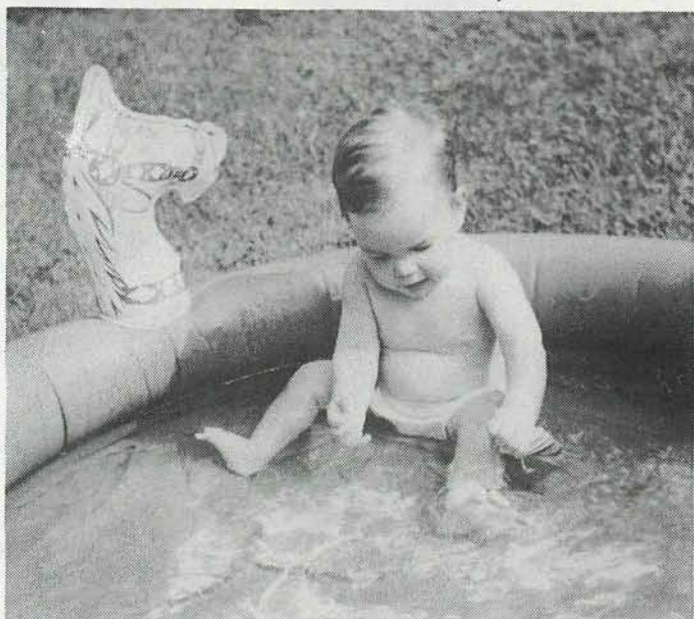


Interview:

Charles Munn



Charles Munn, considered the world's foremost authority on macaws, is an Associate Research Zoologist for Wildlife Conservation International, a division of the New York Zoological Society, with 83 projects in 37 countries. Munn conducts field research on endangered species and ecosystems, trains young Latin American scientists and advises local conservation groups and governments on conservation policies. Munn has spent eight months every year for the last 13 years doing field research in Peru. He is also a consultant to the McArthur Foundation presently involved in Manu National Park.

When did you start your work in Peru?

I came to Peru with John Terbourgh in August 1976. John had been my advisor during my senior year at Princeton when I was a biology student working on birds. I have always been crazy about birds ever since I was a kid. I wanted to work with Terbourgh because he was doing the most field-related zoology and biology. At the time, I was studying mixed flocks in the U.S. and around Princeton. I banded, marked and followed these flocks to study their ecology, social behavior and so forth. Then, one day, Terbourgh asked me if I'd like to see bird flocks in the Peruvian jungle. He said they were unbelievable. His own project dealt with monkeys, so he really didn't have time to study birds except to mark a few. Anyway, he suggested that I come down with him and have a look.

How did that compare with your work in the U.S.?

Well, it was just mind-blowing...the diversity! The western Amazon has the highest diversity of just about everything in the world except, I guess, salt water fish. There are over 500 species of birds in a few square kilometers. That is pretty close to the total number of species in the United States and Canada. You have your work cut out for you. When you're looking at mixed flocks in the jungle, there are so many species it can take forever to become familiar with them all. It's the ultimate bird watching experience -- a constant show. And you never know what you're going to bump into next. That's what is so incredible about a pristine jungle. The first time I was out following a flock, I ran into a jaguar! Pretty exciting. Almost always, everyday, you encounter something unexpected.

Where did you go from there?

I finished my undergraduate thesis

and entered graduate school in Oxford, England. But I was disappointed with the habitats I had to work with, and after a trip to Panama, I realized I wanted to go back to Peru. I definitely didn't want to stay in England. In spite of the work I'd done there and in Poland, my heart was still in the jungle.

What happened next?

I returned to Princeton to work with Terbourgh. He was busy studying monkeys and other things. So I worked in that area, received my doctorate in May of '84, and two days later left for Peru. (I'd done that before. I mean, two days after I got married in July 1982, my wife and I went to Peru.)

When did you start studying parrots?

In the fall of '83, when I was still finishing my flock work, I had already started on parrots, a project financed by the New York Zoological Society. The Society is interested in rare,

endangered, or little-known, spectacular species and, in a few cases, in ecosystems that are spectacular in and of themselves. As a rule, the Society gets involved in this type of conservation only because few Third World countries have the resources or the expertise to save a rare and unique ecosystem. Even in the US preserving ecosystems hasn't really captured the public's imagination. It's easier for people to focus on a specific animal. Once they understand that an animal is endangered, they can better appreciate the need to save its habitat. The Society calls this the "flagship species technique," and it has proved successful in reaching people.

