

## GENOME SEQUENCING

# The Complete Genome Sequences of 94 Species of Parrots (Psittaciformes, Aves)

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## Biodiversity Genomes

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We present the complete genome sequences of 94 species of parrots from 40 genera. Illumina sequencing was performed on genetic material from single individuals. The reads were assembled using a de novo method followed by a finishing step. The raw and assembled data is publicly available via Genbank.

## Introduction

Parrots (Psittaciformes) include 401 extant species in 92 genera (Lepage, Vaidya, and Guralnick 2014). Found primarily in tropical and subtropical regions, the highest biodiversity of parrots is found in South America and Australasia. Parrots are among the most intelligent of birds. The ability of some species to imitate human speech, and their colorful plumage has made them popular in the pet trade. The capturing of young parrots for sale as pets, along with habitat loss, has greatly diminished the wild populations of some species. The IUCN lists approximately a third of parrot species threatened with extinction.

We present the assembled genome sequences from 94 extant species of parrots. Tissue samples were obtained from live birds, preserved birds, and tissue samples from museums. More detailed information about the specimen used for each species can be found in the Biosample linked to each genome assembly in Genbank.

## Methods

DNA extraction was performed using the Qiagen DNAeasy genomic extraction kit using the standard process. A paired-end sequencing library was constructed using the Illumina TruSeq kit according to the manufacturer's instructions. The library was sequenced on an Illumina Hi-Seq platform in paired-end, 2 × 150 bp format. The resulting fastq files were trimmed of adapter/primer sequence and low-quality regions with Trimmomatic v0.33 (Bolger, Lohse, and Usadel 2014). The trimmed sequence was assembled by SPAdes v2.5 (Bankevich et al. 2012) followed by a finishing step using Zanfona (Kieras, O'Neill, and Pirro 2021).

## Results and Data Availability

All data, including raw reads and assembled genome sequence, is available via Genbank.

| species                     | genome_accession |
|-----------------------------|------------------|
| Agapornis roseicollis       | JANEXD000000000  |
| Amazona aestiva             | JANEXC000000000  |
| Amazona autumnalis          | JANDJX000000000  |
| Amazona leucocephala        | JANDEE000000000  |
| Amazona vinacea             | JANZMG000000000  |
| Anodorhynchus hyacinthinus  | WOUG000000000    |
| Ara ambiguus                | JANCME000000000  |
| Ara ararauna                | JANCMIO000000000 |
| Ara chloropterus            | WSYR000000000    |
| Ara glaucogularis           | JAAAKJ000000000  |
| Ara macao                   | JANEYE000000000  |
| Ara militaris               | JAAAKA000000000  |
| Ara rubrogenys              | JANCMJ000000000  |
| Ara severus                 | JANRGX000000000  |
| Aratinga auricapillus       | JANEXI000000000  |
| Aratinga jandaya            | JANCMD000000000  |
| Aratinga maculata           | JANCNV000000000  |
| Aratinga nenday             | JANCMF000000000  |
| Aratinga solstitialis       | WYDG000000000    |
| Aratinga weddellii          | WYDH000000000    |
| Barnardius zonarius         | JAOEHM000000000  |
| Bolborhynchus lineola       | JAOEHX000000000  |
| Cacatua alba                | JANEMJ000000000  |
| Cacatua ducorpsii           | JAOEHO000000000  |
| Cacatua moluccensis         | JAOEHW000000000  |
| Callocephalon fimbriatum    | JANDEC000000000  |
| Coracopsis vasa             | JANHGB000000000  |
| Cyanoliseus patagonus       | JAOTBC000000000  |
| Cyanoramphus novaezelandiae | JAOSLK000000000  |
| Derophtus accipitrinus      | JANHGX000000000  |
| Diopsittaca nobilis         | JANEXE000000000  |
| Eclectus roratus            | JAAGVV000000000  |
| Eos histrio                 | JANHHC000000000  |
| Eos semilarvata             | JANDED000000000  |
| Eupsittula aurea            | JANEWX000000000  |
| Eupsittula cactorum         | JANDAZ000000000  |
| Eupsittula canicularis      | JANEXJ000000000  |
| Eupsittula nana             | JANEXK000000000  |
| Eupsittula pertinax         | WUQE000000000    |
| Guaruba guarouba            | JAABOC000000000  |
| Lophochroa leadbeateri      | JAAAKP000000000  |
| Lorius chlorocercus         | JAOSLP000000000  |
| Lorius garrulus             | JAAAKI000000000  |
| Lorius lory                 | JAOSLQ000000000  |
| Melopsittacus undulatus     | JAOEHZ000000000  |
| Myiopsitta monachus         | WUAQ000000000    |
| Nymphicus hollandicus       | WTVXV000000000   |

