

# SILLIMAN JOURNAL

Volume 56 Number 1 2015



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DISTRIBUTION AND EARLY BREEDING OF  
GREEN-FACED PARROT FINCHES  
(*Erythrura viridifacies*)

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## INTRODUCTION

THE GREEN-FACED PARROT Finch *Erythrura viridifacies* is a poorly known member of the Family Estrildidae endemic to the Philippines. Of the 10 to 13 currently recognized parrot finches (*Erythrura*), two other species occur within the Philippines: the widely-distributed Tawny-breasted Parrot Finch *Erythrura hyperythra* and the Mindanao endemic Red-eared Parrot Finch *Erythrura coloria*. The Green-faced Parrot Finch has been recorded from multiple locations on Luzon, two locations on Negros, and one location each on Panay and Cebu (Collar, Mallari, & Tabaranza, 1999; Paguntalan & Jakosalem, 2008); the species has never been recorded from the relatively large island of Mindoro. As with its congeners, the Green-tailed Parrot Finch seems to be eruptive and semi-nomadic in abundance and is apparently closely tied to presence of bamboo; higher concentrations are reported when

bamboo is in flower (Payne, 2010).

In 2013, the authors encountered the Green-faced Parrot Finch independently during three separate inventories on the island of Mindoro, which is geographically located between the other islands where the species had already been recorded. These sight and specimen records represent the first report of the species for Mindoro. Specimens obtained strongly suggest that the species breeds prior to attaining full definitive plumage.

## MINDORO RECORDS

All records of Green-faced Parrot Finch occurred in Occidental Mindoro within the Sablayan Prison and Penal Farm property on the central west part of the island (Figure 1).

1. March 4, 2013—Sablayan Prison and Penal Farm; Siburan; on trails near rest houses. MJCW saw at least four adult birds in association with flowering bamboo.

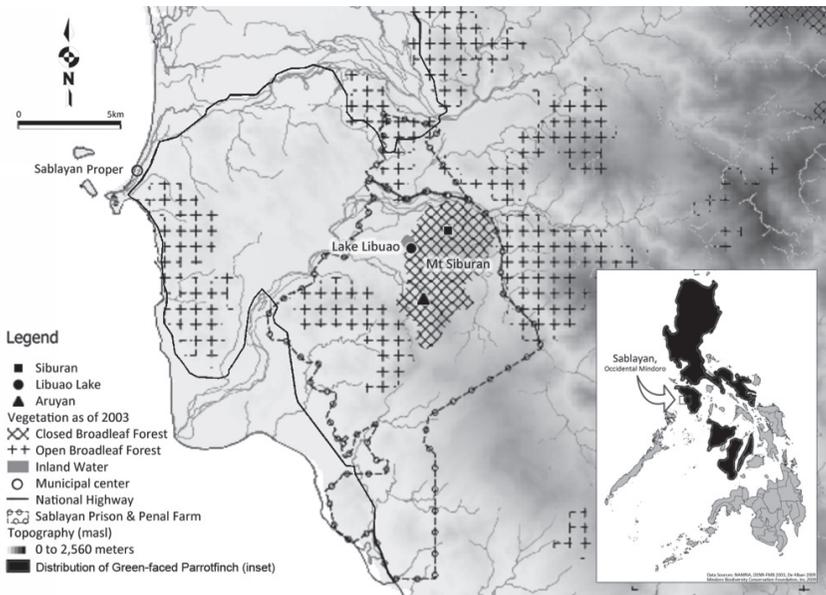


Figure 1. **Map of central Occidental Mindoro showing localities of Green-faced Parrot Finch records. Inset shows current known distribution of the species.**

Table 1. Sex, Age, Breeding, and Gonad Information From Specimens of Green-faced Parrot Finch.

KU Accession No.	Locality	Date	Sex	Skull Ossification	Bursa	Gonads (mm)	Plumage
122353	Aruyan, Bamboo patch	11 July	Male	100%	None	5.5x4	Immature
122355	Aruyan, Bamboo patch	11 July	Female	100%	None	5x3, 1.5 (ova), 3 (oviduct)	Immature
122356	Aruyan, Bamboo patch	13 July	Female	100%	None	8x6, 3 (ova)	Adult
122352	Aruyan, Old growth forest	14 July	Female	5%	None	5x3, 1.5 (ova)	Immature
122354	Aruyan, Old growth forest	15 July	Male	0% (unossified)	2 mm dia.	7.5x4	Immature
122357	Aruyan, Old growth forest	16 July	Female	0% (unossified)	3 mm dia.	8x8, 15 & 7 (ova)	Immature
122372	Libuao, second growth forest	18 July	Female	25%	None	15x8, 8 (unshelled egg)	Immature

