



Cranes: Symbols of Survival

Ten-Year Strategic Vision
for the International
Crane Foundation

2014 - 2024

Cranes are magnificent dancers, international travelers, and great ambassadors for conservation worldwide. What birds could be more deserving of our help and protection?

Sir David Attenborough

OUR MISSION

The International Crane Foundation works worldwide to conserve cranes and the ecosystems, watersheds, and flyways on which they depend. ICF provides knowledge, leadership, and inspiration to engage people in resolving threats to cranes and their diverse landscapes.

OUR VISION

The International Crane Foundation commits to a future where all 15 of the world’s crane species are secure. Through the charisma of cranes, people work together to protect and restore wild crane populations and the landscapes they depend on—and by doing so, find new pathways to sustain our water, land, and livelihoods.

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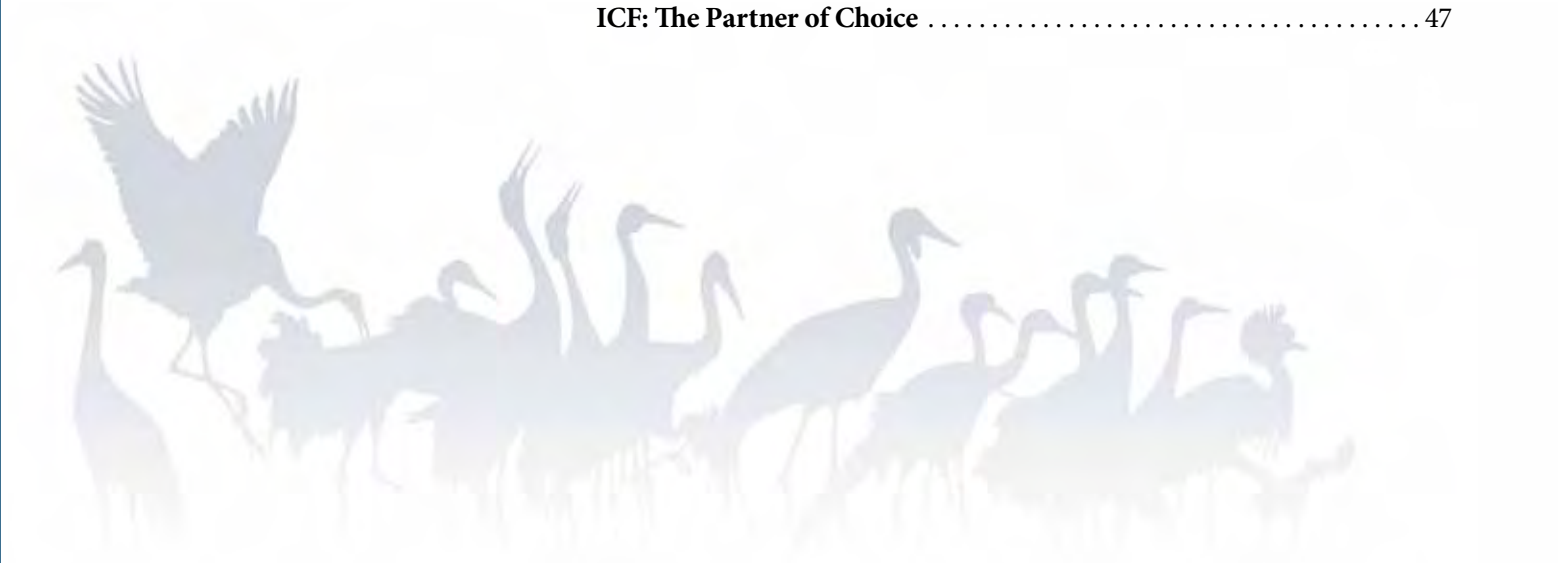
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ICF is a mission-focused organization rooted in the heart of Wisconsin. We are one of the world's most successful conservation organizations at gaining international cooperation for the protection of wildlife and the ecosystems they inhabit.

The International Crane Foundation

WHEN RON SAUEY AND I MET at Cornell University in 1971, we never imagined that our passion to create a center to help cranes would evolve into what the International Crane Foundation (ICF) is today. Incorporated in 1973 through the assistance of attorney and fellow conservationist, Forest Hartmann, ICF started in rural Wisconsin on a horse farm leased from Ron's parents for \$1 a year.

Today, ICF carries that same passion, with a vision that has grown over the years. We now have 40 staff members and a network of hundreds of specialists working in over 50 countries on five continents, including major regional programs in sub-Saharan Africa, East Asia, South/Southeast Asia, and North America. ICF is governed by an international Board of 30 Directors, and has an advisory board drawn from 12 countries. As we have worked to solve threats to the cranes, ICF has found that these charismatic birds inspire actions to resolve conservation challenges that matter deeply to all people, such as water security, clean energy, biodiversity on agricultural lands, and sustainable livelihoods.

ICF maintains a 240-acre campus—a center for conservation leadership just six miles from the Sauey farm, in the heart of Wisconsin. More than 20,000 people visit ICF each year, and dozens of colleagues study at ICF annually. The site hosts a captive flock of over 100 cranes, including the only complete collection of all 15 species ever assembled. ICF's campus is a global classroom, featuring live crane exhibits, crane breeding and rearing facilities, an interactive education center, research library, visitor center, guest house, and nature trails set among 93 acres of restored prairie, savanna, wetland and forest, and adheres to the highest standards for green building principles. ICF has a regional base in China, and shares program offices with partner organizations in South Africa, India, Vietnam, Cambodia and Texas.

My sincere thanks is extended to the thousands who have helped shape something imagined into a reality that emanates help and goodwill from the heart of the USA to the remote areas of our indescribably fascinating and fragile planet where cranes still dance.

Dr. George Archibald, Co-Founder
International Crane Foundation





Executive Summary

ON THE EVE OF OUR 40TH ANNIVERSARY, the Directors, staff, and advisors of the International Crane Foundation engaged in a year-long strategic planning process aimed at taking ICF to a new level of conservation leadership and success. Building on lessons and experience from forty years of crane conservation, this strategic plan describes our vision for the next decade.

First, we identify six conditions—the **Essentials of Crane Conservation**—that must be realized to achieve our goal of securing all 15 species of cranes in the wild. These conditions capture the essence of our commitment to crane conservation—to save cranes, we must engage people in the conservation of landscapes that nurture cranes, ourselves, and the diversity of life on Earth:

- **Safeguarding Crane Populations** in the wild, with direct threats reduced to sustainable levels
- **Securing Ecosystems, Watersheds, and Flyways** on which cranes depend, through sustainable resource management
- **Bringing People Together** for conservation action based on their shared values for cranes and the landscapes they depend on
- **Improving Local Livelihoods** and other benefits for communities through the conservation of cranes and their landscapes
- **Empowering Conservation Leadership** for cranes, local communities, and the landscapes they share
- **Building Knowledge for Policy and Action** to secure cranes and crane landscapes

Second, we define the strategies required to achieve these essential conditions. Our **Global Strategies for the Future** often progress beyond cranes, addressing some of the universal conservation challenges we face as a society—**finding sustainable pathways for water security, clean energy, land stewardship, conservation on agricultural lands, and conservation-friendly livelihoods, and adapting these solutions to the new realities of climate change.**

Third, we distinguish the programs through which we will implement our strategies and measure our success, based on a risk assessment for all crane species and their habitats. **ICF Priority Programs will focus on four vital regions that support the most threatened crane species—sub-Saharan Africa, East Asia, South/Southeast Asia, and North America—and our ICF headquarters that inspires and empowers conservation leadership worldwide.** We defined our goals and initiatives for each of these priority programs over the next decade.

Finally, we reflect on our distinct role as the **partner of choice**. ICF is a mission-focused organization rooted in the heart of Wisconsin. We are one of the world's most successful conservation organizations at gaining international cooperation for the protection of wildlife and the ecosystems they inhabit. By focusing on threatened cranes (and their universal appeal), we mobilize a global community of dedicated and resourceful people for a direct and lasting impact on the environment.

