

Offering Hope for Birds Facing Extinction

One in every eight bird species in the world today is in danger of extinction. Our unique BRINK™ program offers a new and promising approach to rescuing endangered bird species before it's too late.

Bird Species on the Brink

The number of bird species in danger of extinction is increasing as the world's human population expands, we use more natural resources, we pollute or degrade the environment, and we put other priorities ahead of environmental and wildlife conservation.

A critical first step in protecting endangered bird species is population stabilization. All too often endangered bird species are identified and studied but inadequate or ineffective steps are taken to stabilize existing populations, with the results that species populations continue to decline.

When an endangered bird species population drops below a critical level, a level believed to be unique to each endangered species situation, it is believed that the population will likely not recover without significant human intervention, and the species will likely become extinct.

A New Approach to Population Rescue

Bird Recovery International (BRI) strongly supports population stabilization for endangered bird species, and has been a leader in developing a successful new approach for the viable reintroduction of captive bred and specially trained birds back into natural habitats. This new approach, called **Bird Recovery Initial Nurturing Kernel (BRINK)™** is a population stabilization management approach that focuses on maximizing individual survivability for captive bred birds when reintroduced back into the target natural habitat.

BRI believes that the most important element to any reintroduction project is survival of reintroduced birds to breeding. BRINK™ accomplishes this goal by developing the bird's instinctive survival skills. The birds' natural survival instincts need time and opportunity to develop at the appropriate age to produce survival skills suitably adapted to the local conditions where they live. To achieve this initial

preparations process we offer special support and housing for an initial core group of birds we call a Kernel. Each phase of this management approach maximizes individual survivability with a goal of releasing ready to breed birds with highly developed and honed survival skills.

BRINK™ Reintroduction Stages

The BRINK™ management approach includes [six](#) stages:

- 1) Captive Breeding Program – maximize reproduction to increase population, provide birds for survival preparation and expansion of captive breeding stock.
- 2) Flight Skill Development – raise and prepare young birds to have peak fitness and advanced flight skills.
- 3) Practice, Exercise & Protection – expand and refine survival skills in carefully selected locations as the birds mature. Provide food and secure indoor roosting site.
- 4) Transition Site Pair Bonding – facilitate mate selection within the group; provide exposure to nesting opportunities similar to those in the release location.
- 5) In Situ Release and at Liberty Breeding – perform soft release of “survival savvy” mature pairs at target location and continue to monitor health and breeding activity. Assist with supplemental feeding, security and nest boxes as needed.
- 6) New Wild Chick Monitoring – monitor nest and support parents as needed.

A key aspect of BRINK™ [is beneficial](#) use of mild imprinting. [Traditional](#) reintroduction projects work to avoid imprinting whenever possible. The BRINK™ approach turns mild imprinting into an advantage that helps the Kernel group survive and mature to perform at liberty breeding. This simplifies and strengthens the process while also reducing wasted resources used to limit human-to-bird contact. The breeding Kernel birds raise their baby birds without human

contact, making these babies the actual reintroduced birds. These chicks learn just as they would with wild parents.

With the BRINK™ approach, if domestically kept breeding stock is available, there is no need to further deplete a struggling in-situ population by removing individuals from the wild for translocation or breeding. If no, or too few, domestic stock is available, removing a minimal number of birds from the wild for domestic breeding is more justifiable since this reintroduction process offers a high survival rate.

BRI's application of BRINK™ over the past four years with a nine species flock of 25 domestically raised parrots currently has a 100% survival rate from domestic chick to at liberty breeding.

[BRI promotes](#) population stabilization as a critical first step in protecting bird species on the brink of extinction. BRINK™ approach provides an efficient method to increase target wild populations to above critical threshold numbers. Any species of bird that is suffering from very low numbers in all or part of its natural range can benefit from the BRINK™ approach without further affecting populations in other areas.

When is Reintroduction Necessary?

[BRI](#) also strongly [encourages](#) that population stabilization efforts must begin before population levels for an endangered species [drop](#) below their critical threshold number. Waiting to start population stabilization efforts until [an endangered](#) population drops into the teens is essentially failure to save the species. Every effort should immediately [focus on](#) growth toward the critical threshold population size as soon as biologists establish the threshold number.

When a wild bird species population drops to a point it will likely NOT recover without significant human intervention ([below a critical threshold established by biologists](#)), the species will become “extinct in the wild” [unless](#) appropriate action is taken. If the species disappears from a region it once inhabited, but exists in other areas, then it is considered “extirpated” in that region. If there are no individuals anywhere then the species is considered “extinct.” Our goal is to avoid extinction by putting birds back into the wild in areas where they have disappeared from their historic regions.