2. May 16, 2013—Sablayan Prison and Penal Farm; Siburan. JKP and a local guide, Archie Gutierrez, saw a pair of adult birds.
3. July 11–16, 2013—Sablayan Prison and Penal Farm, Aruyan (120.916E, 12.787N), 200m. University of Kansas (KU) and Mindoro Biodiversity Conservation Foundation ornithology team (TJD, CHO, DGEF) obtained six specimens (KU 122353–1223557) captured in 12 m length mist nets placed in and near bamboo patches in tall old growth forest (Table 1).
4. July 18, 2013—Sablayan Prison and Penal Farm, Libuao Lake (120.897E, 12.818N), 170m. University of Kansas and Mindoro Biodiversity Conservation Foundation ornithology team (TJD, CHO) obtained one specimen (KU 122372) captured in a net in secondary forest near inland lake.

### ABUNDANCE AND DISTRIBUTION

Existing data indicate that, similar to other species of *Erythrura*, Green-faced Parrot Finch is nomadic, and its presence is highly correlated with flowering bamboo (Evans & Fidler, 1990; Collar et al, 1999; Payne, 2010). Both sight records support this pattern as the birds observed in March and May at Sablayan were found associated with flowering bamboo.

During the KU expedition that found Green-faced Parrot Finches at Sablayan in July 2013, all seven specimens were captured in mist nets. Most individuals captured at the Aruyan camp were from nets placed in or within 200m of extensive patches of bamboo within the hill forest. The lone capture at the Libuao Lake camp was from a net at the edge of secondary forest with only scattered bamboo. Despite multiple days searching in the habitat where we netted the seven individuals by experienced field ornithologists, no other individuals were seen; there was extremely low bird activity, including very limited vocalizations by normally vocal components of the avifauna. This similarly made locating individuals of most species in the dense habitats at Sablayan extremely infrequent during our stay. Regular captures of small numbers of birds seem to support the observation that the population is not permanent, is dispersed at this time of the year, and is highly nomadic, especially for first year juveniles.

That more juveniles were captured in July 2013 may indicate that first-year birds disperse rapidly after fledging to occupy suitable habitat and/or take advantage of temporary resources.

As a result of these new Mindoro records, the Green-faced Parrot Finch is much more widespread than known only a few decades ago. The range of this species now spans five of the larger islands in the Philippine archipelago (Philippine island size rank in land mass measured in km<sup>2</sup> in parentheses [Dickinson et al. 1991]): Luzon (1), Negros (3), Panay (6), Mindoro (7), and Cebu (9). These islands also form the northern and western line of major islands in the chain; with the Mindoro records, there is no longer a gap in the geographical distribution among islands (Figure 1, inset).

It is possible that further research on other large islands in the archipelago adjacent to islands where the Green-faced Parrot Finch is now known (Samar, Leyte, Bohol) will demonstrate the species is even more widely distributed. The largest Philippine island from which the Green-faced Parrot Finch is unknown is Mindanao. Although Green-faced Parrot Finch may occur on this island, it may be replaced there by Mindanao's endemic Red-eared Parrot Finch that occurs in similar habitat at higher elevations; nonetheless, Green-faced Parrot Finch should be searched for there at elevations below 1000m where no Parrot Finch has yet been recorded (Kennedy, Gonzales, Dickinson, Miranda, & Fisher, 2000).

Despite the presence of flowering bamboo, the only other *Erythrura* known from Mindoro, the Tawny-breasted Parrot Finch, was not recorded at our sites. However, our study sites may have been too low in elevation to document the species (Kennedy et al. 2000).

## PLUMAGE AND BREEDING

Green-faced Parrot Finches are sexually monomorphic with only very minor differences between adult males and females (Payne, 2010). Juvenile plumage is typically described as similar to adult females, but paler and with the under parts buff (Evans & Fidler, 1990; Payne, 2010). Of the two sight records of multiple individuals from March and May 2013, all birds observed were clearly in an adult plumage. However, of the seven specimens collected in July



Figure 2. **Adult and immature plumage of Green-faced Parrot Finch. Note uniform green under parts and longer tail in adult female (L) and shorter tail and buff under parts sharply demarcated from green lower throat/upper breast in juvenile (R).**

2013, all but one—an adult female—were in the very distinctive juvenile plumage; additionally, we found the immature plumage to be quite distinct from the adult female plumage with the latter more closely matching the adult male plumage (Figure 2). As can be seen in Table 1, immature plumage occurred irrespective of skull ossification (ranged from 0–100% ossified) or presence of a bursa (only two with measurable bursas of 2mm and 3mm).

