Flight Path

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The Bulletin of the **Department of Conservation and Field Research** at the National Aviary

LINKS ACROSS THE NATIONAL AVIARY

Avian Rehabilitation for Science and Conservation

Todd Katzner, Ph.D.

Few zoos have managed to integrate their conservation and field research programs with their on-site animal husbandry and training staff. "Links Across the National Aviary" *highlights connections between the Department of Conservation and Field Research and other departments at the National Aviary.*

Rehabilitation of injured wildlife occurs throughout the United States, and the work of wildlife rehabilitators often goes unnoticed. In the world of conservation there are two main criticisms of wildlife rehabilitation. First, most scientists suspect that the number of individuals rehabilitated is small compared to the overall size of the population and that there may be more effective ways to use limited conservation resources. Second, there is almost no knowledge of the fate of a rehabilitated animal, making some wonder if an animal may live or die after being released. There is no doubt, though, that for individual wildlife rehabilitators, for the animals that they heal, and sometimes even for society, rehabilitation has great value.

In spite of these contradictory perspectives, there are times when rehabilitation and science share common goals and can go hand in hand. The case of the National Aviary's "miracle"

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Photo: Nuelsi Palés, National Aviary

Drs. Pilar Fish and Todd Katzner examine Golden Eagle #41 at the National Aviary.

HUMAN POPULATION AND BIODIVERSITY

Declining Populations of Common Birds Revealed

Steven Latta, Ph.D.

Since the late 1980s when the decline of Neotropical migratory birds was first exposed, attention has focused on the patterns of declines of the most threatened bird species. We have learned, for example, that for many species the declines in populations are not the same in all regions, and that some species may show years of population increase as well as years of declines. But little work has focused on species that we think of as being "common."

In June 2007, the National Audubon Society (NAS) released the results of a landmark study of our most common birds, detailing 40-year population declines for 20 species (www.audubon.org). NAS's analysis found declines in such familiar species as Northern Bobwhite (-82%), Evening Grosbeak (-78%), Northern Pintail (-77%), Eastern Meadowlark (-72%), Field Sparrow (-68%), Common Grackle (-61%), Whip-poor-will (-57%), and Ruffed Grouse (-54%).

Although persecution by humans is still a problem for some species, more often the threats to these common species are directly related to loss of habitat resulting from fragmentation of forests through road-building and logging, mining, expansion of agriculture, industrialized agricultural practices,

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LETTER FROM THE EDITOR

Building Capacity Through Professional Education

The Department of Conservation and Field Research strives to understand the ecology of birds and to identify the threats vital to the advancement of avian conservation, especially the relationships among human population size, land use, resource consumption, and environmental degradation. By prioritizing target sites and focal species we affect the conservation of birds through research and education around the world. We also seek to expand the ability of students and partner organizations to help meet their conservation challenges. Through workshops, internships, support of professional meetings, and mentoring and sponsoring graduate students, we are building capacity in the United States and abroad. In our premier issue of Flight Path we presented our Ecuadorian intern, Pedro Astudillo, and his work on threatened Andean hummingbirds.

In this issue we introduce two Dominican interns, Danilo Mejía and Marisabel Paulino, who are leading field studies of Louisiana Waterthrush here in Western Pennsylvania and on wintering grounds in the Caribbean. Elsewhere you will read the story of Giorgi Darchiashvili's National Aviary funded training with our colleagues at Powdermill Nature Reserve, learn of three Mexican students that are completing theses while studying birds over-wintering in riparian habitats in an Aviary-led study, and Aviary partnership and training with the Hispaniolan Ornithological Society and the Philippine Eagle Foundation.

In the future we expect to formalize an internship program to bring promising young students to western Pennsylvania each year to gain practical experience in avian research and management, avicultural practices, and conservation.

—Steven Latta, Ph.D. Editor

FUNDING SUCCESS

Northern Illinois Parrot Society

Organizations such as the National Aviary depend heavily on our donors. We can't do what we do without all of you. It is therefore always exciting when we are able to welcome a new supporter of our program. Last year we were contacted by the Northern Illinois Parrot Society (NIPS). This enthusiastic group of bird lovers was interested in our conservation and field research programs, especially our work with the Hispaniolan Parrot in the Dominican Republic and Haiti. After finding out more about our program, the NIPS asked if they could support our parrot conservation efforts. We were, as always, grateful to receive this support. The funds they have provided are being used to develop a parrot protection program and to educate the public in communities near parrot nesting areas on the importance of the parrots through national pride campaigns. We look forward to further collaboration with this generous group of individuals and to continued conservation efforts for this important species.