Why did you concentrate on macaws?

At the time, no one had done any work on macaws, which are species of parrots. Macaws, of course, are very interesting biologically, but they also happen to be, let's face it, some of the most spectacular birds in the world. They are only found in the New World tropics and to many people they represent the South American jungle. There are 18 types of macaws; eight of these are found in the Madre de Dios Department of Peru. This, of course, is a world record like everything else in that area.

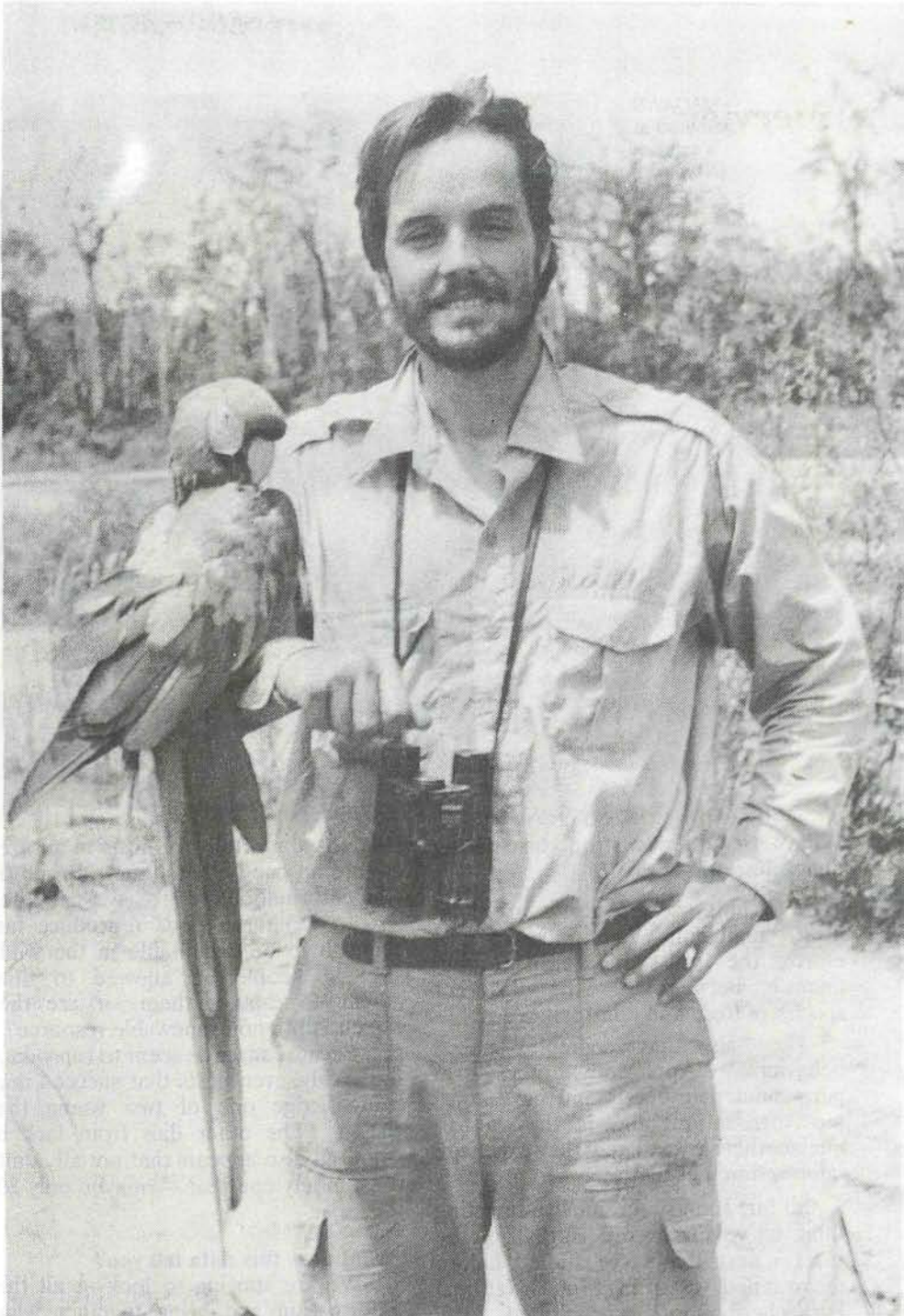
What have you learned up to now?

Parrots are one of the bird families that have a large brain weight to body weight ratio -- in other words, they have more brains per ounce than most other birds.

