Scott A. Carleton, Nancy J. Carlson, Catherine Carney, Liz A. Carver, Mark Causey, Karen M. Clarke, Mary K. Chase, Keith Cline, Dr. Michael W. Collopy, Gary A. Cress, Caroline Czenkush, Traci M. Darnell, James C. Davis, Richard H. Day, Ruth M. DeCosta, Zachary Lee DeGraft, Matthew DiBona, Laura L. Doty, Michael J. Drenth, Nancy C. Dwyer, Stephen M. Fettig, Lisa A. Fitzgerald, Theresa M. Flaherty, Claudia R. Glass, Derek B. Grant, Gregory L. Green, Paul Grindrod, Brett W. Gullett, Roger L. Gunter, Carlton Hardy, Mary L. Harrison, Heather M. Hart, Leslie J. Hawkins, Betty Hayes, Kori M. Heaps, Joel Helm, Diann M. Henthorn, Marcie L. Herry, Tyler J. Hinkle, Even J. Holmboe, Susan R. Hubbard, Robin L. (Hughes) Myers, Erika Jensen, Wendy E. Jess, Mike T. Jones, Irene R. Jorata, Kristina M. Kasick, Paul D. Kaufmann, Amy E. Kearns, Sarah L. (Gale ) Koenen, Marcus Koenen, Kyle A. Kopatz, Craig Koppie, Charles L. Land, Dirk V. Lanning, James A. Lawrence, Barry N. Leach, Lena C. Larsson, Stephanie L. Lee, Scott L. Linssen, Tania L. (Lucas) Crier, Barbara A. Maile, Juan E. Martinez-Gomez, Steve L. Matthew, Danny McElvray, Gwyn McKee, Celeste R. McKnight, Alison Z. Miller, Bettina J. Miller, James E. Montagna, Hugh L. Murray, Brian K. Muzny, Michael R. Nelson, Matthew R. Nimmo, Wayne Norton, Jeff M. Ogburn, Steven J. Page, Suzie Palazzo, Jeanne Parker, Lachovia C. Parrish, Channa P. Pelpola, Anne M. Perrillo, Robert A. Perry, Ann M. Peterka, Joel M. Peterson, Sophia N. Petrovich, Michael J. Phillips, Stephen S. Princer, Christin L. Pruett, John E. Puschock, Shabeer S. Qadri, Nicole Rein, Carol A. Reynolds, Lisa D. Rietfors, David J. Riley, Don D. Riser, Briony Roberts, Bruce A. Robertson, Martha L. Rogers, Kristin A. Rogstad, Robin R. Royer, Lawry Sager, Fumiko Sakoda, Geraldine Saw, Cassandra R. Schermer, Joshua M. Schiering, Stephanie R. Schmidt, Kimberly S. Score, Erica J. Seaver, Annik Shamlian, Phillip Sheehan, Jennie J. Sinclair, Eric J. Slayton, Daniel W. Snyder, Christopher S. Snow, Daniel W. Snyder, Matthew P. Soccio, Anthony Steffer, Sandra L. Stevens, Montie D. Stewart,, Scott G. Summers, Steve Tanguay, Sheryl L. (Tatom) McKenzie, Kristi L. Taylor, Elwin R. Thompson, Melissa Thompson, Thomas B. Thompson, Stephanie N. Toussaint, Shelley Tovell, Douglas A. Tozer, Steve V. Trent, Gregory C. S. Um, Nadine S. Varner, Jessica S. Veysey, Timmy R. Walker, Terri L. Waltman, Adam Wargon, Kimberly J. Weaver, Mark E. Weaver, Corey W. Williams, Robert L. Williams, Mark A. Wolf, Miri Wolfe, Dr. Petra Bohall Wood, Christine M. Wooley, Clarence Wright, Jr., Yan Wu, Ted A. Zawislak, Eric F. Zuelke, and David A. Zuwerink.

