

THE ICF BUGLE

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World Center for the Study and Preservation of Cranes

CHINESE UNITE TO CONSERVE ZHALONG MARSH

by Jim Harris
Deputy Director

The sun rises over vast marshlands. By July, the legions of reeds have reached full height, taller than people, and the reed tops run with the wind sweeping across the 210,000-hectare Zhalong Marsh in northeastern China. The birds have awakened, and suddenly the unison call of the Red-crowned Cranes lifts over shallow waters and the limitless sea of green. Here in Zhalong, the primal wetlands of Asia survive.

But over the reed tops skims a blue hat, atop a local farmer riding a noisy tractor on the way to his corn patch. From another direction, the music from a radio entertains a fisherman in his boat. Ahead, the brown tops of houses on an island break the horizon, one of 17 villages dependent on Zhalong.

Zhalong, like most Chinese wetlands, has a precarious balance; it's home for the cranes and also home for growing numbers of Chinese who must make a living from the marsh. Six crane species visit Zhalong, and the area has more Red-crowned Cranes than any other wetland on earth, 193 birds in May of 1981. But the cranes have trouble nesting because of human disturbance, while Whooper Swans and Eastern White Storks no longer breed on the marsh.

The 1987 International Crane Workshop occurred in May at Qiqihar, a city of a million people 35 kilometers from the Zhalong Nature Reserve's headquarters. The meeting focused international attention on the magnificence of Zhalong and the conservation challenges there, which are typical for wetlands and nature reserves throughout Asia

and Africa. Following the workshop, I stayed at Zhalong together with Norton Nickerson, a wetland ecologist from Tufts University, and three associates. We met with reserve staff and officials from the Heilongjiang Forestry Bureau to examine habitat use and management at Zhalong.

Human uses suffer

Village life revolves around the marsh, and resources are used in varied ways. Until recently, people near the reserve headquarters managed artificial ponds to grow their fish. But with changing policies that en-

couraged more individual initiative, people found they could do better by fishing in the wild wetland, and the fish ponds were abandoned.

As fishing has intensified, the catch has declined year by year. Now it is rare to see fish more than a few inches long. At the reserve dining room, we were served platters of three-inch long fish, each one ready to spawn.

Harvesting reeds for paper is the most important activity on the marsh. **Phragmites** reeds are cut during the winter, when people

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White-naped Cranes and five other crane species depend on Zhalong Marsh. In recent years, however, the wetland has been overused and degraded by human activities. The city of Qiqihar is coordinating a new cooperative effort at management, involving all governmental units concerned with the marsh. This approach offers hope that prime crane habitat can be conserved while meeting needs of the people. Photo by Sture Karlsson.

RECENT ADVANCES IN HEALTH CARE AT ICF

By David H. Thompson
Education Director

Two women enter a pen with two cranes. Marianne deliberately walks toward the birds as they back into a corner. The cranes look a bit ruffled and try to look defiant, and after some maneuvering on both sides, Marianne grabs the patient with a sure hand. The other bird suddenly bursts into flight, lumbering just over their heads. Once the excitement is over, Marianne presents the nervous bird to Julie.

Julie Langenberg, V.M.D., is ICF's "Consulting Veterinarian." She is responsible for the health of the flock, which involves her in emergency care of sick or injured birds, ongoing care, and programs for the prevention of disease and injury. She is also consulted on management decisions that might affect the health of cranes, on problems with cranes in other collections, and on health-related problems arising during research. For example, one scientist consulted with Julie to find out how transmitters could be attached to the cranes in a way that would minimize harm to the birds.

Julie works one and a half days a week for ICF. The rest of her time is divided between an appointment at the University of Wisconsin's School of Veterinary Medicine, and the National Wildlife Health Research Center (NWHRC). At the University, she is involved in three research projects, and teaches classes in Avian Medicine and Pathology. At NWHRC, she spends one day a week as a Diagnostic Pathologist, pinpointing the cause of death in wild birds collected throughout the U.S.

By having a variety of professional affiliations, Julie puts ICF in contact with some of the best wildlife health facilities in the country. Through Julie, the resources of both institutions are available to ICF.

Because of the value of our cranes, health care is vital to ICF's mission. But ICF has to do more than just keep the birds alive—it has to ensure that the cranes are healthy enough to breed. Finally, ICF has a responsibility to make sure that any birds sent to other institutions or released to the wild are as healthy as possible.

