New Cranes of the World Poster!

ICF introduces a new poster of cranes for our 35th anniversary. This beautiful 11.75” x 36” poster features the photographs of Wisconsin photographer Richard Armstrong and the artistry of Next Level Communication’s Designer Carrie Spankowski of Baraboo. The poster is available at www.craneshop.org or by calling our Gift Shop at 608-356-9462 ext. 121 for $19.99 + shipping.

ICF Annual Meeting Saturday, September 27, 2008
Information and Reservation form on Page 11

Cranes Respond to Climate Change
By Jim Harris, Vice President

High altitude landscapes of central Asia, where the Black-necked Cranes nest, have experienced some of the most dramatic warming due to climate change. Black-necked Cranes appear to benefit in the short-term due to lowered mortality with milder weather. But long-term, the melting of glaciers will greatly reduce the extent of lakes and marshes where the cranes nest and feed. Photo by Carl-Albrecht von Treuenfels.
The threat of climate change, independent of other human influences, is most evident with the critically endangered Siberian Crane. Polar regions have seen great changes in temperatures and weather patterns, that in turn are affecting habitats critical for birds and other wildlife.

Scientists from the Institute of Biological Problems of the Cryolithozone in Yakutia are studying the tundra environment, nesting grounds of the Siberian Crane, and finding many indicators of change, such as a drop in the surface of the permafrost layer. The lakes are shrinking and drying up, and the migration cycle of the Siberian Crane, responding to changes around them, is most pronounced on the five continents, bring the issues down to our backyard.

Amur Region, Russia. Sergei and I took a bus to Arkhara. We passed miles of burnt land, miles and miles of burnt land. Even the red active fires...yet never any people with the fires. People walking on the road, and sitting beside us seemed not to notice flames slipping in long, irregular flames across forest or lolling the tall brown grasses. From Arkhara, we drove toward Khinganski Nature Reserve. This landscape without people was burned as well, or burning. As daylight dimmed, the flames we saw on either side of that road grew brighter, snapping the air.

We passed a long lake on the left, partly frozen, and I began to wonder how we could cross our little Kneshen Lake to the island. At the end of the road, I realized that Sergei had no idea either. Sergei and the driver conversed in a language I did not understand over the frozen, shadowy lake, dirty ice with smooth spots that were holes into the water, reflecting the sky. The sky reflected the sky. Long rubber boots started appearing out of the van, leggy boots with little room for feet. Soon, we were carrying little suitcases and water bottles, groceries, and Sergei held eggs, soon, we were carrying little suitcases and water bottles, groceries, and Sergei held eggs...

We entered the road grew brighter, snapping the air. Far outside, listening to the high piping of Far cranes, and how we can respond to save our pristine, lonely wetlands as they could find. From February 19, the cranes have arrived in the Okefenokee Swamp of Georgia...

In farm fields two miles down Shady Lane Road from the Leopold shack, and fed in the Sandhill Cranes are dramatic. Thirty-five...

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We entered...
High dikes present the Namdae River from inundating the rice fields that once provided waste grain for wintering Red-crowned Cranes.

Continued from page 3.

The Red-crowned Cranes of the Anbyon Plain are National Monument Number 241. Since times untold hundreds wintered on the plain benefiting from an abundance of small aquatic animals in the wetlands. As the valley was settled by humans, some wetlands were transformed to rice paddies. The cranes arrived just after the rice was harvested and benefited throughout the winter from waste grains in the paddies. Finally, to channel flooding of the Namdae and to transform the majority of the natural wetlands into fields and villages, high dikes were constructed along both sides of the Namdae. The cranes continued to roost at night in its shallows and to feed on gleanings in the fields. Ornithologists from the Academy of Sciences DPRK in Pyongyang counted 214 in 1980. But the cranes on the Anbyon Plain and other areas of the DPRK did not fare well during the 1990s. Following the collapse of the USSR, farmers once supplied in abundance from the northern neighbor were limited. Steady attrition of soil nutrients accompanied by consecutive years of droughts then floods precipitated a food shortage. All spilt grains were collected from the fields leaving little for the birds. So the cranes continued south to fields and meadows along the Demilitarized Zone (DMZ) and bordering areas in the Republic of Korea (ROK) where there was food. Counts in recent years in ROK by Professor Lee Knip and his colleagues indicate about 80 Red-crowned Cranes. Concurrently, Dr. Pak U Il and his colleagues in the north at the Academy of Sciences searched the many wetlands where cranes once wintered. They didn’t find one. And now there are plans brewing in ROK to develop many key areas near the DMZ vital to cranes.