**1990 Eagle Team** *(left)*

**1992** *(above)***& 1993** *(below)* **Prairie Bird Crews**

**1999 Camp Robinson Crew** *(above)*
**2000 Lesser Prairie-Chicken crew** *(below)*

Photography from Sutton Center files

Our educational staff reached an audience of about 20,000 people annually with programs based on avian conservation. Two school classes visited the Sutton Center daily to see the progress in captive hatching, chick raising, and reintroduction of our national bird, and our staff gave hundreds of lectures to schools and civic groups. The Sutton staff constructed the Pathfinder Parkway Bird Trail in Bartlesville, along which visitors can see birds of the area guided by full-color signs. Although our educational program at present is limited, a major educational effort is planned. Even so, our annual Sutton Natural History Forum brings in nationally recognized talent to speak to as many as 10,000 Oklahoma students and residents regarding the role of environmental conservation in their future.

Awards or recognition given to the Center include the Take Pride in America Merit Award, the Oklahoma Ornithological Society Award, the Oklahoma Academy of Science Award, Keep Oklahoma Beautiful Award, and did I mention an invitation to the White House?

The Sutton Center has hosted or co-hosted a number of national and international conferences including the Raptor Research Foundation Meetings in 1991, the International Conference and Training Workshop on the Conservation and Ecology of Grassland Birds in 1995, the Biodiversity Conference by ODWC in 1996, and the Prairie Grouse Technical Council Meetings in 2001.

We have had the opportunity to work cooperatively on conservation projects with a variety of state, federal, university and non-government organizations over the years. Those with whom we have had the priveledge to work closely are listed on page two.

I would like to say that the wonderful staff we have been fortunate to hire at Sutton over the years has been largely responsible for the success of our operations. It has been my great pleasure to work with not only our current, absolutely top-notch, full-time staff, comprised of Steve Belanger, Alan Jenkins, Karen Kilbourne, Michael Patten, Dan Reinking, Eyal Shochat, and Don Wolfe, but to have been involved also with a special group of past full-time staffers, including Patty Alexander, Alan Beske, Amy Burruss, Sandra Crawford, Tamera Daniel, Anthony Dubois, Paul and Lisa Hendricks, Roxann Herrmann, Amy (Johnson) Pryor, Sarah Koenen, Gwyn McKee, Sheryl (Tatom) McKenzie, Krystal Moore, Denise Perry, Ron Rohrbaugh, Larry Sharpton, Jeff Shuman, Betty J. Werts, David Wiedenfeld, Susan Willis, and Keven Virgilio.

Another special group that has helped the mission of the Center significantly are the long-term volunteers. I know I will leave some out, but I have listed them on page three. There are just too many volunteers who helped gather information for the ***Oklahoma Breeding Bird Atlas***, provided text, provided photos, and who stuck it out to the end, to be able to include them here. Their names, however, are listed in the actual book, so I encourage you to review there the many volunteers who helped with this worthwhile project.

Some who do not necessarily fit into other categories are yet special friends who have given help to the Sutton Center in a variety of ways. They include the late Dr. Dean Amadon, Dr. David Eslicker, Don Henley, Dr. Paul Hendricks, Franklin McCamey, David Ryan and Navigo.com, Frank Oberle, Dr. Pat Redig, Neil Rettig, Dr. Ken Riddle, Dr. Mia Revels, Joel Sartore, Dr. William Southern, Steve Trent, Patricia Velte, and Carolyn Wallace.

Numerous undergrad students, grad students, students somewhere in between, various individuals who are simply interested and want to gain some real field experience, and even some experienced old salts have been invaluable serving as our field technicians, who gather data tirelessly, day after day, come rain, sleet, snow, or sunshine, or in various advisory capacities. These dedicated folks are paid only a living stipend and work primarily from a labor of love. To these individuals, we owe a great debt of gratitude (please see page four).

The Sutton Avian Research Center's Board of Directors and Advisory Council have been and continue to be comprised of influential individuals who contribute time, talent, and treasure. I would like to thank the persons named at the right with whom I serve or have had the pleasure to serve on the Sutton Board or who comprise the Sutton Advisory Council.

Lastly, our work would be absolutely impossible without contributions from individuals, corporations, and foundations. Limited space prevents listing here the thousands of individual contributors who have helped by sending in annual contributions from their own pockets to assist with our conservation projects, but please know that we are grateful for your generosity and spirit of support. Funding sponsors who have provided $5,000 or more and to whom we owe a sincere debt of gratitude are also listed here.

