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JANUARY/FEBRUARY 2015



NEXT ISSUE

Blue-crowned hanging parrots
by Tammy Hartnett

The purposes of the Society are the study of foreign and native birds to promote their conservation and protection; the dissemination of information on the care, breeding, and feeding of birds in captivity; the education of Society members and the public through publications, meetings, and available media; and the promotion and support of programs and institutions devoted to conservation.

Front Cover: Whooping Crane *Grus americana* Photo by: Steve Duncan

Inside Cover: Blue-crowned hanging parrot *Loriculus galgulus* Photo courtesy: Wikipedia.com

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The recent Great Recession has had a serious effect on all discretionary activities, of which private aviculture is one. Can private aviculture recover, given certain trends in the economy? In addition, the effect of CITES on aviculture continues.

One of the back door effects on all wildlife in general is the housing and construction industry.

While habitat and temperature change are widely discussed, the effect of housing construction is generally ignored.

The construction of 1,500,000 homes a year are considered necessary and normal for a healthy economy. Little thought is given to the millions of acres of land covered by this construction. While not all construction is single family homes, the total acreage comes to well over 1,700,000. This means that the habitat change is more permanent than that caused by climate change.

Nothing changes habitat like concrete and black top.

To counter this, private aviculture needs to emphasize serious bird breeding, particularly of smaller, less popular birds.

Every avicultural society and living individual aviculturist has to engage this problem or support those who do.

Step up now and be counted.

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ASA Meetings

Get the latest meeting info online at : www.asabirds.org/meetings.htm

ASA Regular Meetings are generally held the first Sunday of the Month in southern California. Everyone is welcome to attend. Check the website for updates on speakers and their topics as well as to reconfirm dates and times etc. Come as you are and bring a friend!



Return to the International Crane Foundation
Steve Duncan



ALL PHOTOS BY STEVE DUNCAN UNLESS OTHERWISE NOTED

In August of 2014, I was able to visit a very special place to me, The International Crane Foundation in Baraboo, Wisconsin. My connection with ICF began decades prior. In fact, the summer of 2014 marked the 30 year anniversary of my internship there.

My introduction to ICF began in 1980 when I was a senior in high school. At that time, I was already an aviculturist with African Greys, Rosellas, African Waxbills and a few other bird species. I had a keen interest in conservation too. My English teacher gave an assignment to the class that turned out to set a chain of events in motion that helped shape my life. The assignment was very simple – write a four page paper. That’s all. It could be an essay, a research paper, a creative fictional work. The choice was completely up to the student as long as it was at least four pages. I had already chosen biology as my major for my approaching college studies so the choice was simple for me. I would write a research paper on the critically endangered Japanese Crested Ibis, a bird I had recently read about in a very short article in the AFA Watchbird magazine. Besides, the teacher wouldn’t know anything about a Japanese Crested Ibis so I could write just about anything, but I was going to do my best to find good factual information.

It was thought at the time that the Japanese Crested Ibis was down to just a hand-full of individuals in the Demilitarized Zone between North and South Korea - not the best place for anyone to conduct field research so there was little literature to use for my research paper. I decided

to write a letter to the editor of the AFA Watchbird Magazine where I had first learned about the plight of this bird. I received a reply from Watchbird editor, Sheldon Dingle, who encouraged me to contact the International Crane Foundation in Baraboo, Wisconsin, since George Archibald, one of ICF’s founders, had just been to Korea and had seen them in there. Thus began a life-long friendship with Sheldon, somebody I had always admired for his wit and wisdom in the pages of the Watchbird.

On Sheldon’s advice, I did write to the Crane Foundation and received a small sampling of information about the Crested Ibis, but what is more important is that the Crane Foundation also informed me of internship opportunities there. That was a bit of exciting information that I would keep in mind for the next 4 years as I was studying Biology in college. During my senior year in college, I decided the time was right so I applied for and was granted an internship at ICF for the summer of 1984. This was a wonderful opportunity to work with some of the world’s most endangered birds learning about their husbandry, incubation, artificial insemination, and to simply enjoy Baraboo, Wisconsin, which is a whole different world from my Anaheim, California upbringing.