AT ICF health care is based on four basic concepts: prevention, continuity, compassion, and cooperation. Since Julie began work at ICF in June of 1987, there have been numerous improvements resulting from the combined efforts and expertise of Julie, ICF's

aviculture staff, and outside experts and institutions.

Prevention

In maintaining a healthy collection, prevention is crucial. This involves an annual health check of all the cranes, ongoing checks for parasites and infectious diseases, and quarantine of newly arrived birds or birds known to be carrying disease. Procedures are also established to prevent the spread of disease, such as foot baths of disinfectant for aviculturists at the entrance to each pen. Finally, new facilities are carefully designed to minimize the risk of injury or spread of disease.

Continuity

As health care grows more complex, continuity becomes increasingly important. Most people agree that human health care is best when you return time after time to the same physician . . . someone who knows you and your family. Perhaps the biggest improvement at ICF in recent years comes from the continuity possible with Julie's ongoing presence. Before Julie was hired, a number of local veterinarians combined trips to ICF with their local practice. But unlike local

veterinarians, Julie specializes in birds. Moreover, regular visits allow her to get to know the cranes individually, and to develop standard procedures for recurring problems.

Having a standard procedure, or "protocol," means that time and research can be devoted to finding the best solution to a recurring problem, like a broken beak. Then, when the emergency arises again, no time is wasted in looking for the best approach. Continuity has allowed ICF to develop a whole system for care involving facilities, equipment and supplies, protocols to deal with health problems, and the training of staff.

Compassion

When you see the same birds every week, you get to know them as individuals and begin to feel compassion for these magnificent creatures. ICF's cranes are wild birds, so any contact with humans can be stressful. Compassion for the birds means we do everything we can to reduce the stress they feel. Studies have shown that stressed birds have a weakened immune system, and that they are less likely to breed successfully. Whenever possible, Julie modifies medical procedures to minimize stress.



ICF's "Consulting Veterinarian," Julie Langenberg, V.M.D., examines a Sandhill Crane and instructs aviculturists on follow-up treatment. Photo by David Thompson.

Sometimes, there are difficult choices to be made. Do you treat, which involves a lot of handling and stress, or do you take the risk of no treatment? Last summer, a breeding White-naped Crane was started on antibiotic injections to fight a low-level infection. Stress resulting from twice-daily injections caused her to stop laying, so Julie decided that the treatment could wait until after breeding was finished. It's like postponing elective surgery until after your honeymoon.

Cooperation

Julie's continuing presence means greater cooperation at ICF. Julie not only knows the birds, but the aviculture staff as well. She knows the skills of each and how to rely on them for assistance. She trains them in diagnostic procedures. Julie also brings cooperation from experts in Madison. For example, a parasitologist at the School of Veterinary Medicine has lent his expertise to the ongoing checks for intestinal parasites, while a microbiologist at NWHRC is monitoring fecal samples for **Salmonella**, an often fatal infection that is common in birds.