From March 25 – April 8, with a Canadian passport and traveling on behalf of ICF’s sister organization, BirdLife International, I was able to visit DPRK to discuss plans for crane conservation on the Anbyon Plain.

**On the Plain**

Over a steep hill from Anbyon Town, the little village of Pisan (Fortress Mountain) is tucked in a narrow valley that opens onto the wide Anbyon Plain that continues 15 miles northeast to the East Sea. The 1750 residents are members of the Pisan Cooperative Farm. Rice is the primary crop, with corn and wheat planted along the banks of the Namdae River that separates the Pisan Farm from the Hak Chon (Crane Stream) Farm. The Hak Song (Crane Formation) farm lies at the base of the hill that separates the Pisan Farm from Anbyon Town.

For three days, in company with Dr. Pak and three of his colleagues, I traveled with British conservationist and birder extraordinaire William Duckworth on visits to Pisan Farm. Our hostess was the Manager of the farm, Mrs. Kim Yon Sim, a gracious lady in her early forties and brimming with competence and enthusiasm. Approximately 500 hectares (ha) are included in the farm, 275 of which can be farmed. The remains of islands are in the Namdae and steep hillsides carpeted on the west side by grass and on the east by pine plantations. Rice is the primary crop (280 ha), followed by corn (34 ha), beans (3 ha) and potatoes (2 ha). Twenty-two additional hectares of potatoes are planted in early spring and harvested in late May or early June before the same fields are planted in rice. Fodder for domestic animals from hay fields (12 ha) and natural grasslands (21.7 ha) as well as vegetable gardens (7.7 ha), orchards of apricot, pear, apple and persimmon (8.6 ha), and fish ponds (1.1 ha), make this a diverse and interesting landscape. In and near the village are fish ponds, vegetable plots, and domestic animals including cattle, pigs, goats, chickens, ducks and geese. Rebuilding from those crisis years in the 1990s, the fertility of the soil is being enhanced by manure. Pisan Farm needs better machinery to farm more effectively. As part of an arrangement for the farm to help restore Red-crowned Cranes as winter residents, we contributed a rice milling machine that can process four tons of rice per hour, and promised other necessary equipment in the future. In exchange, the farm has agreed to feed the cranes when they land on migration, and to allow Dr. Pak and his colleagues to demonstrate new organic farming techniques on one hectare of land. The scientists will also construct a large aviary near the Namdae River for one male Red-crowned Crane on loan from Pyongyang Zoo. It is hoped this lone crane will call down the wild cranes to feed on gleanings in the fields leaving little for the birds. So the cranes continued south to fields and meadows along the Demilitarized Zone (DMZ) and bordering areas in the Republic of Korea (ROK) where there was food. Counts in recent years in ROK by Professor Lee Knip and his colleagues indicate about 80 Red-crowned Cranes. Concurrently, Dr. Pak U Il and his colleagues in the north at the Academy of Sciences searched the many wetlands where cranes once wintered. They didn’t find one. And now there are plans brewing in ROK to develop many key areas near the DMZ vital to cranes.

From left to right: Mr. Ha Jong Nam, Manager Hak Chon Farm (Crane Stream), Mrs. Pak Yon Chon, Manager Hak Song Farm (Crane Formation), Mrs. Kang Song Ok, Chair Anbyon County People’s Committee, and Mrs. Kim Yon Sim, Manager Pisan Farm (Mountain Fortress).
Veterinary Dentistry: From Dogs to Cranes

By Dr. Barry Hartup, Director of Veterinary Services

You-Yi with her shorter prothetic lower beak.


Cranes continually pose challenges to the medical and surgical treatment of their illnesses and injuries. On the other hand, those long beaks and legs sometimes provide unexpected opportunities for creative applications of techniques that are now standard in small animal veterinary practice.

This year I have managed two such cases, and both involved fractures of a crane’s beak. Though the ICF’s aviculture and veterinary staff continually strive to identify and remove hazards in crane enclosures, the appearance of these injuries in two older, well-habituated captive enclosures, the appearance of these injuries significantly more stable than with a temporary splint. Photos by Barry Hartup

For more than a month, You-Yi was tube fed by ICF staff to maintain her body weight while her wounds healed and her upper beak was surgically shortened to more closely match what was left of the lower beak.