Neotropical Migratory Bird Conservation Act (NMBCA) Award

The National Aviary learned recently that Dr. Steven Latta was awarded a grant of more than $49,000 for a project entitled "The value of restored riparian habitat to over-wintering Neotropical migratory birds." This project, now in its fourth and final year, focuses on providing critical guidance for the restoration of riparian vegetation to improve and enhance wintering habitat vital to the long-term conservation of Neotropical migratory birds. With partners from the University of Guadalajara, ProNatura (Mexico), TerraPeninsular, and PRBO Conservation Science, we are relating bird use, over-winter site persistence, and survivorship to restoration design, silvicultural practices, water flow regimes, and other restoration activities.

Understanding human impacts on wildlife and how we can mitigate those impacts is central to our mission. In this study we work simultaneously in well-conserved riparian and restored habitats because these sites have been previously assessed as breeding habitat for Neotropical migrants by partner organizations. We are able to evaluate the value of riparian restoration efforts for migrants during the non-breeding period, and test whether restoration favorable to breeding birds is also favorable to wintering birds. Work is being conducted at 20 study plots at six sites in California and Mexico. Focal species include flycatchers, vireos, wrens, warblers and sparrows, and other upland species known to rely on riparian habitat in winter. Mexican graduate students are using this research for three theses, so we also include an important training component in the project.

RECENT PUBLICATIONS

A major measuring stick of the DCFR's success is publishing our research in peer-reviewed scientific journals. Each issue of Flight Path *will feature a recent publication by one of our staff ornithologists.*

The Chat-Tanagers of Hispaniola

Townsend, A. K., C. C. Rimmer, S. C. Latta, and I. J. Lovette. 2007. Phylogeographic concordance of nuclear and mitochondrial gene genealogies in the single-island avian radiation of Hispaniolan Chat-Tanagers (Aves: Calyptophilus). *Molecular Ecology* 16:3634-3642.

It is difficult to conserve a species if we don't know it exists. Therefore, identifying new species, determining their distribution, and understanding the process of biological diversification is fundamental to the study of biodiversity and conservation. In a study recently published in the journal *Molecular Ecology*, Andrea Townsend of Cornell University, along with the National Aviary's Steven Latta and other co-authors, used molecular techniques to determine the history of diversification in the genus *Calyptophilus*. These cryptic tanagers live close to the ground and are only found on Hispaniola. Several species are thought to have evolved on the island, and because of their small population size and restricted geographic range they are of conservation concern. We collected DNA samples from seven populations of Chat-Tanagers in old-growth mountain-top forests of the Dominican Republic and Haiti. Analyses of genetic variation suggested that there are two species of Chat-Tanagers, the Western Chat-Tanager (*Calyptophilus tertius*) and the Eastern Chat-Tanager (*Calyptophilus frugivorus*). Because populations of each species are so small, these results will increase pressure on international conservation groups and governments to recognize each species as Critically Endangered.

Photo: Eladio Fernandez

Western Chat-Tanager at its nest.

Avian Rehabilitation for Science and Conservation

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Golden Eagle is just such a tale. Most Pittsburghers and National Aviary members know the story of this bird. He was accidentally caught in a leg-hold trap by a West Virginia trapper and delivered to a local Wildlife Conservation Officer, who notified his district office. Because the district office knew of our work, they called and asked if we could use the bird in our studies. We hoped to telemeter and release the bird, but because it was so badly injured, we were forced to bring it back to Pittsburgh for rehabilitation. The bird was successfully rehabilitated and eventually released close to where he was caught. He has now migrated back to northern Canada, where he has spent the summer.

That part of the story was reported extensively in the local press. (See press reports of Golden Eagle #41 at www.aviary.org.) What is less well known is the massive effort that was required to heal this bird and the extent of the cooperation between different sections of the National Aviary required to get this eagle flying again.

