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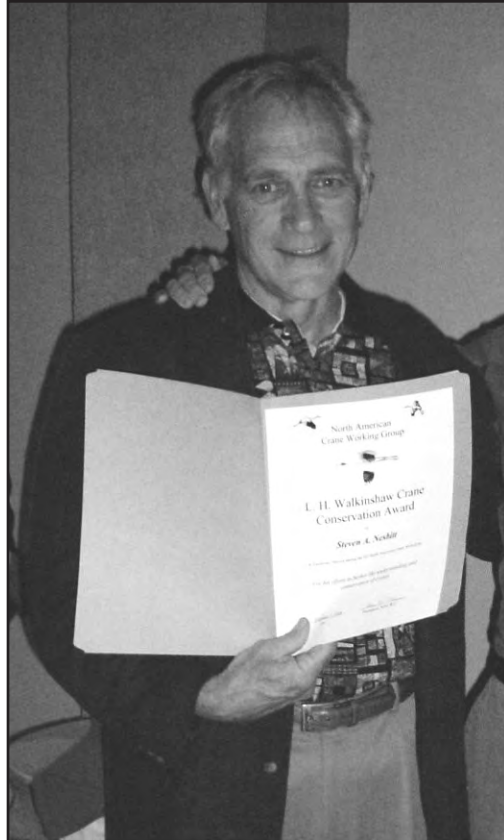
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PROCEEDINGS OF THE
**TENTH NORTH AMERICAN
CRANE WORKSHOP**



7-10 February 2006
Zacatecas City, Zacatecas, Mexico



FRONTISPIECE. Steve Nesbitt was awarded the 4th L. H. WALKINSHAW CRANE CONSERVATION AWARD on 10 February 2006 in Zacatecas City, Zacatecas, Mexico. Steve's work with Florida sandhill cranes began over 3 decades ago. He first published a paper on cranes in 1974, and since has authored or co-authored >65 publications on cranes. Steve, a founding member of the North American Crane Working Group, is the world's authority on Florida sandhill cranes. Steve has been active in the conservation of other races of sandhill cranes, including the eastern greater sandhill crane and the Cuban sandhill crane. Over 27 years Steve banded 1,093 individual sandhill cranes. Steve was the driving force in Florida for the re-establishment of non-migratory whooping cranes. In addition, Steve has published 40 other papers on species such as red-cockaded woodpeckers and wood storks. His life's work (much of which can only be described as of *pioneering* quality) focused on conservation of species threatened with extinction. Though employed for 34 years by the Florida Fish and Wildlife Conservation Commission (previously the Florida Game and Fresh Water Fish Commission), Steve's conservation efforts go beyond Florida's boundaries. Steve, through the donation/translocation from the State of Florida, has been instrumental in the recovery of the brown pelican and bald eagle. (Photo by Scott Hereford.)

Front Cover: At first light in the Sierra Madre, sandhill cranes fly over pasture lands toward feeding grounds near Laguna de Babicora in the Chihuahuan Desert of northern Mexico. Image Copyright Michael Forsberg / www.michaelforsberg.com.

Back Cover: Scenes from the Tenth Workshop in Zacatecas by Marty Folk.

PROCEEDINGS OF THE
**TENTH NORTH AMERICAN
CRANE WORKSHOP**

**7-10 February 2006
Zacatecas City, Zacatecas, Mexico**

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PREFACE

Every 3 years (or thereabouts), the North American Crane Working Group holds a workshop for the exchange of information regarding efforts to conserve and better understand America's two cranes. The papers herein, with a few exceptions, were presented in Zacatecas City, Zacatecas, Mexico 7-10 February 2006 at the Tenth North American Crane Workshop. When preparing for a trip to Mexico in February, visions of sunny beaches come first to mind. However the city of Zacatecas is over 8,000 feet above sea level, so nights were often chilly and the altitudinal changes took a while for us flatlanders to adjust to. The charm of the city and warmth of the Mexican people only added to the pleasure and excitement of spending four days awash in the ponder of cranes. Logistics for the workshop itself were expertly organized by Felipe Chavez-Ramirez; he provided the following summary:

The Tenth North American Crane Workshop (NACW), as is customary, was a great way to learn from and interact with other crane researchers from North America and other parts of the world. The site for this meeting, however was extraordinary: Zacatecas City, Zacatecas, a UNESCO World Heritage site. This meeting was the first NACW to take place in Mexico. The NACW was a great success thanks to the support and efforts of several dedicated local individuals and organizations. Among our local organizing committee we owe our most sincere thanks to Miguel Angel Diaz Castorena, Manuel Macias Patino, and Patricio Tavizon for their tireless efforts, interest, and support in having the workshop in their city. When I first proposed the idea to them they were immediately interested and volunteered to support in whatever way they could, which they did with great dedication to the very end of the activities. I found out that organizing a workshop can be difficult work, but our local committee took it all in stride and worked to solve emerging problems without a single complaint.

The main element of our workshop, the scientific program, took place in probably the most unique setting so far in our workshop's history. The scientific program took place in one of the exhibit halls of the Museo Rafael Coronel housed in the former convent of San Francisco, which dates back to 1567, among a series of unique paintings (see back cover for photos). Director of the museum, Miguel Angel Diaz, was most gracious in allowing us to use this singularly unique environment for our talks and meetings. Additionally, he was always ready to show any of the craniacs around the museum and explain the history and culture of the exhibits. Local arrangements such as hotel, registration, and meal arrangements were supported by Manuel Macias and other office staff of the Secretaria de Media Ambiente y Recursos Naturales, delegacion Zacatecas. The state government offered their support and was well represented in the person of Patricio Tavizon, State secretary of Ecology, who was extremely helpful throughout the entire logistics of the organization of the workshop. The state government additionally provided wine for our banquet. In addition to receiving support from the local SEMARNAT office, we were honored by the presence and presentation of Felipe Ramirez Ruiz de Velasco, Director General de Vida Silvestre, from the national office of SEMARNAT in Mexico City.

We want to make sure that all those local individuals and organizations that assisted with the planning and development of the 10th North American Crane Workshop are aware how much we appreciate their efforts in making this workshop so matchless and memorable. In addition to the always stimulating learning opportunities of these workshops, other good memories remain in those of us who attended the Tenth NACW. For example, some experienced for the first time perhaps, the only roving party to occur during a workshop through the streets of Zacatecas during the memorable "Callejoneada". Some will remember for a long time the interminable dusty trip to see one of the most southern distribution areas of wintering sandhill cranes in the desert spring areas of San Juan de Ahorcados. Several other trips were organized and attended by workshop participants in the surrounding areas and local attractions. Thank you again, to all those who made these possible for the rest of us. Thank You Zacatecas, and may we walk your stone streets again someday.

Marilyn Spalding skillfully organized the paper sessions for the workshop. Jane Chandler, Lara Fondow, Bill Brooks, Kristi Candelora, Felipe Chavez-Ramirez, Barry Hartup, Matt Hayes, and Jeannette Parker introduced speakers. Many great presentations on a variety of topics were delivered at the workshop. Forty-five papers and seven posters covered nesting ecology, genetics, behavior, survival and reproduction, research techniques, whooping cranes, management, physiology, diet, health and captive management, distribution, population numbers and ecology. Kristi Candelora was awarded the best student presentation for her paper "Infectious Bursal Disease in Wild Populations of Florida Turkey (*Meleagris gallopavo*) and Sandhill Crane (*Grus canadensis*), Preliminary Findings."

The North American Crane Working Group Board of Directors consisted of President Glenn Olsen, Vice President Felipe Chavez-Ramirez, Secretary Tracy Grazia, Treasurer Tom Hoffmann, Jane Austin, Marilyn Spalding, and Richard Urbanek. Newsletter editors were David and Cathy Ellis.

We acknowledge the yeoman efforts on behalf of the authors and associate editors for bringing forth this crane knowledge. We thank Rod Drewien for his assistance with the Mexico perspective on sandhill cranes and for allowing use of uniquely appropriate photos from Mexico. Richard Urbanek provided editorial advice on the manuscript. We are honored to be able to work with such dedicated biologists who share a common interest in the world's cranes.

Marty Folk and Steve Nesbitt, editors.



Cranes wintering near Ascension Chihuahua, Mexico (northwest corner of the state), note the cross-fostered whooping crane with them. Photo by Roderick C. Drewien.

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