They also have very complex ecologies. For example, they eat a rather wide variety of fruits and seeds, especially seeds. Parrots living in a forest with so many trees and plants have to learn a lot to exploit their environment efficiently. To survive in a jungle where there are 600-700 species of trees, they have to know what they're doing, -- where to nest and what to eat. When fruits and seeds are scarce, as in July-September, they really have to know how to make a living. That means that they may have to put many, many square kilometers of forest into their little on-board computers, and they probably know how to share this information with other macaws.

What is known about the ecology of macaws?

Macaws don't disperse seeds. They destroy seeds. This means they don't



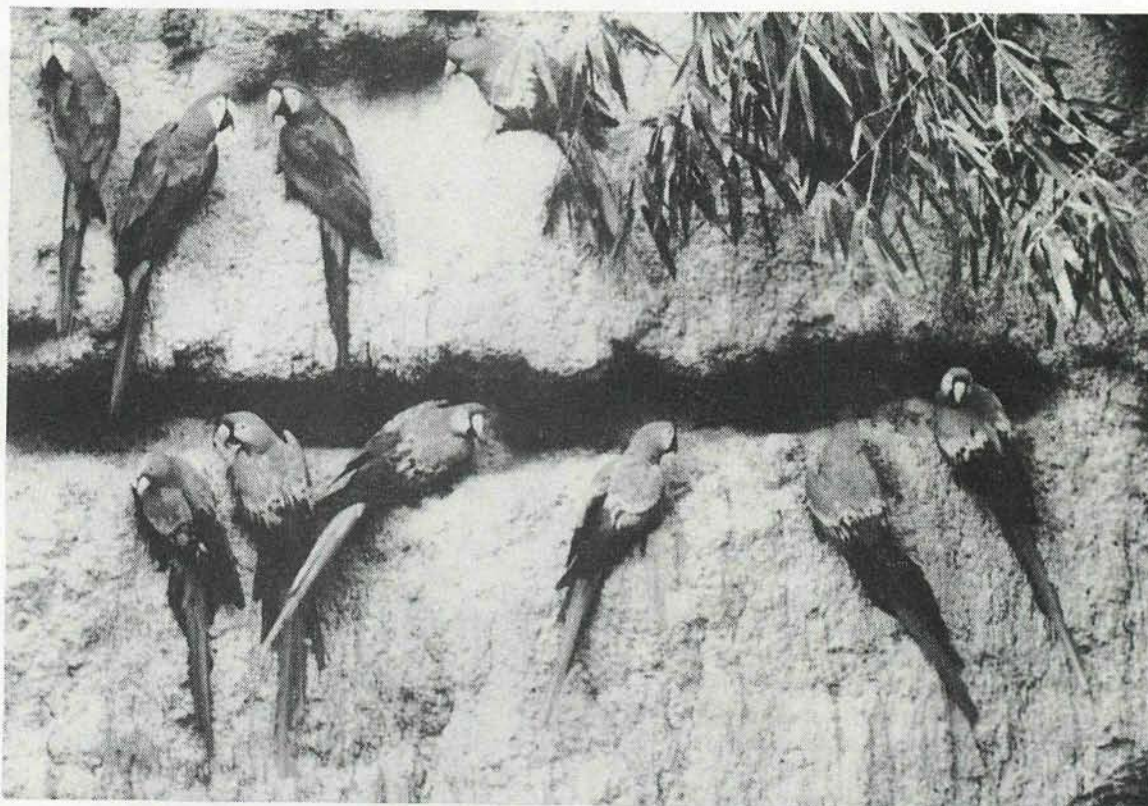
DR. MUNNN in Manu National Park with a scarlet macaw. [New York Zoological Society Photo]

swallow the seed whole and then regurgitate it or pass it intact somewhere else like some other animals. Sometimes they'll eat the pulp and drop the seed below the tree, which isn't very helpful. But macaws, like other parrots, are able to manipulate objects with great dexterity. They can deal with even the most minute seed, holding it in the foot and rolling it against the beak and tongue. By way of example, a big scarlet macaw can peel an apple seed.

I had a scarlet macaw that we rescued from starvation in Cuzco. The bird was crazy and will be bonkers for

the rest of its life, but it was a great research assistant, because it was a living demonstration of just how well a macaw can process food. We gave it a prune one day, just out of curiosity. Well, like all parrots it wanted to see what the seed was like. It didn't waste time with the pulp, because pulp is relatively poor in nutrients. It went straight to the pit and in about ten seconds had the pit cracked and the seed inside peeled and eaten. That is pretty darn good. It would take me several minutes to do the same thing, even using special jewelers' instruments.