Our Strategic Commitment

FROM ITS BEGINNING, ICF has recognized that conserving all 15 species of cranes requires a broad commitment to the people and places essential to cranes. Over the past four decades we have grown dramatically in global reach and impact, while steadily developing our capacity to address the health of the landscapes that sustain not only cranes, but also people and a wealth of biological diversity. Cranes truly are ambassadors for conservation—serving both as sentinels and flagships for some of the most important places on Earth.

Crane conservation remains a daunting challenge. Cranes are among the most endangered families of birds in the world, with eleven of the fifteen species threatened with extinction. Many populations are in peril. In sub-Saharan Africa, Grey Crowned, Black Crowned, Wattled, and Blue Cranes face many threats fueled by rapid population growth and widespread poverty. In Asia, six species are threatened, including Siberian, Red-crowned, White-naped, Hooded, and Black-necked Cranes in rapidly developing East Asia, and the Sarus Crane throughout its range in South and Southeast Asia. The rarest of all cranes, the Whooping Crane, faces an array of conservation challenges in North America. Consequently, ICF's global priorities span sub-Saharan Africa, East Asia, South/Southeast Asia, and North America, while our headquarters in Baraboo, Wisconsin serves as a global center for conservation leadership and training.

Crane conservation inspires big thinking. How do we feed billions of people and still maintain healthy landscapes for cranes and other life we hold dear? Can we provide freshwater to thirsty cities and farmlands without sacrificing rivers and wetlands that support the lives of cranes and people? Can we meet the global demand for energy without irrevocably damaging the ecosystems, watersheds, and flyways on which cranes, and people, depend? To save cranes, ICF is engaged in many of the challenges we face across the globe—finding sustainable pathways for water, land, and energy development, securing biodiversity on agricultural lands, enabling communities to benefit in meaningful and lasting ways through conservation action, and adapting to new climate realities. We bring people together to create models that demonstrate real conservation solutions, based on long-term commitments to the people and places where we work. We employ sound science as a foundation for conservation policy and action. And we train and empower conservation leaders of the future.

On the following pages, we describe our strategic commitment to conservation for the coming decade, including our efforts to secure the essential conditions for crane conservation, our global conservation strategies, and our vision for priority programs over the next decade.

This strategic plan is dedicated to our many partners who make our work possible. Thank you for your commitment to saving cranes and so much we hold dear.

Richard Beilfuss, President & CEO
International Crane Foundation



Photo: Joel Sartore



The achievements of ICF bring into focus the world of the crane; the wider world of the bird; the miracle, the majesty, the magic of the bird as it impacts on a broader environmental perspective. Truly the crane is the canary in the mine—only today the mine is the world.

Dan Lufkin, Peter J. Sharp Foundation

The Essentials of Crane Conservation

CRANE CONSERVATION requires intimate knowledge of the birds themselves, and action on their behalf. Yet we are increasingly aware that the fate of cranes mirrors the health of the places they inhabit, the watersheds and wetlands on which they depend, the flyways they follow across continents, and the global environment they share with all species, including ourselves. In the coming decade, we will build on lessons and experiences from 40 years of conservation success to focus on six conditions essential to securing the future of cranes in the wild.

- **Safeguarding Crane Populations**
- **Securing Ecosystems, Watersheds, and Flyways**
- **Bringing People Together**
- **Improving Local Livelihoods**
- **Empowering Conservation Leadership**
- **Building Knowledge for Policy and Action**



Photo John Ford

Safeguarding Crane Populations



While our highest priority is to save cranes in the wild, reintroductions are sometimes an important conservation tool.

WHEN PEOPLE COMMIT TO SAVING CRANES, we work to ensure that viable crane populations remain in the wild. ICF works intensively to mitigate the direct threats to cranes, while supporting the most threatened populations with captive propagation and reintroduction efforts.

Direct threats to cranes are growing. They include illegal trade, collisions with overhead power lines, disturbance of nesting sites and theft of eggs and chicks, poisoning from agricultural, municipal, and industrial runoff, infectious diseases, and hunting.

The capture of cranes from the wild for domestication and trade is one of the most daunting challenges to crane populations, especially in Africa. Endangered Grey Crowned and Black Crowned Cranes are attractive targets for animal dealers who sell them to collectors and zoos. In collaboration with Wetlands International, ICF studied the black market for cranes in Mali and learned that thousands of cranes were being illegally captured and exported to Europe, the Middle East, and Asia—and 80% or more die through this supply chain. Based on this knowledge, our programs now focus on reducing the international demand for cranes by raising awareness among governments, zoo associations and private collectors and coordinating captive breeding efforts. We also are cutting off the supply of cranes from Africa by increasing national and local pride for these species in the wild, strengthening the enforcement of laws, and providing alternative livelihoods that are not dependent on the crane trade.

To safeguard against extinction of the rarest crane species, and to produce birds for reintroduction to the wild, ICF maintains a captive flock as a “species bank.” Many scientific contributions and “firsts” were achieved with this flock, including the first breeding of Critically Endangered Siberian Cranes in captivity. ICF continues to develop state-of-the-art techniques for artificial insemination, egg incubation, health care, and genetic management.

While our highest priority is to save cranes in the wild, reintroductions are sometimes an important conservation tool. The entire naturally-occurring population of Endangered Whooping Cranes is concentrated on limited wintering grounds in Texas that face a range of daunting threats. We are partnering with private organizations and government agencies to establish a separate, self-sustaining population of Whooping Cranes in the eastern United States to ensure a future for this iconic species. Whooping Crane chicks are hatched in captivity and raised using crane costumes first developed by ICF to prevent imprinting on humans and to prepare them for life in the wild. Some of the chicks are flown by ultra-light aircraft from breeding grounds in Wisconsin to wintering grounds in Florida, others are released in large wetlands and migrate sound with wild Whooping and Sandhill Cranes. The cranes return unassisted to Wisconsin the following spring, and then complete this same migration on their own in successive years. We support the Whooping Crane reintroduction efforts with outreach to diverse public audiences that address emerging threats to the birds along their new flyway, such as accidental shootings. Through in-depth research and monitoring we are uncovering the factors that limit successful chick production by the reintroduced Whooping Cranes and adapting our reintroduction methods based on this knowledge.



Photo: Crane Wu



Photo: Mike Endres

ICF is working with colleagues from North and South Korea to protect the Korean demilitarized zone—a vital wintering area for White-naped Cranes and many other threatened species—for biodiversity conservation and world heritage.

To save Endangered Grey Crowned Cranes, we are reducing the capture of cranes from the wild for international trade and securing wetlands that serve as vital breeding grounds.

We are proud to support this remarkable conservation effort, which has led to more than 100 Whooping Cranes now living and breeding in the Eastern United States. The knowledge, strategies, and techniques developed through ICF's 40 years of captive management and reintroduction efforts strengthen worldwide efforts to save cranes and other bird species. We are particularly proud of the ever present concern that ICF has in helping local people improve their lives as a result of the ICF bird conservation efforts.

Terry and Mary Kohler



Securing Ecosystems, Watersheds, and Flyways



With support from ICF and others, my community group is working to stop wetland destruction. We help local communities farm organically, fish sustainably, produce bee products, and create and sell handicrafts—all wetland friendly practices. Through our efforts, we have reversed the trend of destruction and restored many wetlands to health.

Maurice Wanjala, Kipsaina Crane and Wetland Conservation Group

WHEN PEOPLE COMMIT TO SAVING CRANES, we protect and restore some of the most productive wetlands, savannas, and grasslands in the world. We work to achieve alternative water and land-use practices in the watersheds that sustain these ecosystems. And we safeguard these ecosystems along the extraordinary flyways traversed by migrating cranes to ensure that vital breeding, staging, and wintering grounds are secured.

