



THE ICF BUGLE

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World Center for the Study and Preservation of Cranes

Crane Voiceprints

By Dr. Bernhard Wessling

Just as fingerprints identify individual humans, I have discovered that voiceprints identify individual cranes. An analysis of their loud unison calls provides this information, and my story begins at a nature reserve on the outskirts of Hamburg, Germany.

My profession is chemistry and my avocation is nature.

For many years I served as volunteer coordinator for a group of citizens who helped assure that people stay on the trails at Duvenstedter Brook Reserve. In 1981, we were thrilled when a pair of Eurasian Cranes established residence in the park and produced their first chick the next year. Gradually the numbers of breeding pairs increased to six.

There were many questions regarding the biology of these cranes that could only be answered through the recognition of individual birds. Staying on the trails at Duvenstedter Brook Reserve applied to researchers too, so catching cranes to identify them was nearly impossible. It was then that I began to think about identifying cranes

by their voice.

The unison call is a dramatic duet between the male and female of a mated crane pair. It is used as a territorial threat to neighboring pairs and is most frequently given at the onset of the breeding season when wetland real estate is being divided and defended. During this display, the call of the

male is completely different from, although synchronized with, the call of the female. While male and female cranes are identical in external features, gender is readily told by the unison call.

Unison calls from all Eurasian Crane pairs at this Reserve were recorded with a sensitive microphone, and the structure of the call was analyzed for timing, loudness and pitch. I discovered that each crane has a unique pattern. Using this technique, I identified all 12 individuals of the six pairs. The call of each crane did not change noticeably from year to year. Over the years, some new pairs appeared. In the year 2000, visual observation showed only 4 or 5 territorial pairs, howev-



Photo by Bernhard Wessling

Before the first flight of the Whooping Cranes planned for autumn of 2001, I hope to secure excellent recordings of Whooping Crane calls. These can then be played by keepers who costume-rear the crane chicks and by pilots flying the ultralight aircraft. Perhaps this use of recorded calls projected by speakers attached to the ultralight aircraft will provide some basic communication with the cranes. Current trials with Sandhill Cranes, in preparation of the planned 2001 migration with Whooping Cranes, are very encouraging.

<http://home.nikocity.de/craneworld/images/wav/flight.wav>

This website connects to the crane sounds currently being used to train Sandhill Cranes at Necedah National Wildlife Refuge.

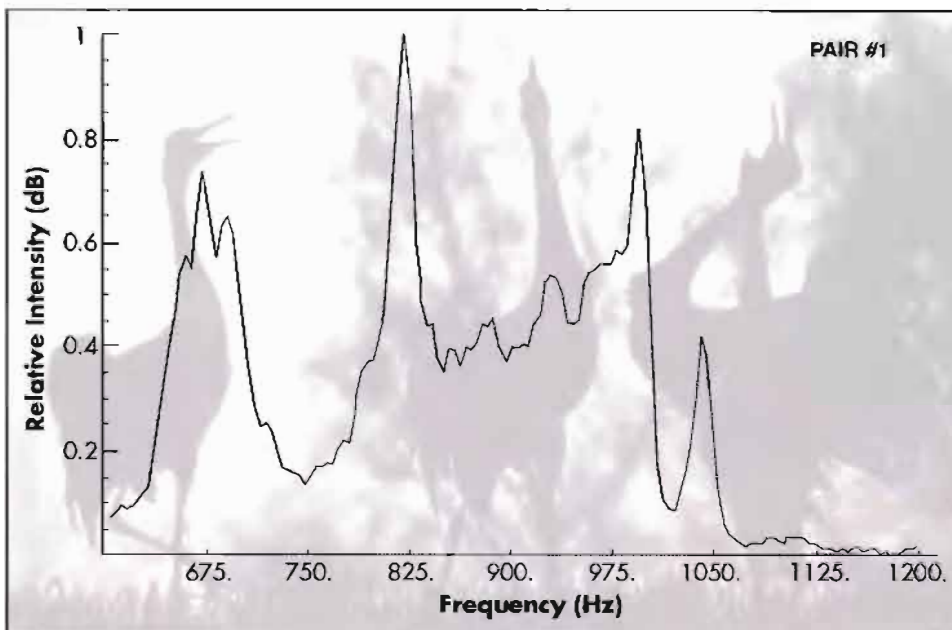
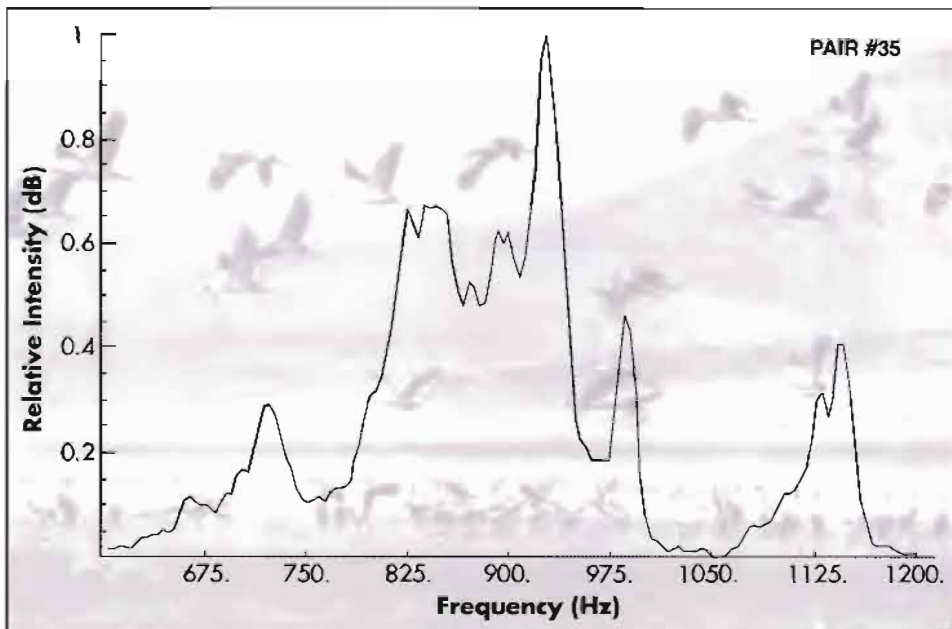
er, my voiceprints proved the presence of six breeding pairs!

