

# Long Live the Parrot

This issue's contributor, **Anna Young**, received her PhD from New Mexico State University studying vocal learning, behavior, and social stress in budgerigars. Before attending graduate school she worked at the Phoenix Zoo as a zookeeper, and at Reid Park Zoo as a zoo educator. Anna will continue her passion of working with parrots and zoos in her new position later this year as a professor in the Zoo and Conservation Science program at Otterbein University in Ohio.



Varied Lorikeet © Steve Murphy



## *Parrot Lifespans* are the stuff of legend!

We've all heard stories about parrots outliving their owners, but how many years can we really expect each species to live?

IT IS DIFFICULT FOR SCIENTISTS to conduct studies on wild parrot lifespans as parrots can be hard to track in the short term, much less over several decades. Since there isn't much data available about parrot lifespans, some collaborators and I set out to estimate how long parrot species live in captivity by using data gathered in zoos. Not only is this information interesting to parrot owners, but it is also important for conservation planning such as managing captive breeding programs.

The International Species Information System (ISIS) is a global database for the zoological community that contains information on animal births, deaths, transfers, and medical records from zoos all over the world. Data has been collected for more than two centuries on thousands of different species of captive animals. In collaboration with

my lab mate Elizabeth Hobson, advisor Tim Wright, and ISIS database manager Laurie Bingaman Lackey, we collected more than 80,000 parrot records from the last two hundred years.

We analyzed these records to determine how long parrots live and breed on average in captivity. We found that some individuals live extremely long lives. The ISIS longevity winner was a Salmon-crested, or Moluccan Cockatoo (*Cacatua moluccensis*) that lived to be 92! On the whole, though, parrots weren't living as long in captivity as expected. In fact, of the 260 species we analyzed, only 11 species besides the Salmon-crested Cockatoo had an individual that lived longer than 50 years in a zoo (*Figure 1*). In over half of the parrot species in the ISIS records there were no individuals over 22 years old. However, when we analyzed the birds that are still alive

Zoo records were analyzed to determine longevity of individuals and clades of parrots. **The Moluccan Cockatoo** (right) had the longest living individual in captivity at 92 years. Overall, the Amazons and macaws had the longest median lifespans.



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Great Green Macaw © Steve Milpacher

today, we found a trend for these to outlive previous generations, indicating that captive care of psittacines is improving over time. Like most animals studied to date, larger parrot species generally live longer than smaller species (Figure 2). We found the difference in lifespan between large and small-bodied parrots might be only a decade.

WE LOOKED MORE CLOSELY at six distinct clades of parrots (each representing one branch of related species on the evolutionary “tree of life”) that are of particular interest to conservation:

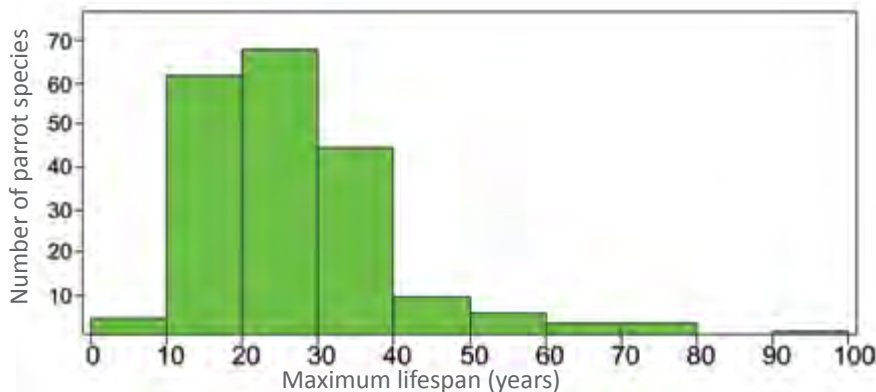
cockatoos, lorikeets, rosellas, macaws, conures, and Amazons. We found that the cockatoos had the highest average maximum lifespan of the six clades, but that the macaws and Amazons had higher average median lifespans. This means that while cockatoos have the potential to live long lives, most individuals are not, and many are not living as long on average as individual macaws and amazons.

Several parrot species such as the Yellow-shouldered Amazon (*Amazona barbadensis*), the Puerto Rican Parrot

(*A. vittata*), the Hispaniola Parrot (*A. ventralis*), Scarlet Macaw (*Ara macao*), Echo Parakeet (*Psittacula echo*) and the Rimatarua Lorikeet (*Vini kublii*) have been successfully reintroduced into the wild from captive populations. Because of the potential for more parrot reintroductions we also analyzed breeding parameters in an effort to guide captive managers in husbandry choices. We analyzed female breeding parameters, such as age at first breeding and last breeding across all the species in our study, and in more detail for the six clades as well. We couldn’t do this analysis for males as paternity isn’t always clear. The results were varied for different species; some small species can breed before they turn a year old, some larger species can breed into their 40s.

WE WERE ALSO INTERESTED in post-breeding duration, which is how long an individual lives after it stops being able to reproduce. We found that post-breeding duration is relatively long and that it is similar in duration to the number of years parrots actively reproduce. There are few species studied

Figure 1. Captive parrots from the ISIS records aren’t living as long as expected.





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Just 7% of the parrot species in zoo records are Endangered; 3% are critically endangered species like the **Blue-throated Macaw**.

to date (humans being one of them) that have post-reproductive durations close to their active reproductive durations. Of course, we have to take into account that these data are coming from zoos, where not all parrots are housed with a potential breeding partner. Still, we can draw three possible conclusions from this data: 1) parrots in zoos are not being housed in a manner which allows them to be productive, long-term breeders, 2) parrots stop being able to breed earlier in their lifespan relative to other species, or 3) captive parrot lifespan is greater than it would be

in the wild and females are living longer than they have the ability to produce eggs. Whether one or a combination is true, this information would be beneficial to conservation managers in making decisions about how to house and breed endangered parrots.