Bird Species in Danger Increases Daily

There are over 9,900 known species of birds. One hundred and twenty-eight (128) have already become extinct – lost to the world forever. Whether in danger of extinction throughout all or a significant portion of its range, the

number of bird species in danger is increasing as the world's human population expands.

This is why population stabilization for critically endangered bird species is so important. Although what is considered a critical threshold is different for different species, the basic biology is the same. Once a population drops below this threshold number of individuals, based on species characteristics, habitat conditions, environmental factors, and other stressor factors, the species is no longer self-sustaining, and population decline continues.

Irreversible Impacts to Struggling Species

A significant factor affecting action now in saving endangered bird species is that conservation biology tends to take a hands-off approach when rapidly changing real world conditions warrant earlier intervention. Changes in regional economics or politics, hurricanes and other natural disasters, introduction of predators or disease, habitat encroachment, etc. all can have sudden impacts on struggling species. And once the birds are gone in the wild, the reality has been that they are likely gone forever. The last Passenger Pigeon died in the Cincinnati Zoo on September 1, 1914, without any effort to secure the [species'](#) future through captive propagation.

Unfortunately this is a much larger problem than the public may realize. For example

- Approximately 80 percent of wild parrot species are endangered, threatened, or vulnerable to become threatened. About one third of the 350 species of parrots are considered threatened or endangered.
- The Echo Parrot (*Psittacula echo*) was down to 12 individuals in 1990 before captive breeding and double clutching wild pairs (stimulating the pair to immediately lay again by pulling the first eggs for captive rearing) brought their numbers up to approaching 300, 20 years later.¹
- The Puerto Rican Parrot (*Amazona vittata*) population dropped to an estimated 16 individuals in 1972, before serious efforts were made to protect them. In 1989 the population was reduced from 47 to 23 by a series of hurricanes, before most of them were placed into a captive breeding program. Currently the population is up to nearly 350 and growing steadily toward the goal of 1000. This project is now successfully using domestically prepared birds in the form of two free-flying flocks with a third flock in development.²
- In 2009 researchers studying the Spix's Macaw (*Cyanopsitta spixii*) in Brazil stated that they “were not there to protect the last Spix's Macaws but to study them.” When the last Spix's Macaw

disappeared from the wild, those same researchers lost their government funding because the bird was considered extinct in the wild. (Today there are only about 85 Spix macaws remaining in the world, most held for breeding in one collection.)



[Spix Macaw, Brazil](#)

critical to keep enough individuals alive to insure genetic diversity, breeding viability, and survivability against disease outbreaks, predators and loss or changes in food sources. Establishing captive populations can be critical as backup genetic stock or for providing breeding stock for reintroduction projects.

Captive Breeding and Genetic Diversity

Captive breeding has been viewed as a last resort, often leaving genetic diversity as lowest on the priority list. For example it is currently believed that the low viability, about 20% hatch rate, in domestically bred Spix macaws is due to past inbreeding. It becomes even more difficult to reestablish a species once the number of individuals gets too low to maintain genetic diversity. And though genetic diversity can be maintained in captive populations, in the wild this requires a certain number of individuals to maintain group survival. There are only about 100 Orange-bellied Parrots (*Neophema chrysogaster*) left in the wild in Australia. Researchers there believe the species will be extinct within the next 5 to 10 years leading some to abandon this species as hopeless.



[Orange-bellied Parrot](#)

While traditional bird re-introduction plans are occasionally considered and/or attempted in order to stabilize critical bird populations, these efforts do not always succeed because of poor re-introduced bird survivability. As such, re-introduction efforts are not used as often, or as successfully, as they could

be to help stabilize endangered populations. The reason is that efforts to reintroduce species are often created without an appropriate knowledge of key behavioral systems and usually result in only a small number of birds being released into the wild. Frequently, the few birds involved are released at an especially vulnerable age or physical condition and many fall to predation or illness prior to reaching breeding age.

For example, the Arizona Thick-billed parrot projects released captive raised birds without what would have been adequate behavioral systems integration. With unidentified upbringings and after living in a cage most of their lives, these birds were expected to suddenly find food in the wild, physically keep up with wild flock mates, and automatically interact as a flock for protection against predators. The result: predators ate many of the birds within a few days of release.

Thick-billed (*Rhynchopsitta pachyrhyncha*) parrots that once lived in Arizona and New Mexico are gone from the U.S. except for approximately 200 individuals remaining in zoos and private ownership. U.S. laws have caused their numbers to decrease in captivity by making it illegal to sell Thick-billed parrots across state lines without [difficult-to-obtain](#) Fish & Wildlife permits. The result is decreasing incentive for breeders to breed hard to sell birds. [BRI](#) estimates that only about ten baby chicks are being raised every year in the U.S.