MACAWS
gathered at
a salt lick
[New York
Zoological
Society
Photo]



What else do you find fascinating about macaws?

Well let's see... Macaws are long lived, intelligent. They have to memorize the forest and learn to distinguish between all the different species of toxic and non-toxic seeds.

They also have complex social behaviors. Apparently, they form permanent pair bonds and have complex vocalizations, that is, they talk to one another. Most likely they exchange information, but that's hard to prove.

So far, I guess the most interesting thing we've discovered is that of the first ten nests that we've studied, half of them failed, even in Manu National Park where hunting is prohibited.

Why is that?

The best nest sites are near rivers where food is plentiful. But floods often carry away trees near the river. Nests are lost. At any rate, this is how it looks to us, but we really don't have a good handle on it yet. Then, too, macaws probably suffer from fungal diseases and bot flies, especially during the wet season when they're nesting. There are nest predators, too.

We'll be studying 23 active nests this year in the western Amazon, one of the richest areas in the jungle. We hope this will give us a better idea of

the actual mortality of nests in an area where no one bothers them. Based on the information we get, we can then ask -- Do these birds reproduce fast enough to be exploitable in the wild? Should people be allowed to hunt them, to capture them, or are they essentially a non-renewable resource?

Because macaws seem to reproduce so slowly, even nests that succeed may only fledge one of two young that hatch. The other dies from lack of food. It also appears that not all adults nest in any one year -- maybe only 20-30%.

What does this data tell you?

We are starting to look at all this information and bring together what we know about macaws. Let's just say, perhaps, they nest every three years and lose their nests half the time, that they live 30-40 years and successfully nest 10 times during their lives, producing an average of 10-15 young. That's not much different from people, really. So we may be looking at animals that are selected to heavily invest in their offspring, because the area they inhabit makes it very difficult to reproduce. They may raise very few, but these few will receive a lot of care. And how long do the young stay with their parents? Who knows? Maybe years. They may be much more similar to humans than we think.

And if these birds rarely nest, if it's hard to bring off a successful nest in the rich western Amazon, in an area where no one bothers them, and where the soil is good and fruit is plentiful, then what is it like for them throughout the rest of the Amazon where the reproductive success of macaws may be very low? They may reproduce themselves so glacially slow that if you tamper with their nests, or with the babies or with the adults, in any way, by shooting or capturing them, then they'll disappear quickly; they'll melt away long before the forest is gone. And this is exactly what we're finding already -- macaws are missing in areas where the forest is still pretty much intact.

What comes next?

After this season, we'll have a good idea of how successful the nests are. This could be the most successful breeding area in South America, and based on what we find, we ought to be able to make some recommendations. We might actually be able to provide some hard facts to lawmakers. In the U.S., legislators are considering a bill banning the sale of birds caught in the wild, or perhaps wild-caught birds over a certain size, because the larger the birds, the slower they reproduce. Right now, New York state is the first of several states to ban the sale of wild-caught birds, and this includes macaws.

What are some of the problems with the sale of wild caught birds?

Macaws, especially, are popular pets. They are shipped out of many South American countries, but in only two [Argentina and French Guyana] is the export legal. There's a very high mortality in shipping -- perhaps 20% are lost, but this figure may go as high as 60-90%.

So, you're already destroying the wild populations, and then you're wasting the few that manage to survive by selling them to people who don't realize what they're doing.

Macaws make excellent pets, but only if raised from the egg. I don't recommend getting a large macaw unless you are prepared to put up with some real hassles. They're noisy as hell, and to be happy, they need to bite things.

What other "human" dangers do macaws face?

They are shot for food, though not frequently, and for their feathers, which are put on arrows sold to tourists who don't know better. Tourists should never, ever, buy an arrow that has parrot feathers, and especially not macaw feathers, because the birds are shot expressly for this reason. They are not plucked and released. They are shot.

Last year I ran into a fellow proudly carrying his bundle of arrows with macaw feathers after a trip to one of the jungle lodges. I can't help but tell fools like that that they really shouldn't buy such things. "Oh, no," he replied, "They keep the birds in captivity and pluck them." "Are you crazy?", I asked him. "Do you see any macaw farms anywhere?" If you are interested in seeing wild macaws, then buying arrows or anything with macaw feathers only helps wipe out the very thing you probably paid to come and see.