Even though I had followed ICF’s accomplishments over the years

since then, I wasn't able to return in person until August of 2014. Since I was travelling with family on a road-trip through Wisconsin, I was eager to finally stop by and visit. I contacted Bryant Tarr, the Curator at ICF, who graciously agreed to show me around and provide important insights into ICF's current operations.

ABOUT ICF

The International Crane Foundation was founded by George Archibald and Ron Sauey in 1973. From its humble beginnings on Ron Sauey's parents' horse farm in Baraboo, Wisconsin, ICF has gone on to accomplish many firsts in crane aviculture including the first world captive breeding of Siberian Cranes and of Hooded Cranes. ICF is also the first institution to successfully breed all 15 species of cranes.

The current facility is 225 acres and houses over 100 cranes. The facility is divided into 4 main parts – the public display area, the breeding facility known as Crane City, an isolation chick rearing facility for chicks that are to be released into the wild, and an administrative complex complete with an extensive crane library and dormitories for interns and a conference center. The intern dormitory housing is a far cry from the office trailer I stayed in 30 years ago.

ICF has a full-time staff of about 45 people in Baraboo in various departments including, Aviculture, Communications and Education, Field Ecology, Site Maintenance,

Development, Veterinary Services, and Administrative. A seasonal team of up to 20 interns spread among many of these disciplines helps out as well. In addition to the Baraboo staff, ICF supports about a dozen staff members abroad in China, Russia, India, South East Asia, and Africa. ICF also collaborates widely with many research associates and local non-governmental organizations across the globe.

From 1976 to 1982, George Archibald took on a now famous endeavor – to breed a certain Whooping Crane named Tex who was hopelessly imprinted on humans and would not accept a mate of her own species. Tex's genetics were very important to the tiny gene pool of Whooping Cranes. George often spent the entire daylight period with Tex during breeding season to perform all the mating dances and rituals necessary to get her to lay an egg. Through the use of artificial insemination, Tex finally laid a fertile egg in 1982. The resulting chick, Gee Whiz, was only 2 years old when I was at ICF, and he still lives there today. Gee Whiz has produced dozens of offspring, many of which are now flying free thanks to the reintroduction efforts that can be undertaken with captive-bred offspring that are raised in visual isolation from humans by the use of crane puppets and costumes. ICF has a separate unit dedicated to isolation rearing of cranes for reintroduction to the wild.

ICF is more than a crane breeding center though. From their earliest days, working with foreign countries to preserve critical crane habitat



Figure 1 Aerial photo of ICF. Crane City breeding compound at top. To the right of that on the other side of the trees is the Isolation Chick Rearing facility. At the center bottom is the administrative complex. The lower left portion is the public display area with the circular shaped "Pod" display.

was always an important part of the work they do. George Archibald is equally talented at the diplomacy and passion required to encourage foreign countries to protect crane habitat as he is talented at establishing captive populations of cranes. ICF has instituted crane conservation programs in Russia, China, North America, and Africa. These programs are enormously valuable for preserving critical habitat for wild cranes.

THEN VERSUS NOW

My internship in 1984 was during a time of transition for ICF. The breeding facility was still located at the old Sauey horse farm. A new facility was being built a few miles

north at the current location. All the incubation and chick-rearing was carried out at the new facility. Some adult display birds were at the new facility also, but all the breeding birds were still at the old facility. ICF was running regular tours for the general public at the new facility and public education was increasingly an important daily activity handled by educational interns.

The cranes become very familiar with the aviculture staff and would often play and dance when we entered their pens for maintenance. Since the public tour groups stayed on the outside of the pens, the cranes essentially ignored them as the guides would lead the groups



Figure 2 - Gee Whiz the Whooping Crane *Grus americana*

by and provide information about each species to the visitors. It was always fun to quietly tag along with a tour because as the guide stopped in front of a pen to talk about the inhabitants, I could softly call to the cranes who would recognize me and become very animated, calling and performing their dancing displays which delighted the visitors and the tour guide as well.