She was then brought to the University of Wisconsin School of Veterinary Medicine (UW-SVM) Dentistry Service for the placement of a temporary prothetic to augment her lower beak, such that it would protect her healing stump and provide the necessary length and solid base for her to eat. Drs. Jason Soukup and Bill Cengler worked to wire the two parts of the mandible together, creating a framework for a cold-curing dental acrylic to construct the prothetic.

You-Yi rebounded well and was self feeding by the end of March. Though her outlook was touch-and-go for many weeks, remarkably, she laid two eggs by early June and incubated a pair of “dummy” plaster filled eggs as a test.

Whether she successfully turned the eggs as normal cranes do is unknown, though videotape may help us discern this aspect of her performance. We are guarded optimistic that You-Yi will be able to continue contributing to the conservation of cranes through her use as a surrogate incubator for other crane’s eggs.

Howard’s fracture was more common, but complicated by the degree of damage to the bones of the upper beak. After wearing a temporary splint for two weeks, Howard received an external splint of the same dental acrylic anchored by two wires placed through the beak. Practice with home caulking projects certainly helped me in the construction of Howard’s splint, which will stay on for 4-6 weeks.

Both of these cases illustrate the successful collaboration that ICF has maintained with the UW-SVM for many years and under formal agreement since 2000, as well as the successful (and creative) transfer of techniques “from dogs to cranes.”

Bob Dohmen shown a scale model to staff and visitors of the planned African Crane Exhibit that will break ground at the end of August.

This year’s financial statement will include a full time Director of Accounting and Finance. This important position will round out our senior management in-steam and enable us to install new financial accounting software for the foundation. An added benefit of new software will be better administrative support of programs, so that our Program staff will spend more time directly on conservation activities.

We are well along in implementing the first step of our 2005 Master Site Plan and expect to break ground on new state of the art exhibits for African cranes just before this year’s annual meeting. We plan to open in late June of 2009. Our project involves substantial rework of our existing Wattled Crane site, located just west of our Gift Shop, an upgrade to part of our existing pod structure and the creation of two brand new exhibits. All four exhibits will feature natural settings for the African cranes and strong interpretation of our field conservation efforts on the Africa continent. Our Conservation Education Department has crafted a carefully thought out Site Interpretive Plan which will tell a balanced story about people, places and these spectacular African birds.

ICF Director Bob Dohmen, through the Dohmen Family Foundation, provided lead funding for the project while ensuring that this very generous gift also includes direct support for field conservation for cranes in Africa. Bob’s financial support and his tireless participation in the planning and execution of this project deserve the highest accolades. We are also grateful to many of our members who also helped this effort through last year’s annual campaign.

I look forward to seeing many of you at our Annual Meeting on Saturday, September 27, 2008. We will have the chance to hear our Co-founder George Archibald share inspirational memories of our thirty-five year history, while sensing our exciting future as we develop new exhibits and new conservation action. We have a great event planned and look forward to a terrific day.

Yam Hordz
STATEMENTS OF FINANCIAL POSITION

Years ended March 31, 2008 and 2007

ASSETS

2008  2007

CURRENT ASSETS

Cash and cash equivalents  $2,771,969  $3,412,146
Accounts receivable  16,236  10,570
Grants receivable  134,846  134,846
Unrestricted permanent to give - current portion  2,884,865  2,880,542
Investments  66,397  62,075
Prepaid expenses and investments  5,144,943  4,779,938
Total Current Assets  8,874,974  8,399,473

Property and Equipment, net  1,922,919  1,999,005
Other Assets

Permanently restricted  2,884,865  2,880,542
Temporarily restricted  1,678,396  1,407,597

Total Other Assets  4,563,261  4,298,141

Total Assets  $14,684,845  $12,376,122

LIABILITIES AND NET ASSETS

LIABILITIES

Unrestricted permanent to give - net of current portion  762,087  764,102
Deferred revenue  -32,000
Unconditional promises to give - net of current portion  40,000  223,000

CURRENT LIABILITIES

Accounts receivable  16,238  10,570
Inventories  66,397  62,075
Prepaid expenses and investments  5,144,943  4,779,938
Total Current Liabilities  5,144,943  4,779,938

Total Liabilities  5,144,943  4,779,938

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$10,000,000

C. Robert Binger
The Bob Frey Foundation

Douglass and Margarette Hug
Charles C. Haffner III

Robert and Vicki Hallam
James and Coke Haffloess
John and Elizabeth Hans
Lou Harris
Christina Havard
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Isabella Lyons

Mark and Barbara Lyons

Cindy and Mark MacKenzie

Madeline Island Wilderness
Preserve, Inc.