We are especially proud to have become affiliated with the **University of Oklahoma's College of Arts and Sciences** and the **Oklahoma Biological Survey** in 1997, and we are honored to be included, along with our colleagues in state and federal government, universities, and non-governmental, organizations as a part of positive environmental conservation efforts emanating nationally and worldwide from the Sooner State.

And finally, I would just like to say how much I have enjoyed knowing and working with so many wonderful people over the last 20 years who really care that there remain out there wild places and wild things that make wild places wild.

## *Sutton Board Members and Advisors...*

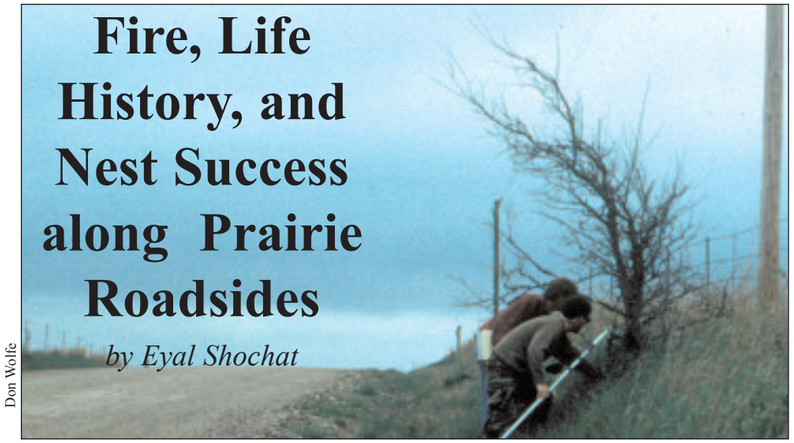
**Thomas Ackley, Stephen S. Adams, Robert H. Ahlquist, Steve C. Alter, John R. Barker, Barbara L. Bates, Herbert S. Beattie, Dr. Paul B. Bell, John A. Brock, Howard R. Burman, Sam P. Daniel, Rebecca Dixon, William C. Douce, Daniel B. Droege, Ruthie Duenner, Tuss G. Erickson, Mary Y. Frates, Warren D. Harden, Lee Holcombe, Margaret Kelley, Thomas J. Kilkenny, Robert E. Lorton, Wilma P. Mankiller, Carolyn A. McGraw, Dr. Vesna Mihailovic, Judge Joseph W. Morris, Jerry Parkhurst, Robert Patterson, Harold C. Price, James L. Rainey, Kenneth Read, M. David Riggs, Dr. Gary D. Schnell, Martin Schweig, Jr., H. Tom Sears, John S. Shackford, Richard J. Sherry, Dr. Jack D. Tyler, Dr. Caryn C. Vaughn, Lew O. Ward, Joseph M. Westervelt, Dr. Clayton M. White, Bryan K. Whitworth, Joseph H. Williams, Kenneth L. Wire, and Dr. John L. Zimmerman.**