At the new facility, a large, off-exhibit breeding compound, dubbed Crane City, was planned, but construction had not yet started in 1984. Today, that facility is well-used and hugely successful, housing roughly 50 pairs of cranes. Each pen has a 12' X 12' totally enclosed shelter connected to a 50' X 60' chain-link pen. The chain link is covered in opaque green shade-cloth to provide privacy to the pairs. All pens are covered in flexible netting to keep wild

cranes out and the captive cranes in. Remote cameras are set up to observe each pen. The pens can be flooded to create the marshy habitat that encourages them to breed. The current breeding pens at Crane City are actually very similar to the original breeding pens at the old horse farm, but we certainly did not have remote cameras and closed-circuit monitoring 30 years ago.

The old crane nursery has been converted to administrative offices, and the new nursery is located off-exhibit since most of the chicks are reared for release. This marks one of the biggest changes in protocol between then and now. When I was at ICF, nearly all cranes were incubator hatched and hand-reared with full human contact resulting in tame adults. Today, the chicks are parent-reared by their own biological parents or by another

Figure 3 – Service Aisle at Crane City breeding facility





Figure 3 - One of the newer shelters in Crane City. Most of the original shelters have outlived their 25 year life-span and are being replaced with shelters such as this that are more resistant to weathering.

Figure 4 - One of the newer shelters in Crane City. Most of the original shelters have outlived their 25 year life-span and are being replaced with shelters such as this that are more resistant to weathering.

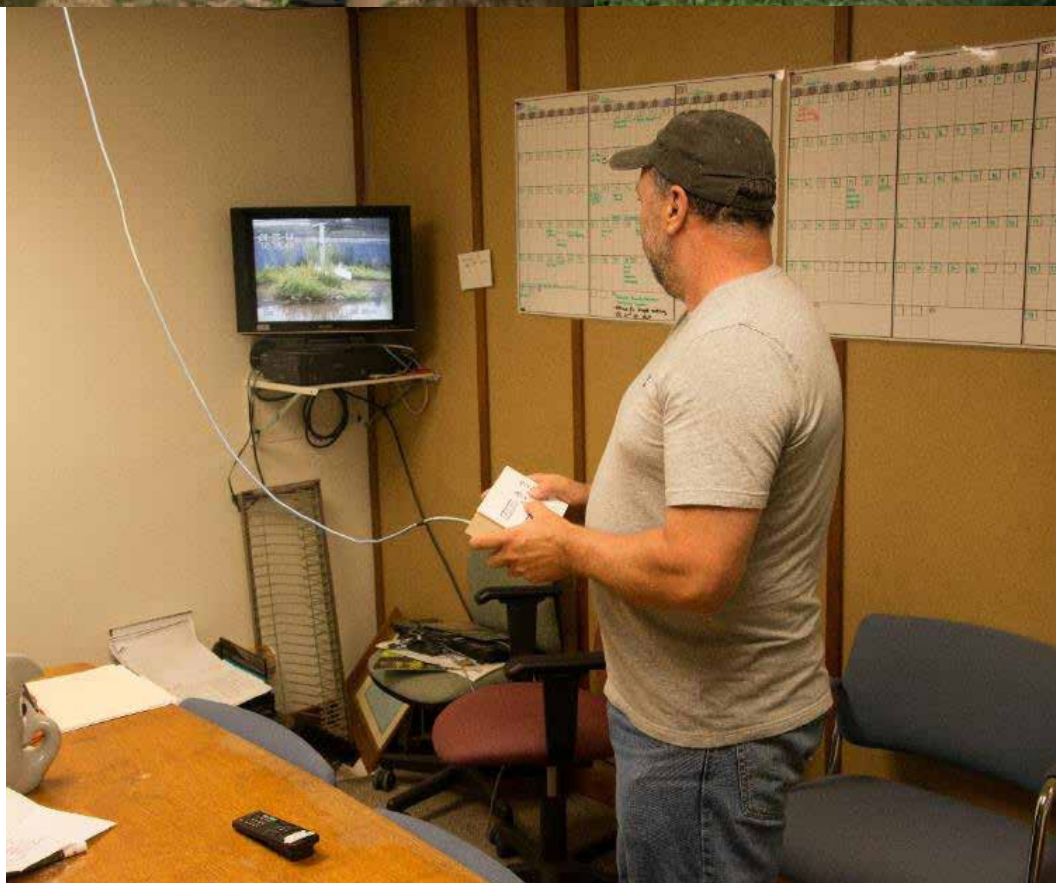


Figure 6 - Bryant Tarr demonstrating remote monitoring of breeding pens.