The ICF Bugle - Vol. 34, No. 3 - August 2008

The ICF Bugle - Vol. 34, No. 3 - August 2008
Celebrated ICF’s 35th Anniversary on Saturday, September 27, 2008!

ICF’s 2008 Annual Meeting celebrates our humble beginnings on a horse farm in Baraboo, Wisconsin, to our success as a world leader in working on crisis events. ICF’s history contains many milestones, but ultimately it is a story of how ICF motivates people around the world to join forces to conserve our crises and fragile ecosystems. Help celebrate ICF’s accomplishments by sharing your story—how did you become involved with ICF and what is your favorite memory? Stories will be collected throughout the day at ICF on September 27. If you are unable to attend this event, please send your stories to: abuker@savingcranes.org. These stories will be featured on the ICF website (with author permission).

Please use the form below to register for the evening banquet only.

**RSVP by 9/22/08**

**5:00: GATES CLOSE.** Registration is required for the following activities assisted at the Glacier Canyon Lodge.

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**3:50: Hospitality Hour:**
- Book Sale: 9:00 – 5:00: Muraviovka Park for guided tours.
- Birding Hike: 9:00 – 10:00: Birding Hike led by Alyssa Rod, Visitor Services Coordinator, and Rob Carr, Interpretive Program Manager.
- 3:30 – 4:40: Guided Tour of Crane City. A unique opportunity to visit ICF’s off-exhibit crane breeding facility.
- **9:00 – 4:00: Book Sale.**
- **9:00 – 10:00: Birding Hike.**
- **9:00 – 5:00: Muraviovka Park for guided tours.**
- **10:00 – 2:00: Children/Adult Activities.**
- **11:30 – 1:30: Bag lunches will be available for purchase on sit.**

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**ACCOMMODATIONS** for Saturday, September 27, 2008:

Glacier Canyon Lodge at the Wilderness Resort: 455 Hillman Road, Wisconsin Dells, WI: 715-395-1511 or upgrade available for $155 (plus tax). Call 800-867-9433 and book under the ICF block. **Deadline: August 27, 2008.**

For other lodging options, contact the Baraboo Chamber of Commerce at 800-227-2266 or www.baraboo.com; or the Wisconsin Department of Tourism, Bureau of Travel Services, 800-223-3557 or www.dells.com.
Investing in the People and Science of Crane Conservation

By David Koehler, Director of Development

People save cranes. Our worldwide efforts to protect these magnificent birds and their fragile habitats depend on the passions and skills of diverse individuals – donors, volunteers, partners, citizens, staff and scientists. Science informs our work. The significance and scale of our mission requires that the people saving cranes and ecosystems are armed with the latest tools and information – the very best science and conservation practices available.

ICF invests in the people and science of crane conservation across the globe. Through our programs around the world – from research to education to direct conservation action – we are strengthening our established relationships, empowering new partnerships, and informing our work. The significance and scale of our mission requires that we prepare a new generation of skilled and passionate conservationists who can lead us toward a better future for these magnificent birds.

Jeb Barzen, Director of Field Ecology

Jeb has directed ICF’s Field Ecology department for over 20 years and oversees all of our work in Southeast Asia, at Poyang Lake in China and in Wisconsin where we continue our Long-term Crane Research Project with Sandhill Cranes. Jeb is a driving force behind ICF’s strong use of science and has served as the graduate advisor for the studies of Fengshan, James, Triet (profiled below) and other researchers. The diverse projects of our Field Ecology department involve developing research and conservation programs that improve outcomes on both private and public lands around the world. Two examples include developing the Healthy Growth Potato that improves stewardship in the potato fields and the wetlands, prairies or savannas that cranes use on the same farms and solving crop damage in a way that benefits farmers, Sandhill Cranes and other crane species worldwide. Jeb is currently coordinating a peer review of ICF’s science and conservation management practices. The outcomes of this effort will help strengthen ICF’s use of science and best practices.

