

# A Survey of the Riparian Vertebrate Fauna of Señora River, Siquijor Island, Central Philippines

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An assessment on the status of the riparian vertebrates of Señora River in Siquijor Island was conducted from February-May, 2011 using purposive sampling techniques. This study observed 40 species of birds, five species of amphibians, 13 species of reptiles, and 10 species of mammals.

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**KEYWORDS:** assessment, riparian, vertebrates, Siquijor, Philippines

## INTRODUCTION

The Philippines is one of the 17 megadiverse countries in the world, with high species richness and endemism (Heaney & Regalado, 1998; Ong, Afuang, & Rosell-Ambal, 2002; Brown & Diesmos, 2009). At the same time, it shares only with Madagascar the distinction of also being one of the world's top 25 global conservation hotspots (Myers et al., 2000).

Siquijor is a coralline island with an area of 344 km<sup>2</sup> located in northwestern side of the Bohol Sea and about 75km southeast of Negros Island. The highest elevation in Siquijor is 600 m.a.s.l. on Mt Malabahoc in Bandilaan Natural Park, the largest forest reserve in the island.

The island's vegetation consists mainly of secondary forest growth and agricultural crops and fruit trees. Steep limestone outcrops occur in the western and northwestern part of the island, with trees such as *Alstonia*, *Ficus*, and *Erythrina* growing on them. Palms (*Heterospatha*) and lianas are found common on this part of the island. Degraded areas are dominated by the exotic lantana (*Lantana camara*), cogon (*Imperata cylindrica*), and several species of shrubs and weeds.

Earlier workers published papers based on materials collected from Siquijor. For example, Leviton (1963, 1978) reported two species of snakes, Brown and Alcala (1978, 1980) reported scincid and gekkonid lizards and Rand & Rabor (1957, 1959) described the endemic subspecies of birds in the island.

This study on the riparian vertebrates of Señora River in the Siquijor Island is an attempt to contribute to the inventory of certain groups of animals associated with this river system.

## METHODS AND MATERIALS

### Description of the Survey Stations

Señora River (Figure 1) is located in the municipality of Lazi, Siquijor. Three survey locations were established, in the upper reaches (Capalasanan), middle segment (Cambugahay), and lower reaches (Simacolong) of the river. These were designated as stations 1, 2, and 3, respectively.

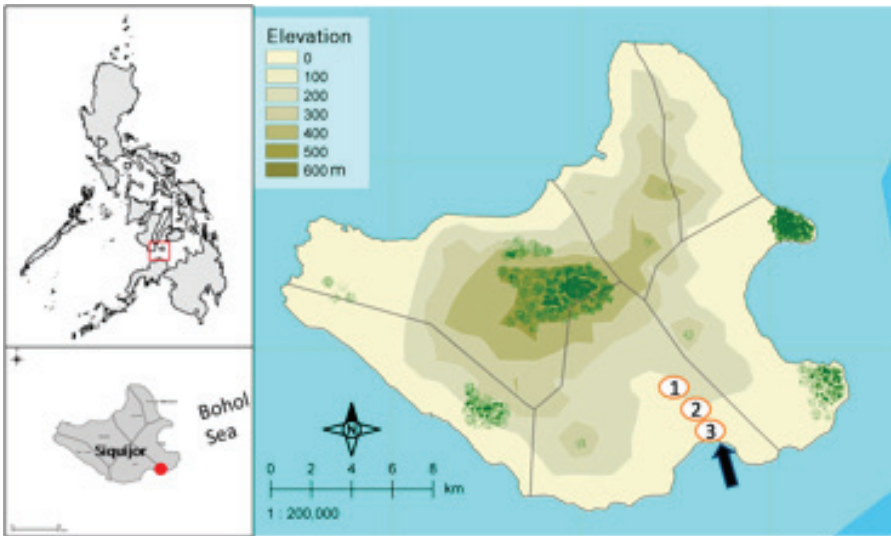


Figure 1. Map showing the location of the survey sites along the Senora River, Lazi, Siquijor. Map Layouts: A. Bucol and J. Maypa.