## *Major Contributors include:*

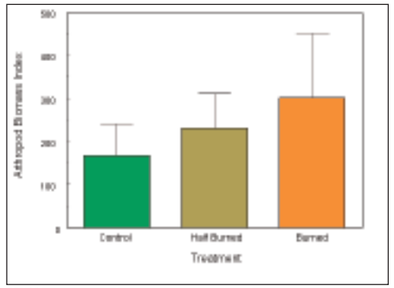
**Kenneth G. Adams, Kenneth S. Adams Foundation, Stephen S. Adams, AEP/Public Service Co. of Oklahoma, Alabama Department of Wildlife Conservation, Albert & Tricia Nichols Foundation, American Bank & Trust in Tulsa, American Airlines, American Express Foundation, Anonymous Private Foundation, Arrow Trucking, Bank of Oklahoma, Bernice Barbour Foundation, Bernsen Foundation, William Bingham Foundation, John A. Brock, Central & Southwest Services, Inc., CITGO, Commonwealth Foundation, ConocoPhillips, Creek Nation Gaming, Sam P. Daniel, F&M Bank and Trust, FlintCo, Charles W. and Pauline Flint Foundation, Founders and Associates, Inc., Dr. Dorothy Fuller, Grasslans Foundation, H. A. and Mary K. Chapman Charitable Trust, Hedwig Drummer Trust, The Helmerich Foundation, Don Henley of the "Eagles", Inasmuch Foundation, Lois Johnson, Robert S. & Grayce B. Kerr Foundation, Lowrance Electronics Inc., Lyon Foundation, J. E. and L. E. Mabee Foundation, Inc., MAPCO, Matrix, McCasland Foundation, Carol McGraw, Richard K. Mellon Foundation, Dr. Vesna Mihailovic, National Aeronautics & Space Admin., National Fish & Wildlife Foundation, New Mexico Game and Fish, Nicaraguan Conservation Fund, Noble Foundation, NORDAM, OK Dept. of Wildlife Conservation, Parker Drilling Co., Joseph H. Parker, Bob Patterson, Phillips Petroleum Co., Harold C. and Sandra L. Price, Public Service Company, Ken Read, M. David Riggs, Riggs & Abney Attnys at Law, R. J. Reynolds Co., Sanguine Ltd., Sarkeys Foundation, Service and Technology Corp, Southeastern Wildlife Exposition, Tulsa World/World Publishing, U.S. Army, U.S. Fish & Wildlife Service, Joe Westervelt, Wildheart Hunting Falcons, Willbros Energy Service Company, the Williams Companies, Williams Natural Gas, David R. Williams, Joseph H. Williams, Wolf Creek Foundation, Anne and Henry Zarrow Foundation, Henry Zarrow at Tulsa Community Foundation, and John Steele Zink Foundation.**

# Fire, Life History, and Nest Success along Prairie Roadsides

*by Eyal Shochat*



Don Wolfe




**Differences in arthropod biomass between unburned, half-burned, and burned fields in Osage County, Oklahoma. The biomass index incorporates both abundance and size of arthropods caught with step-stake sticky flags.**

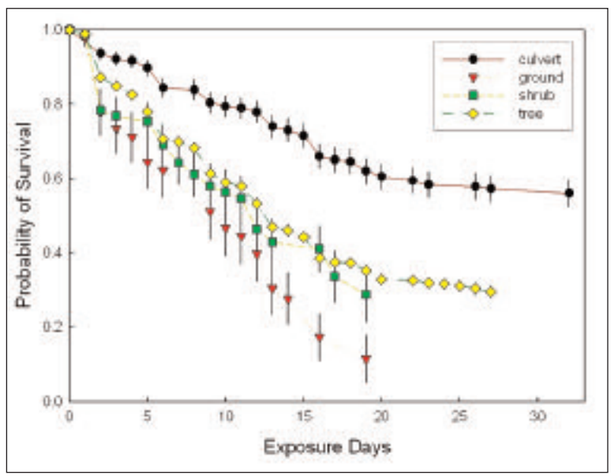
Roadside vegetation can provide important habitat for breeding birds in landscapes dominated by grasslands. The attributes of roadside vegetation such as the number of trees, hedge height or width, and plant species composition, affect bird abundance, distribution, composition, and diversity. Roadside vegetation can also affect nest success, but to date there are relatively few works on reproductive success of birds nesting along roadsides. Conservation programs may benefit from studying the various effects of roadside vegetation on nest success because it directly relates to bird fitness.

Between 1992-96 the Sutton Avian Research Center conducted a five-year study on bird nest success in the tallgrass prairie along roadsides in Osage County, Oklahoma. The study included around 1400 nests of 23 species. The goals were to test whether and how prescribed fires, as well as other factors (nest and plant height, tree density, and life-history traits) affect nest success. The fields adjacent to the studied roadsides included control, half-burned (where only one side of the road had been burned) and burned plots. Burning may cause drastic changes in both vegetative cover and arthropod abundance. During the breeding season birds rely heavily on arthropod food for their nestlings, so drastic and somewhat unpredictable changes in food abundance may influence nest success greatly.

