



Sexing the Monk Parakeet (*Myiopsitta monachus*) by using external measurements: morphological and colour analysis



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Introduction

• Psittacine Monk Parakeet (*Myiopsitta monachus*)

Agricultural and urban pest in many countries of the world

• Sex determination

Key factor for the management and control of wild populations

Difficult task in psittacines → 75% are monomorphic

Methods

- **Capture** of 50 individuals using the Yunick trap (Yunick, R.P., 1971) → Ciutadella park of Barcelona (2012- 2013)
- **Measurement of morphological variables** → wing, tail and beak length (mm) using a rule, beak height and width (mm) using a digital calliper, among other.
- **Extract of feathers** from wing, tail, flank, carpal and chest → colorimetric analysis using Minolta spectrophotometer
- **Extract of blood** (0,05ml) from cubital vein → molecular sexing

Discussion and Conclusions

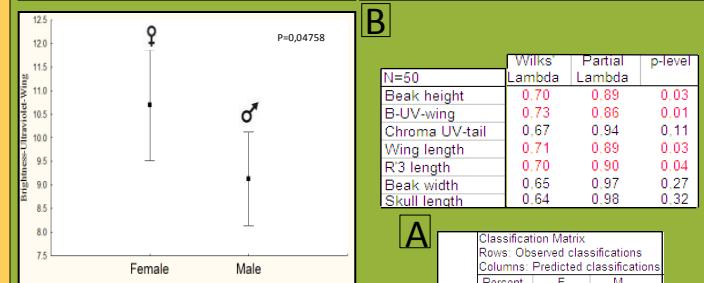
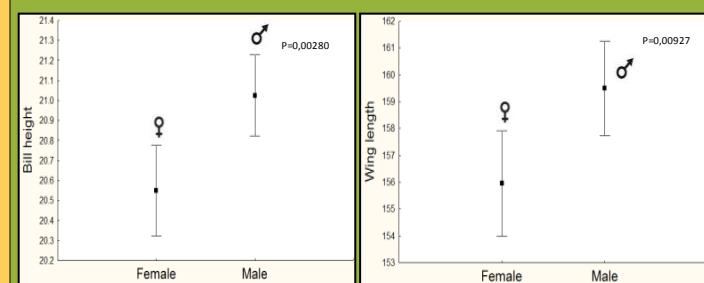
- In Psittacines, previous work suggest → Ultraviolet reflectance and some morphological measurements, might be important to sex determination (Bonilla-Ruz, C. et all, 2011)
- We obtain that **Beak height, Wing length, Ultraviolet brightness** and 4 more variables in combination → allows 80% of sex determination
 - ✓ Measurements are easy to obtain in the field
 - ✓ Improve accuracy of studies on the population dynamics
 - ✓ Help in the design of management programs of the species
- Surprisingly, we obtained **higher values of ultraviolet brightness wing feathers on females**

Aim

Find some variables that allow us sexing the *Myiopsitta monachus* by non-invasive external measurements and feather coloration analysis, based on the UV reflectance.



Results



A) Discriminate Analysis shows a 80% correct the identification of sex from a model with 7 variables

B) Univariate Analysis (ANOVA) shows significant values for Beak height, Wing length and Ultraviolet brightness from wing

References

Bonilla-Ruz, C., Magallón, C.C. and Santos-Moreno, A. 2011. Determination of sexual secundary dimorphism in military macaw (*Ara militaris*): morphometry complementary with ocular index. Acta Zoológica Mexicana (n.s.) 27 (2): 245-255

Yunick, R.P. 1971. The Squirrel-Prooftrap platform. Ebba News. Vol. 34, No. 3: 120-126