The vegetation in Station 1 (Capalasanan near the Kawasan Cave) is predominantly native tree species such as *balete*, *labnog*, etc. (*Ficus* spp.), *lomboy* (*Syzygium cumini*) and *buto-buto* (*Ardisia pyramidalis*). Exotic trees such as *gmelina* (*Gmelina arborea*), and mahogany (*Swietenia macrophylla*) were also observed.

Station 2 (Cambugahay Falls and vicinity) has steep karst topography. The presence of small falls formed by a series of karstic slopes attracted both local and foreign tourists. The periphery of the area is planted with coconuts, and other agricultural plant species except in steep slopes where some karst-adapted trees like *Ficus*, *atum* (*Macaranga tanarius*), and *Alstonia* sp. remain.

Station 3 (Tigbawan-Simacolong, vicinity of the Senora Bridge) is mainly of agricultural-plantation-residential type. Coconuts and other fruit-bearing trees like mangoes (*Mangifera indica*) are also common. The estuarine mangrove nipa (*Nypa fruticans*) was found abundant near the mouth of the river.

## Field Techniques

Birds were surveyed using transect walk method (MacKinnon & Philips, 1993; Bibby, Jones, & Marsden, 1998) with the aid of binoculars for identification using the field guide *Birds of the Philippines* by

Kennedy et al. (2000). List of birds, however, follows the updated sequence used by the Oriental Bird Club (OBC), available in [www.orientalbirdimages.org/checklist](http://www.orientalbirdimages.org/checklist).

Mist nets measuring 6m x 4m were also set near fruiting trees and flyways to maximize capture. Individuals captured were immediately identified, photographed, and released.

Bats were surveyed using mist nets (the same nets as utilized for bird surveys). Taxonomic identification of bat species was based on Ingle & Heaney (1992) and Sedlock & Ingle (2010). Captured bats were immediately released after identification.

The reptiles and amphibians were surveyed through cruising only (as used by Alcala, Alcala, & Dolino, 2004, Alcala & Alcala, 2005). Identification of amphibians followed Alcala and Brown (1998) while that of reptiles follow Brown and Alcala (1978, 1980), and Alcala (1986).

## RESULTS AND DISCUSSION

### Avifauna

A total of 40 bird species (Table 1) were recorded from the three survey stations from February through June, 2011, comprising of 36 resident species (six are Philippine endemics), and only four migrant species. Most of the species were recorded in Station 1 in Barangay Capalasanan, Lazi with 33 species, followed by Station 2 (Cambugahay Falls and vicinity) with 29 species while only 19 species were recorded in Station 3 (vicinity of Señora Bridge).

Out of the six threatened species known to occur in Siquijor, only the Streak-breasted Bulbul *Ixos siquijorensis* was encountered in this study. This species is currently recognized as an endangered species by the International Union for the Conservation of Nature (IUCN), according to BirdLife International (2008). This study recorded the Striated Grassbird *Megalurus palustris*, a species previously unreported on Siquijor, based on the range map provided by Kennedy et al. (2000).

### Mammalian Fauna

Ten species of mammals are known in the three survey stations (Table 2). Only one threatened species *Pteropus pumilus* (Vulnerable) was mistnetted during the survey. The Cave in Station 1 hosts a population of the insectivorous bat *Hipposiderus diadema*.

Table 1.

List of birds observed in the three sampling stations of Señora River. Note: X—present; R—resident; M—migrant; PE—Philippine Endemic; M—migrant