Owing to the resulting lush vegetation on which certain species of insects feed, burning increased arthropod biomass. Consequently, bird nest success increased with burning and was the highest near burned plots. Although nest predation also increased with burning, it appears that the increase in food abundance was the most important factor affecting nest success. Nest success also increased with tree height and nest height, but was not affected by tree density. Therefore, roadside management at the local scale (tree cutting) is less important than grassland management at the larger spatial scale (field burning) for species breeding along roadsides.

Life-history traits greatly affected nest success. Ground-nesting species were less successful and culvert-nesting birds were more successful than shrub- and tree-nesting species. Among these four groups, nest predation rates were correlated negatively with nest success, suggesting that most failures were the result of predation. Although nests of ground-nesting species were exposed for the shortest time (maximum 21 days), about 90% of them failed. In contrast, nests of culvert-nesting species were exposed for the longest period (up to 39 days), but almost 60% succeeded. The extremely high nest failure rate of ground-nesting species suggests that roadsides provide poor habitat for them.

The results indicate the importance of spring fires to nest success for certain species by creating a temporal increase in food abundance. However, because fires open the landscape and may ease predator access to the nests, not all bird species benefit from burning, and ground-nesting species suffer from high rates of nest failure. To increase nest success of shrub- and tree-nesting species it may be more important to keep trees tall and their foliage dense than to manipulate tree density in roadsides.




**Cumulative probabilities of nest survival for ground-, shrub-, tree- and culvert-nesting bird species in roadsides.**



Tyler Hinkle

**Barbed wire fences are a significant source of mortality in Oklahoma prairie-chickens as evidenced by the carcass above.**

# Should the Chicken Cross the Road?

*by Michael A. Patten*

Population biologists in Europe have been at the cutting edge of research on how collisions with manmade structures affect avian survivorship. Much of their research has focused on the effects of fences, roads, and power lines. Studies by David Baines and colleagues--such as those published in the *Journal of Applied Ecology* (vol. 34, pp. 941-948, 1997) and *Biological Conservation* (vol. 110, pp. 169-176, 2003)--identified an interesting and disturbing pattern along fence rows: three species of grouse, the Red Grouse (*Lagopus lagopus scoticus*), Black Grouse (*Tetrao tetrix*), and Capercaillie (*T. urogallus*), accounted for over 90% of all avian mortalities. These startling data imply that grouse are far more susceptible than other birds to collisions with fences.

The Sutton Avian Research Center's long-term research on the ecology and demography of the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) underscores the reality of this threat. Collisions with fences, vehicles, or power lines caused nearly 30% of the 198 Lesser Prairie-Chicken deaths the Center has documented. Fences are an especially pervasive threat. By itself, this information suggests an important conservation and management strategy for maintaining healthy populations of this species: remove or make more visible the many fences now crisscrossing what remains of the prairie-chicken's habitat. But there is much more to the story. Mortality from collisions is not distributed evenly between the Center's study sites in New Mexico and Oklahoma. A prairie-chicken is three times more likely to collide with a fence, vehicle, or power line in the latter state (14.3% vs. 42.4% of mortalities). Moreover, the difference is driven chiefly by the females, as males succumb far more often to predation.

Luke Bell

**A female Lesser Prairie-Chicken seeks cover in northwestern Oklahoma shinnery oak habitat.**

This large difference in collision frequency suggests that we should see strong selection pressure acting on females of the Oklahoma population, but just how would this pressure manifest itself? A well established element of the theory of life-history evolution, the branch of biology focusing on an organism's demography, is the tradeoff between fecundity and life span--as one goes up, the other goes down. If female life span has been reduced because the birds are much more likely to collide with a fence or other object, then we expect to see a compensatory increase in reproductive output. In other words, although natural selection is a blind process, it will "attempt" to balance the high mortality by favoring the production of more young.