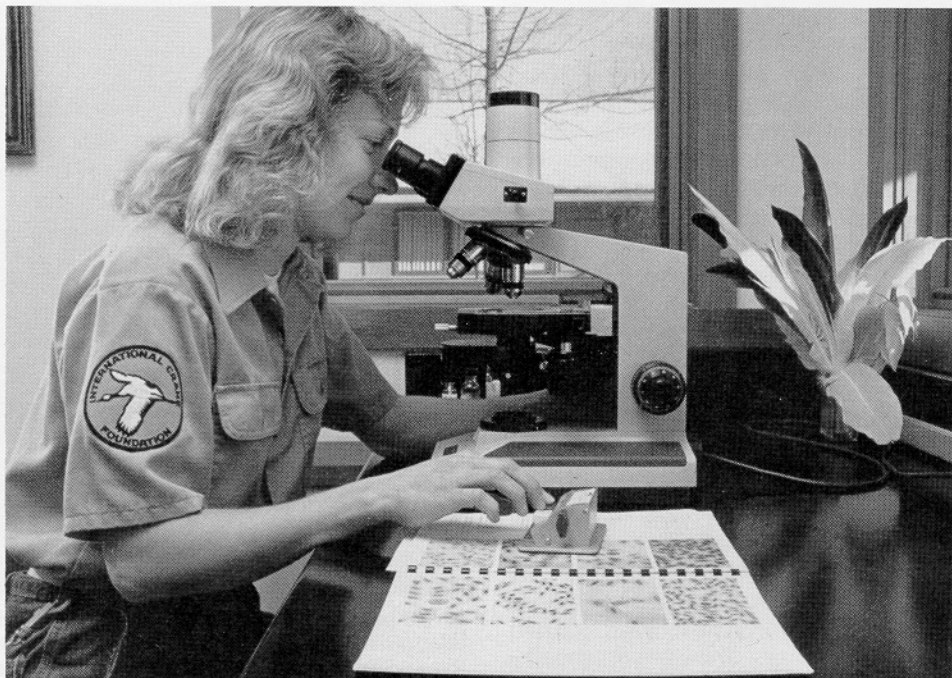
Advances Since 1985

For years, ICF has had an annual health check, during which all the birds are examined and screened for disease during two busy days. These exams are now more thorough, involving more attention to internal organs through palpation and through listening with a stethoscope. More blood samples are now taken, giving early warning of disease, or providing a baseline of normal parameters. These baselines are important because, with few published studies of crane physiology, Julie cannot just go to a book and look up normal values when she has a sick bird on hand.

Routine screening for parasites has also been improved. Now every bird has a fecal sample taken two times a year. A parasitologist at the School of Veterinary Medicine has completed a thorough survey of all the birds in the collection, and has produced a photographic guide to the parasites of cranes. We now have a complete picture of the existing levels of infection, and of the tests that need to be continued to stay on top of the problem.

We've also made progress against infectious disease, especially **Salmonella**, which can potentially cause infertility in adults or kill chicks. The number of **Salmonella** carriers in the collection has been reduced from 17 in 1986-87 to 2, and they are strictly isolated. Protocols for handling the **Salmonella** problem have been developed, and productive relationships with outside researchers have been established.

Quarantine involves the isolation of a new arrival while the bird is closely watched for any sign of disease. At ICF, quarantine lasts at least six weeks, and involves a battery of



Aviculturist Marianne Wellington does a white blood cell count. Most laboratories are unable to perform these valuable diagnostic tests on birds. Photo by David Thompson.

tests. Improvements in this area involve much more extensive screening for disease, including blood chemistry and serological tests.

Xiwang, the Black-necked Crane recently shipped from China, has undergone approximately 25 separate tests since he arrived in quarantine, everything from blood tests to X-rays to tuberculosis tests. We now know a lot about his health status, and by extrapolation, something about the health status of cranes in Chinese zoos. He probably felt like a military recruit getting his first physical exam.

In spite of these advances, there are still a lot of improvements needed. For example, ICF hopes to obtain special funding to provide for diagnostic equipment. Having in-house X-ray equipment would eliminate the need to transport birds to off-site facilities, and fiberoptic scopes would help to determine a bird's sex with only a tiny abdominal incision. Better on-site equipment increases efficiency for the staff and reduces stress on the birds.

ICF also hopes to increase in-house research on diseases common to cranes. Unlike the status of human medicine, there are many common medical problems that have never been studied. For example, problems with the legs of cranes are common in any collection. The large collection of cranes here, along with our proximity to facilities in Madison, makes ICF an ideal location for clinically-oriented research.

Prevention Pays Off

The emphasis on care and prevention at

ICF over the years has paid off, resulting in a collection that is remarkably free from disease. For example, in the summer of 1988, 119 birds were tested three or more times for all parasites. Only 21 of these birds (18%) tested positive, and most of the positive birds did not have high enough levels or serious enough types of infection to have any noticeable effect on their health. None of the birds tested positive for coccidia, which at other breeding centers has resulted in the loss of over 40% of the chicks hatched. There are no detectable viral infections in the long-term collection.

In 1988, ICF had fewer than five cases of disease caused by bacteria, and all of these were local lesions caused by bacteria commonly present in the environment. Finally, not a single chick was lost to infectious disease. Only two died, one from a combination of leg problems and metabolic disease (gout), and another from a difficult hatch.

As progress continues at ICF, health care for cranes is beginning to look more and more like health care for people. The trend is toward preventative medicine, and when the cranes see their "family physician," they get continuity and compassion from health-care professionals who work as a team. Although the costs are rising, our valued patients are worth every cent.

When Marianne captures a crane for its appointment with Julie, she makes a purring sound for the crane. It's like the compassionate small-talk you hear in any good hospital today.