In the 2000 breeding season, one pair re-occupied their old territory from 1998. In 1999, the year they skipped using this territory; a completely different pair of cranes occupied it. This seventh pair did not show up in 2000. Without voiceprints, the casual observer would assume it was the same pair continuously using that territory. Additionally, three younger pairs were looking for and fighting for territories. Coincidentally, I had recorded the voiceprints of these younger pairs a few years earlier when they briefly visited the Duvenstedter Brook Reserve. Also, the sound recordings showed that one of the established pairs lost his female partner, and a new female joined the male.

My study took me to another wetland in a nature preserve in East Germany where it was suspected that only one pair of cranes was living. I discovered two pairs. In a neighboring territory, my sound recordings showed that cranes can have marriages as rocky as humans! One male had a different female the following year, and the next year his former mate and a new male showed up in the same breeding territory.

With encouragement from ICF, I recorded and analyzed the calls of many pairs of both wild and captive Whooping Cranes in the U.S. and Red-crowned Cranes in Japan and Korea.

As with Eurasian Cranes, I found that every crane has a unique call when performing the unison call. I discovered that there were variations between populations. For example, the captive Whooping Cranes have a simpler unison call than their wild relatives, suggesting that the complex habitat of a wild crane somehow affects its calls. To my amazement, the unison calls of the wild Red-crowned Cranes in Korea were quite different from those in Japan. The role of environment and social influences in the development of the unison calls is a fertile field for future research. At the very least, we now have a method to identify individual adult cranes by voice, but this non-invasive technique may have much broader applications in learning more about birds without the stress of captur-



The "acoustic fingerprint" of pair # 1, shows the intensity of all frequencies expressed by the cranes during the call. This graph does not show the evolution of the call over time, but the intensity of the call at various frequencies. As can be seen from another "fingerprint" - pair # 35 - this is characteristic for each pair and individual.

ing and banding them.

I wish to sincerely thank the following individuals for helping with this research: Dr. Eberhard Henne, my son Bengt, George Archibald, Tom Stehn, George Gee, Brian Johns, Jane Nickolich, Scott Swengel, Yulia Momose, Dr. Kimiya Koga, Prof. Masatomi, Seong Hwan Pae.

For more information and sound bites on Dr. Wessling's research check out his website and email at: <http://www.craneworld.de> or "wessling@zipperling.do.uunet.de" - 🐦

Bernhard Wessling wrote a book about his observations and the crane's intelligence, their emotional reactions, and their problem solving capabilities.