Triet Tran, Southeast Asia Program Coordinator

Triet was born in Vietnam and began working for ICF in 1993 while pursuing his MS and PhD from the University of Wisconsin-Madison. Upon completion of his degree in Land Resources in 1999, Triet began to direct ICF’s program first in Vietnam and later throughout Southeast Asia. Triet has been instrumental in developing the first regional training program for wetland science that is now taught within a consortium of 13 Southeast Asian universities. Last spring, Triet’s work in Vietnam with Phu My villagers on the Ha Tien – Habitats to Handbags project received the prestigious United Nations Dubai Award and the Equator Prize for impact, sustainability, partnership and community empowerment. His creative project combines protecting nearly 6,500 acres of wetlands important for wildlife, including Eastern Sarus Cranes, with developing skills and alternative livelihoods for residents of one of Vietnam’s poorest villages. After three years of implementation, the income of local families has more than doubled and the number of Sarus Cranes using the Phu My wetland during the dry season has grown from 5 to nearly 200. He has spent the last four years investigating the relationships between water levels, water plants and water birds in the vast, complicated and dynamic Poyang system.

Fengshan Li, China Program Coordinator

Fengshan was born in Chifeng, Inner Mongolia in the People’s Republic of China. He first came to ICF in 1989 for wetlands training and, in 1997, earned his PhD in Land Resources from the University of Wisconsin-Madison on an ICF-supported project studying Black-necked crane winter ecology at Gong Xi in Yunnan Province, China. Fengshan has continued his critical role developing our China program since that time and leads our efforts for Black-necked crane research and conservation in Yunnan, Guangzhou and Sichuan Provinces as well as our community-based conservation efforts at Can Hai and ecological monitoring at Poyang Lake. He has also been very active in eastern China, and serves as the China Technical Advisor for the UNEP/GEF Siberian Crane Wetlands Project.

James Burnham (on right), Poyang Lake Program Scientist

James received his MS from the University of Wisconsin-Madison in 2007 while working as a research associate at ICF studying the ecology of wintering Siberian Cranes and associated waterfowl at China’s Poyang Lake. He has spent the last four years investigating the relationships between water levels, water plants and water birds in the vast, complicated and dynamic Poyang system.

Gopi Sundar, Research Associate, India

ICF is committed to building capacity for the conservation of Indian cranes. To advance knowledge in this area, ICF has been supporting the education of Indian scientist Gopi Sundar. This summer, Gopi completed his PhD coursework at the University of Minnesota and is now conducting field research in Uttar Pradesh, India, where he is exploring ways to retain cranes and other birds in a landscape that is otherwise used intensively for cultivation. Lessons from Gopi’s research may help guide ICF activities for cranes across farmlands of other regions. While in India, he will concurrently write his doctoral dissertation and continue to administer activities of the Indian Crane and Wetland Working Group on behalf of ICF.

Kelly Maguire, Senior Aviculturist

Kelly started working for ICF as a Chick- and Assessor in 1994 and became an Aviculturist later that year. She has worked in all aspects of crane husbandry at ICF including incubation, maintenance, artificial incubation, chick rearing and medical care. More recently, Kelly has participated in early training and migration efforts of the reintroduced Whooping Cranes led by ultralight aircrafts from Wisconsin to Florida. As part of this project, Kelly just completed her MS in Wildlife Ecology at the University of Wisconsin-Madison studying habitat selection of reintroduced Whooping Cranes on their summer grounds in Wisconsin. She continues to supervise egg incubation for the Whooping Crane recovery efforts at ICF and will soon engage in research on breeding activity of reintroduced Whooping Cranes as we attempt to learn more about the reproductive behaviors of this rarest of all cranes.