Little has been published on the breeding ecology of Green-faced Parrot Finches in the wild. Collar et al. (1999) inferred at least some breeding take place in May based on gonad development (males with enlarged gonads; females with undeveloped gonads). While Payne (2010) indicated the breeding season appears to be March–April and males perform a courtship similar to a congener. It is unclear whether they were referring to wild or captive birds because the remainder of their information on breeding specifically refers to data from captive birds.

Breeding Green-faced Parrot Finches in captivity has been relatively unsuccessful with several attempts failing to produce even one clutch (Morly, 1984; Evans & Fidler, 1990). Currently,

this species seems to be one of the rarest of the grass finches in aviculture.

At least two female (ovary > 5mm long, ova larger than 1mm diameter) and one male (testes 7.5x4mm) specimens are in immature plumage but appear to be actively breeding based on gonad condition, including one female with an unshelled egg in its oviduct (Table 1). Based on the gonad development, it is clear that immature *Erythrura* at least attempt breeding prior to attaining definitive adult plumage characteristics (fully pneumatized skulls, lack of bursa, as well as adult plumage).

Data on early breeding of members of *Erythrura* are limited, and refer almost exclusively to captive birds. Evans & Fidler (1990) cited several instances of early breeding for members of the genus, but never mentioned that they did so while in immature plumage; at least in one case, breeding in captivity was more successful with younger birds (under 12 months). Savage (1897) found a pair of young birds that were supposedly a pair, but did not indicate they had ever been bred successfully.

Captive immatures are usually removed from adult birds early on and not presented with resources that may stimulate breeding (nest material, nest boxes, soft food, etc.); some breeders have had several species of *Erythrura* breed successfully when at least one member of the pair was in immature plumage (Scott Golden, Rich Dozaba, pers. comm.). Golden also indicated that immature birds rarely paired with other immature birds; pairs would be made up of one adult and one immature bird. In these instances, a sex imbalance may influence pairing with immatures. The Gouldian Finch *Erythrura gouldiae* is relatively well-known in aviculture for both retaining their immature plumage longer than other parrot finches and for breeding prior to attaining adult plumage when given the opportunity (Dozaba, pers. comm.).

McRae (2014) indicated that Tricolored Parrot Finch *Erythrura tricolor* attains adult plumage in two to four months and have reproduces successfully in captivity at six months of age. Nicholson (1950) also indicated Red-headed Parrot Finch *Erythrura cyanovirens* attained adult plumage at four months. Data from captive species of *Erythrura* all indicate adult plumage is reached at an age of between four and six months (Rich Dozaba verbally; Scott Golden, Graham Lee, *in litt.*).

Although it is unknown exactly how old the immature birds we collected on Mindoro were, it may be that Green-faced Parrot

Finch retains juvenile plumage characters longer than congeners, thus increasing the probability of breeding while in immature plumage.

Because the availability of one of the primary food resources (bamboo seeds) of Green-faced Parrot Finch is unpredictable and local, early breeding may be adventitious when such resources are temporarily abundant. In these scenarios, pairs may double or triple clutch in a single favorable season providing a glut of immatures available for subsequent pairing. Scott Golden (pers. comm.) also surmised based on his experience with captive *Erythrura* that an excess of adults may promote indiscriminate pairing with immatures.

Our analysis demonstrates the importance of specimen data when studying breeding in birds where condition of the gonads can only be determined internally. More data on breeding of the poorly known *Erythrura viridifacies* in the wild is needed.

## ACKNOWLEDGEMENTS

We wish to thank the Department of Environment and Natural Resources MIMAROPA office, PENRO Occidental Mindoro and CENRO Sablayan, for facilitating permits; the Sablayan Prison and Penal Farm and Sablayan municipality for permission to work in the area; local guides and our Philippines field crew for assistance in field; and, Mark Robbins for useful comments on this manuscript. Rich Dozbaba, Scott Golden, and Graham Lee provided valuable information on captive parrot finches. Fieldwork in the Philippines was supported by a US National Science Foundation Grant to R. Brown and R. Moyle (DEB 0743576).

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