It is in German, and he is still looking for a translator. The book is not at all a dry scientific one, but written in a light-hearted, funny style.



Photo by Betsy Didrickson

Healthy Start to Whooping Crane Reintroduction

By Barry Hartup, Veterinarian

An important part of maintaining the health of cranes (and people!) is a quality preventative health plan. In order to keep tabs on the health and development of young cranes, ICF aviculturists and veterinary staff coordinate several examinations designed to pinpoint potential medical problems in birds as early as possible. The 22 Sandhill Crane chicks in this year's ultralight aircraft experiment are no exception. Together with ICF's veterinary technician, Jeanne Marie Pittman and other Whooping Crane Project partners, I have been heavily involved in preparing for and conducting several health checks at the Necedah National Wildlife Refuge in central Wisconsin.

Health checks are a critical step in the process of reintroducing cranes to native habitat. They provide an indication of individual health and help us evaluate whether each bird would be expected to survive after release (or in this case successfully follow an ultralight airplane). They also provide reasonable assurance that disease-causing organisms are not being transferred from place to place as birds are moved. This is especially valuable information used to safeguard both wild and domestic animal populations that may come in contact with the reintroduced birds.

The first round of examinations occurred when most of the birds were nearly one month old and already

weighed over two pounds. The ICF veterinary team focused on eight Sandhill Cranes being reared in the field at Necedah, while the remaining 14 birds were examined at Patuxent Wildlife Research Center in Maryland where they were undergoing directed ultralight training. In both instances, all staff involved with these checks were required to wear crane costumes to prevent association with humans. At later checks, the chicks have had a nylon hood placed over their heads to shield their view of humans during the exams.

On June 30th, the Sandhill Cranes from Patuxent were shipped by plane directly to Necedah to fledge and finish their ultralight training in the field. The planning for this event was nearly perfect. The birds were transported on the ground for only a very short period at either end of the trip. The weather was ideal for the flight, which was generously donated by Windway Capital Corp. From air conditioned vans, each bird was brought to a converted office and garage (thankfully mosquito free!) where the project's veterinary team examined, swabbed, x-rayed and collected blood from each bird. All of the birds were in good health. Unfettered by the shipping process, the birds went right to feeding and preening after release into their pens in the Necedah marshes.

The goal of this year's Sandhill Crane experiment is to evaluate the ultralight aircraft migration and coordinated team approach for its application to the reintroduction of a

migratory Whooping Crane population. These evaluations can only be made based on quality information. At last count, the ICF veterinary staff has processed over 200 diagnostic samples from these birds, with one pre-migration health check yet to come! The information generated from this year's birds will be an invaluable resource to help determine the health risks to Whooping Cranes undergoing a similar process, and to ensure their survival into the future. 🦩



Veterinarian Barry Hartup, left, and Assistant Curator of Birds, Marianne Wellington, both of the International Crane Foundation, examine one of the Sandhill Crane chicks shipped from the Patuxent Wildlife Research Center in Maryland to Necedah National Wildlife Refuge in Wisconsin on June 30, 2000. Photo courtesy of Necedah National Wildlife Refuge.

Whispers



Daybreak. A cold heavy fog covered the valley. From my hide along the bank, I watched a Sandhill Crane intently on her nest. She warbled softly, then nuzzled her newly-hatched chick. A shaft of smoky gold filtered through the fog casting a soft spotlight on the rust-stained bird as though it were on a stage. Nearby, the male stood in a deep shadow, an ever-vigilant sentry on the point of this wooded, tiny spring-fed creek.

It was early May and the last day of my visit. I had come to the Baraboo Hills of central Wisconsin at the generous invitation of George Archibald. It was my chance to photograph wild nesting Sandhill Cranes, an experience I would never have on the Platte River in Nebraska.

For the last several years I have spent thousands of hours photographing Sandhill Cranes on the Platte River. This critical spring staging area is used by nearly 90 percent of the entire mid-continent's Sandhill Crane population - about 500,000 birds. The Sandhill Crane is fanfare and spectacle with as many people as there are birds from all over the world descending upon the Platte to witness the roar and awesome gathering of these gray ghosts.

The cranes are focused on surviving spring blizzards and often sub-zero temperatures to rest and build up fat reserves before they head north. For a photographer, the scene is often loud and hurried.