Remarkably, this predicted increase in reproductive output is exactly what the Center has documented. Oklahoma females lay two eggs more per clutch (10.81 ± 0.42 vs. 8.73 ± 0.26) and fledge four more young per successful nest (11.08 ± 0.98 vs. 7.07 ± 0.63). Oklahoma females also attempt more nests within a given year: 79% of them re-nest in a year, as opposed to only 15% in New Mexico. Again, there are tradeoffs due to mortality: many females in Oklahoma now nest in only one year, whereas those in New Mexico virtually always nest in two or more. Nesting more often per year seems like a good strategy to counterbalance the increased rate of mortality, but this shift in reproductive strategy comes at a cost. Focusing more effort within a year places Oklahoma females at greater risk of annual vagaries of weather. A bad year can devastate the population because most females will attempt to nest only in that year. New Mexico females, by contrast, can withstand a bad year, because they can always try again next year. The results predict a crash in the Oklahoma pop-

Sutton Center Files

**Recently hatched chicks are vulnerable to severe weather and predators.**

Dan Reinking

Dan Reinking

**Bartlesville High School students help install the entry sign to the Pathfinder Bird Trail in Jo Allyn Lowe Park, Bartlesville, OK.**

# The Sutton Center Wins A First Place in the *Keep Oklahoma Beautiful* Competition

*by M. Alan Jenkins*

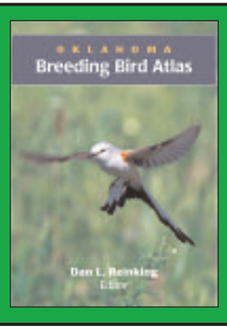
Longtime members will recall a project we finished in the summer of 1999, which we named the Pathfinder Parkway Project. Pathfinder Parkway is a biking/jogging/walking trail that winds through Bartlesville. Along part of its path the trail runs close to the Caney River. We conceived a birding trail signage project for the segment of the parkway that starts at Jo Allyn Lowe Park and goes to another entrance near Bartlesville High School. We planned to have two large signs, one at each end of the bird trail segment, and ten informational signs along the way. The signs would illustrate and relate information about the birds one would likely see when traveling the Pathfinder Parkway.

We enlisted the services of attorney Mark Waller, who is very skilled at depicting birds. We wanted state-of-the-art signs that would withstand the elements and vandalism to create a lasting project. The visual arts department at OSU-Okmulgee, headed by James McCullough, was chosen to design the signs. Pannier Graphics produced the fade resistant and durable fiberglass embedded signs. Mark's artwork was scanned and printed out on fiberglass and epoxy resin signs. Bartlesville's Service and Technology Incorporated, and our longtime friend, K. Vasudevan, executed the frames for the two large entrance signs.

The Sutton staff created the text for the signs. Each member was assigned a suite of birds to write about, with orders to make it interesting. The birds were grouped four to each sign, with similar birds together, such as four woodpeckers or four "colorful songsters." Range maps showing where the birds nest and where they spend the winter were included for each species, and the English and scientific names were given as well, along with interesting facts. The Bartlesville High School science class provided the manpower to erect and cement in the signs.

Last month a notice came across my desk for the Keep Oklahoma Beautiful competition, and our Pathfinder Parkway seemed a natural for the nonprofit educational and beautification category. We were awarded a first place in that category and received our award at a ceremony held in Midwest City on November 7th.

Not to brag (well, maybe a little) one of the comments by the judges, all of whom were from out of state, said: “Great commitment for this 3-year project - you can sense that this project was a unifying agent in the community.” We humbly agree.

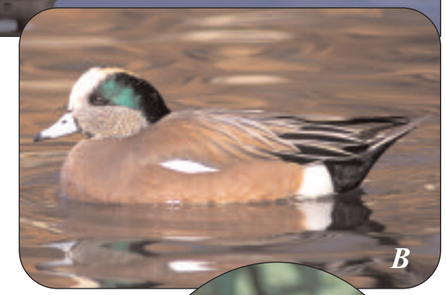


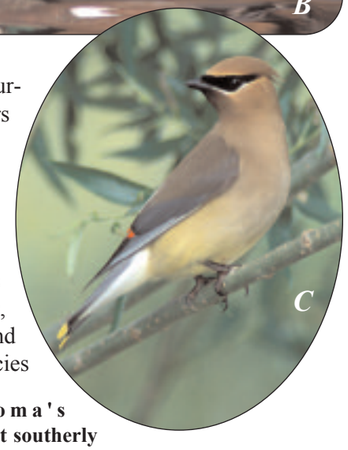

**From 1997 to 2001, over 100 volunteer birders surveyed nearly 600 blocks of land throughout Oklahoma for nesting birds as part of the Oklahoma Breeding Bird Atlas project. The Oklahoma Winter Bird Atlas project nicely complements this recently completed effort and will make Oklahoma one of very few locations in North America to have completed both breeding and wintering bird atlases. Containing over 500 pages, more than 220 color photographs, and more than 220 color maps, the Oklahoma Breeding Bird Atlas is currently in production at the University of Oklahoma Press and should be available in May of 2004.**