| species                           | genome_accession |
|-----------------------------------|------------------|
| <i>Orthopsittaca manilatus</i>    | JANEXM000000000  |
| <i>Pionites leucogaster</i>       | JAOEIA000000000  |
| <i>Pionus maximiliani</i>         | JANEMH000000000  |
| <i>Pionus senilis</i>             | WURU000000000    |
| <i>Platycercus adscitus</i>       | JAOSLL000000000  |
| <i>Poicephalus cryptoxanthus</i>  | JANHOB000000000  |
| <i>Poicephalus gularis</i>        | JANEXQ000000000  |
| <i>Poicephalus meyeri</i>         | JANHGE000000000  |
| <i>Poicephalus robustus</i>       | JANDJS000000000  |
| <i>Poicephalus rufiventris</i>    | JANEXB000000000  |
| <i>Poicephalus senegalus</i>      | JAOEIB000000000  |
| <i>Primolius auricollis</i>       | JANFOM000000000  |
| <i>Primolius couloni</i>          | JANDJU000000000  |
| <i>Primolius maracana</i>         | JANEWZ000000000  |
| <i>Probosciger aterrimus</i>      | JANIIIB000000000 |
| <i>Psephotus haematonotus</i>     | JANEWY000000000  |
| <i>Psilopsiagon aurifrons</i>     | JAOEHY000000000  |
| <i>Psilopsiagon aymara</i>        | JANRGW000000000  |
| <i>Psittacara chloropterus</i>    | JANEXP000000000  |
| <i>Psittacara holochlorus</i>     | JANDAY000000000  |
| <i>Psittacara leucophthalmus</i>  | JANDJW000000000  |
| <i>Psittacara mitratus</i>        | JANEXA000000000  |
| <i>Psittacara wagleri</i>         | JANEMI000000000  |
| <i>Psittacula cyanocephala</i>    | JANEXR000000000  |
| <i>Psittacus erithacus</i>        | WYDI000000000    |
| <i>Psittacus timneh</i>           | WYDJ000000000    |
| <i>Psittacus krameri</i>          | JAAAKH000000000  |
| <i>Pyrrhura albipectus</i>        | JANFOL000000000  |
| <i>Pyrrhura amazonum</i>          | JANFON000000000  |
| <i>Pyrrhura chapmani</i>          | JANZXS000000000  |
| <i>Pyrrhura cruentata</i>         | WUAO000000000    |
| <i>Pyrrhura egregia</i>           | JANEXG000000000  |
| <i>Pyrrhura frontalis</i>         | JAAAKN000000000  |
| <i>Pyrrhura griseipectus</i>      | JAAAKS000000000  |
| <i>Pyrrhura hoematotis</i>        | JANFOO000000000  |
| <i>Pyrrhura hoffmanni</i>         | JANHKG000000000  |
| <i>Pyrrhura lepida</i>            | JAABNU000000000  |
| <i>Pyrrhura lucianii</i>          | JANIAF000000000  |
| <i>Pyrrhura melanura</i>          | JANFOK000000000  |
| <i>Pyrrhura molinae</i>           | JAADKS000000000  |
| <i>Pyrrhura orcesi</i>            | JANHHA000000000  |
| <i>Pyrrhura perlata</i>           | JAAGVT000000000  |
| <i>Pyrrhura picta</i>             | JANHHA000000000  |
| <i>Pyrrhura roseifrons</i>        | JANFHV000000000  |
| <i>Rhynchopsitta pachyrhyncha</i> | JANEXL000000000  |
| <i>Tectocercus acuticaudatus</i>  | JANHGX000000000  |
| <i>Trichoglossus euteles</i>      | JAOEHP000000000  |

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