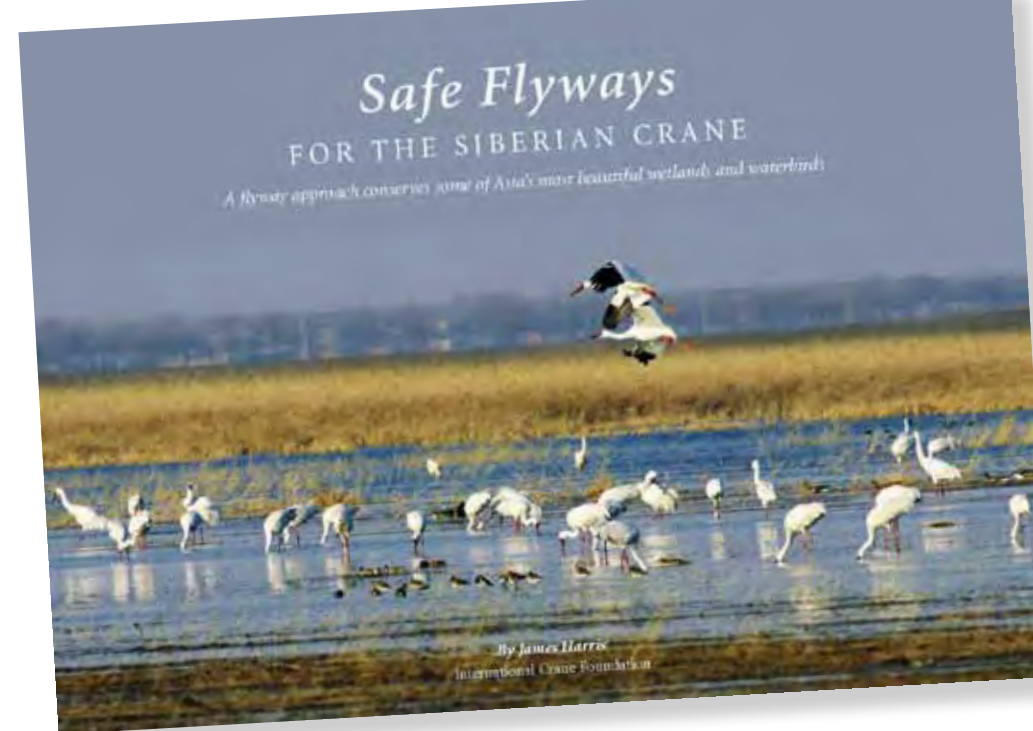
The wealth of ecosystems ICF works to protect include Poyang Lake in southeast China—winter home to almost the entire world population of Critically Endangered Siberian Cranes and 400,000 other waterbirds, and designated one of the seven Biodiversity Wonders of the World. It also includes the Demilitarized Zone between North and South Korea, which supports Endangered Red-crowned, White-naped, and Hooded Cranes and provides the only remaining wilderness on the Korean peninsula, and the magnificent bays and estuaries on the Texas coast that support the last naturally-occurring population of Endangered Whooping Cranes.

Unfortunately, these globally important ecosystems—and many other crane habitats on five continents—are under serious threat. Population pressure, poverty, and the demand for economic growth drive changes in these ecosystems. Wetlands, savannas and grasslands are drained and ditched for agricultural development, impounded for navigation or hydropower production, mined for energy development, filled for urban encroachment, or damaged by excessive livestock grazing, timber harvest, uncontrolled wildfires, and invasive species.

ICF works with national governments and through international agreements to secure key ecosystems as protected areas and ensure their ecologically-sound management. For example, ICF was instrumental in establishing Tram Chim National Park in Vietnam for Sarus Cranes and many other species—the most important protected area in the vast Mekong Delta. In South Africa, key crane areas are secured through voluntary “Biodiversity Stewardship Agreements” between landowners and the government, extending the national network of protected areas. We also promote careful stewardship of the public and private lands where cranes occur.

The ecosystems that sustain cranes also depend on the landscapes from which their water comes. These watersheds range in scale from tiny valleys surrounding small wet meadows to international river basins with diverse cultures, governments, and social priorities. Changes in watersheds—for example, deforestation or major diversions of water—can overcome the best of conservation efforts tightly focused on individual wetlands within those basins.

Sustainable river basin management is critical to the health of downstream ecosystems, and ICF has become deeply involved in securing vital flows in major river systems around the world. In Southern Africa, ICF is leading international efforts to secure water flows in the Zambezi River watershed to sustain the Kafue Flats, Zambezi Delta, and other key wetlands. At China’s Momoge National Nature Reserve, the key staging area for almost the entire global population of Siberian Cranes, our Chinese colleagues, with help from ICF, are securing water inflows by using excess irrigation water from huge



expanses of rice fields. We are monitoring water quality and investigating health risks for cranes as a flagship for other species that depend on the wetland.

Cranes inspire other watershed conservation measures as well. ICF associate Maurice Wanjala founded the Kipsaina Crane and Wetland Conservation Group, which has cultivated and planted more than one million native trees to stabilize slopes and promote agro-forestry around Saiwa National Park in Kenya, restoring breeding grounds for Grey Crowned Cranes and other threatened species.

Many crane species move beyond local watersheds, crossing continents during their spring and autumn migrations. Whooping Cranes migrate 2,500 miles from Wood Buffalo National Park in northwest Canada to their coastal Texas wintering grounds. Red-crowned, White-naped, and Hooded Cranes migrate from breeding grounds in Russia, China, and Mongolia to winter on the Korean peninsula, as well as in Japan, and southern China. And Demoiselle Cranes may have the world’s most breathtaking journey—across the majestic Himalayan Mountains en route from Mongolia and Central Asia to India. Along these migration paths, like pearls on a string, lie wetlands where cranes pause to rest and regain fat reserves that fuel their passage. For many crane populations, their future depends on saving the “weak links” along these long migration routes. Unless the flyway as a whole remains viable, species within that flyway cannot thrive. ICF helps countries work together to assure the welfare of places essential for these far-traveling birds.

ICF’s multinational, United Nations-supported Siberian Crane Wetland Project, is the international model for the “flyway approach” to the conservation of migratory birds, biodiversity, and natural resources. The project spanned the two major Siberian Crane flyways in East and West Asia, covering four key countries—Russia, China, Kazakhstan, and Iran. This effort resulted in improved protection for more than 4 million acres of wetlands through the establishment of new reserves, expansion of existing reserves, improved legal protection of others, and the declaration of five new “Wetlands of International Importance” under the Ramsar Convention for Wetlands.

The Siberian Crane Wetland Project underlines how conservation of biodiversity and human concerns go hand in hand.

Dr. Achim Steiner, UN Under-Secretary General and UNEP Executive Director



Bringing People Together

WHEN PEOPLE COMMIT TO SAVING CRANES, we join together to take action based on our shared values for cranes and their landscapes. Cranes are powerful ambassadors for international goodwill and collaboration. From the wedding kimonos of Japan, to the colorful textiles in African markets, to the ancient poetry of the Ramayana in India, cranes figure prominently in the lives of people wherever they occur. Red-crowned Cranes are symbols of longevity, marital bliss, and good luck in East Asia. Sarus Cranes are the bridge to spiritual afterlife in Vietnam. Grey Crowned Cranes appear on the national flag, currency, and coat of arms of Uganda.

ICF draws on the strong cultural connections we share with cranes to bring together people from diverse backgrounds for conservation action. ICF hosts the Wetlands International-IUCN Species Survival Commission Crane Specialist Group which stimulates and coordinates activities involving over 250 experts from 50 countries. In the 1990s, ICF helped broker agreements between China and Russia to work together to protect and manage crane breeding grounds along the Amur and Ussuri Rivers that divide the two countries. Together with the Endangered Wildlife Trust in South Africa, we were awarded the Rolex Award for Enterprise in 2002 for creating a pan-African network of researchers and conservationists dedicated to saving Wattled Cranes and their wetlands. Through the Convention on Migratory Species, ICF brought together 11 diverse nations—including Afghanistan, Azerbaijan, People’s Republic of China, India, Islamic Republic of Iran, Kazakhstan, Mongolia, Pakistan, Russian Federation, Turkmenistan, and Uzbekistan—to sign a Memorandum of Understanding for the conservation of Siberian Cranes. And in the Korean peninsula, ICF is unique in engaging both North and South Korea in protecting vital wintering grounds for threatened Red-crowned and White-naped Cranes, based on their shared reverence for cranes.

With their cultural significance, high visibility, extraordinary beauty, dramatic migrations, and striking behavior, cranes inspire caring and action on five continents.



Supporting the work of ICF is a natural extension of our family’s deep connection to the African continent. Under the flagship of cranes, we are helping improve environmental and living conditions for the benefit of people and wildlife for generations to come.

