



# Population genetic structure of the blue-fronted Amazon (*Amazona aestiva*, Psittacidae: Aves) based on nuclear microsatellite loci: implications for conservation

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**ABSTRACT.** The blue-fronted Amazon (*Amazona aestiva*) is a widely distributed Neotropical parrot and one of the most captured parrots in nature to supply the illegal trade of wild animals. The objectives of the present study were to analyze the genetic structure of *A. aestiva* to identify management units and support conservation planning and to verified if *A. aestiva* populations have undergone a recent bottleneck due to habitat loss and capture for the pet trade. The genetic structure was accessed by analyzing six microsatellite loci in 74 individuals of *A. aestiva*, including samples from the two subspecies (*A. a. aestiva* and *A. a. xanthopteryx*), from five populations: four in Brazil and one in Argentina. A significant genetic dif-

ferentiation ( $\theta = 0.007$ ,  $P = 0.005$ ) could be detected only between the most distant populations, Tocantins and Argentina, localized at the northeast and southwest limits of the sample sites, respectively. There was no evidence of inbreeding within or between populations, suggesting random mating among individuals. These results suggest a clinal distribution of genetic variability, as observed for variation in plumage color of the two *A. aestiva* subspecies. Bottleneck analysis did not show a recent reduction in population size. Thus, for the management and conservation of the species, the populations from Argentina and Tocantins should be considered as different management units, and the other populations from the center of the geographical distribution as another management unit.

**Key words:** *Amazona aestiva*; Microsatellite; Genetic structure; Bottleneck; Conservation