| English Name                        | Scientific Name                         | Status | Station   |           |           |
|-------------------------------------|---|--------|-----------|-----------|-----------|
|                                     |   |        | 1         | 2         | 3         |
| STRIATED HERON                      | <i>Butorides striata</i>                | R      |           |           | X         |
| CATTLE EGRET                        | <i>Bubulcus ibis</i>                    | R      | X         |           |           |
| LITTLE EGRET                        | <i>Egretta garzetta</i>                 | M      |           | X         | X         |
| BRAHMINY KITE                       | <i>Haliastur indus</i>                  | R      | X         | X         |           |
| BARRED RAIL                         | <i>Gallirallus torquatus</i>            | R      | X         | X         | X         |
| WHITE-EARED<br>BROWN DOVE           | <i>Paphitreron leucotis</i>             | PE     | X         | X         |           |
| SPOTTED DOVE                        | <i>Streptopelia chinensis</i>           | R      | X         | X         |           |
| EMERALD DOVE                        | <i>Chalcophaps indica</i>               | R      | X         | X         |           |
| ZEBRA DOVE                          | <i>Geopelia striata</i>                 | R      | X         | X         |           |
| PHILIPPINE COUCAL                   | <i>Centropus viridis</i>                | PE     | X         | X         | X         |
| ASIAN KOEL                          | <i>Eudynamis scolopaceus</i>            | R      | X         |           |           |
| PHILIPPINE HAWK-OWL                 | <i>Ninox philippensis</i>               | PE     | X         | X         |           |
| PHILIPPINE NIGHTJAR                 | <i>Caprimulgus manillensis</i>          | PE     | X         | X         |           |
| GLOSSY SWIFTLET                     | <i>Collocalia esculenta</i>             | R      | X         | X         | X         |
| PYGMY SWIFTLET                      | <i>Collocalia troglodytes</i>           | PE     | X         | X         |           |
| COMMON KINGFISHER                   | <i>Alcedo atthis</i>                    | M      |           |           | X         |
| COLLARED KINGFISHER                 | <i>Todiramphus chloris</i>              | R      | X         | X         | X         |
| HOODED PITTA                        | <i>Pitta sordida</i>                    | R      | X         | X         |           |
| BARN SWALLOW                        | <i>Hirundo rustica</i>                  | M      | X         | X         |           |
| PACIFIC SWALLOW                     | <i>Hirundo tahitica</i>                 | R      |           |           | X         |
| PIED TRILLER                        | <i>Lalage nigra</i>                     | R      | X         | X         | X         |
| STREAK-BREASTED<br>BULBUL           | <i>Ixos siquijorensis siquijorensis</i> | PE     | X         | X         | X         |
| BLACK-NAPED ORIOLE                  | <i>Oriolus chinensis</i>                | R      | X         | X         |           |
| LARGE-BILLED CROW                   | <i>Corvus macrorhynchos</i>             | R      | X         |           |           |
| ORIENTAL MAGPIE-ROBIN               | <i>Copsychus saularis</i>               | R      | X         | X         | X         |
| GOLDEN-BELLIED FLYEATER             | <i>Gerygone sulphurea</i>               | R      |           |           | X         |
| PIED FANTAIL                        | <i>Rhipidura javanica</i>               | R      | X         | X         | X         |
| BLACK-NAPED MONARCH                 | <i>Hypothymis azurea</i>                | R      | X         |           |           |
| MANGROVE BLUE<br>FLYCATCHER         | <i>Cyornis rufigastra</i>               | R      | X         |           |           |
| WHITE-BREASTED<br>WOOD-SWALLOW      | <i>Artamus leucorhynchus</i>            | R      | X         | X         | X         |
| BROWN SHRIKE                        | <i>Lanius cristatus</i>                 | M      | X         | X         | X         |
| LONG-TAILED SHRIKE                  | <i>Lanius schach</i>                    | R      | X         |           |           |
| STRIATED GRASSBIRD                  | <i>Megalurus palustris</i>              | R      |           | X         |           |
| ASIAN GLOSSY STARLING               | <i>Aplonis panayensis</i>               | R      | X         | X         | X         |
| COLETO                              | <i>Sarcops calvus</i>                   | R      |           | X         |           |
| PURPLE-THROATED<br>SUNBIRD          | <i>Nectarinia sperata</i>               | R      | X         |           |           |
| OLIVE-BACKED SUNBIRD                | <i>Cinnyris jugularis</i>               | R      | X         | X         | X         |
| ORANGE-BELLIED<br>FLOWERPECKER      | <i>Dicaeum trigonostigma besti</i>      | R      | X         | X         |           |
| EURASIAN TREE SPARROW               | <i>Passer montanus</i>                  | R      | X         | X         | X         |
| BLACK-HEADED MUNIA                  | <i>Lonchura malacca</i>                 | R      | X         | X         | X         |
| <b>Total Number of species = 40</b> |   |        | <b>33</b> | <b>29</b> | <b>19</b> |

Table 2.