pair of the same species, or they are isolation-reared for potential release. If cranes are foster-parented by a different species of crane, they will imprint on that species and will usually not accept a mate of their own species when they mature. Typically, all of the Whooping Cranes are isolation-reared as potential

release candidates while the other species are parent-reared. This is also reflective of ICF's crane population, of which Whooping Cranes are the most numerous by far. There was only one Whooping Crane, "Gee Whiz", when I was there. Now, the main focus of producing chicks is to produce Whooping Cranes for



Figure 7. *Indian Sand Crane, *Grus antigone antigone*, at up to 6 feet tall, this is the tallest flying bird in the world.*

release, and ICF houses 36 breeding Whooping Cranes, a large portion of the captive population.

One of the primary crane public display enclosures is named, "The Pod" which was just completed when I was there. It was designed by Herb Fritz, a student of architect Frank Lloyd Wright, which shows in its artistic, yet highly utilitarian design. The Pod is a large, circular complex with pens radiating out from a central service area. Each section is designed to house a pair of cranes. There is a chain-link divider in each section to either allow for separation of the pair for various reasons or to allow one side of the enclosure to weather while the cranes are in the other side. During my recent visit, there was a pair of Indian Sarus Cranes, *Grus antigone*, incubating an egg. The male was a known egg-breaker so he was separated on the other side of the divider leaving the female to incubate on her own but still in close contact with her mate. The egg has since hatched, and the male will be introduced to the same enclosure once the keeper staff feels the chick is large enough to avoid potential aggression. The reintroduction will be closely supervised of course.

The Pod is still in use today, although one section has had some of the pen dividers removed and a mural of an African savanna has been painted on the walls to create a large, very attractive display for a pair of Blue Cranes. The large Blue Crane pen faces the rest of the African species of cranes, the Grey Crowned Cranes, Black Crowned Cranes and

Wattled Cranes which are housed in newer enclosures with nice shaded seating for quiet observation by the public. These four species of African cranes are part of ICF's newer push to preserve habitat in Africa and promote conservation there. The remaining pens in The Pod house Hooded Cranes, Demoiselle Cranes, Black-necked Cranes, Siberian Cranes, White-naped Cranes, Sarus Cranes, Brolga Cranes, Sandhill Cranes, Eurasian Cranes, and Japanese Red-crowned Cranes to round out all the world's 15 crane species.

During my internship, ICF did not have Black-necked Cranes, Hooded Cranes, Demoiselle Cranes, or Black Crowned Cranes. Today, all 15 species of Cranes can be seen there. In fact, the Black-necked Cranes arrived just days after my internship was completed. I remember helping to prepare the pens for their arrival and the excitement of the staff in anticipation.

The most impressive enclosure though, is the relatively new Whooping Crane Amphitheater (figure 14). This pen is over an acre in size and bean-shaped as it faces a large amphitheater with plenty of seating that looks out over a large pond. A berm is built up on the opposite side of the pond from the seating. The berm hosts a heavy growth of native tall-grass prairie and wetland vegetation which visually hides the enclosure walls beyond. The effect is completed by a backdrop of native oak woodland in the distance. The result is an absolutely natural-looking prairie wetland complete with a gorgeous



Figure 8 - Aerial View of the Pod

Figure 9 - Brolga Crane, *Grus rubicunda*, enclosure showing chain link divider between two holding areas.



pair of endangered Whooping Cranes strolling about and foraging in their habitat. The visual effect is truly stunning as all hints of the enclosure are completely hidden from view while sitting in the amphitheater. The exhibit must be appealing to the birds too since wild Whooping Cranes have stopped in for a visit during their migration through the area.

As part of the aviculture staff during my internship, my daily routine began at the new facility checking in on the nursery and incubators. We would then drive the few miles to the old horse farm to care for the breeders there. Once that was complete, we would return to the new facility to care for the display birds and chicks, and perform any needed tasks including cleaning and repairs. Today, all the cranes are

at one facility, although golf carts are very handy to get around the 225 acres.

