Global Re-introduction Perspectives: 2013

Further case-studies from around the globe

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Re-introduction of vinaceous Amazon parrots in the state of Sao Paulo, Brazil

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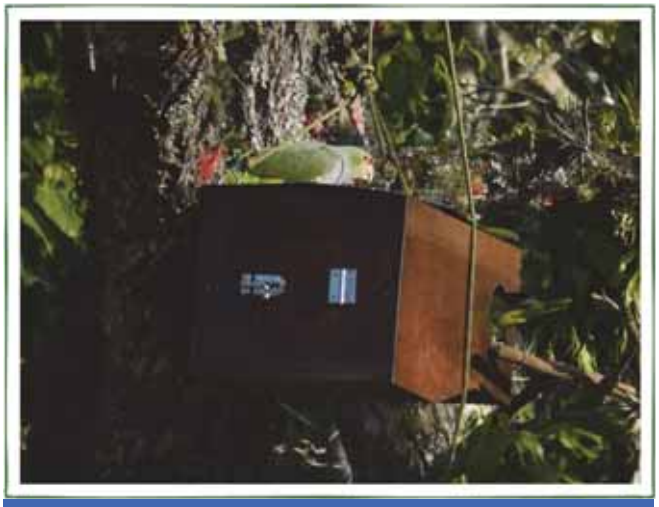
Introduction

The vinaceous Amazon (*Amazona vinacea*) is an endemic species of the Atlantic rainforest and submontane mixed regions. In the past it was widespread through eastern South America, and now isolated in small islands of habitat due to heavy deforestation coupled with capture for the illegal trade. An approximate number of less than 2,000 individuals remain in Brazil, and populations in several states are close to extinction (Birdlife International, 2013). The species is classified as CITES I and listed globally Endangered by the IUCN as well as nationally and critically endangered in the state of Sao Paulo (Birdlife International, 2013; Livro Vermelho, 2008). From July 2011 to the present moment groups of vinaceous Amazons were selected to participate in a re-introduction in a private protected area in the Atlantic Rainforest, at the state of Sao Paulo, Southeast Brazil. In this area the species had been declared extinct for at least 30 years and an effort for re-establishing it in its historical range is being carried on. Birds were chosen according to their ability to fly, behavior, physical and health screening. All were confiscated and previously maintained as illegal pets having undetermined ages, although considered as adults based on their sexual behavior.

Goals

- Goal 1: Re-introduction of the species in its historical range.
- Goal 2: Gradual adaptation of individuals that would remain long enough around the release area receiving supplemental food in order to be self sustainable in the wild.
- Goal 3: Birds forming a local population and remaining in the area long enough to form flocks before migrating to other regions of the Atlantic Rainforest.

Released bird in the wild © Wallace & Wittkoff



Pair inspecting a nestbox © Wallace & Wittkoff

- Goal 4: Formation of pairs and breeding attempts.

Success Indicators

- Indicator 1: Survival of most released individuals forming an independent flock.
- Indicator 2: Use of wild food sources demonstrating not being dependent of supplemental feeding.
- Indicator 3: Proof of successful fledging of offsprings in the wild.

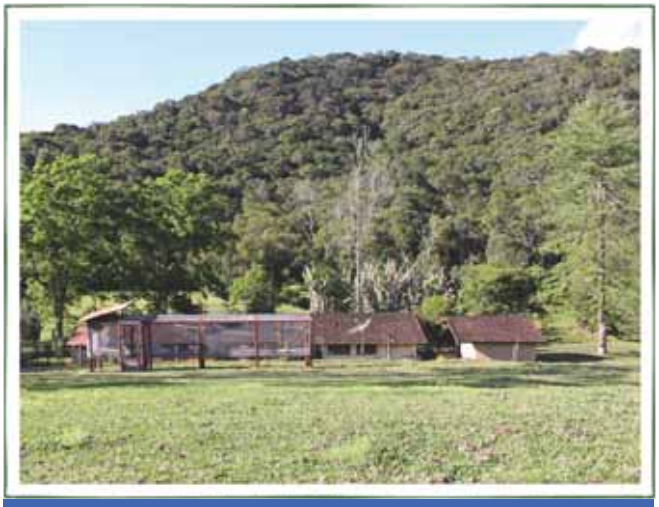
Project Summary

Feasibility: The chosen region for the re-introduction is located inside the Lymington Foundation a 36 ha property of protected restored habitat which promotes captive breeding of endangered parrot species as well as conservation initiatives at this area and elsewhere. The Foundation area is also located within the original distribution range for the species. The surrounding areas are not subjected to agricultural or increased human expansion pressures and a good relationship with the neighboring communities is maintained.