From the moment that we took possession of this eagle, three departments of our institution were deeply involved in his care. National Aviary Animal Programs staff provided housing, food preparation and maintenance for the bird for the entire three months he was with us. This alone was no small feat for a staff already stretched thin by the responsibility of caring for hundreds of other birds. Likewise, the Veterinary staff at the National Aviary, led by Dr. Pilar Fish, contributed a huge amount of time and expertise in the care of this bird. Every other day Dr. Fish led 1-2 hour wound cleaning and bandage changing sessions that involved 4-6 people working together. In addition, the eagle required daily medications, which meant catching him 1-2 times daily to force feed him mice laced with a cocktail of antibiotics and other healing medicines.

Although grant funding helped to pay for many of the supplies and medicines we used, every person involved in this project freely donated their time to help us save this one bird. The individuals who donated thousands of person hours and years of experience to the care of this eagle are responsible for his survival today.

Because our Department of Conservation and Field Research is based at a zoo, this presents us with special opportunities. In the case of Golden Eagle #41 we were able to take advantage of the remarkable talents of National Aviary staff to heal and release a wild Golden Eagle. His life and his contribution to science are a testament to the dedication of our staff and the effective links we have forged across the National Aviary.

PARTNERING FOR CONSERVATION

Sociedad Ornitológica de la Hispaniola

Todd Katzner, Ph.D.

In the Department of Conservation and Field Research, we are well aware of the role that our national and international partners play in helping us to achieve our organizational goals and to complete projects. In this regular column we feature one of our many key partners with whom we collaborate.

The Hispaniolan Ornithological Society (SOH; "Sociedad Ornitológica de la Hispaniola" in Spanish) is the premiere avian conservation and research organization in the Dominican Republic. The island of Hispaniola (composed of the Dominican Republic and Haiti) faces ecological threats from a variety of sources and is a strategic focus of our department. Population pressures and resource exploitation have combined to create a heavily impacted natural system, and several endemic bird species (those found nowhere else in the world) are highly threatened by human activities. Furthermore, because of different historical contexts in which the DR and Haiti were governed and because of the contrast between their population densities, the island makes for a classic case study on the ways that human populations impact ecosystems.

Photo: Eladio Fernandez

Community theater used to promote conservation.

One of the goals of the Department of Conservation and Field Research is to work with SOH's expert ornithologists to increase our collective ability to study and conserve Hispaniolan birds and the ecosystems on which they depend. Toward this goal, both DCFR staff (Latta and Katzner) serve on SOH's organizational advisory board. We also work extensively with SOH staff on research and conservation projects.

The flagship example of how our collaborative abilities and expertise improves conservation is the Hispaniolan Parrot Initiative described in the previous issue of Flight Path. In that project, funds raised at the National Aviary's summer bird show directly support SOH's work to protect the species. The greatest threat to parrots involves poaching of chicks from nests for the captive bird trade. To help stop this poaching, SOH has published and distributed a stunning parrot conservation poster (available for download at www.aviary.org/csrv/hispanParrot2.php), held educational meetings, and monitored parrot poaching and parrot reproductive efforts. This year they hope to expand a community theater program with a parrot conservation theme.

There is, of course, more to Hispaniolan avifaunal conservation than parrots, and the DCFR and SOH are involved in a number of other projects focused on both migratory and year-round resident birds. Among the most significant of these are a series of projects designed by Dr. Steven Latta. The newest of these focuses on Pennsylvania's own Louisiana Waterthrush (*Seiurus motacilla*) – a species that breeds in our region but winters south of the border, including the Dominican Republic. SOH members Danilo Mejía and Marisabel Paulino spent this past summer conducting research on the breeding biology of these birds at Powdermill Nature Reserve with Dr. Latta. Danilo and Marisabel have now returned home, taking what they learned here, and are applying it to study this same species on its winter range in the DR. Because understanding links between summer and winter range is crucial to establishing effective conservation, this study is truly cutting edge ornithological science.

For more information on SOH and our collaboration, visit their web page at www.soh.org.do, or our "projects" web page at www.aviary.org/csrv/projects.php.

NATIONAL AVIARY
let your spirit soar

"Flight Path" is published for the members and benefactors of the National Aviary.