Robert Dohmen

Improving Local Livelihoods



Through our partnership with Nature Uganda, crane biologist and community organizer Jimmy Muheebwa spearheads the involvement of local communities in restoring papyrus wetlands that had been ditched and drained. These communities now produce a variety of papyrus products to sell for profit in local markets, and Grey Crowned Cranes once again nest on these recovering lands.

WHEN PEOPLE COMMIT TO SAVING CRANES, our conservation vision includes the welfare of communities who share the landscape with cranes. From the rice paddies of north India to the hillsides of Rwanda to the converted agricultural plains of northeast China, cranes live in some of the most densely settled—and impoverished—regions of the world. Conservation solutions in these settings, as well as among more affluent regions, must bring meaningful benefits to local people, and those benefits must be sustained for the long-term.

Healthy ecosystems suitable for cranes provide a wealth of services, including food for human consumption—fish, waterfowl, edible plants, wild grains. Wetlands provide, cleanse and filter waters, providing reliable drinking water supplies, and help stabilize water flows, absorbing water during floods and slowly releasing it during times of drought. Wetlands and grasslands provide materials for houses, mats, baskets, utensils, and clothing. Savannas provide timber and other wood products. These services, when managed sustainably, also provide a foundation for producing goods that can be sold through markets, producing jobs and generating income.

In places as diverse as Vietnam and Uganda, ICF is working with local communities to produce high quality hand bags, baskets, plates, and other goods from wetland resources that can be sustainably harvested. Their products are sold for profit in local, regional, and even international markets.

Cao Hai Nature Reserve in China takes another approach. ICF is partnering with reserve staff and Chinese specialists to create incentives for water and soil conservation around this vital wetland for Black-necked Cranes. They use small grants to families and business training to enable woman and men to start new ventures and diversify local economic activity in ways less-dependent on wetland resources. Some bought old oil barrels and made them into stoves, while others bought foods in one market and sold them in another for profit. As support for the wetland increases, villages plant shrubs and trees to reduce soil loss, and ban free-roaming herds of goats from degrading the hill slopes. And in two decades, the population of Vulnerable Black-crowned Cranes has increased at Cao Hai from about 200 to more than 800 individuals.

Empowering Conservation Leaders

WHEN PEOPLE COMMIT TO SAVING CRANES, we recognize the vital importance of conservation leaders of the future. For 40 years and throughout much of the world, ICF has identified and advanced emerging leaders to help cranes and their landscapes. We provide the training and resources they need to engage their communities in positive change, developing long-term relationships and offering professional opportunities. We inspire and mentor scores of young learners—through curricula for school children, volunteer opportunities, paid internships, field training, as well as graduate and post-graduate programs.

Our ICF headquarters in Baraboo, staffed with experts in crane biology, environmental education, field ecology, captive management, and conservation medicine, is a pre-eminent center for the training of future leaders. Conservationists from dozens of countries have visited ICF to study crane conservation, and utilize materials in the Ron Sauey Library for Bird Conservation—a clearinghouse for crane information from all over the world. Over the decades our visitor program has engaged more than a quarter of a million students. Our captive flock of all 15 species of cranes provides unequaled opportunities for training in all aspects of crane biology and husbandry, including specialized techniques for artificial insemination, captive rearing, and reintroduction to the wild. Veterinary services staff provide training for veterinary students and colleagues in crane medicine and surgery, and consultation on health issues for wild crane populations. Our 240-acre site is a living laboratory for ecological restoration, including fire management, invasive species control, and plant and animal monitoring, and our long-term crane field research site nearby in central Wisconsin provides a unique setting for research and training using a large population of marked Sandhill Cranes.

A unique strength of ICF has been the mentoring and inspiration we provide to conservationists and crane supporters everywhere that cranes occur around the world, a cornerstone of the philosophy of Co-Founder George Archibald. This important networking continues through the efforts of all staff, with a special focus on building community leaders who work with our priority programs in Africa, Asia, and North America.

ICF established a network of 18 universities in Southeast Asia to empower future leaders in wetland ecology and management in the Mekong Region. During its first 10 years, the University Network has trained more than 220 young lecturers and wetland managers from universities, government agencies, and conservation organizations from eight countries in the region.



Building Knowledge for Policy and Action



Photo: Crawford Prentice

ICF and Russian researchers join together to study and protect Critically Endangered Siberian Cranes on their breeding grounds in Yakutia, Russia.

WHEN PEOPLE COMMIT TO SAVING CRANES, we employ sound science as a foundation for conservation policy and action. ICF is a science-based organization whose success is built on its long-term accumulation of knowledge and expertise. We engage on issues before they become polarized, identifying future problems and complex relationships and working to resolve them pro-actively.

At Poyang Lake, our research helps national decision-makers understand the importance of natural water level fluctuations for Siberian Cranes, many other wetland-dependent species, and for human needs such as transportation, water quality, and fisheries. By linking the ebb and flow of water with the productivity of aquatic plants that cranes feed on, ICF research helped quantify the catastrophic impacts that would result from raising and stabilizing waters at Poyang. We applied these results to develop an “ecosystems approach” to managing Poyang for the long-term benefit of wildlife and local people, with cranes serving as ambassadors for this complicated system. This work has challenged plans for a proposed dam across the lake’s outlet, and given ICF a place at the table for future deliberations.

In India, our research uncovered the significant biodiversity value of the densely settled agricultural regions of the northern Ganges plain, and identified factors that favor or threaten the functioning of this patchwork of farm fields and small wetlands. Ancient farming practices that use minimal mechanization, and a reverence for cranes, allow the world’s highest density of Sarus Cranes and over 300 species of birds to coexist amongst intensive farming. We are using this knowledge to assist village councils and governmental agencies in strengthening land use policies and practices that will sustain this balance in the rapidly-growing region.

Even where crane populations are strong and growing, there are still conservation challenges. Sandhill cranes in the Midwestern U.S. have recovered from a few hundred birds to more than 60,000 individuals, but as Sandhills increased in density and spread across the landscape, their impact on croplands has intensified. Our research led to a new deterrent, resulting in a “win-win” solution for cranes and the farmers whose lands allowed the Sandhills to recover.

ICF identified how cranes damage corn, tested a safe affordable substance that is distasteful to cranes, and teamed with us to provide this deterrent (now called Avipel®) to farmers via the marketplace. The area of farmland treated each year continues to grow rapidly and Avipel is now applied to deter crop damage caused by other bird species (such as pheasants and blackbirds) and to deter bird damage in other crops such as rice and sunflower seed.

Ken Ballinger, President, Arkion Corporation



Photo: Ted Thousand

Global Strategies for Our Future

ICF APPLIES A RANGE of conservation strategies across our programs in Africa, Asia, and North America. We undertake these strategies to tackle the conservation challenges unique to specific crane areas, while developing the depth of skills and experience necessary to solve problems on a broader scale. Other strategies progress beyond cranes, addressing some of the universal challenges we face as a society.

- **Water Security**
- **Clean Energy**
- **Land Stewardship**
- **Conservation on Agricultural Lands**
- **Adaptation to Climate Change**
- **Conservation-Friendly Livelihoods**

Watching the cranes fly over the wetland was one of the most beautiful sights nature has to offer, the white birds with the black wing tips, long necks outstretched ahead, and long legs stretched out behind, illuminated by the sun. They seemed unreal, sent as a special gift...from a magic realm.

Dr. Jane Goodall DBE
Founder—Jane Goodall Institute & UN Messenger of Peace

Photo: Mike Sloat





Cranes and wetlands are inextricably linked, but many wetlands around the world continue to be lost or degraded. ICF's long-term work in helping to maintain and restore the networks of wetland habitats upon which cranes depend continues to make a valuable contribution towards achieving the goals of the Ramsar Convention on Wetlands.

Nick Davidson, Deputy Secretary General, Ramsar Convention

Water Security

THROUGHOUT THE WORLD, RIVERS NOURISH A REMARKABLE BIODIVERSITY of plants and animals. Our most vulnerable cranes—Siberian, Whooping, Red-crowned, Wattled—are intricately dependent on the exchange of freshwater between rivers, floodplains, and estuaries for their survival. Healthy functioning river systems provide clean drinking water and support agriculture, fisheries, and other vital ecosystem services that sustain local communities. Yet one billion people suffer from inadequate water supply, and water shortages for agriculture threaten food security for many, resulting in tremendous pressure to dam and divert rivers to meet the needs of more distant cities and farmlands. Such solutions help some, but harm many others.