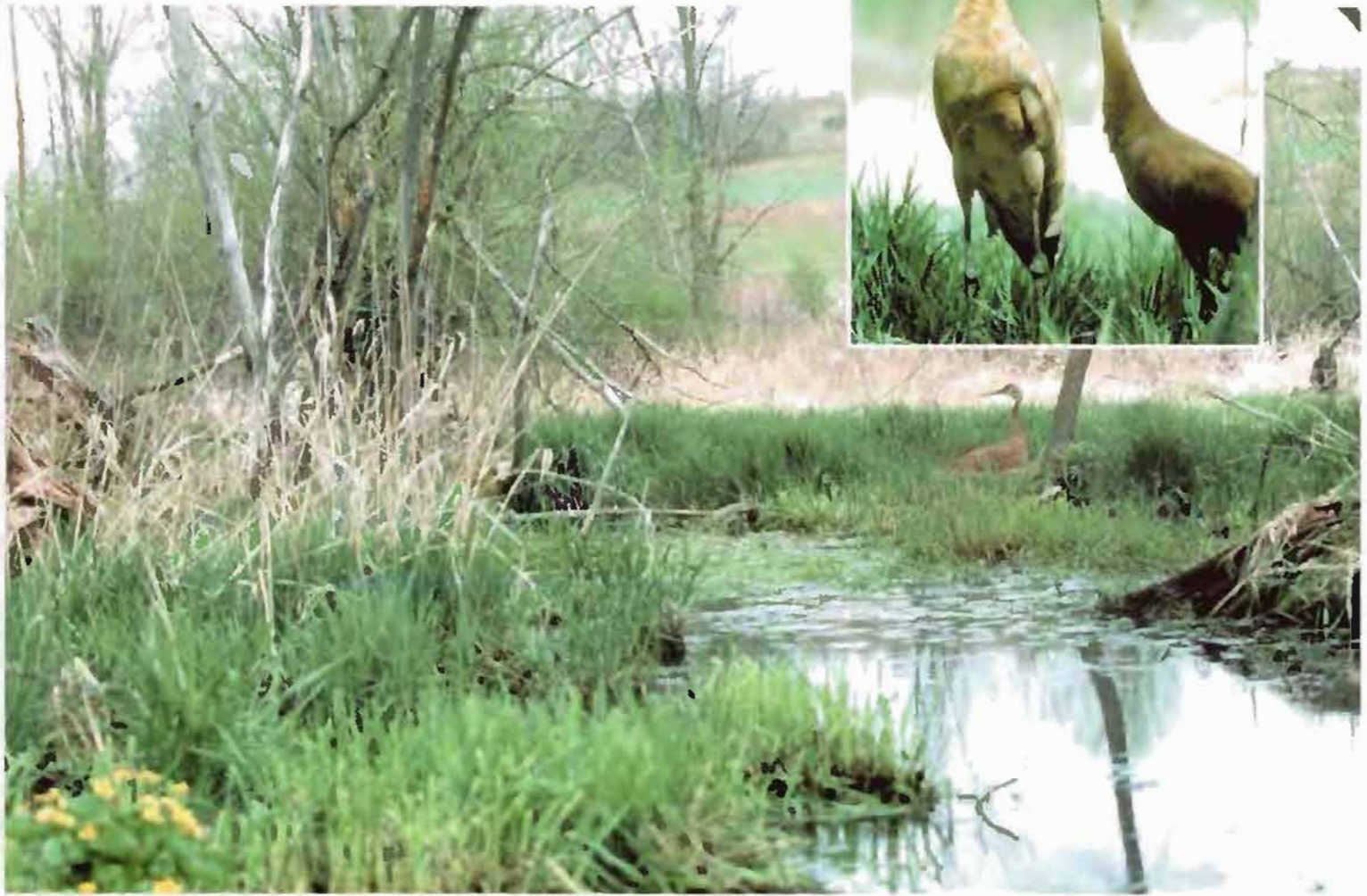
I felt privileged to photograph cranes on the land where Aldo Leopold recorded his passion for Sandhill Cranes.

While the Platte is truly one of the most amazing wildlife spectacles in the world, my crane experience in Wisconsin was unlike any I have had. In Wisconsin, the beauty was more detailed. It was quiet, lush and green.

The moments were subtle. The scene was ever so intimate. On the Platte there is always a roar. On the nest there seems only a whisper.