Not all 225 acres are developed though. The vast majority of the acreage is preserved as natural habitat including tall grass prairie, oak woodland, and prairie wetland. Three miles of nature trails wind through the property. The public displays are near the front. Crane City is near the back of the property, and the isolation chick rearing unit is separated a bit away through a grove of trees for complete privacy. Even the enclosures for the cranes on public display are very natural with a host of native species sharing the space with the cranes.

CRANE HUSBANDRY

Cranes are well known for their dances and loud trumpeting calls. Despite the fact that Cranes



Figure 10. Blue Crane Enclosure in the Pod



Figure 11 - Blue Crane, *Anthropoides paradiseus*, also known as the Stanley Crane.



Figure 12 - Black Crowned Crane Exhibit



Figure 13 - Black-necked Crane, *Grus nigricollis*

Steve's Photo Pick

Grey Crowned Crane Chick *Balearica regulorum*

Baby Cranes are more properly called "Colts". Grey Crowned Cranes have two subspecies that are native to eastern and southern Africa. Crowned Cranes are the only perching cranes and will occasionally nest in trees on the African savannah, a trait they share with their sister species, the Black Crowned Crane, *Balearica pavonina*. This species was considered not at risk of extinction, but their numbers have declined more than 50% over the past 20 years due to drought-related agricultural changes to their habitat including wetland draining and over-grazing by cattle. Additional pressure from trapping and poisoning also threatens their survival.







Figure 14 - Whooping Crane Amphitheater

congregate in huge flocks during the non-breeding season, they remain monogamous. Cranes have developed an extensive ritualized body language to communicate with each other and maintain the pair bond amid these large flocks. It is this body language that ICF founder, George Archibald, did his PhD studies on. There are stereotypical threat displays that are common among all species of cranes but with unique attributes to each species. Most of these displays could be disregarded as normal preening behaviors and postures to the casual observer, but with experience, it becomes very easy to spot the communication that is actually constantly happening.

The most impressive displays are the unison calls. The bonded pairs of cranes perform a unison call that is unique to each species. Just like

any good duet, each partner has their own specific role. The males perform one part of the call while the females fill in their part. The result is a cohesive call that sounds like a single bird calling. Each sex has specific postures during the unison call as well; usually the males have the more exaggerated positions with wings tilted up or heads thrown back farther. (for a video of Siberian Cranes performing a unison call, and more photos of ICF, please go to asabirds.org/cranes)

During my time at ICF, the diet was very simple - a proprietary pellet made for cranes. The breeding pellet had a bit over 20% protein, and the maintenance pellet is slightly less at under 19% protein. During the winter months, the pellet diet was sometimes supplemented with corn. Unlike similar-looking fish-eating



Figure 15 - Whooping Crane, Grus americana in the Whooping Crane Amphitheater. One might not know this is an image of a captive crane.

birds such as herons and egrets, Cranes feed primarily on vegetable matter including roots, tubers and grains. Chicks will eat more animal protein, mostly in the form of insects and other invertebrates, and adults will take live food opportunistically, but the bulk of the diet is vegetable-based. The only time live food (waxworms) was offered when I was there was when a pair of White-naped Cranes was rearing their own baby.

Today, the diet is more varied. Commercially available Zeigler Bros Crane Pellets is the base of the diet with breeder pellets (22% protein) and maintenance pellets (15% protein) and for the chicks - starter pellets (24% protein), but a huge variety of additional items

are offered including fruits and vegetables, berries, nuts, corn, seeds, mealworms, waxworms, smelt, crawfish, pinkie mice and more. Chicks get live food in the form of mealworms and waxworms regularly in addition to live minnows, worms, snails, clams, and such when chicks are being encouraged to forage on their own in wetlands for eventual release.

Cranes are fiercely monogamous so they are typically kept one compatible pair per enclosure. Occasionally, there can be some aggression between mates and the pairs may be split up into adjacent enclosures.

In the non-breeding season in the wild, cranes are highly gregarious and will congregate in huge flocks for migration and overwintering. Pairs remain close and display in spectacular dances, leaping into the air, often while tossing twigs into the air at the same time. This behavior helps maintain the pair-bond among so many other birds. These dances have inspired many traditional human cultures around the world in art, folklore, and dance. Red-crowned Cranes, for example, are highly revered in Japan where they represent long-life and fidelity and are very common in traditional textiles, paintings and origami.