# Announcing the Oklahoma Winter Bird Atlas Project

*by Dan L. Reinking*
*Photography by Bill Horn*


**Oklahoma's somewhat southerly latitude means that its many reservoirs are usually ice free in the winter months, providing habitat for a variety of waterfowl including the stately Northern Pintail *(A)* and the American Wigeon *(B)*.**
**The nomadic Cedar Waxwing *(C)* is commonly seen in Oklahoma during the winter, where it travels in flocks to find its favored food of berries, sometimes becoming inebriated from consuming those that have been fermenting on the trees. Many species of sparrows breed farther north but find brushy cover in Oklahoma to their liking during the winter months, including the Fox Sparrow *(D)* and White-crowned Sparrow *(E)* shown here.**

Whereas studies of breeding birds are commonplace in North America, populations in winter are generally less well studied---consider that nearly every state has completed a breeding bird atlas, while wintering bird atlas projects are underway in only two states. Existing information on the winter distribution of most bird species in Oklahoma is limited to general statements of occurrence within broad regional areas, on the basis of many decades of sightings, both opportunistic and anecdotal. Christmas Bird Count data are often used to indicate winter bird distribution, but there are only about 20 such count areas in Oklahoma, and these counts take place in the early winter. The use of a standardized methodology to survey systematically nearly 600 locations across the entire state, during both early and late winter, within the relative confines of a five-year period, will provide an accurate snapshot of current bird distribution within Oklahoma during the winter. This survey is called the Oklahoma Winter Bird Atlas project and will take place over five winters from late 2003 through early 2008.

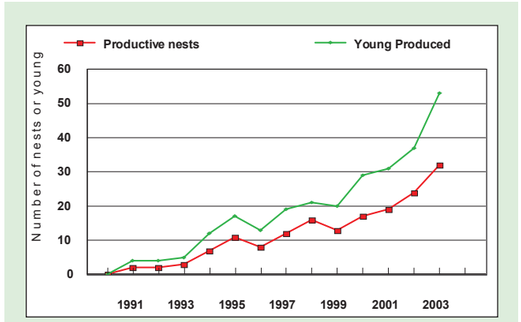
Oklahoma's mid-south latitude means fall migration in many species continues well into November and spring migration for some species begins in late February. Therefore the winter season is defined as 1 December to14 February, a period believed to capture wintering species with minimal overlap from migrants. A major difference between the Oklahoma Breeding Bird Atlas (see sidebar) and the Oklahoma Winter Bird Atlas (OWBA) is that in the breeding season most individual birds remain on local territories, whereas in winter, birds may be more mobile in response to regional or local weather and foraging conditions. As a result, there may be distributional differences in some species between early and late winter periods, or from one year to the next. To assess seasonal distributional patterns within a single winter, the OWBA season and survey effort are divided equally into early winter (1 December to 7 January) and late winter (8 January to 14 February) periods. To assess year-to-year variation in bird distributions, a number of blocks will be surveyed in each region of Oklahoma in each year.



In addition to surveying the randomly selected blocks throughout the state, birders are being asked to report observations of special interest species which are rare or local in distribution, and to report observations of water birds on Oklahoma lakes during the winter survey period. Persons with good bird identification skills and a desire to get involved should call or e-mail the Sutton Center for more information, instructions, and data forms.

# Bald Eagle Nesting Season, 2003

*by M. Alan Jenkins*




Knowing that the West Nile Virus was adversely affecting some species of birds and that Bald Eagles are known to suffer and die from the malady, I speculated in the last Sutton Newsletter that perhaps we might see a decline in the Oklahoma nesting population due to the disease. I am overjoyed to state that the eagles proved me wrong--again. I should give up prophecies about eagles.