ICF has long recognized that solving the global freshwater crisis is as much a challenge of water distribution as absolute scarcity. Our solutions lie in bringing together diverse water users, managers, planners, and policy-makers to find common ground for sharing water. Cranes have a key role in this process—helping us understand the importance of naturally-functioning river systems for the web of life.

In the coming decades, we will deepen and expand our efforts to contribute sustainable water solutions for some of the most important river basins in the world—the Amur, Yangtze, Lower Mekong and Upper Ganges of Asia, the Zambezi and Upper Nile of Africa, and the Guadalupe and Platte in North America. We draw from important lessons gained from two decades of engagement—that the needs of downstream people, and the needs of cranes and many other species of plants and animals, are often surprisingly compatible and linked strongly to natural water fluctuations. We have learned that the economic value of shared waters between upstream and downstream users often outweighs the value of that water when used solely for upstream diversions, or hydropower.

We will continue as a leader in the emerging field of environmental flows, providing training for water managers, engineers, ecologists, and others concerned with the quantity, timing, and quality of water flows needed to sustain freshwater and estuarine ecosystems and the livelihoods and well-being of people who depend on these ecosystems.



ICF is leading international efforts to secure water for key wetlands in the Zambezi River watershed, through controlled releases of water from dams developed for hydropower production. These efforts not only help cranes, but also provide fisheries, floodplain agriculture, and grazing lands for hundreds of thousands of basin villagers.



Sustainable paths to energy exploration and mining are a key conservation challenge. Public concern over the fate of cranes, iconic symbols of survival, may help inspire new approaches to our energy future.

Clean Energy

RELIABLE, CLEAN SOURCES OF ENERGY ARE VITAL to global economic growth. The production and distribution of energy is increasing rapidly and will continue to grow in the coming years, especially in rural Asia and Africa where it is needed most to help alleviate poverty.

Many of our current practices for energy production and distribution pose a serious challenge for cranes and numerous other species. Cranes are highly vulnerable to collisions with overhead power lines near their breeding and roosting sites. Landscapes important to Blue Cranes in South Africa are being mined on a massive scale for coal and natural gas. East African peat lands, where Grey Crowned Cranes breed, are removed for biofuel production to meet short-term energy needs despite permanent destruction of productive ecosystems. Vast, highly toxic tailings ponds resulting from tar sands excavation in Canada occur along the migratory route of Whooping Cranes, and one of the most heavily used flyways for waterbirds in North America.

There are no easy solutions to these and other challenges, but cranes are an important flagship for a more ecologically-sustainable energy future. Our partner in Africa, the Endangered Wildlife Trust, developed an innovative national program in cooperation with its national power company, Eskom—they are relocating power lines from the highest-risk areas, ensuring the safer placement of new lines away from critical habitats, and marking power line stretches that cranes traverse most frequently. We are expanding this program to influence power distribution systems and decision-making across Africa, and extrapolating this experience to other continents—influencing power line networks along the central flyway for Sandhill and Whooping Cranes, for example. Sometimes the passion for cranes transcends “business as usual” practices—our colleagues in economically impoverished Bhutan buried more than 30 miles of power lines, at great cost, to eliminate the risk to their beloved Black-necked Cranes. These actions benefit much more than cranes—millions of birds, including vultures, bustards, eagles, owls and other raptors are thought to die each year as a result of power line interactions.

Where power is produced, cranes also inspire innovative approaches to energy. Our long-term collaboration with power companies in Africa balances hydropower production with downstream water releases for cranes, other wildlife, and thousands of farmers and fishers negatively affected by river regulation. In other regions, our research serves to inform and mitigate the impacts of “environmentally-friendly” sources of energy, such as wind turbines, to minimize their impact on cranes and other biodiversity.

Land Stewardship

THE FUTURE OF THE WETLANDS, SAVANNAS AND GRASSLANDS on which cranes depend requires a long-term commitment to land stewardship. Whether established as formal protected areas, held as private properties, or shared as communal lands, these ecosystems are affected by a range of management challenges. To each of our projects, we bring decades of experience with managing fire, grazing, invasive species, erosion, and other factors to benefit cranes and the wealth of other species that depend on these systems.

Fire is an important natural process for maintaining many landscapes. Wetlands, grasslands, and savannas depend upon fire to remove encroaching shrubs and matted grasses that inhibit young plant growth. ICF conducts prescribed fires to manage native grasslands that harbor a rich diversity of plants and animals in Wisconsin, and to create patchworks of burned and unburned areas in Africa. At Zhalong National Nature Reserve in China and Muraviovka Park in Russia, however, uncontrolled fires set by people sweep across wetlands that harbor breeding Red-crowned and White-naped Cranes, killing eggs and young birds. In these settings, where changes in water supply have made fires more frequent and destructive, we focus on water management or train local managers to burn firebreaks and small patch fires to prevent larger fires from spreading.

Similarly, grazing by native herbivores or livestock maintains the health of native grasslands, and improves access to the underground tubers preferred by cranes and other waterbirds. But over-grazing, especially by cattle, leads to trampled nests and loss of nesting cover, such as for Grey Crowned Cranes in East Africa. Here, we rely on community outreach and “wetland watch” groups to promote alternative land stewardship.

ICF also plays a key leadership role in managing invasive plant species, the bane of crane conservation on five continents. At Tram Chim National Park in Vietnam, ICF and colleagues developed an ecologically-sound, cost-effective alternative to herbicides, using a concentrated salt solution to kill invasive Mimosa shrubs. At other sites, we are experimenting with diverse management strategies—including hiring local community members to remove Mimosa and helping them invest their income in community-development projects.



Through training local colleagues in successful, cost-effective management techniques, and promoting a land ethic on all lands we share with cranes, we are laying the long-term foundation for good stewardship.



Photo: Mark Anderson

Conservation on Agricultural Lands

MOST OF THE WORLD'S CRANES RELY ON AGRICULTURAL LANDS as well as wetlands. With the conversion of natural grasslands, savannas and wetlands to croplands across Africa, Asia, Europe, and North America, cranes have little choice but to adapt to these new landscapes. In India, Sarus Cranes breed on wetland “islands” in a sea of cropland, feeding in rice paddies. Blue and Grey Crowned Cranes feed on corn, oats, sorghum, and sunflowers on former grasslands of the South African highlands, and roost in farm ponds. The three most abundant species of cranes—Sandhill, Eurasian, and Demoiselle—also are the species that have most successfully adapted to farming landscapes.

In many settings, and throughout much of the year, cranes provide a service to farmers by feeding on insect pests or gleaning waste grain without conflict. But at times cranes can damage crops, especially young sprouts and ripened grain, leading to conflict with the landowners who are providing the habitat that cranes need. Historically large numbers of Blue Cranes were poisoned in South Africa as a reaction to perceived crop depredation and in Kenya today Grey Crowned Cranes are increasingly targeted for poisoning by farmers.

Crane conservation can only be successful if we ensure that farmers do not suffer losses from having cranes on their lands. Moreover, we seek ways that having cranes on private lands will represent economic and environmental success rather than loss. In Wisconsin, we assist farmers to better manage native wetlands that cranes nest in, improve ground water infiltration through restoring prairie, and provide a rural aesthetic that people value. In North Korea and Russia, we are working with farmers to promote organic agriculture and ample waste grain on lands shared with cranes.

Cranes also serve as flagships for conservation on these agricultural landscapes. In the many places where cranes are revered, the presence of nesting or foraging cranes on one's land is good luck. Through the charisma of cranes, we engage in efforts to restore small wetlands, control soil erosion through improved farming systems, and reduce pesticide applications that impact water quality. The rewards are impressive. In the northern India province of Uttar Pradesh, for example, agricultural landscapes protected for Sarus Cranes support blue bull antelope, leopards, mongoose, wild cats, and many bird species of conservation concern.



Our effort to recognize and manage agricultural lands in northern India as biodiversity hotspots is bringing a substantial new swathe of the globe into conservation focus.

Climate Change Adaptation



Photo: Keju Wang

Healthy ecosystems help cranes, other biodiversity, and vulnerable people adapt to climate change.