Implementation: Birds were subjected to a quarantine period and health exams and later gradually installed in groups in a intermediate sized flight (3 m^2) in order to get used to the temperature, sights and sounds of the area as well as to observe their behavior (pair formation and antagonistic interactions that would need intervention). Once observed they were adapted and passed through a new series of health checks, the groups were installed in a large suspended flight (12 m long) for flight training and presentation of wild food types found in the region. Branches of local trees with fruits and pods with varying diameters and with their respective leaves are offered frequently and set up in a way to force birds to fly to them and use as perches. This is especially important for heavier birds of Amazon parrot size and up to learn how to select an appropriate branch that will support their weight in order to land safely and how to reach food in thin/hard to reach braches.

Observation of each individual's behavior, weight and breast muscle development checking allowed selection and release groups of 3 to 4 birds each time for easier follow up instead of releasing many birds at once which could create some difficulties on visual monitoring. These birds are closed in a 3 m section of the flight for a few days before opening the release hatch in the early morning offering food at this platform as well on elevated feeders set in front of the flight path exit.

The door is closed at night (to avoid the entrance of predators) with any birds that wish to come back to sleep inside and opened the next morning. When the group seems to be adapted, another is prepared also taking into account the climate conditions (not heavy rainfalls or release in a time where wild food sources might be scarce such as winter in this region). Artificial nestboxes were also set up around the release area and immediately called the bird's attention.



Release flight and habitat © Andre & Saidenberg

Post-release monitoring: Visual monitoring is done daily especially during feeding times (morning and late afternoon) and birds are usually first located by vocalization. More intensive searches are performed especially on the third day if a new bird has not returned to feed. Since the ex-pet background creates some additional difficulties on some individual's adaptation, any bird that seems to have difficulty to come back is offered food by the means of a mobile feeder located close to the tree where it stays or if necessary the bird is captured and brought back to the release area until it gets used to the surroundings and know when to come back for supplemental feeding if necessary. A fact which usually does not have to be repeated more than twice. Since distinctive color markings cannot be easily used for this species to identify each bird individually (e.g. feather color combinations) every individual can be identified by color marked with imping of a central tail feather from a different species (e.g. golden conure, white swan, etc.) as well as with stainless steel leg band (although of difficult identification from distance). Anodized aluminum colored bands were employed recently in a number of birds with success. Monitoring includes the immediate vicinity of the property as well as reports from neighbors and inhabitants of the closest village (7 km away). After one and a half year post release (June 2012), 16 out of 21 released birds could be accounted at the area on certain days although they have been seen more and more infrequently. The individuals have either joined a large flock or stay in small groups visiting the release area only occasionally and being seen eating wild food sources with no dependency on the supplemental feeders. Breeding activity (copulation) was frequently observed with three pairs during the start of the breeding season (September until March) and one pair laid three eggs in an artificial nestbox with one embryo not developing more than one week, one broken, and one infertile. Another pair laid fertile eggs in a dead palm tree hollow successfully raising 3 fledglings.

Major difficulties faced

- Intensive pre-release preparation as well as the need to evaluate each bird's necessities considering their ex-pet background requiring intensive follow up post release to intervene if necessary to guarantee a high percentage of survivability.
- Keeping track of newly released birds on heavily forested and steep terrain with no available open tracks.
- Territorial aggression by established birds toward new candidates during breeding season required to temporarily recapture of a few previously released birds until the new ones had adapted and could be part of the flock.
- Political obstacles created by colleagues and groups who disregard previous re-introduction examples all around the world and consider it as a "novelty" and therefore impractical carrying too many risks.
- Interference by other species such as invasion of nestboxes by Africanized bees and wasps requiring removal and use of safe insecticides. Nocturnal predation of at least one parrot by a big-eared opossum (*Didelphis aurita*), and the presence of crab eating foxes (*Cerdocyon thous*) around the area predating other free ranging birds in the property during the day. These latter species currently lack their own predators for population control due past extinctions and have become extremely common as the new top predators.

Major lessons learned

- For some birds it was found useful to temporarily limit the complete flight ability to fly too far from the release area in the first days where some might get disoriented by plucking two inner flight feathers from each wing which still leaves plenty of flight ability. These grow back within a month when the bird is fully adapted to the surroundings.
- Necessity to prevent access and control common predators by the means of adding plastic sacs wrapped around tree trunks and supplemental feeder's poles covered with grease to prevent climbing predators.
- Importance of habituating parrots in captivity not to perch or forage close to the ground (high perches and suspended feeders in the acclimation flight).
- Capturing and relocation of these common predators.
- Necessity of educating local people to the importance of the release and getting their cooperation.

Success of project

Highly Successful	**Successful**	Partially Successful	Failure
	√		

Reason(s) for success/failure:

- Successful establishment of the species in the area with reported breeding attempts as well as fledging of offsprings.
- Careful pre release preparation (flight training, health checks, and wild food presentation) as well as attention on each individual's necessities (removing birds from the main flight that are not being able to compete with stronger/

more aggressive ones, and re evaluation to add them back to the main flight at a later stage).
- Guaranteeing that for the critical first 3 days after the release the birds are able to have access to food and water and learn their way from the property area back to the feeders.
- Attention to predator control.
- Training in captivity to be able to be competent in flight abilities, recognizing wild food types as well as not to look for food at the ground level.

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