For six consecutive days, from sunrise till sunset, I crawled into a lean-to blind made out of tree limbs and marsh grass. Just 50 feet away from me, a nesting pair of Sandhill Cranes would feed, sleep, incubate eggs, brood their young and defend

In The Mist



their nest. As the days passed, my reverence for these magical, intelligent birds only deepened. I felt privileged to photograph cranes on the land where Aldo Leopold recorded his passion for Sandhill Cranes. To think the Sandhill Crane was nearly extirpated and has since had such a successful recovery. I believe Sandhill Cranes hold the power to act as ambassadors for the preservation of a host of wildlife species and their wetland habitats.

My hope is that all of the images I have captured and have yet to capture will someday be a part of an epic picture book that will celebrate the Sandhill Crane and its varied habitats. And my desire to tell their story continues to grow. 🦢

Story and Photos by Michael Forsberg

Contributions

April 1 - June 30, 2000

GRANTS AND AWARDS

ANR Pipeline Company;
Alliant Utilities;
Chevron Research and Technology;
Cracid Breeding & Conservation Center;
Dellwood Foundation, Inc.;
Frances R. Dewing Foundation;
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Helen Brach Foundation;
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Phillips Petroleum Company;
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Lufthansa
ICF's Official Airline

BEQUESTS

A bequest to the International Crane Foundation is an excellent way to help ICF in its conservation efforts. A model clause like the one below can be used for this purpose.

"I give and bequeath (cash amount or description of property) to the International Crane Foundation, Inc., having its principal offices at E 11376 Shady Lane Road, Baraboo, WI 53913-0447, to be used for the general purposes of the organization."

All bequests are deposited into ICF's endowment fund, which now totals over \$2,600,000. Income from the endowment supports ICF's operational budget, the Ron Sauey Memorial Library for Bird Conservation and ICF's educational program.

It is advisable to consult your attorney to ensure that your will is legally valid and effective. If you would like more information about making a bequest to ICF, please contact George Archibald, President, or Bob Hallam, Development Coordinator, at ICF.

ICF WISH LIST:

Want to help? Call Vice-President Peter Murray at
608-356-9462 ext. 153

- Laminator - 36" across
- New slide projector - Kodak Ektagraphic IIIA projector.
- Radiographic table (contact ICF Veterinarian Barry Hartup for details)
- Real-motion, time lapse recorder/player (VCR) Model number AG/RT600A (needed to observe crane pairs housed in Crane City)
- Golf Cart - to help give tours to people who have difficulty walking.

THANKS!

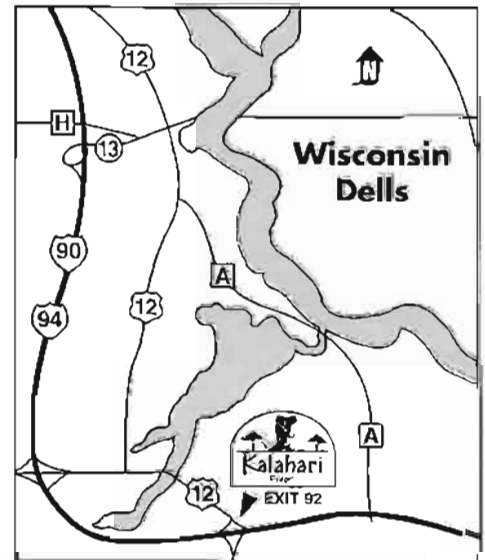
The computer monitor donated by John and Erna Heinrichs, has helped our GIS lab immensely, but the computer that they donated to go along with it was unexpected and truly appreciated!



Spend the day at ICF!

September 9: Enjoy Family Fun Day, a day dedicated to having a good time, making crafts, meeting cranes, and embarking on a nature scavenger hunt.

October 15: Fall Into Nature, a celebration of the beautiful, changing landscapes at ICF. Enjoy crafts, activities, pumpkins and more!



CLICK AND CONNECT

**www.
savingcranes.
org**

**It's an address you
can easily remember,
so spread the word!**

The ICF Bugle is the quarterly newsletter for members of the International Crane Foundation (ICF). Bugle comments or questions? Please write me at kate@savingcranes.org or P.O. Box 447, Baraboo, WI 53913

Editor: Kate Fitzwilliams

Memberships are vital to ICF. Please join or give a membership to a friend at the following annual rates:

Student or	Family	\$35	Sponsor	\$500
Senior Citizen ..	Associate	\$20	Patron	\$1,000
Individual	Sustaining	\$25	Benefactor ..	\$2,000
Foreign		\$30		

Join us at the Kalahari Resort for our Annual Meeting

WE WANT YOU! Please use the form provided to reserve your space by **September 8**.