Zhalong Marsh

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can walk over the ice. The activity is lucrative. Zhalong Village near the headquarters has purchased tractors and rebuilt its school. In some villages, almost every house boasts a tall television antenna.

But the harvest of reeds in the western part of the marsh has declined significantly. Although economic policies have encouraged more intensive harvesting, so that now, almost all reeds are cut, something is amiss. The yield per hectare has declined, and extensive areas no longer grow reeds.

The problem has to be seen in geographic perspective. Zhalong is a large river delta, where water from mountains to the north gradually spreads south and finally evaporates in the southern part of the marsh. Because of diversions for irrigation, the flow into the marsh was decreasing. There was not enough water to support luxuriant growth, and in addition, salinity was increasing. Over the years, salt has normally been deposited in the southern part of the marsh, leaving salt pans that are barren and white. But as less water entered the northern part of Zhalong, it evaporated in the middle of the marsh, depositing salt in formerly productive reed beds. These problems may have been partially resolved by the recent construction of canals for transporting more water to and from the delta.

Nevertheless, major resource problems still affect the ecology of Zhalong, including wildlife. Unfortunately, the reserve staff have no jurisdiction over fish, reeds, or water. The reserve has responsibility and authority over only the wildlife, and thus can prohibit hunting or persecution of birds or their nests. Protection staff have done an admirable job of curbing poaching, and at the same time have initiated education so that the local people understand the needs of nesting birds. But the reserve does not control the habitat on which the cranes depend.

Authority over the wetland resources is fragmented. Reed farms control the reeds, a fish bureau oversees the fishing, a water bureau manipulates the water, and a complex of county, village, and city governments has jurisdiction over the human population.

A changed perspective unifies resource management

Managers at Zhalong Reserve have long been aware of the impact that human activities have had on the cranes and other birds. As they attempted to persuade other agencies to correct the problems, however, conflicts quickly appeared between the needs of birds and of people. Fishermen, for example, traveling throughout the marsh disturb



Recent policies in China have encouraged individual initiatives, so that the villagers at Zhalong are using marsh resources more intensively. If the people conserve their marsh to provide long-term benefits, the wildlife also will thrive. Photo by George Archibald.

the nesting of cranes. But politically, it is impossible to stop fishing in spring for the sake of cranes. Fishing is not a sport; people need the fish. Resource conflicts, between people and birds, must be decided in favor of people. The trick is to rephrase the issues.

Past resource use at Zhalong has suffered from a major fallacy—seeing the resources of the marsh (birds, reeds, fish, water) as separate from each other. Instead, all are integral parts of the marsh ecosystem. What happens to one element of that ecosystem affects the other elements. Accordingly, management must focus on the ecosystem as a whole, not on single elements.

At Zhalong, fragmented use and abuse of resources was threatening the marsh itself. Nature Reserve staff, however, had an opportunity to change the focus of their efforts. If the reserve advocated conservation of the marsh as a whole, conflicts between wildlife and human uses would become secondary. The primary concern would be Zhalong itself, on which people and wildlife both depend. As the marsh begins to recover from overuse, there will be a chance to improve reed and fish harvests, while still providing better conditions for the birds.

Qiqihar city sets pace for conservation

In the past year, the nature reserve staff have expanded their role. They still protect the wildlife, the one element of the marsh ecosystem over which they have control. But by advocating ecological needs for the area, they are inspiring coordination of all governmental units with authority over the marsh.

The ecological expertise of the reserve is having an impact far beyond the reserve's regulatory authority.

Following our discussions at Zhalong, Norton Nickerson, his co-workers, and I, prepared a report on habitat problems and solutions at Zhalong. ICF's George Archibald then visited Zhalong, and, together with staff of the reserve, met with leaders of municipalities around the marsh. We then revised the report.

The Heilongjiang Forestry Bureau, with jurisdiction over the reserve, then translated the report into Chinese, printed 1,000 copies, and circulated it among crane and wetland experts across China. At a spring 1988 meeting of China's United Crane Committee, Chinese crane conservationists discussed the challenges at Zhalong, and the solutions proposed in the report. Beyond assessing needs at Zhalong, these discussions have created a nation-wide dialogue on balancing the needs of people and wildlife in China's wetland reserves.