List of amphibians, reptiles, and mammals observed in the sampling stations of Señora River.

| Family             | Species                                    | Common Name                      | Station    |           |          |  |
|--------------------|--|----------------------------------|------------|-----------|----------|--|
|                    |  |                                  | 1          | 2         | 3        |  |
| <b>HERPETOFUNA</b> |  |                                  |            |           |          |  |
| Bufonidae          | <i>Rhinella marina</i>                     | Giant Marine Toad                | X          | X         | X        |  |
| Ranidae            | <i>Fejervarya vittigera</i>                | Common Pond Frog                 |            | X         |          |  |
|                    | <i>Limnonectes visayanus</i>               | Stream Frog                      |            | X         |          |  |
| Ceratobatrachidae  | <i>Occidozyga laevis</i>                   | Puddle Frog                      | X          |           |          |  |
|                    | <i>Platymantis corrugatus</i>              | Forest Frog                      | X          |           |          |  |
| Agamidae           | <i>Hydrosaurus pustulatus</i>              | Sailfin Lizard                   |            | X         |          |  |
|                    | <i>Draco spiloferus</i>                    | Flying Lizard                    |            | X         | X        |  |
| Varanidae          | <i>Varanus nuchalis</i>                    | Monitor Lizard                   |            | X         |          |  |
| Gekkonidae         | <i>Gekko gekko</i>                         | Tokay Gecko                      | X          | X         | X        |  |
|                    | <i>Hemidactylus frenatus</i>               | House Gecko                      | X          | X         |          |  |
|                    | <i>Hemidactylus platyurus</i>              | House Gecko                      | X          | X         |          |  |
| Scincidae          | <i>Lamprolepis smaragdina philippinica</i> | Emerald Tree Skink               | X          | X         | X        |  |
|                    | <i>Sphenomorphus steerei</i>               | Skink                            | X          |           |          |  |
| Colubridae         | <i>Cerberus rynchops</i>                   | Dog-faced water snake            |            | X         |          |  |
|                    | <i>Lycodon capucinus</i>                   | Snake                            |            | X         |          |  |
|                    | <i>Dendrelaphis terrificus</i>             | Vine Snake                       |            | X         |          |  |
|                    | <i>Chrysopelea paradisi</i>                | Gliding Tree Snake               | X          |           |          |  |
| Typhlopidae        | <i>Ramphotyphlops cf. cumingii</i>         | Blind Snake                      |            | X         |          |  |
|                    | <b>Number of species: 18</b>               |                                  | <b>9</b>   | <b>12</b> | <b>6</b> |  |
| <b>MAMMALIA</b>    |  |                                  |            |           |          |  |
| Pteropodidae       | <i>Cynopterus brachyotis</i>               | Common Short-nosed Fruit Bat     | X          | X         |          |  |
|                    | <i>Macroglossus minimus</i>                | Dagger-toothed Flower Bat        | X          | X         | X        |  |
|                    | <i>Ptenochirus jagori</i>                  | Musky Fruit Bat                  | X          | X         | X        |  |
|                    | <i>Eonycteris spelaea</i>                  | Common Nectar Bat                | X          | X         |          |  |
|                    | <i>Rousettus amplexicaudatus</i>           | Common Rousette                  |            | X         |          |  |
|                    | <i>Pteropus pumilus</i> , Vu               | Little Golden-mantled Flying Fox | X          | X         |          |  |
|                    | Hipposideridae                             | <i>Hipposiderus diadema</i>      | Insect Bat | X         |          |  |
|                    | Vespertilionidae                           | <i>Scotophilus cf. kuhlii</i>    | Insect Bat | X         |          |  |
| Soridae            | <i>Suncus murinus</i>                      | House Shrew                      |            | X         |          |  |
| Muridae            | <i>Rattus tanezumi</i>                     | Common House Rat                 |            | X         |          |  |
|                    | <b>Number of species: 10</b>               |                                  | <b>7</b>   | <b>2</b>  | <b>8</b> |  |

## Herpetofauna

This study encountered 18 species of herptiles, comprised of five amphibians and 13 species of reptiles (Table 2). Forest dwelling species such as the Pit Viper (*Parias flavomaculatus*) reported in the remaining forests of Siquijor (e.g. Bandila-an Natural Park) by Beukema (2011) and arboreal skinks of the genus *Lipinia* reported by Brown and Alcala (1980) were not encountered in this study.

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