If you have any questions, please call Kate Fitzwilliams at 608-356-9462 ext. 147.

Saturday, September 16, 2000

6 - 10: Early Morning Bus Trip to Briggsville. Join Jeb Barzen and others on a tour to Briggsville, WI where you will track some of Wisconsin's wildest Sandhill Cranes! Meet in the visitor parking lot. 45 person limit. Call Carol at 608-356-9462 ext. 103 to reserve your space. \$10 fee. Please pay as you board the bus. Cash or checks made out to ICF.

9 - 5: ICF's Gallery. "Rebirth of the Prairie: Aldo Leopold and Ecological Restoration," sponsored by the Wisconsin Academy of Sciences, Arts, and Letters.

10 - noon: Whooping Cranes in Wisconsin - The Power of Partnership. Get the inside scoop on the efforts to reintroduce a migratory flock of Whooping Cranes that will breed in Wisconsin and be taught to migrate to Florida. Meet in the Cudahy Theatre.

1 - 2:30: Crane City Tour - a rare opportunity to see ICF's breeding facility with guides from our Crane Conservation Dept. Please meet at the Chick Yard.

2:45 - 4: Prairie Restoration Tour. Experience ICF's acres of prairie, oak savanna and wetland restoration efforts with guides from our Field Ecology Dept. Meet at the gates of Crane City if you are already on the Crane City Tour, or at the Chick Yard if you are just joining the tour.

5 p.m. GATES CLOSE



For reservations at the Kalahari Resort call 877-253-5466 and ask for booking #12241. Reserve no later than 8/15 to take advantage of the incredible ICF discount! The Desert Room, a double with two queen beds plus a sleeper sofa (includes indoor waterpark) is just \$89 for Fri, Sept. 15 and Sat, Sept. 16. Explore The Kalahari online at www.kalahariresort.com.

Kalahari Resort

Located at Exit 92 off I-90/94 in Lake Delton just minutes from ICF. (See map on page 6)

5:30: Hospitality Hour - Casablanca Room (cash bar).

*You have the opportunity to bid on a unique quilt! From 5:30 - 7:15 participate in a silent auction to win The Muraviovka Park Quilt. Russian children attending the environmental camp made all the squares without sewing machines!



6:30: Sit-down dinner will be served. Members have their choice of a rib & chicken plate, or vegetarian lasagna. Indicate the vegetarian option when registering.

7:30: Welcome and Business Meeting. ICF Co-founder and President George Archibald and ICF Board President Mary Wickhem.

7:45 - 8: Program. Enjoy the highlights of ICF's season presented by George Archibald, followed by an award and the announcement of the Muraviovka Quilt's highest bidder.

8 - 9: Sharing the Hopes and Dreams of South African Crane Conservation. ICF is proud to present this year's keynote speaker Lindy Rodwell, Co-chair of the South African Crane Working Group and 1999 winner of the Royal Geographical Society, Whitley Award for International Conservation. Lindy will talk about the status of cranes in southern Africa. She completed an aviculture internship at ICF in 1988 and began working on a voluntary basis for the Endangered Wildlife Trust (EWT), which is based in Johannesburg, South Africa. EWT is a non-government conservation organization whose mission is to conserve the diversity of species in southern Africa.

Please write names as you would like them to appear on name tag.

Name (1): _____ veg entree? _____ Name (2): _____ veg entree? _____
 Name (3): _____ veg entree? _____ Name (4): _____ veg entree? _____

Mailing address: _____

email address: _____

I would like to purchase _____ tickets to the Annual Meeting Banquet @ \$25 each for a total of \$ _____.

My check made payable to the International Crane Foundation is enclosed.

Or by Credit Card (Visa/Master Card/Discover) _____ Exp. Date _____

_____ I cannot attend, but please send me a copy of the annual report.

Send this form with your payment to Attn: Annual Meeting
 P.O. Box 447, Baraboo, WI 53913

What a BEAUTIFUL day!

Cranefest - May 6, 2000



Join us next year! Cranefest - May 12, 2001

ANNUAL MEETING
Details Page 7



International Crane Foundation

E11376 Shady Lane Rd. (608) 356-9462
P.O. Box 447 Fax: 356-9465
Baraboo, Wisconsin 53913-0447 cranes@savingcranes.org
Website: www.savingcranes.org

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