Another extremely important step has been the city of Qiqihar's emerging leadership in conservation at Zhalong. The city has authority over all of the agencies and local governments concerned with Zhalong. Furthermore, Qiqihar's leaders had an active role in the 1987 International Crane Workshop, and have a special sensitivity to the value and conservation needs of cranes.

In April of 1988, the city government convened a "Crane Protection Workshop of Qiqihar" with about 100 participants. The

reserve staff did much of the organizational work, and Mr. Wu Chang Shen, director of the reserve, gave a major presentation on the current situation and problems of Zhalong. Other leaders discussed the problem from the perspectives of their agencies. By the end of the meeting, 24 units had proposed actions they could take on behalf of the marsh.

These actions will not end problems for the marsh, but they do represent a significant change, a recognition that the marsh ecosystem must be everyone's concern. The Fish Bureau, for example, will strictly enforce the no-fishing season for one month each spring; not only will this help fish reproduction, but disturbance of nesting birds will be reduced. Controls will be implemented regarding minimum mesh sizes in traps and nets.

The Water Bureau will deliver more water. Water management is difficult and complicated, and conflicts between irrigation needs and preserving the marsh will not disappear, but at least marsh ecology is now recognized as a priority need. The Environmental Protection Bureau will tighten controls on pollution of the waters feeding into Zhalong.

Reed management concerns were carefully discussed. In spring, the villagers burn what remains in the cut-over reed beds to improve growth. They have pledged to stop the burning, so that nesting birds will not be harmed. The reserve will no longer have to pay to have the reeds left uncut in the area adjacent to the headquarters.

And perhaps the most encouraging is news that about 900 hectares of reeds will be left uncut in belts and patches scattered throughout the marsh. In recent years, the removal of old reeds has deprived many birds of nest sites, because the new growth of reeds is not available in April and early May when nesting begins. Ground-nesting birds like cranes will also benefit; they will have cover for their nests, and some shelter from the disturbance of passing villagers. This action provides an opportunity for wildlife and reed managers to measure the impact of leaving some reeds uncut, both on nesting birds and on reed growth, to help guide future management.

The April meeting marked a milestone in efforts at Zhalong, as the focus shifted from crane protection to marsh management, and as conservation became the concern of all agencies, not just of the nature reserve.

The process continues. In May, a six-person inspection team toured three counties and ten towns around Zhalong to talk with local officials and explain the new approaches for Zhalong. The city of Qiqihar will convene meetings each spring to assess and coordinate activities.

Zhalong serves as model for cooperation

ICF will continue its involvement at Zhalong, because here is a model for solving conflicts over wetland use. In July of 1988, I returned to Zhalong, and was delighted and impressed by the efforts of Qiqihar, the nature reserve, and the local people. Their new philosophy represents a pioneering effort for conservation in China, where development for the people and conservation for the wetland are seen as compatible goals.

ICF has worked closely with Zhalong Nature Reserve since 1981 when George Archibald first visited to study cranes and other birds. From 1983 to 1985, ICF led 16 teams of Earthwatch volunteer researchers to Zhalong to study the birds and to provide initial equipment for the new research and education complex at the reserve. It is easy to focus on problems, but the progress at Zhalong in eight short years has been extraordinary.

As the next step, we have arranged to co-sponsor a wetland workshop with Zhalong Nature Reserve and the United Crane Committee of China. The ten-day event will occur in June, and concentrate on both research and management. Dr. Norton Nickerson, together with six students and associates, will provide instruction on wetland ecology to 35 wetland researchers and managers from across China.

Nickerson and his team will also focus on integrating tourism with other goals of nature reserves. Zhalong Headquarters has a thriving visitor program, attracting 20,000 people

per month during the warm seasons. A small portion come from China and many foreign countries to study and watch birds. But most are workers and families from Qiqihar, seeking a pleasant outing. During my July, 1988 visit, loudspeaker music began in the parking lot at 7:15 a.m., as busloads of visitors started to arrive. A carnival-like atmosphere prevailed, as crowds enjoyed the games and vending booths on their way to see the cranes.

Such mingling of education with pure fun seems appropriate if great numbers of Chinese are to come and discover the cranes. But the visitor program is now spreading disturbance beyond the circle of headquarters buildings, into the surrounding marsh. Visitor programs and activities must be carefully controlled, if reserve managers are to retain a diversity of wild birds within sight of the headquarters. Since most visitors come from Qiqihar, we hope the city government will again take a lead in forestalling serious conflicts.