Photo: Mike Sloat

IN THE COMING DECADES, BILLIONS OF PEOPLE, particularly those in developing countries, will face shortages of water and food and greater risks to health and life as a result of climate change. Climate change also presents a range of challenges for wildlife—hotter, drier conditions, more extreme weather patterns, melting glaciers, and rising sea levels.

Each of the 15 crane species has its own vulnerabilities to climate change. Whooping Cranes winter in salt marshes along the Texas coast, where a rising ocean could drown their habitats. The Brolgas and Sarus Cranes of Australia face unprecedented drought that is shrinking wetlands across their range. In the polar regions where the effects of climate change are most pronounced, the islands, peninsulas, and low-lying shores where Siberian Cranes breed are being replaced by open water as ice sheets melt.

Where shifts in climate are driving changes in key landscapes, ICF sets high priority on research and modeling to understand the impacts on cranes and their habitats so that we can devise adaptive conservation responses. Our Russian colleagues are studying the impact of climate change in the tundra environment on the nesting grounds of the Siberian Crane, including key indicators of change such as a reduction in the permafrost layer. We are modeling how sea-level rise will impact current and future estuarine wintering grounds of Whooping Cranes in Texas, and using this knowledge to assist in securing conservation easements and other set-asides that will accommodate the recovering crane population under future sea-level conditions.

In regions where climate change will make water and energy supplies less predictable and less secure, a range of important adaptations are already clear. In the Zambezi and Mekong River basins, our research is challenging river developers to incorporate climate change into the design and operation of new dams, encouraging smaller run-of-river dams and other energy alternatives more resilient to climate change and less harmful to downstream users and wildlife. In Northeast China, we are working with our Chinese colleagues to negotiate water releases to maintain water and vegetation in four key wetlands of the Songnen Plain.

Our efforts to adapt to climate change often have a human face as well. At Tumuji and Momoge National Nature Reserves, we are helping reserve managers develop climate change vulnerability assessments and adaptation plans. In addition to conservation assessments that focus on key waterbird species and ecosystems, we are helping communities reduce their vulnerability to highly variable weather. This approach brings benefits to the people who share the wetlands, reduces risk of resource conflicts, and results in more efficient water use.

Conservation-Friendly Livelihoods

HUMAN POVERTY IS THE SCOURGE OF MODERN SOCIETY, and poverty reduction is the top priority of many international organizations. Yet the desire for a better standard of living is at the root of many of the conservation challenges we face today. The demands upon ecosystems to provide food, water, fuel, medicine, and shelter are growing, but human actions are diminishing the capacity of many ecosystems to meet these demands. The eight “Millennium Development Goals” adopted by all 193 countries of the United Nations emphasize human well-being and environmental sustainability. Yet lasting “win-win” solutions that link human livelihoods with biodiversity conservation and sustainable development remain elusive.

Everywhere ICF works, human livelihoods are deeply entwined with the fate of the ecosystems we are trying to save. In many places, generations of people have used natural resources sustainably, and an intricate interdependence of people on nature, and nature on people, continues to exist. ICF is engaged in a range of methods for providing an economic foundation that encourages people to continue sharing their lands with cranes.

One approach is to link communities with regional or international markets for quality products that can be sustainably produced from wetlands and grasslands that are vital to cranes. At Phu My in Vietnam, for example, locally-produced handicrafts from Lepironia wetlands are sold in competitive markets of Europe, Japan, and the Middle East. The income generated covers most of the costs for managing this important wetland for Sarus Cranes and other species. In just six years, local income increased five-fold for the community and crane numbers jumped from 5 to over 250 (30% of the known population). Facilitating access to micro-finance can play a key role in enabling the launch of these small businesses.

ICF also supports local communities by working to ensure that the natural services and products that they depend on remain intact. In addition to providing subsistence needs, healthy ecosystems regulate floods, erosion, and disease, support soil formation and nutrient cycling, and contribute to recreational, spiritual, religious, and other nonmaterial benefits. In Rwanda, we are quantifying the full range of ecosystem services provided by Rugezi Marsh to secure this key breeding ground for Grey Crowned Cranes. A long-term commitment to maintaining the huge volume of peat stored in the marsh to sequester carbon, for example, would provide funding for alternative livelihood projects and support management of the marsh through Voluntary Carbon Markets.



In 2006, ICF’s Phu My project in Vietnam was given the Equator Prize—awarded biennially by the United Nations Development Programme and partners to outstanding community-based sustainable development solutions—for its innovative role in integrating wetland conservation and improved income for local people through the successful production and marketing of products made from renewable wetland plants.

Eileen de Ravin
United Nations Development Programme

ICF Priority Programs

ICF's priority programs are focused on the regions where cranes are most threatened in Africa, Asia, and North America, and our global center for conservation leadership and training in Baraboo, Wisconsin. In the following pages, we share our goals for these programs over the next decade, and the key initiatives we will undertake to achieve our vision.

- Sub-Saharan Africa
- East Asia
- South/Southeast Asia
- North America
- ICF Center for Conservation Leadership

Perhaps more than any other living creatures, cranes evoke the retreating wilderness, the vanishing horizons of clean water, earth and air upon which their species—and ours, too—must ultimately depend for our survival.

Peter Matthiessen, *The Birds of Heaven*

Sub-Saharan Africa



The wetlands and savannas of sub-Saharan Africa support six of the world’s fifteen species of cranes, including resident Grey Crowned, Black Crowned, Wattled, and Blue Cranes, and wintering Demoiselle and Eurasian Cranes. African cranes face many threats fueled by rapid population growth and extreme poverty in the region. Endangered Grey Crowned Cranes, for example, are in serious decline due to capture for illegal trade, compounded by loss of vital wetlands in the agricultural landscapes of East and Southern Africa, while Vulnerable Wattled Cranes are at risk from large dams and floodplain degradation. Our innovative conservation programs employ diverse strategies for saving cranes and some of the most important wetlands on the Africa continent.

GOAL

The impact of the captive crane trade on wild crane populations is reduced to a sustainable level, through mitigation measures that target local, national and global supply and demand.

KEY INITIATIVES

- Monitor the supply routes of cranes, from capture to export, in key hotspots for illegal trade in Africa.
- Reduce the need for wild-caught cranes through participating in and supporting sustainable global captive management and propagation.
- Reduce demand for wild-caught cranes by creating local, national, and international awareness of the status of Africa’s resident cranes and the threat that trade poses to wild populations.
- Improve policies and legislation that govern the trade in cranes, strengthening the consequences of engaging in illegal trade.

GOAL

Large African floodplains are restored and maintained for Wattled Cranes and the ecosystem services that support biodiversity, fisheries, agriculture, and other livelihoods.

KEY INITIATIVES

- Implement environmental flows in the Zambezi River basin, through changes in the operating rules of existing dams, strategic design and placement of new dams, and sustainable water management policies in the headwaters region.
- Demonstrate successful river-floodplain restoration by reconnecting the Lower Zambezi River with its delta through the Salone waterway.
- Implement ecosystem management plans and practices to control invasive species, fire, and human disturbance in the Kafue Flats, Bangweulu Swamps, and Liuwa Plain of Zambia and the Zambezi Delta of Mozambique.
- Apply monitoring and adaptive management practices that quantify the value of improved water management for Wattled Cranes and other target species, human livelihoods, and broader socio-economic interests.
- Develop strong institutional capacity for integrated river basin management and climate change adaptation in the region.



Photo: Crane Wu



Photo: Bradley Gibbons



Photo: Ian Corbut

GOAL

Critical breeding grounds for Grey Crowned Cranes are secured through community-based wetland conservation and management.

KEY INITIATIVES

- Implement integrated, community-based projects to secure significant breeding sites for the Grey Crowned Cranes in Burundi, Kenya, Rwanda, South Africa, Tanzania, Uganda, and Zambia, using regional campaigns to increase pride in the cranes and identify and training local leaders for crane and wetland conservation.
- Develop a sustainable finance mechanism to support long-term community conservation efforts for key crane sites through carbon trading markets and payment for ecosystem service functions.
- Find and advocate for the use of mitigation measures to reduce the conflict between farmers and Grey Crowned Cranes in agricultural landscapes where substantial crop damage occurs.

