Macaws are found only in the new world, stretching from Mexico through Central America, across South America down to northern Argentina. The diversity of macaws is greatest in the rainforests of South America, where, in some places, five species occur together. From this humid starting point, several species have evolved out of the forest to specialize on other habitat types in South America. Not surprisingly, these more specialized macaws, adapted for a more specific habitat, comprise the majority of the threatened, extinct in the wild or extinct macaw species.

Two of these macaw species with highly evolved specialized lifestyles exist exclusively within Bolivia’s political boundary. The Blue-throated Macaw (Ara glaucogularis) is found only in the lowland seasonally flooded savannas of Beni in northeast Bolivia. The Red-fronted Macaw (Ara rubrogenys) is found in the dry Andean valleys mostly in the department of Cochabamba in central Bolivia.

The Andes Mountains split Bolivia down the center from north to south. For most of South America, the eastern slope of the Andes is a moist, rich place, thick with epiphytes and bromeliads that make up the dense cloud forest habitat. In Bolivia, the Andes cut out to an elbow near the center of the country, dividing weather patterns; moist to the north and dry below.

The Eastern slope of the Andes below the elbow, demarcated by the city of Santa Cruz, is a region as close to the definition of desert that one can find in Bolivia. This area is the most diverse in the country for cacti. Plants here are well adapted to extended dry periods. Diversity and abundances of other plant life are severely reduced to the point that large expanses of emptiness are the norm. This hilly area of frequent silence is also the selected home of the specialized Red-fronted Macaw.
Considered by some as the most beautiful of all macaws, the Red-fronted lives in this arid environment surviving on seeds from seedpods of the Soto tree and river edge vegetation. One can walk the desert for days without seeing evidence of this handsome creature but there are watering holes and breeding cliffs where one can spy into the life of this stunning macaw.

The Red-fronted Macaw has a distinctive life routine. Around October each year, breeding pairs seek out cliff holes along the deep cut river valleys of Rio Caine, Mizque, and Pilcomayo. The species would prefer to nest in a colony but because of its dependence on physical holes in the hard rock, on occasion, a single solitary nest must suffice. The macaws breed on these cliff faces along with the dry valley-adapted Cliff Parakeet (Myiopsitta luchsi), considered an endemic species closely related to the Monk Parakeet but with a far cleaner appearance — with a clean white throat. The Turquoise-fronted Parrot (Amazona aestiva), Blue-headed Parakeet (Aratinga acuticaudata), Mitred Parakeet (Aratinga mitrata) and Yellow-chevroned Parakeet (Brotogeris chirichiri) also join the macaw in the area but they are more dependent on the river-edge vegetation.

During the breeding period there are also groups of non-breeding Red-fronted Macaws that forage in many different areas, often seen flying high in the sky traveling many miles each day in search of ripe forage. Around May, most of the chicks have fledged and travel with their parental pair for the rest of the year. Outside of the breeding period the Red-fronted Macaw becomes very gregarious, forming flocks as large as more than a hundred individuals. In the last few decades these flocks frequently forage on the turned remains of peanut crops along the river-edge in August and September.

For at least a thousand years, the Red-fronted Macaw has seen its river-edge habitat radically change as it became highly cultivated by the indigenous people in the area. Through development and better road access to city markets, this has continued exponentially in the last hundred years. Much of the river-edge has been cultivated, leaving less natural forage for the Red-fronted Macaw. Corn has become very popular and is fed on by the macaw; but the quantity of available corn has also caused the numbers of Blue-headed and Mitred Parakeets to explode, bringing those species to plague proportions and guaranteeing their place at the bottom of the hearts of the local people.

Thankfully, the Red-fronted Macaw managed to adapt and find its niche in this new difficult terrain. From contemporary stress factors beleaguering the species, we can only assume that today’s population of the Red-fronted Macaw has been severely reduced from its highest natural state population. That means when we look at our earliest available population data, say for instance from the 1950s, we don’t know how that relates to the population of Red-fronted Macaws that lived in the area prior to human development of the habitat.