In the wild, these migratory and over-wintering flocks are often of mixed species. Prior to my time at ICF, the cranes were sometimes kept in mixed-species flocks during the non-breeding season to simulate this natural seasonal cycle, but an



Figure 16 - Spacious and Natural Wattled Crane Enclosure

outbreak of deadly herpes virus that spread among the communal flock stopped that practice. The breeding cranes are now kept in single-pair enclosures year-round.

Most of the crane species can handle the year-round weather in Wisconsin and are allowed the freedom to enter or exit their shelters except during extreme winter storms. A few of the tropical African species, such as Crowned Cranes and Wattled Cranes, must be kept inside and heated during freezing temperatures.

Of the two species of Crowned Cranes, the Black Crowned Crane was once more critically endangered. Unfortunately, the Grey Crowned Crane has suffered dramatic population declines and is now as rare as the Black-crowned Crane in the wild.

Figure 17 - Some of the 3 miles of nature trails



One of ICF's early successes was with the critically endangered Siberian Crane. Successful breeding of these cranes was very challenging. They nest at very high latitudes in Siberia, close to the Arctic Circle, where it can be daylight for all 24 hours of the day. High powered artificial lighting was installed over the breeding compound to simulate this very long photoperiod. ICF's founding breeding stock mostly came from various zoos and most of the Siberian Cranes in captivity at the time had been pinioned for display in typical open-topped waterfowl enclosures. Pinioning involves amputating the distal portion of one wing to prevent flight and is a permanent alteration. Many times, pinioned male cranes cannot successfully mate since they need their full wings for balance during copulation. Some of the Siberian Cranes had also been kept singly for some time so there was some concern about aggression if they were to be kept together as pairs. The solution to both the pinioning issue and the aggression issue was to house the birds in adjacent enclosures and use artificial insemination. The birds could still see each other and perform the pair-specific behaviors without risk of over-aggressive birds causing injury to their mates. Artificial insemination also allowed more genetic combinations because a female could be inseminated with semen from different males without having to form new pair-bonds, something that would normally be impossible during a single breeding season.



Figure 18 - Wattled Crane, *Buzgeranus carunculatus*



Figure 19 - Siberian Crane, *Leucogeranus leucogeranus*, Performing Unison Call



Figure 20 - Japanese Red-crowned Cranes, *Grus japonensis*



Figure 21 - Black Crowned Crane, *Bucorvus abyssinicus*.



Figure 22 - Siberian Crane, *Leucogeranus leucogeranus*

ARTIFICIAL INSEMINATION

Artificial insemination (AI) is an oddly straight-forward process that I will summarize. The cranes do not typically volunteer for the process, but with regular attempts, about 3 or 4 times per week, they can be conditioned to respond more favorably. Tame or imprinted cranes are generally better candidates for AI, but even wild, un-tamed birds can be used successfully once they become accustomed to the routine.

To collect the semen, the male is restrained in a natural standing position with the handler and crane facing each other, but the crane's head and neck will go through the legs of the handler so the head is

behind the handler. The handler massages the inner thighs for a few seconds or minutes depending on the cooperation level of the crane. A second person massages the abdomen and dorsal area near the tail by applying gentle pressure and moving toward the vent. The crane should respond with grunting noises and will lift the tail and sometimes voluntarily evert the cloaca. The semen is stripped from the vent by milking the cloaca gently after the bird responds to the stroking. In very cooperative birds, the semen will ejaculate just from stroking the thighs and does not need to be stripped from the cloaca. The semen is collected in a small glass container or in a pipette.

To inseminate the female, a similar process is used but the handler will stroke the back just in front of the tail and the outer sides of the thighs where the male would normally make contact when mounted during copulation. The female will respond by raising her tail and opening the cloaca. The opening to the oviduct will appear inside the cloaca toward the left side. The semen can be inserted gently inside this opening by use of a smooth-tipped syringe.

If semen samples are very small, the use of a semen extender made for turkeys can be used. The semen extender is simply a fluid to increase volume, but it also contains some sugars to help maintain sperm vitality. ICF has also successfully used frozen semen samples that were collected then stored in liquid nitrogen coolers for later use. The use of cryogenically collected semen is a valuable tool to manage the genetics of such critically endangered birds.