GOAL

Blue Cranes are stable on the changing agricultural landscapes of South Africa.

KEY INITIATIVES

- Develop and implement a conservation plan for Blue Cranes, based on a clear understanding of how cranes use the agricultural systems in the Western Cape and the probable impacts of climate change on land use and agricultural practices.
- Minimize the impact of mining and other land development on critical Blue Crane breeding and roosting sites.
- Implement a media and marketing campaign for Blue Cranes as the national bird in South Africa to engage people to take action based on their pride for the species.

GOAL

Key breeding grounds are sustainably managed for Black Crowned Cranes in West and Central Africa.

KEY INITIATIVES

- Implement a community-based conservation project for Black Crowned Cranes integrated with broader wetland management programs in West Africa.
- Implement priority conservation measures to secure Black Crowned Cranes around Lake Tana in Ethiopia and on their stronghold in South Sudan.

GOAL

Status and emerging threats to African cranes are monitored on a continental basis and Conservation Action Plans are adopted for all four resident crane species.

KEY INITIATIVES

- Implement long term monitoring for each of the four resident crane species and periodic surveys of the wintering crane species, including population status surveys and assessment of current and emerging threats.
- Continually assess the risks related to overhead power line collisions and mitigate those risks by relocating power lines, ensuring the safer placement of new lines, and marking high risk lines.
- Develop Biodiversity Management Plans for the three South African Crane species.
- Develop and implement Species Action Plans for Wattled and Grey Crowned Cranes through the African-Eurasian Waterbird Agreement.

East Asia



East Asia is home to eight crane species, the most of any region. Five of these species are threatened—Siberian, Red-crowned, White-naped, Hooded, and Black-necked Cranes. Intense land and water development pressures due to rapid economic growth threaten wetlands of vital importance to crane survival in this region. ICF’s work builds on the strong cultural ties to cranes in East Asia, to engage people and policy makers in conservation of protected areas and their surrounding landscapes.

GOAL

Breeding and migratory populations of Red-crowned, White-naped, Hooded, and Siberian Cranes are stable or increasing through improved wetland management in the Amur-Heilong Basin.

KEY INITIATIVES

- Support development and implementation of water management plans that sustain crane habitats and preserve wetlands for wildlife, flood control, enhancement of water quality, fisheries, and other harvests important to people at Zhalong, Momoge, Xianghai, Tumuji, Muraviovka, and other key crane wetlands.
- Develop pilot projects in China and Russia that demonstrate community involvement with wetland conservation.
- Promote cooperative research efforts between crane conservationists in Mongolia and the Amur-Heilong basin of Russia and China.
- Conduct environmental education activities among communities and stakeholders affecting critical crane habitat to increase local and national pride and commitment to conservation action.

Photo: Vincent Munier





GOAL

The wetland ecosystems of Poyang and nearby lakes support stable wintering populations of Siberian, White-naped, and Hooded Cranes and maintain the extraordinary diversity of other waterbird species.

KEY INITIATIVES

- Determine the effects of different water management scenarios on cranes and their aquatic plant food base.
- Promote ecosystem approaches to management, including strategies to manage for natural fluctuations at Poyang through mitigation of current hydrological degradation caused by water infrastructure and economic development within its basin.
- Collaborate with Chinese agencies and researchers in monitoring changes in critical ecosystem parameters.
- Support efforts by management agencies and partners to identify and restore alternative wintering sites in southern China.

GOAL

The three populations of Black-necked Cranes in western China continue to expand in size and range.

KEY INITIATIVES

- Support pilot projects to reduce catchment degradation around key wetlands through alternative income and agriculture practices.
- Undertake long-term monitoring of selected breeding areas to assess the impacts of climate change on cranes and key wetlands, and to develop measures for adaptation to climate change.
- Strengthen environmental education efforts at Cao Hai and use these efforts as a model to increase community awareness and pride in crane conservation in other areas of China.

GOAL

Wintering grounds are secured for Red-crowned and White-naped Cranes in and near the Demilitarized Zone of the Korean Peninsula.

KEY INITIATIVES

- Facilitate technical exchange, dialogue, and collaboration involving North and South Korean scientists and decision-makers.
- Restore crane wintering areas in the Anbyon Plain of North Korea by assisting the local farming community in developing sustainable farming methods while providing food for cranes.
- Develop habitat management plans for the conservation of coastal wetlands in southwest North Korea.
- Support efforts within South Korea to protect Choelwon and other current wintering sites.

GOAL

The chain of wetlands that sustain crane migration is secured for each of the major East Asia crane flyways.

KEY INITIATIVES

- Develop and implement a long term monitoring project for each of the five threatened crane species of East Asia, including population status surveys and assessment of current and emerging threats.
- Through periodic workshops, bring people together from across these flyways to share information, seek solutions to common threats, and improve collaborative activities.
- Raise understanding and support for flyway-level conservation efforts through targeted communications and education activities.
- Enhance monitoring and habitat protection at Bohai in eastern China, the narrow coastal zone where cranes funnel between the mountains and the sea.
- Take a leading role in the East Asian-Australasian Flyway Partnership to engage diverse national partners in conservation of key wetlands.

GOAL

Policies affecting cranes and their important habitats in China are strengthened and enforced.

KEY INITIATIVES

- On the basis of strong demonstration projects, influence the development of national policies that protect cranes in nature reserves, ensure water supply for wetlands, and make sure that resource harvesting from wetlands is done sustainably.
- Support management-related research, and disseminate research findings through publications such as *China Crane News*.
- Through targeted communications and networking, raise the profile of ICF in order to increase our influence and access to information and decision-makers.

South/Southeast Asia



South and Southeast Asia are home to Sarus Cranes, as well as wintering Demoiselle, Eurasian, and Black-necked Cranes. Vulnerable Sarus Cranes face a myriad of challenges across their range, including loss of wetlands due to agricultural development and reduced water flows, as well as egg removal, power line collisions, and other direct threats. Strong cultural ties to cranes in India and Vietnam provide opportunities to engage people in the conservation of these intensely settled landscapes using the Sarus Crane as a flagship species.



GOAL

The Indian Sarus Crane population is stable or increasing in South Asia through community-supported conservation practices and governmental policies that maintain the rich biodiversity of agricultural landscapes.

KEY INITIATIVES

- Implement projects at two key demonstration sites in Uttar Pradesh, India to understand and develop effective mitigation for the impacts on Sarus Cranes and wetlands from climate change and habitat loss.
- Reduce threats to Sarus Crane populations from chick predation by feral dogs, egg removal, electricity wire collisions, illegal conversion of wetlands, and poisoning by agricultural chemicals.
- Create a demonstration site at Lumbini, the birthplace of Buddha, to showcase the restoration of the Terai landscape of Nepal and provide conservation education based on the Buddhist love for nature.
- Collaborate with village councils, farmers, and conservation partners to identify and implement strategies, including education and outreach, that preserve the agricultural and wetland landscape supporting cranes and communities.
- Partner with the Indian conservation community on advocacy to improve state and federal wetland policy.

GOAL

Southeast Asia's population of Eastern Sarus Cranes increases and expands as a result of community-based conservation efforts and broader Mekong River initiatives to protect important wetlands.

KEY INITIATIVES

- Secure crane wintering habitats in the Tonle Sap Lake Basin and the Mekong Delta through strengthening conservation practices at existing crane sites and safeguarding small remnant wetlands that cranes could use.
- Adapt successful Mekong delta community-based wetland and livelihood conservation models to other important crane areas in Southeast Asia.
- Enhance the efficacy of the Mekong Wetland University Network through further development of a stable independent structure, development of the Network's training programs, and integration of the Network with priority conservation projects throughout the Eastern Sarus Crane range.
- In collaboration with other key partners in the region, assess and mitigate impacts of large-scale river basin development and climate change on Sarus Cranes and wetlands.

GOAL

The status of cranes and their habitats from South Asia to Australia are monitored and conservation strategies are implemented to address emerging threats.

KEY INITIATIVES

- Enhance and coordinate strategies for monitoring the status and threats for Sarus Cranes and their habitats in India, Nepal, Myanmar, Cambodia-Vietnam, and Australia.
- Monitor wintering populations of Eurasian Cranes, Demoiselle Cranes and Black-necked Cranes in South Asia and, with partners, identify threat mitigation strategies to secure the future of these species.
- Use range-wide networking and periodic workshops to share information, and develop and test solutions to common threats in different crane landscapes.