In addition to the stress introduced by radical habitat changes, the international pet trade demand starting in the 1970s reduced numbers to the point where the species is now considered in danger of extinction according to the World Conservation Union (IUCN) and BirdLife International.

Bolivia has banned the trade of wild animals but the capture of individuals for the pet trade remains the biggest threat to the species' immediate recovery. For instance,
a group of Bolivian men arrived in one community, we
were told, with a document declaring they were from the
Santa Cruz Zoo and had permission to collect the Red-
fronted Macaw. The document later was determined to be
false. To provide the local people knowledge about what
is going on and what needs to be done, an educational
component plays a key role in our program now. Today,
the same fraud could not be perpetrated because the
locals know better than to allow it.

Unfortunately, there are reports of foreigners arriving
in their village to offer money for the Red-fronted
Macaw. In a 2005 study by Armonía of the illegal pet
trade in the city of Santa Cruz (to be published in Bird
Conservation International 2007) we found over 30
individual Red-fronted Macaws traded in one year. It is
safe to extrapolate that to 100 individuals caught and
traded throughout Bolivia that year. With a population
under 1500 individuals, a continued capture rate at these
numbers soon would reduce the species to extinction in
the wild.

In 2003, Asociación Armonía, the BirdLife partner for
Bolivia, recognizing the importance of helping this species,
sought financial support for proposed conservation
actions it developed. Because conservation funding is
sparse, Armonía set out to determine the most efficient
applications of available funding. Through intelligent
planning, we sought the greatest productivity in the field.

For Armonía to achieve our goals and hopefully preclude
any wasteful false starts, the most important first step was
an evaluation of the Red-fronted Macaw population and
determination of the threats to it. This current data would
serve as the basis for future conservation decisions.

When we started, no one really knew how many Red-
fronted Macaws there were or what their range was.
We created a proposal with Felix Huaquipa to conduct
local interviews defining the range of the species and its
breeding areas. This project and the activity that launched
the Red-fronted Macaw conservation program were
supported by a much-appreciated anonymous donor.

With later financial support from American Bird
Conservancy, we were able to expand on Felix’s local
information study by conducting a breeding bird survey of
the Red-fronted Macaws. There are many ways to survey
birds, like mist netting them as they migrate over a region,
but the best data to quantify populations is a breeding
bird survey — which one can easily and reliably compare
year to year in a monitoring program. By 2005, we knew
most of the accessible breeding cliffs for the species but
did not have an idea of the numbers in the deep river
valleys. To complete the study, Armonía researchers
paddled down Rio Caine and Rio Mizque through the
turbulent water to mark potential and active nesting sites.

That same year, thanks to support from Ben Olewine and
the Noemi Lupka Trust, The Royal Zoological Society
of Scotland Conservation Fund, the Scottish Zoological
Society, Twycross Zoo and CEPA (Conservation des
Espèces et des Populations Animales), we were
able to start strong conservation measures. Abraham
Rojas joined the conservation program at this point to
coordinate its activities and invigorate the program with
his passion. Utilizing solid data from the population
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study it was clear the species had three main central points: Rio Caine, Rio Pilcomayo and Rio Mizque.

Both Rio Mizque and Rio Caine, in proximity to large cities, had populations already seriously depleted and in continual threat. In the Rio Caine watershed there was an American Non-Government Organization (NGO) called Food for the Hungry International (FHI) working in the area. FHI is a religious organization that has received support from the U.S. government through the USAID Title II program since 2002. During a USAID evaluation of the program, they found that the development support and evangelizing of FHI in indigenous communities was actually destroying the habitat of the Red-fronted Macaw. Consequently, USAID financially assisted this religious human-development NGO in beginning a field biology wildlife conservation program on the Red-fronted Macaw in the Rio Caine watershed. The Armonía conservation program decided that the best place to start serious conservation efforts was with the threatened population of the Red-fronted Macaw in the Rio Mizque area. In the area there exist several breeding cliffs. It was known chicks were removed each year from these nests for the illegal pet trade. Thankfully, with the continued support for several years now by Ben Olewine, Noemi Lupka Trust, CEPA, Royal Zoological Society of Scotland Conservation Fund and Twycross Zoo, we were able to develop a multilayer conservation program.