Photo by Joel Sartore www.joelsartore.com
Plateau are predicted to have more rainfall in available once glaciers disappear – with major breeding seasons. But less water will be past 50 years. Glaciers are rapidly melting, surface temperatures rising by 1.1˚ C in the climate change on earth, with average annual experiencing some of the most dramatic Cranes is likely to be temporary. Tibet is highly complex, and rely on models developed 2010. Repeating these same surveys in later baseline studies in Tibet starting in 2009 or Ruoergai in 2009 and are preparing to do climate change. We have surveys planned for breeding success that may reveal the role of and document habitat conditions and conditions on the breeding grounds (the future than now, but this change could be offset by greater evapotranspiration, and likely lead to substantially reduced breeding marches. Even now, at the key breeding area of Ruoergai in Sichuan and Gansu, 6 of 17 lakes larger than 6.67 hectares have dried completely from 1985-2000, and the sizes of the other 11 lakes have been reduced to different degrees. While we attempt to understand the changes happening to wetlands and water in Tibet, and how cranes interact with these changes, the species will remain "vulnerable" on the IUCN Redlist for endangered species. Changing rainfall threatens the Red-crowned Crane In regions where climate change will make water supplies less predictable and less secure, a range of important adaptations to climate change are already clear. The 1990s, during the wet part of this cycle. Now that landscapes are mid-way through the dry side of the cycle, most of those protected wetlands are dry. Wildfires have shifted from grasslands to forest-steppe, mostly at higher elevations or to the north. As years of drought continue, waterbirds, people and livestock depend on ever smaller wetlands, with so much disturbance from people and livestock that birds are unable to raise young at all. At present, it is extremely difficult to separate the impacts of recent human development, the thirty-year cycles and the onset of long-term climate change. Yet it is evident that Red-crowned Cranes and many other waterbirds face severe threat from lack of water combined with accelerated human activity. This year, ICF is working with Chinese, Russian and Mongolian colleagues to assess numbers and breeding success of Red- crowned Cranes across this entire gradient, from Lake Khanka in the east to the Argan and Hui Rivers in the west, including Mongolia’s Uldz and Onon River watersheds, that have been the stronghold of the long White-naped Cranes.

With the exception of Lake Khanka, numbers of successfully breeding Red- crowned Cranes are severely reduced. This deteriorating situation has been obscured by the numbers of cranes unable to breed and still inhabit the edges of marshlands or former breeding sites. Five years ago White-naped Cranes’ breeding in shallower wetlands, were less affected. Now, White-naped also cannot breed. In the past, water has been an effective barrier keeping people from the sensitive crane nesting spots. Now people and the livestock can walk almost everywhere. In Russia, where rural people believe that burning grasslands will promote better plant growth to feed their livestock, fires have much more severe impact because they sweep over drying wetlands, destroying nests and burning deep into peat exposed to the air. Low water also makes it easier to get machinery into place for ditch digging – so that conversion of wetlands to farmlands has accelerated. During dry parts of the cycle, pressures grow greater on rivers and lakes already stressed by lack of water, for mines or other new development. Variability in rainfall and security of water have become a priority problem, both for supporting improved livelihoods for people and for safeguarding the region’s extraordinary diversity of cranes and other waterbirds. Wetlands are intimately connected with water supply and water quality, and provide essential support for many economic activities such as fisheries, livestock, and growing tourism to natural areas in all three countries. Vast amounts of carbon are sequestered in the abundant peatlands of this region. Without protection of wetland and water resources, this carbon will be released to the atmosphere – especially as fires burn away peat exposed to air – accelerating the build up of greenhouse gases. Fortunately, the conservation actions needed in response to this tundra landscape, prime breeding habitat of the critically endangered Siberian Crane, already is changing due to warming conditions in the Arctic. Open water is expanding over islands, peninsulas, and low-lying lake shores, including favored nesting sites for the cranes. Photo by Crawford Prentice.

Changing climate is affecting cranes across large parts of Asia. Map by Dorn Moore.

This problem has a human face as well. At Kerqin Nature Reserve in Inner Mongolia, where Red-crowned and White-naped Cranes can no longer nest due to drought, ICF is helping herders and communities adapt to the drier landscapes. An aggressive effort by the county government as well as the nature reserve is protecting the grasslands essential to the livelihoods of these herders. To sustain that resource base, livestock herds are now half their former size, but still too large. ICF is assisting with converting herds to more productive varieties – such as cashmere goats – while adjusting how animals use the land. We also support alternatives to herding helping to enhance incomes. For people who already feel that they are struggling, it is hard to think about climate change and not lose hope. It can be the same for those who care about cranes and wild places. Yet the ancient cranes are resilient and surprisingly adaptable – it is so remarkable how Wisconsin’s Sandhills and Japan’s Red-crowned Cranes have recovered since Aldo Leopold’s day that they still exist. ICF is adapting as well. Science, as well as beauty and hope, should be our companions in the years of conservation effort ahead.