Why is there a market for these feathers?

It's a problem all over South America. Missionaries go out of their way to make it easy for Indians to sell what they can, and this includes arrows and other things with parrot feathers. They'll buy up what the Indians make and sell it for them. They even transport it around the country to sell it to tourists. Missionaries, in particular, make it possible for Indians to sell in quantity.

And macaw feathers aren't really a traditional part of native commerce.

They use feathers now because there's a demand. It is true that many Indian cultures create beautiful and intricate feather art, and it may well be true that feather trading took place centuries ago before any outside contact. But since contact with Europeans and subsequent disease, trade declined. It's only been in the last few years that trading in feathers has picked up. This is directly related to tourism.

What is the future of the macaw in Peru?

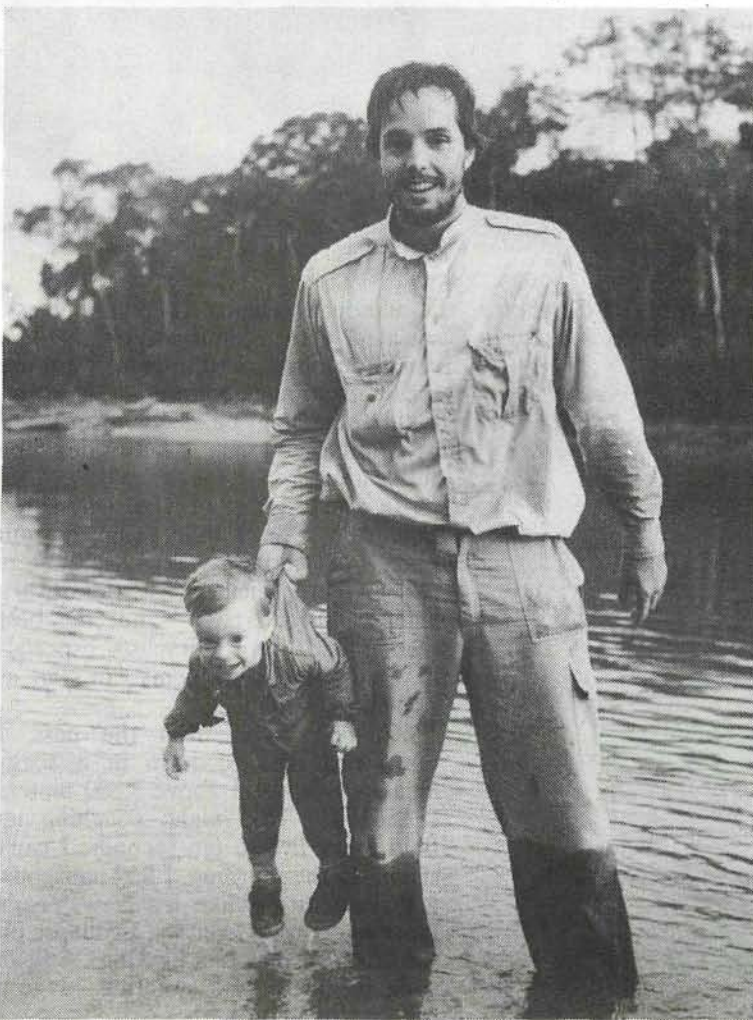
Peru has such a monopoly on macaw populations, it's unbelievable. There are at least 50 macaw licks -- areas of salt and mineral deposits found along river banks -- in south-eastern Peru. Each of these has anywhere from 100-250 wild macaws. To see one of these licks may well be one of the great natural spectacles of the world. It's simply breathtaking to watch flocks of macaws screaming and whirling about in the air. Strange that no one has thought to put a lodge across the river from something like

that.

But in fact, what happens is that these places get hunted out -- all the macaws are shot and killed before anyone realizes they might be worth something just the way they are. I personally know the location of about 20 such sites. The sooner that people begin to make money by taking tourists to macaw licks instead of shooting the birds, the better. Once a lick is shot out, it's no good anymore. Any birds that survive are smart enough not to return.

At some of the licks, the birds are so absurdly tame it's amazing. You can wander around the river bank with these magnificent creatures. There will be 70 on the bank and another 100 in the trees, all squawking, a mixture of brilliant colors -- it's just like Christmas time in birdland. []

Tax deductible donations to support Munn's macaw projects and other field work can be sent to: Wildlife Conservation International, New York Zoological Society, Bronx, NY 10460.



CHARLES Munn and friend.