Zhalong offers an important lesson for conservationists elsewhere. In northeastern China, as in so many countries, conservation problems will remain intractable so long as different groups define their interests narrowly and ignore the other values of wetlands. The key is for one group to look at the wetland as a whole, including all values and uses, and to define a long-term future that can sustain the needs of the people. When one group gains that vision—as the Zhalong reserve and then the city of Qiqihar did for the Zhalong wetland—swift agreement and progress become possible.



The headquarters at Zhalong Nature Reserve contains an impressive array of facilities for research and visitor education. The visitor program is so successful, however, that careful planning is essential. Otherwise, the marsh surrounding the headquarters will be degraded, and its value for education lost. Photo by Jim Harris.

THE FIRST ICF BIRD-A-THON

by Eleanor Chiquione, ICF Volunteer and Bob Hallam

Would you enjoy spending a spring day bird watching? This year, ICF offers its members a good reason to visit their favorite bird habitat. ICF is sponsoring its first Bird-a-thon. Bird-a-thon have been a good fundraising method for other organizations, and they succeed because it's fun and educational for the participants.

Bird-a-thon operate the same way as most "pledge" contests. Participants gather small pledges from friends, neighbors, and associates for each bird species they will see on the day of the Bird-a-thon. The big day arrives, and the participants test their knowledge of bird species (and their ability to pick good birding locations!) by counting as many bird species as possible. Participants collect their pledges and send their results to ICF. For those who do not want to participate, you can help simply by sponsoring the ICF team.

Anyone can participate. Because the peak of spring bird migration depends on weather and location, you can select any convenient day between April 15 and May 21 for your day in the field.

Anyone who has participated in Wisconsin's annual Sandhill Crane Count knows how magical bird watching can be. Spending quiet hours in good bird habitat refreshes one's spirit in a wonderful way. Helping a worthy organization like ICF just adds to the warm glow.

We will be mailing all ICF members detail-

ed information about the Bird-a-thon in March. All proceeds will go equally to ICF and the Ron Sauey Fund for International Conservation. You have an opportunity to brush up on your "birding" skills and spread the word about ICF. We hope you will consider participating by making a direct donation, by sponsoring the ICF team, or by securing your own pledges!

ICF MEMBERS INVITED TO JOIN FIELD TRIP

ICF's George Archibald and David Thompson will be leading a trip on April 29 featuring conservation values, cranes, and international cooperation. Discussions will focus on how a conservation ethic that began in Wisconsin is helping the whole world.

The trip will start at the Leopold Memorial Reserve for a sun-up reading of Aldo Leopold's "Marshland Elegy," to an accompaniment of the voices of wild cranes. Then, we'll go to John Muir Park for readings and discussion about John Muir, at the site of his boyhood home. Next, the group will visit the French Creek DNR Area and the marsh near

Owen Gromme's home at Briggsville, in order to observe the wetlands and their birds. The day will conclude with a tour of ICF facilities near Baraboo.

As a special treat, we expect the trip will include members of a delegation of conservationists from the plains of Mongolia. Located at the same latitude as Wisconsin, Mongolia has expansive grasslands reminiscent of the prairies that once graced Wisconsin. White-naped, Red-crowned, and Common Cranes breed on the borders of scattered lakes, while Siberian and Hooded Cranes rest in the shallows surrounding the ponds, and Demoiselle Cranes breed in the grasslands. The people of northeast China have greater numbers and more species of cranes than any other place on earth. In Inner Mongolia, they are setting up new reserves and making great strides in conservation.

Participants will be responsible for their own food and travel expenses. We'll send you information regarding the meeting time, directions, and what to bring.

We're asking for a donation of \$25 per person. The income will help support ICF's foreign training efforts. To reserve a place, please send full payment to David Thompson at ICF, including name(s), addresses, and phone number.

THE ICF BUGLE is the quarterly newsletter for members of the International Crane Foundation (ICF). Articles review ICF programs as well as crane research around the world.

