Where do the birds seized from the illegal trade come from? An approach with molecular markers

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The illegal wildlife trade is currently one of the biggest threats against Brazilian wildlife, especially birds. Large numbers of individuals are taken from wild populations and transported for sale in local fairs far from their origins. In this work we propose a contribution from the academy to the establishment of Wildlife Forensics capabilities in Brazil. Working with 4 bird species exploited by the illegal trade - *Paroaria dominicana, Sporophila frontalis, Cyanoloxia brissonii* and *Saltator similis* - we are developing primers which amplify anonymous polymorphic nuclear *loci*, performing population differentiation analyses, constructing a reference blood bank covering the majority of the species' distributions, and performing assignment tests to infer the origins of the trafficked birds. We developed genomic libraries for each species, resulting in 56 pairs of primers which were amplified in gradient PCRs and are undergoing tests of polymorphism. At this point we have tested two sets of primers in the four species and they were polymorphic. This approach will help us to add critical information for reintroduction efforts, pinpoint most exploited regions, and work with different Police divisions to develop regional educational and enforcement plans. We will have the tools for the assignment tests ready for use for these species in upcoming police raids. In the meantime, we are collecting blood samples of as many individuals as we can, from the natural populations and from the seized individuals, working with the environmental authorities and the Civil Police. The next challenge will be to work with the Justice system so this kind of scientific evidence can be accepted during the legal process. Funds FAPESP and CAPES.