[Arizona Thick-billed Parrots](#)

In Brazil the last Spix's Macaws were studied without active protection until the Spix's Macaw became extinct in the wild. The remaining single collection has been potentially endangered by exposure to disease. Today, Ryan Watson, the person in charge of the Spix captive breeding program wants to use a similar preparation and release approach as he used as part of the Echo Parrot project but is encountering resistance from various other decision makers in the project.

[BRI](#) believes that reintroduction programs for endangered species produce the fastest increase in critical wild populations. However, reintroduction programs based on domestic breeding without integration of behavioral training is [ineffective](#)³ This can be illustrated by the poor results experienced in Arizona with the attempted reintroduction of the Thick-billed parrots. According to the Arizona Game and Fish Department, *"Reintroduction effort started in 1986 using confiscated birds. Attempts to maintain the reintroduced flocks were terminated in 1993 due to an excessive mortality rate among the ill adapted released birds"*.

For reintroduction programs to work, domestically raised birds must be prepared behaviorally to survive in the release environment. The challenge is that the behavioral preparation approaches showing the most promise for success are new, and not [always](#) accepted by researchers.

Promising Reintroduction Methods

[BRI has](#) spent the past twenty years training captive raised parrots to fly in some of the most challenging environments available. This has [allowed BRI](#) to develop insights into how to [implement bird behavior-based training programs](#) not usually available to field biologists. [This is critical because BRI](#) knows that reintroduction programs can be effective provided they include adequate behavior training.

Recent success raising parrots for a free-flying lifestyle strongly suggests there is a simple and effective way to raise and prepare parrots, including Thick-billed parrots, for release into the wild (Biro, Hartman and Layman, 2009). For the past four years [BRI staff](#) has been flying 25 macaws, conures, cockatoos, senegals parrots and amazons nearly every day, all day, all year [in a predator rich environment with](#) zero losses to predation. The birds fly as a flock, evade predators [and](#) post sentries when eating. Many are now reaching sexual maturity and searching out and defending nest cavities. Some have hatched eggs. [These results are critical to future reintroduction strategies when you consider](#) that many of the 40 [plus](#) domestically raised Thick-billed parrots from the previous projects of the 1980s and 1990s were killed by predators within two weeks of release.

In July of 2011, visiting conservation biologist Bennett Hennessey (of the Bolivian NGO Armonia, Blue Throat Macaw and Red Front Macaw projects) observed some of BRI's domestically prepared birds successfully use their advanced predator evasion skills during two separate interactions with peregrine falcons.

[How You Can Help](#)

[Become a supporter of Bird Recovery International by making a donation that helps further our work in saving bird species on the brink of extinction. For more information on BRI's non-profit programs, and to make a donation, please visit \[www.BirdRecoveryInternational.com\]\(http://www.BirdRecoveryInternational.com\).](#)

About Bird Recovery International

Bird Recovery International is a non-profit organization that works to assist threatened and recovering bird populations around the world by supporting research, reintroduction programs and habitat conservation initiatives that focus on immediate bird survivability and population stabilization. Bird Recovery International does this work through a combination of public education, training, and direct support of scientific field and research projects.

[BRI's "living" results demonstrate that its \[BRINK™ method offers a viable approach for successful bird\]\(#\) reintroduction, \[and that such\]\(#\) programs can be a successful tool in stabilizing bird populations, provided these efforts incorporate age appropriate behavior based domestic preparation strategies and techniques to increase survivability to breeding age. These strategies encompass breeding, training, housing and release efforts. Establishing location specific appropriate health screening strategies and protocols \[are also required\]\(#\).](#)

[The overall goal of the \[BRINK™ approach is establishing\]\(#\) reintroduced birds \[that\]\(#\) reproduce.](#) We use our knowledge of parrot physiology, ethology and operant conditioning to select each element of the BRINK™ approach with one goal in mind, the safety and survival of the birds [to breeding in-situ](#). Success is defined as the bird completing its natural developmental processes, including acquisition of instinctive survival skills, such that the birds can survive and reproduce in the released environment.

[BRI](#) believes that if [its](#) approach is incorporated into current and new bird conservation projects, biologists will gain valuable time to continue to study endangered and threatened bird species, and thus be able to develop long-term conservation strategies.

1

http://www.priam.com.au/ppc_conservation/Psittacula_echo/echo.html

2 <http://www.fws.gov/southeast/prparrot/>

<http://www.lafeberconservationwildlife.com/?p=942>

3 Enkerlin, Macias, Menterrubio, Cruz and Venegas, 2001.