Co-Founders: George Archibald
Ron Sauey

Editor: Jim Harris

Assoc. Editor: David Thompson

ICF offers memberships at the following annual rates:

Individual	\$20	Foreign	\$25
Family	\$30	Sponsor	\$500
Associate	\$100	Patron	\$1,000



On moving day, a bird "cranes its neck" to get a first view of its new home. Aviculturist Tom Mahan keeps a watchful eye on a young White-naped Crane during the move from its old pen at the Sauey Farm to its new home in "Crane City." Nearly fifty birds will "migrate" to their new homes by the end of February, when construction will be finished on the rest of the new pens. We move a few at a time, because the process doesn't end with transportation. We need to watch the birds for several weeks to ensure that they are adjusting to the new location and eating properly. Some birds are hand-carried for convenience, but ICF reduces stress to nervous birds by carrying them in special boxes. Photo by David Thompson.

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, having its principal offices at E-11376 Shady Lane Road, Baraboo, WI 53913-9778, to be used for the general purposes of the organization."

It is advisable to consult your attorney to ensure your will is legally valid and effective.

If you would like more information about making a bequest to ICF, please contact Joan Fordham, Administrator, or Bob Hallam, Development Coordinator, at ICF.

TYPEWRITER NEEDED

If you have an office typewriter in good condition that you can donate, it will be made available in the intern's quarters so that they can correspond with graduate schools, seek employment, or develop professional-looking resumes.



ICF is nearing completion of the second phase of our new breeding center, and the birds are getting settled into new quarters that seem like "luxury crane condos." Each pen is surrounded by four empty pens, buffer strips, and visual barriers (the dark fences) to enhance the apparent size of the bird's territory. Each single bird or pair is rotated between the two adjacent halves of each pen, to reduce the build-up of pathogens in the soil. Each pen has an insulated shelter that provides a comfortable and familiar retreat in case of bad weather or recovery from illness. Some pens have photoperiod lights or sprinklers to encourage breeding by simulating the bird's natural habitat. All of the pens are covered with flight netting, so that the birds can be left with the capability of flight, which helps natural copulation. Other features include south-facing translucent windows, and doors that enable staff to lock birds in or out of their houses without disturbing them. The shelters are easy to disinfect, and are equipped with running water and electricity. Photo by David Thompson.

CONTRIBUTIONS

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WINTER AT ICF: STAFF AND CRANES LIKE THE COLD

by David H. Thompson
Education Director

In winter, the cranes at ICF seem especially beautiful, with their whites, blacks, and reds bright against a background of dazzling snow or blue shadow. According to Claire Mirande, Curator of Birds, "Many of them seem to like winter. You'd think they would be huddled up and waiting for spring, but often they're active and calling. . . steam comes from their mouths as crisp calls shatter the frozen air. They're just invigorated, and they love it."

Cranes are able to enjoy winter because they are adapted to the cold. Fluffing out their feathers provides a layer of warm air against their skin, and when the cold weather comes, they often stand with a leg or bill tucked under the feathers. Another adaptation is the addition of body fat for insulation.

In the wild, cranes don't fly south to avoid the cold, but to find food and open water. The Red-crowned Cranes of Japan dance and court during the blizzards at their wintering grounds on Hokkaido. But even the cold-hardy cranes need a little help when the north wind blows at ICF.

In the new pens at "Crane City," all of the birds have access to a small room within their pen. They are free to go outdoors if they like, but are locked inside when the weather reaches their limit of tolerance, which varies from species to species. However, six of the hardiest species are free to go in or come out as they please, no matter how cold it gets.

Besides shelter, the only other requirement for winter is a diet supplement of corn, which not only keeps them warm and fat, but helps to trim their bills and tame them in prepara-



ICF's pair of Common Cranes threaten the photographer. Cranes are highly active through the winter. Photo by George Archibald.

tion for breeding. They love this "crane candy" so much that they forget to defend their territories when it's scattered on the ground.

Although cold weather kills parasites in the soil, it does create headaches for the aviculture staff. They have to watch for frostbitten crane toes during rounds twice a day. Water buckets have to be kept unfrozen with electric heating coils.

Winter provides a change of pace for the aviculture staff as well as the birds. Besides caring for the birds, the staff analyzes records

and begins to prepare for the next breeding season. Since ICF is closed to the public until spring, there are fewer disturbances, making it easy to observe interactions between cranes, evaluate pair bonds, and decide which birds should be paired for breeding. The staff starts to prepare the birds for artificial insemination by stroking and regular visits.

Claire Mirande explained the special meaning that winter has for the aviculture staff: "It's a time to re-establish a bond with the birds, to rejuvenate ourselves, and to remind ourselves why we work so hard."



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