For more information about effects of climate change on wildlife, see:

- **Migratory Bird Treaty Act (2010) [PDF]**
- **Climate Change and Resilience (1.2 MB) [PDF]**
- **IUCN Redlist for Endangered Species**
- **ICF Report: Global Status Report - Bird Species and Climate Change**
- **ICF Bugle - Vol. 34, No. 3 - August 2008**
- **ICF Bugle - Vol. 34, No. 2 - August 2008**
- **ICF Bugle - Vol. 34, No. 1 - August 2008**
- **ICF Bugle - Vol. 33, No. 3 - August 2007**
- **ICF Bugle - Vol. 33, No. 2 - August 2007**
- **ICF Bugle - Vol. 33, No. 1 - August 2007**
- **ICF Bugle - Vol. 32, No. 3 - August 2006**
- **ICF Bugle - Vol. 32, No. 2 - August 2006**
- **ICF Bugle - Vol. 32, No. 1 - August 2006**
- **ICF Bugle - Vol. 31, No. 3 - August 2005**
- **ICF Bugle - Vol. 31, No. 2 - August 2005**
- **ICF Bugle - Vol. 31, No. 1 - August 2005**
- **ICF Bugle - Vol. 30, No. 3 - August 2004**
- **ICF Bugle - Vol. 30, No. 2 - August 2004**
- **ICF Bugle - Vol. 30, No. 1 - August 2004**
- **ICF Bugle - Vol. 29, No. 3 - August 2003**
- **ICF Bugle - Vol. 29, No. 2 - August 2003**
- **ICF Bugle - Vol. 29, No. 1 - August 2003**
- **ICF Bugle - Vol. 28, No. 3 - August 2002**
- **ICF Bugle - Vol. 28, No. 2 - August 2002**
- **ICF Bugle - Vol. 28, No. 1 - August 2002**
- **ICF Bugle - Vol. 27, No. 3 - August 2001**
- **ICF Bugle - Vol. 27, No. 2 - August 2001**
- **ICF Bugle - Vol. 27, No. 1 - August 2001**
- **ICF Bugle - Vol. 26, No. 3 - August 2000**
- **ICF Bugle - Vol. 26, No. 2 - August 2000**
- **ICF Bugle - Vol. 26, No. 1 - August 2000**
- **ICF Bugle - Vol. 25, No. 3 - August 1999**
- **ICF Bugle - Vol. 25, No. 2 - August 1999**
- **ICF Bugle - Vol. 25, No. 1 - August 1999**
- **ICF Bugle - Vol. 24, No. 3 - August 1998**
- **ICF Bugle - Vol. 24, No. 2 - August 1998**
- **ICF Bugle - Vol. 24, No. 1 - August 1998**
- **ICF Bugle - Vol. 23, No. 3 - August 1997**
- **ICF Bugle - Vol. 23, No. 2 - August 1997**
- **ICF Bugle - Vol. 23, No. 1 - August 1997**
- **ICF Bugle - Vol. 22, No. 3 - August 1996**
- **ICF Bugle - Vol. 22, No. 2 - August 1996**
- **ICF Bugle - Vol. 22, No. 1 - August 1996**
- **ICF Bugle - Vol. 21, No. 3 - August 1995**
- **ICF Bugle - Vol. 21, No. 2 - August 1995**
- **ICF Bugle - Vol. 21, No. 1 - August 1995**
- **ICF Bugle - Vol. 20, No. 3 - August 1994**
- **ICF Bugle - Vol. 20, No. 2 - August 1994**
- **ICF Bugle - Vol. 20, No. 1 - August 1994**
- **ICF Bugle - Vol. 19, No. 3 - August 1993**
- **ICF Bugle - Vol. 19, No. 2 - August 1993**
- **ICF Bugle - Vol. 19, No. 1 - August 1993**
- **ICF Bugle - Vol. 18, No. 3 - August 1992**
- **ICF Bugle - Vol. 18, No. 2 - August 1992**
- **ICF Bugle - Vol. 18, No. 1 - August 1992**
- **ICF Bugle - Vol. 17, No. 3 - August 1991**
- **ICF Bugle - Vol. 17, No. 2 - August 1991**
- **ICF Bugle - Vol. 17, No. 1 - August 1991**
- **ICF Bugle - Vol. 16, No. 3 - August 1990**
- **ICF Bugle - Vol. 16, No. 2 - August 1990**
- **ICF Bugle - Vol. 16, No. 1 - August 1990**