The National Aviary inspires respect for nature through an appreciation of birds.

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MEETING REPORTS

The National Aviary Visits Capitol Hill

The Neotropical Migratory Bird Conservation Act (NMBCA) is one of the premier pieces of legislation supporting research and conservation of migratory birds. Since 2002, the U.S. Fish and Wildlife Service has awarded $3-4 million each year in matching grants to promote long-term conservation of Neotropical migratory birds and their habitats in the United States, Canada, Latin America and the Caribbean. As a past recipient of several NMBCA awards, the Aviary's Dr. Steven Latta was invited by the Congressional Advisory Group of the NMBCA to comment on past successes and opportunities for future improvements in the Act. Latta's presentation on "Conservation science under the Neotropical Migratory Bird Conservation Act" in Washington, DC focused on the need for continued funding of research, especially on the ecology of over-wintering Neotropical migrants, and for long-term investments in monitoring and building capacity in Latin American and Caribbean countries.

The Department of Conservation and Field Research is Invited to China

In June 2007, Dr. Steven Latta attended an Intervention Monitoring Exchange sponsored by Conservation International (CI), held at the Wanglang Nature Reserve in Sichuan Province, China. The forum provided an opportunity for leading experts on avian monitoring to discuss ways that CI and other conservation organizations can demonstrate the success or failure of management or conservation initiatives. This is important because with billions of dollars spent on conservation, managers are increasingly expected to be able to demonstrate that their conservation actions are effective. Latta presented a paper on the use of birds as indicators of conservation success, titled "Coordinated avian monitoring in Latin America and the Caribbean: A monitoring strategy in six levels."

Human Population and Biodiversity

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and suburban sprawl. In addition, global warming and other broad environmental issues and policies are compounding local problems and challenging conservationists to find solutions to problems at multiple levels.

The NAS study suggests a variety of actions to help stem this loss of birds, including protecting grasslands and wetlands, preserving large blocks of forest, especially in the Canadian boreal biome, supporting sustainable forestry, fighting the spread of non-native grasses and other exotic species, conserving farmlands through the Conservation Reserve Program, and halting global warming.

While these are all positive actions that together will benefit many bird species, what is missing from the Audubon report is recognition of the root cause of habitat loss and global warming. The growth of human populations and the ever-increasing demand for scarce resources to support economic expansion and higher standards of living are the drivers of habitat loss within the United States and worldwide.

The research and conservation agenda of the National Aviary is focused on determining threats to birds in high priority regions, countries, and habitats, and recommending conservation measures to address these threats. As revealed in the NAS study, most often the proximate or direct threats to birds are related to habitat loss, but the ultimate threat is that our planet is being forced to provide for more and more humans, with each demanding an increasingly more taxing share of its natural resources. We suggest that regulating our numbers and our consumption are the twin pillars of a more sensitive conservation agenda. Furthermore, in assessing environmental threats and conservation actions, we and other conservation organizations need to consistently remind the public and policy makers of the need to address these drivers of habitat degradation. Band-aids that address the impacts of human population growth and consumption are critically important, but these only treat the symptoms, not the causes of avian and other conservation problems. Conservation of birds and our natural environment is complex. The science we do at the National Aviary is an important component of developing a complete picture of the factors responsible for the loss of biodiversity, and understanding these factors is necessary to develop practical solutions for a sustainable future.

Photo: Steve Shaluta

Ruffed Grouse in winter.

SHORT TAKES

National Aviary Supports Internships

In a new research project to evaluate Louisiana Waterthrush as an indicator species of ecosystem health, and to understand factors on the breeding and wintering grounds that may affect population size (see related story, page 7), the National Aviary has sponsored two Dominican biologists as project interns. Members of the Hispaniolan Ornithological Society, Danilo Mejía and Marisabel Paulino, have worked with Dr. Steven Latta for a number of years on a variety of projects in the Dominican Republic. With the development of our new long-term project focusing on waterthrush, we recognized the advantage of having a full-time field team that knew the birds, their behavior and habitat, and our research protocols. In addition to learning more about waterthrush, Danilo and Marisabel have had the opportunity to participate in bird banding at Powdermill, to see how successful field stations operate, and have come to know Pittsburgh and western Pennsylvania. At the conclusion of the first field season of work, Danilo and Marisabel said, "We thank the National Aviary and Powdermill Reserve for the invitation to work with the Louisiana Waterthrush, and for allowing us to be a part of this new international project. We are excited about taking our skills to the Dominican Republic where we can continue to learn about the habitat needs and survival of this interesting migratory bird."