EGG MANAGEMENT

Cranes will only lay 2 eggs per year if allowed to hatch and rear their chicks, but they will lay replacement eggs if the eggs are removed. Since many of the cranes are endangered, the goal is sometimes to rear as many as possible so pulling eggs as soon as they are laid was the standard protocol. In this way, cranes can lay a dozen or more eggs in a breeding season, greatly increasing the population much quicker than allowing them to rear their own offspring. Today, most crane species are allowed to incubate and rear their own offspring since breeding is controlled by the Species Survival

Plans, but Whooping Crane eggs are still artificially incubated to increase production and provide young birds for release.

The eggs are still incubated in Petersime and Humidaire incubators that were in use during my time, and some newer model GQF incubators have been added to the mix. Historically, eggs were fumigated with formaldehyde gas initially before going into the incubators. Today, formaldehyde gas is no longer used as it is highly dangerous. The eggs are now sanitized with ozone gas when they are brought in for incubation.

Part of my internship at ICF was to collect data on the weight loss of the eggs and to record the angle at which they floated when placed in water. Crane eggs are heavily pigmented and are difficult to candle, especially for biologists studying nests in the wild. It was hoped that fertile eggs or developing eggs could be quickly identified compared to dead or infertile eggs by observing the angle at which they floated in the water. Sadly, the experiment did not identify a difference except for eggs that are quite far along in development. In these eggs, the movements of the chick inside the egg could be observed as it caused the egg to jiggle and bob while floating. Floating eggs in water for a few minutes does no harm provided the water temperature is close to the same temperature as the eggs. The crane eggs I studied were floated in an aquarium filled with water at about 98 degrees F so it wouldn't cool the eggs



Figure 23 - On Site Lab for Semen Evaluation and Microbiology

causing the contents to contract thus drawing in any contaminants on the outside of the shell.

CHICK REARING – THEN VERSUS NOW

For artificially incubated eggs, a few hours after hatching, the chicks are placed individually in brooders and must be encouraged to eat. Crane chicks are precocial and can eat on their own, but the parent cranes will pick up tidbits to offer to their offspring encouraging them to eat. Baby cranes instinctively peck at anything that looks somewhat like a crane beak so one of the handiest

items to simulate this was a long-handled red plastic spoon that we often acquired at the local Dairy Queen. I did my part to consume as many sundaes as possible in the name of crane conservation.

Once the chicks were a few days old and eating well, they were brought outside to a very large exercise pen where they were closely supervised because chick to chick aggression was common if left unattended. The chicks were encouraged to swim in pools of water to provide impact-free exercise to their long legs. Without proper exercise, baby cranes can develop bowed legs and other developmental deformities of the legs and feet so it was very important to get the chicks out in the exercise yard regularly. Walking and running about on grass also helped keep the toes straight. If kept on a hard surface or if not enough exercise is provided, baby crane toes tend to bend to the side resulting in permanent



Figure 24 - Incubation Room



Figure 25 - A juvenile Hooded Crane, *Grus monacha*, with its foster parent of the same species.

deformation. If a toe began to bend to the side, it was often taped to a splint for a day or so to keep it in the correct position.

The crane chick exercise yard is a thing of the past though. Today, chicks that are being reared to stay in captivity are parent-reared so they get all the exercise they need following their parents around their spacious enclosures. Whooping

Crane chicks that are candidates for release are raised at a separate compound in visual and audible isolation from humans. Caretakers don crane costumes and act as crane parents to provide the proper socialization skills for the growing chicks who follow the costumed caretakers about large enclosures for foraging and exercise.

Since cranes are migratory, the young cranes must learn the migration route in their first fall. There are two basic methods to accomplish this.

One method is to train the baby cranes from a very young age to follow an ultra-light aircraft that will ultimately lead them on their journey south. To accomplish this, the surrogate human parent in a crane suit will encourage the chicks to follow him/her in a model of an ultra-light. Later, a motor is added to accustom the birds to the loud sound it makes. Eventually, the birds will follow a full-size ultra-light on the ground. As the birds mature, short flights are taken until they are strong enough to begin the journey. Due to the limitations of flying ultra-lights for long-distances and the planning involved to have landing places and crane pens set up each night during the migration, this is a very difficult and arduous process, but it has been very successful at establishing new migratory routes. This trip can take several weeks to complete. An experienced wild crane can actually cover the same distance in just a few days.