WE WANTED TO SEE IF there was a relationship between lifespan and breeding data and the conservation status of parrot species housed in zoos. Using the IUCN Red List, we assigned a conservation category to each species of parrot housed in zoos and found that the majority of parrots being

housed were actually of Least Concern (68%). Some were Near Threatened (10%) and Vulnerable (11%), while 7% were Endangered, and only 3% were Critically Endangered. The species listed in the three highest threat categories had greater average lifespans, bred later into their lives, and bred for longer durations than the species listed in the two lower threat categories.

OUR STUDY HAS MULTIPLE CONSERVATION implications. First, captive lifespans should be considered by zoos when deciding which species to breed. We suggest that zoos focus on breeding



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## What about my bird?

BEAR IN MIND that individual bird's lifespans, just like humans and other animals, can vary considerably. Factors such as diet, exercise, and overall care can affect results dramatically.

shorter lives due to improper care, diet and caging.

The ISIS records are a wealth of information going back over 200 years. As such, they cover a lot of history. Parrot husbandry has come a long way in that time. In fact, it has only been in the last 20-30 years that good care and husbandry have been widely practiced for parrots. Prior to that time many birds likely faced

Also consider that up until the 1990's many birds in captivity originated in the wild. As we know from our work studying the trade, many of those birds faced incredibly difficult circumstances prior to coming into our care as a result of being taken into captivity. Your bird has his or her own unique background, medical history and lifestyle – all of which contribute to what we all hope for – a long and healthy life. - World Parrot Trust

### Lifespan records

for all 260 species in this study can be perused in "Survival on the Ark: Life History Trends in Captive Parrots" from *Animal Conservation* - available online at [www.psittascene.org](http://www.psittascene.org)

Of 260 species analyzed, 12 had individuals on record that lived longer than 50 years in captivity, New Zealand's **Kea** among them.



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endangered species that fare well in captivity and for which reintroduction programs exist. We also suggest a long term goal of parrot conservation should be to study species that aren't currently as successful in captivity to improve their care and husbandry. Additionally, our data could be used to model the stability of wild populations and to demonstrate how captive reintroductions could augment dwindling wild populations.

Our data has also raised interesting questions about post-reproductive lifespans, suggesting that zoos should attempt to house and breed species later in life than perhaps previously attempted, and to document how successful or unsuccessful these attempts are. Lastly, the trend we

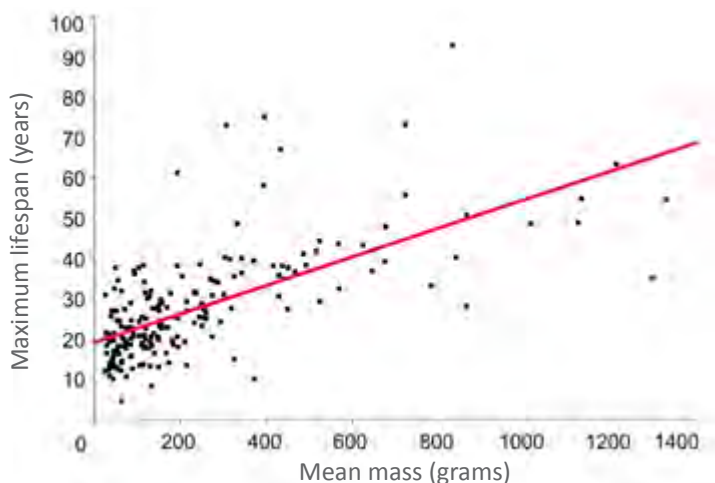
discovered relating IUCN (threat) status with life history parameters suggests that we can proactively identify which species might become endangered or threatened, and act to manage wild populations accordingly. For example, an aging population may appear stable based on numbers, but not necessarily based on demography. As the population ages it may move beyond its reproductive potential. With little to no recruitment of new birds for breeding, the population could drop dramatically. Breeding data can be useful in understanding these subtleties.

SO WHAT DOES THIS MEAN FOR parrot owners who want to see their beloved companion live to a ripe old age? While our study didn't address why parrots are living to the age that they do, the fact

that parrots are reaching older ages in zoos today suggests that your pet parrot can live a long life if it has access to modern diets and health care, plus an enriching environment. So here's to many more years with your feathered friend.



Figure 2. Larger parrot species tend to live longer than smaller ones.



## Longest Lived

The longest living captive parrot species (based on ISIS records), each with an individual living 50 years or longer, are:

**Salmon-crested (Moluccan) Cockatoo**  
(*Cacatua moluccensis*)

**Major Mitchell's Cockatoo**  
(*Lophocroa leadbeateri*)

**Sulphur-crested Cockatoo**  
(*Cacatua galerita*)

**Roseate Cockatoo**  
(*Eolophus roseicapilla*)

**Yellow-naped Amazon**  
(*Amazona ochrocephala*)

**Green-winged Macaw**  
(*Ara chloroptera*)

**Golden Conure**  
(*Guaruba guarouba*)

**Ducorps's Corella**  
(*Cacatua ducorpsii*)

**Red-tailed Black Cockatoo**  
(*Calyptorhynchus banksii*)

**Military Macaw**  
(*Ara militaris*)

**Hyacinth Macaw**  
(*Anodorhynchus hyacinthinus*)

**Kea**  
(*Nestor notabilis*)