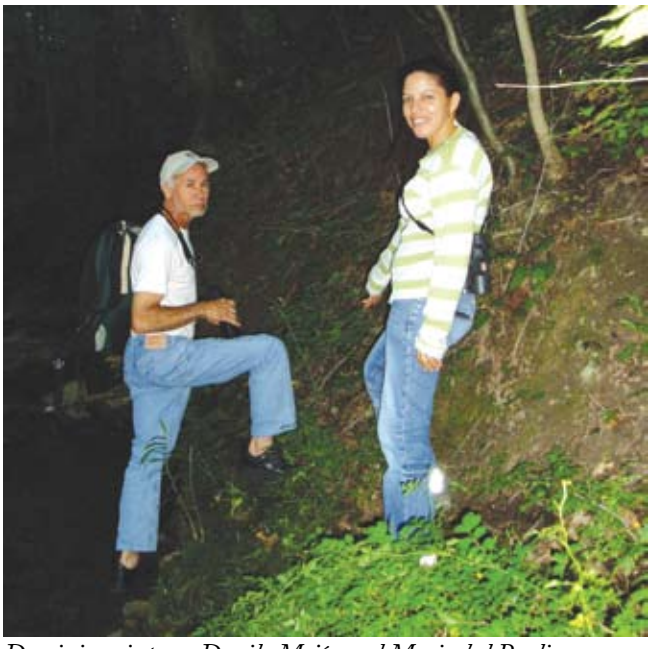

Photo: Robert Mulvihill

Dominican interns Danilo Mejía and Marisabel Paulino.

Powdermill Welcomes Dr. Andrew Mack

In early June a new research ornithologist came to town. Dr. Andrew Mack, formerly the Papua New Guinea (PNG) country director for the Wildlife Conservation Society, was hired as the William and Ingrid Rea Conservation Biologist at Powdermill Nature Reserve in Rector, Pennsylvania.

A native of Pennsylvania, Andy received his PhD in 1995 from the University of Miami after building his own research station in a remote area of PNG. For his dissertation research, he studied seed dispersal by the Dwarf Cassowary. Since completing his dissertation Andy has maintained a remarkable research and conservation program in PNG.

We at the National Aviary are thrilled with the addition of a new colleague and the continued development of our partnership with Powdermill.

MEETING REPORTS

Katzner Attends Meeting of the Wildlife Conservation Society of the Philippines

In April, Dr. Todd Katzner attended the 16th Annual Meeting of the Wildlife Conservation Society of the Philippines (WCSP). The meeting was held in Davao City on the island of Mindanao in the southern Philippines. WCSP is an exciting meeting because the vast majority of the attendees are young biologists or students. They have great energy and there are numerous opportunities to influence development of the next generation of conservationists in this "hotspot" of biological diversity.

Dr. Katzner's primary reason for attending this meeting was to build contacts with local biologists, to develop working plans for conservation of Philippine Eagles, and to help lead a research training course with Dr. Nina Ingle (WCSP) and Dr. Jodi Sedlock (Lawrence University, United States). Another highlight of the trip was a 2-day research planning workshop led by Dr. Katzner at the Philippine Eagle Foundation. That workshop identified research goals for the field team and built the framework for an important set of next steps in Philippine Eagle conservation studies.

SHORT TAKES

Louisiana Waterthrush Study Initiated

The use of birds as indicators of ecosystem health is important to conservation. The Louisiana Waterthrush, a large warbler commonly found near fast-flowing, forested headwater streams in the eastern United States, has been proposed as an indicator of change in stream habitats. Our new study seeks to identify threats to this and other species sharing their riparian habitat, and identify key conservation and management issues for riparian birds.