The other method is to release the cranes at just the right moment when wild adults and their wild chicks are beginning to congregate before migrating south. The released birds are monitored to make sure they join a wild flock. This method obviously requires an established wild population with the desired migratory route, but it is certainly more natural and much easier to accomplish. This method is called Direct Autumn Release.

Regardless of which method is used, once the chicks have completed one

Fall migration south, they are capable of returning in the Spring without any additional assistance although they do migrate in flocks. Most cranes do not breed until they are about 3-6 years of age so they will have made the migratory round-trip several times before they are old enough to rear their own offspring.

30 YEARS IS MUCH TOO LONG

When I finished my internship at ICF 30 years ago, I was certain I would return in the next few years to see the progress they had made. There was so much construction planned that had yet to be started when I was there. It was very exciting. It turned out, that I didn't get back there soon at all, but I certainly was not disappointed when I finally did return last summer.

ICF has always been unique for their all-encompassing approach to conservation of cranes. It is amazingly inspiring to see something so successful that was started on a horse farm in Baraboo by two people with a passion for cranes. ICF'S efforts are truly global and have been that way from the start although the influence has grown over the years. The effort involves habitat conservation, captive-breeding, working with foreign governments, education of the people who share their native habitats abroad, as well as educating the general public in the United States. ICF is successful on all these fronts which means not only good news for cranes but also good news for other species that share their diminishing habitats. Cranes are a highly revered symbol in many cultures around the world so it is a more successful strategy to focus on their survival which depends on protecting their remaining habitat. All the other species that share that habitat also win as a result.



Figure 26 - Wild Sandhill Crane, *Grus canadensis*, at wintering grounds in Bosque del Apache, New Mexico. The cranes roost in shallow water every night. The water sometimes actually freezes around their legs as evidenced by the small ice anklet on its left leg after taking off in the early morning light.

Figure 27 - Educational signage showing the species that share and depend on the same habitat as each species of crane.





Figure 28 · Flock of Sandhill Cranes arriving at wintering grounds at Bosque del Apache, New Mexico


The people of ICF, the lessons I learned, and the cranes themselves never left my mind. Even the small town of Baraboo was a delightful first home away from

home for me. The experience I had there truly made an incredibly positive impact on my life. It's good to know that the International Crane Foundation has only



gotten better at their important work of preserving these very special birds.

If you would like to learn more about the International Crane Foundation or about

the internship program, please visit their website – www.savingcranes.org or visit them in Baraboo, Wisconsin. If you love birds, it's well worth the trip and may be the trip of a lifetime. 

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Laura Chee (keynote), US Fish and Wildlife Service – Smuggling and Birds

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Dick Zembal – Southern California Conservation Projects

Liz Koustos, Mazuri – Current Concepts in Avian Nutrition

Rebecca Schwartz, San Diego Audubon - Audubon's Important Bird Area Program and Conservation Planning

Jessica Theule, San Diego Zoo Global- 2014 Highlights at the SDZ's Avian Propagation Center

Nicole LaGreco, San Diego Zoo Global - The Mangrove Finch project in the Galapagos Islands

Bill Robles, SeaWorld – Project Puffin

Linda Henry, SeaWorld – Lighting and Birds

Justin Brackett, SeaWorld – Micronesion Kingfisher rearing and SSP overview

Schedule

WEDNESDAY

Afternoon: Check-in & Open Bird
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Evening: Cocktail Ice-breaker Party

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FRIDAY

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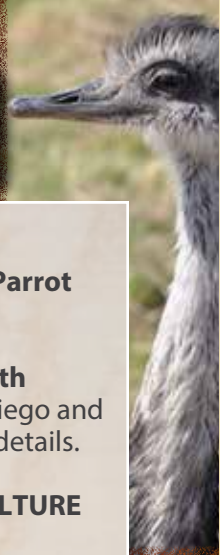
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March 11-15, 2015 **AVICULTURAL SOCIETY OF AMERICA 10th ANNUAL EDUCATION CONFERENCE** - At the Bahia in San Diego and hosted by SeaWorld, San Diego - watch www.asabirds.org for details.

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