North America



The Whooping Crane is one of the rarest and most endangered bird species in North America, and faces myriad threats. ICF is committed to the conservation of the naturally-occurring Whooping Crane flock that migrates between breeding grounds in Wood Buffalo National Park, Canada and wintering grounds in coastal Texas, and the reintroduction of additional self-sustaining populations of Whooping Cranes according to the Whooping Crane Recovery Plan. Our North America program also includes long-term research on Sandhill Cranes aimed at understanding important aspects of crane biology and developing model solutions for crane conservation on agricultural landscapes.

GOAL

Sufficient high-quality habitat along the central Texas coast wintering grounds and migratory flyway is secured to support the full recovery of the last naturally-occurring population of Whooping Cranes.

KEY INITIATIVES

- Identify and prioritize Whooping Crane habitat around Aransas National Wildlife Refuge and assist in securing conservation easements or other set-asides that will accommodate a growing population and habitat changes due to sea-level rise.
- Implement a long-term monitoring program to determine population growth, winter range expansion, territory needs, and wintering Whooping Crane health in cooperation with the U.S. Fish & Wildlife Service (USFWS) and other partners.
- Coordinate with USFWS to monitor and manage black mangrove in critical Whooping Crane habitats in Texas.
- In collaboration with partners, assess threats along the migration route, identify management priorities to secure key stopover sites, and share recommendations with decision-makers and stakeholders.

Photo: Joel Sartore



Photo: Tom Lynn

GOAL

Sufficient freshwater flows in Texas' Guadalupe/San Antonio basin are secured to sustain healthy bays and estuaries for Whooping Cranes, other biodiversity, and the coastal economy.

KEY INITIATIVES

- Clarify the ecological relationships linking Whooping Cranes, freshwater inflows, and estuary system health for use in policy development, advocacy, and educational outreach.
- Develop, implement, and monitor specific environmental flow recommendations to sustain Whooping Cranes and the coastal system.
- Provide leadership and guidance for all basin water users to engage in voluntary water conservation programs that will strengthen watershed stewardship and sustainability.

GOAL

Two self-sustaining populations of Whooping Cranes are established in eastern North America.

KEY INITIATIVES

- Optimize production and preparation for release of captive Whooping Cranes using state-of-the-art techniques for crane husbandry and health care, artificial insemination, egg incubation, and chick rearing.
- Monitor and conduct research to evaluate the success of the Wisconsin released population and the efficacy of reintroduction as a conservation method, and share results for adaptation to additional release projects, such as in Louisiana.
- Reach more than 1,000,000 people each year with outreach and environmental education that builds citizen pride in Whooping Cranes and commitment to reduce threats.

GOAL

Applied research on Sandhill and Whooping Cranes results in creative solutions to emerging conservation challenges.

KEY INITIATIVES

- Enhance and promote understanding of crane damage to crops and the use of deterrents to solve conflicts between people and cranes.
- Assess impacts of hunting on the eastern population of Sandhill Cranes and the illegal shooting of Whooping Cranes and provide information to stakeholders and decision-makers.
- Monitor impacts of power line and wind turbine development; collaborate to develop and share mitigation strategies.
- Understand how habitat selection on breeding, staging, and wintering grounds affects crane reproductive potential.
- Model how crane populations change in relation to crane densities as a way of understanding crane recovery.

ICF Center for Conservation Leadership



The future of cranes depends on conservation leadership at all levels. ICF's headquarters is a global center for conservation leadership, providing expertise and training in conservation science and management, wetland and grassland restoration and ecology, captive crane management and care, environmental education, and conservation communications. ICF's international and regional programs integrate training and mentoring of leaders into each project, especially to develop leaders in the communities who share crane landscapes. We focus on identifying, training, mentoring, and supporting conservation leadership among a broad spectrum of people, from promising young scientists and conservationists to the land owners and decision makers who influence crane survival in key places. We empower colleagues with knowledge, skills, and experience to lead effective conservation action.

GOAL

ICF's visitor programs align with our major crane conservation priorities and engage every visitor with opportunities to take conservation action.

KEY INITIATIVES

- Attract to our site people who have a significant influence on crane conservation now or in the future.
- Enhance and freshen the on-site visitor experience and visitor education through development of new exhibits, interpretive materials, tours, temporary exhibits, and special events.
- Communicate about ICF and our current conservation work through a variety of tools including cutting-edge technology to reach diverse audiences and recruit supporters;
- Train international colleagues, students, and interns in crane conservation issues, interpretive arts, and community education concepts, through active participation in the visitor and communications programs.
- Empower citizen advocacy and informed decision-making on crane and wetland issues through education and outreach programs and materials.

GOAL

ICF practices and teaches cutting-edge management, husbandry, health management, and research for sustainable management and reintroduction of captive populations of cranes.

KEY INITIATIVES

- Optimize the health and sustainability of captive crane populations through cutting edge avian husbandry and medicine practice.
- Participate in American Zoo and Aquarium Association (AZA) and other coordinated efforts to build sustainable captive crane populations for critical species, and assist in developing, sharing, and implementing genetic management goals for captive crane populations.
- Conduct select research projects to improve knowledge of captive crane biology, health and physiology, behavior, management, propagation, and successful release methods.
- Share knowledge on captive crane management and reintroduction through internships, training of students and visiting colleagues, and presentation and publication of new information.

GOAL

Conservation leaders key to crane and wetland conservation priorities are trained and mentored in important skills such as field research and monitoring, restoration, captive management and research, conservation medicine, strategic communications, and conservation GIS.

KEY INITIATIVES

- Customize training and leadership development experiences for colleagues associated with ICF priority programs, providing opportunities to study at ICF's headquarters and its associated field research sites, and encompassing the range of unique skills sets among ICF staff.
- Through sustained relationships, consult with and mentor colleagues working on important crane issues across the world.
- Offer regular opportunities to staff, interns, and volunteers to increase their crane and conservation knowledge base and develop their professional skills.
- Publish and disseminate ICF information important to building knowledge and skills of future crane conservation leaders.

GOAL

Global networks of conservation leaders assess crane status, threats and current conservation responses, and work collaboratively to address emerging threats.

KEY INITIATIVES

- Engage colleagues in monitoring the status and current threats for all species of cranes through our broader role in the Wetlands International –IUCN Species Survival Commission Crane Specialist Group, the work of ICF Research Associates, and our networks with other key partners.
- Through publications, site visits, and gathering together specialists from different regions or with diverse expertise, facilitate more effective conservation action by crane specialists throughout the world.
- Support flyway level initiatives for cranes and other species that share their migratory routes through the Convention on Migratory Species, the Africa-Eurasian Waterbird Agreement, the East Asian - Australasian Flyway Partnership, and the Western/Central Asian Site Network for Siberian Cranes and Migratory Waterbirds.
- Establish and mentor ICF Research Associates working on crane conservation throughout the world.

Photo: Deb Johnson



When we hear his call we hear no mere bird. We hear the trumpet in the orchestra of evolution. He is the symbol of our untamable past, of that incredible sweep of millennia which underlies and conditions the daily affairs of birds and men.

Aldo Leopold



Photo: Ted Thousand



ICF: THE PARTNER OF CHOICE

The conservation of cranes and their ecosystems worldwide depends on the efforts of many individuals and organizations. ICF is a mission-focused organization rooted in the heart of Wisconsin. We are one of the world's most successful conservation organizations at gaining international cooperation for the protection of wildlife and the landscapes they inhabit. By focusing on threatened cranes (and their universal appeal), we mobilize a global community of dedicated and resourceful people for a direct and lasting impact on the environment.

We are committed to being the partner of choice for agencies, businesses, communities, foundations, universities, and all who commit to saving cranes. Our commitment runs deep and organization-wide. We are grateful to our staff and associates, our Board of Directors and Emeritus Directors, and our advisors and supporters who contributed to this strategic vision for the next decade. ICF's work is funded largely through the generosity of private individuals. Please contact us to learn about membership and donor opportunities to help cranes.



ICF consistently receives high ratings from Charity Navigator, placing us among the most accountable and best-run charities in America.



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