The 2003 nesting season was unremarkable except for the productivity results. In total there were 41 occupied nests, up 4 nests from last year's total of 37. Thirty-seven of the occupied nests were active, compared to last year's 32 occupied nests. Of the active nests 32 produced one or more young; 24 were successful last year. These data are increases of 11%, 16%, and, 33% respectively for occupied, active, and successful nests compared to the results of 2002. All these data are the highest we have ever recorded.

Now, for the really good news! Compared to last year's number of 37 fledged, this year saw an increase of over (you're sitting down, I hope) 43%---that's 53 fledged Bald Eagles in 2003! Exhale now.

It's obvious that the Bald Eagle Restoration Program, the Sutton Avian Research Center's first project, has been successful beyond our expectations. Now that we have 14 years, 1990-2003 inclusive, of eagle nesting data for the state, we felt it was time to publish the results of our surveys in the scientific periodical literature. Executive Director Steve Sherrod and I have authored a publication entitled "Growth and Recovery of the Bald Eagle Population in Oklahoma," and recently submitted it to the *Wildlife Society Bulletin*. Above is a figure from that manuscript, a graph that shows the increase in the numbers of successful nests and young for the period of the study. The Dow-Jones Industrial Average should do so well.

# From the Quail House...

*by Steve Belanger*

The quail facility at Sutton is busily producing frozen *Coturnix* quail for our good customers, the falconers. We also ship to a small zoo or two, herpetological enthusiasts, and an ornithology class for dissection; in addition, we sell live quail to dog trainers. Occasionally our efforts go to various projects such as the fertile eggs that were shipped to a student at the University of Texas for research this spring.

Dan Reinking

**Steve Belanger feeds newly hatched Japanese (genus *Coturnix*) quail.**

I found it especially gratifying to have our quail being used by a partner in avian conservation: The Foster Falcon Program and Peregine Restoration at Shenandoah National Park. In Virginia, most of the breeding peregrine falcons nest on bridges in eastern/coastal areas. Many peregrine chicks in these coastal areas are at risk of premature fledging from their bridge nests. This results in high chick mortality due to drowning over open water. Through the Foster Falcon Program, many of theses chicks are moved from their bridge nests and released in Shenandoah National Park. The goal serves a dual purpose: to improve survival of young coastal peregrines and to boost peregrine numbers in the central Appalachians. At Shenandoah, the release site offers ideal cliffs and safer fledging habitat. The eventual hope is that these fostered falcons will return to the mountains of Virginia to nest and reclaim their essential role as a keystone species in the central Appalachian ecosystem.

The preferred method used for peregrine falcon reintroduction is called “hacking.” Hacking consists of taking 6-10 at-risk falcon chicks from nest sites in eastern Virginia and bringing them to the park where they are placed in protective wooden boxes for 10 days. The hackbox is placed on a high cliff ledge that mimics a natural peregrine nest scrape. The boxes are constructed so that the young birds can view and acclimate to their environment as they develop toward first flight, but are protected from predators such as raccoons. While they are in boxes, park staff provide for their care and feeding (with quail raised at the Sutton Center), and monitor their condition, all the while minimizing contact with humans. When the falcons are ready for flight, the boxes are opened and the falcons are allowed to leave. They will continue to be fed and monitored at the hack site as they learn to hunt for themselves.

At the Sutton Center, we are pleased to be producing high quaility quail for our loyal customers, the proceeds from which contribute to our conservation work.



# *Thank You to The Loyal Sutton Supporters!*

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**Memorial Funds**

In memory of Marge Cartland: Jack Cartland. In memory of Earl Sneed: James Sneed. In honor of their son Dan: Carl & Nan Reinking.

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## 2002

**Wiedenfeld DA, Wolfe DH**, Toepfer JE, Mechlin LM, Applegate RD, **Sherrod SK** (2002) Survey for reticuloendotheliosis viruses in wild populations of Greater and Lesser Prairie-Chickens. *Wilson Bulletin* 114:142–144.

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