With co-principle investigator Bob Mulvihill of Powdermill Avian Research Center and interns from the Dominican Republic (see related story, page 6), we are assessing factors affecting the reproductive success of Louisiana Waterthrush, and comparing characteristics of territories of birds that are successful at nesting with those that fail to reproduce. In addition to determining reproductive success for each nest, we are also collecting physical measures of the stream and the territory of the pair of birds, water quality at each site, the macroinvertebrate assemblages found in the water, and the abundance of flying insects that are eaten by the Louisiana Waterthrush.

There is also a critical need for understanding the effects of habitat change on over-wintering waterthrush on the wintering grounds in the Caribbean and Central America. In the winter of 2007-08 we plan to move the study south and collect habitat and survival data from the tropical wintering grounds. Understanding factors affecting avian population sizes throughout the annual cycle provides a foundation for specific conservation and management actions in these habitats. If we truly want to understand population trends of birds, it is critical to evaluate avian life history throughout the year, not exclusively on breeding or wintering grounds. This cutting edge project attempts to do just that.

Photo: Steve Shaluta

Louisiana Waterthrush

Georgian Conservationist Supported

In autumn 2006, the National Aviary supported the North American training of a conservation biologist from the Republic of Georgia. Giorgi Darchiashvili, a biologist from the Georgian Center for Conservation of Wildlife, spent three weeks learning the details of mist netting and bird banding from the expert ornithologists at Powdermill Avian Research Center. When he left, we asked Giorgi to write about his experience in this country.

Establishing a bird banding scheme is one of the priorities of the Georgian Center for Conservation of Wildlife (GCCW). However, this work requires special training, equipment, licensing, etc., which makes it difficult to start. I was very happy when Todd Katzner, Director of Conservation and Field Research at the National Aviary, informed us that there was an opportunity to practice bird banding at the Powdermill Avian Research Center in Pennsylvania.

At the beginning of September, 2006, I visited Pennsylvania. My trip, and my stay in the US, were financially supported by the National Aviary. During the first two days I spent in Pittsburgh I was lucky to see the National Aviary which made a great impression on me. I especially liked the tropical and wetland walk-through exhibits where I saw many amazing birds and even fed some of them. I would wish to see something similar in my country sometime in the future.

I spent three weeks at the Powdermill banding station of the Carnegie Museum of Natural History where I stayed until the end of September. I saw many common and rare autumn migrant birds of North America. Every day there were several new species for me. I couldn't have imagined that warblers could be so colorful. At the beginning I was just observing how birds were extracted and banded by experienced banders as they are easily hurt by improper handling. After a few days I was allowed to extract some birds under supervision. It was not easy at all and I often needed help. As I learned, banding became easier and I felt comfortable with it. As regards to aging and sexing the birds, it requires much more practice. Also, it turns out that molting of most of the European passerines is very different from American birds. The time spent at the Powdermill reserve was a great experience for me, and it will help me in setting up bird banding in my country. I would like to thank Robert Mulvihill, the Field Ornithology Projects Coordinator, and all of the staff at the Powdermill Avian Research Center and the National Aviary for their help and support.

Julianne McCarville helped to edit this piece.

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SHORT TAKES

Update – Golden Eagle Migration

In the last issue of Flight Path we highlighted our relationship with Powdermill Avian Research Center. A central component of that relationship is our joint project to study the potential impact of the development of wind power on migratory Golden Eagles and other raptors. As was noted in that piece, last November we caught two nearly adult male eagles and put telemetry devices on those birds. Both birds spent the winter largely in West Virginia and Kentucky and, as expected, both migrated north in March. As we go to press, both are in northern Canada (Quebec and Labrador) where it appears that they have established breeding territories. Without visiting these sites we can not be certain if the birds are actually producing chicks, but we do know that both appear to be doing quite well. Sadly, the telemetry unit on eagle #39 appears to be slowly failing and we've been getting fewer and fewer locations from that bird. Although it is difficult to see the telemetry unit malfunction, we are thrilled to have been able to track that bird and get so much data on its movement.

Both migratory eagles used a narrow corridor of land when they migrated through Pennsylvania. This fits with our predictions of how Golden Eagles should move through the state. If we continue to collect similar data from other eagles, it would suggest that wind power development and other human activities in this narrow corridor should be developed with extreme care.

See a related story on page 1.

Migration of Golden Eagles #39, #40 and #41.