Conservation is a difficult task. One wants to be as productive as possible with the limited resources that are available; conducting actions that have an immediate impact but that are also long lasting. Many times what needs to be done is not that clear. Many times what may work in one area with one community might not work in another. Because we had faithful supporters, we were able to look more at the long-term and to create a program that requires several years of implementation but should produce long-term conservation forever.

It was clear from the beginning that we would have to work with the local communities. They were the ones who could realistically save the Red-fronted Macaw. If they understood the importance of the species, they could protect it, especially as it lives on their land. This went through a long period of development, which Abraham patiently conducted through many meetings and mini workshops. We started with an environmental education program and assisting the local communities with the idea that they would help us by protecting the Macaw. After the first year’s work it became obvious that, besides being fantastically beautiful, the Rio Mizque breeding cliff near the communities of Amaya, Perrereta and San Carlos was an important site.

In 2006, we constructed a small rustic ecolodge on the other side of the river from the Red-fronted Macaw breeding cliff. We only had funds to construct a chalet style house with three bedrooms, two bathrooms, a simple kitchen and a veranda facing the breeding cliff. The lodge has worked as a focal point of our conservation activities in the area, being a base for education programs, reproduction monitoring, a doctor/dentist visit to the local communities, a Christmas clothing and toy donation and for meetings. The site for the ecolodge is fantastic, providing a wonderful experience for tourists. The ecolodge is also near an archaeological site, which is another point of interest for tourists.

The ecolodge has formed a catalyst to promote other conservation programs in the area. ForPlanet, an Italian conservation group, is supporting the program in order
to purchase the area around the cliff as a reserve for
the Red-fronted Macaw. Also, WWF-Italy has offered to
support our education program in the entire area and we
are developing such actions as tree planting with the local
community and a honey program that demarcates areas
of the forest that will be fenced off from the devastating
effects of foraging goats.

The ecolodge is growing in popularity. Over the next
two years, we hope that it will generate enough support
to sustainably protect the area and assist the local
community. But even at this beginning stage, we feel
confident that no one in the community would permit
someone to take chicks from the nests.

These actions along the Rio Mizque watershed have
stimulated other regional ecotourism actions and
requests for help that we are attempting to satisfy. With
our continued support for the next few years to make
sure the ecolodge runs smoothly, we believe the Red-
fronted Macaw along the Rio Mizque will be protected
and safe for the future. However, given local poverty and
the constant demand for the bird through the illegal pet
trade, we need to establish a stronger program in the Rio
Caine area, probably repeating our successful actions in
the Rio Mizque area. Red-fronted Macaws continue to
enter the local pet trade through Cochabamba and we
suspect they must be coming from this area.

We are presently seeking financial support to conduct
these conservation actions in the Cochabamba area. All
of our conservation work totally depends on the financial
support of individuals and institutions. Armonía’s field
 coordinators always have far more creative, effective and
productive conservation action ideas than we can ever
financially act upon but we hope to at least accomplish
the priorities.

I know Abraham has several excellent conservation
ideas that he wants to put into action. We want to
develop the program in the Rio Caine area by evaluating
and monitoring the illegal pet trade, conducting a high
profile education program explaining to everyone in the
area the importance of this threatened Bolivian Macaw
and reviewing the breeding sites and existing threats and
possible solutions.

The success from the Rio Mizque area gives us a clearer
idea of what needs to be done in the Rio Caine area. It
provides the time period and the stages necessary to
complete the long-term, sustainable conservation of the
species. The nice part is that such a goal, with support
and a little elbow grease, is obtainable and that we can
see, still in the far future but there hovering ahead, a day
when the Red-fronted Macaw is no longer threatened
with extinction.
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Bennett Hennessey is Executive Director of Asociación Armonía, the BirdLife International partner in Bolivia. Armonía has 14 programs and projects working for avian conservation. http://www.armonia-bo.org/