The Terrestrial Vertebrate Fauna of Bago River, Negros Occidental, Philippines

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The terrestrial vertebrates of Bago River were surveyed for six months in 2009 and 2010 using purposive sampling techniques. There were 129 bird species, 19 reptiles, 10 amphibians, and 14 mammals (10 of which were bats) documented in the four sampling stations of the river. Conservation and management efforts for Bago River are urgently needed to ensure the sustainability of its biodiversity.

KEYWORDS: Negros Island, threatened species, migrants, residents, vertebrates

INTRODUCTION

The terrestrial fauna of Negros Island is relatively well studied (Turner, Slade, & Ledesma, 2002), especially the herpetofauna (Inger, 1954; Reyes, 1957; Brown & Alcala, 1961, 1970, 1978, 1980, 1986; Ross & Alcala, 1983; Brown, Diesmos, & Alcala, 2001;

Alcala, 1962; Alcala, Alcala & Dolino, 2004; Alcala & Alcala, 2005; Koch, Gaulke, & Bohme, 2010), avifauna (Rabor, 1954; Rabor, Alcala, & Gonzales, 1970; Ripley & Rabor, 1956; Carumbana & Alcala, 1974; Alcala & Carumbana, 1980; Erickson & Heideman, 1983; Brooks et al., 1992; Hamman & Curio, 1999; Paguntalan, Pedregosa, & Gadiana, 2000), and mammalian fauna (Cox, 1987; Oliver, 1992, 1995; Groves, 1997; Heaney et al., 1998; Cariño, 2004).

Early collections and surveys conducted in some rivers in Negros Island primarily focused on fishes such as in southern Negros by Jordan and Seale (1905), particularly Ilog, Ocoy and Pagatban rivers in the late 1970s through early 1980s (Cabanban & Calumpong, 1979 unpublished report; Alcala, Luchavez, & Luchavez, undated report). Apparently, only a few studies (e.g., Alcala & Ross, 1983) have been done on the vertebrate fauna associated with the rivers of Negros Island.

This present paper provides a list of vertebrate species observed in the four sampling stations along the Bago River in Negros Occidental. In addition, data on amphibians and reptiles are important since no formal survey has been conducted in Bago River and its vicinity.

MATERIALS AND METHODS

Description of the Study Area

The Bago River System originates between the two large mountain ranges in northern Negros, the Mt. Kanlaon Volcano in the southeast and North Negros mountain range in the northeast, stretching about 76km and passing through five municipalities to drain at Guimaras Strait. The four study sites (see detailed description for each study site below) and their corresponding base reference points beginning at the headwaters going downstream are as follows: Barangay Kumaliskis, Municipality of Don Salvador Benedicto (10°31.760' N, 123°12.854' E), Barangay Lopez Jaena, Municipality of Murcia (10°33.450' N, 123°04.140' E), Barangay Damsite, Municipality of Murcia (10°33.234' N, 123°02.143' E), and Cavan-Lagasan area in Barangay Tapong, Municipality of Pulupandan and Barangay Lag-asan, Bago City (10°31.204' N, 122°50.260' E).

Kumaliskis (Station 1) is generally of an agricultural landscape, mainly for sugar cane and partly for corn and rice fields. The forest has been severely devastated due to agricultural practices; most of

the plants are comprised of exotic and agricultural species (e.g. *Chromolaema odorata, Lantana camara, Gmelina arborea*). The steep slopes are occupied by stunted native species, mostly figs (Moraceae) and grasses (Graminae).

Lopez Jaena (Station 2) is similar to Station 1, except that this station has higher number of households near the river. Very little forest is left by agriculture which explains the degraded state of most of the area. Abandoned private lands have been colonized by grasses (e.g. *Imperata cylindrica, Bambusa vulgaris*) and shrubs (*C. odorata*). Like those in Station 1, trees are mostly agricultural species (e.g. *Chrysophyllum cainito, G. arborea*).

Damsite (Station 3) is dominated by bamboo thickets and cultivated fields on either banks of the river, with a few severely degraded forest fragments. Proximate to the location of the dam by the National Irrigation Authority (NIA) is a continuous area dominated by shrubs (e.g. *L. camara*) and grasses (e.g. *Paspalum*).

Cavan-Lagasan (Station 4) is located near the mouth of the river. Cavan (Pulupandan municipality) is a mixed-type of habitat, but emphasis was given to the marsh-mangrove area where both forest birds and waders can be found.

Field techniques

Birds. Transects for each station were regularly traversed during observations in the morning (5:30-8:30) and late afternoon (15:30-18:30) between August to October 2009 and February to April 2010. Birds were identified through their calls or through sighting. For cryptic species and birds seen at a distance, binoculars and/or a spotting scope mounted on a tripod were used. The field guide Birds of the Philippines by Kennedy, Gonzales, Dickinson, Miranda, & Fisher (2000) was used for identification. Listing of species (as well as counting for certain taxa) was repeated until the species discovery curve reached its plateau, i.e., no new species added to the cumulative list (Bibby, Jones & Marsden, 1998; Van Weerd & Van Der Ploeg, 2004). Roosting species (e.g. ducks) were observed at their roosting sites or when they formed aggregations when feeding (Bibby, Jones & Marsden, 1998).

To capture birds for closer identification, monofilament mist nets measuring 12 x 4 meters mounted in bamboo poles were installed in fly ways at canopy height or a meter above ground level for mist nets deployed near thickets and reeds. Standard biometric measurements

were taken for captured individuals using vernier calipers. Identification of some species was further verified by taking video footage and photographs. Captured birds were released immediately after the measurements. At times, informal interviews of locals were carried out for additional details.

The conservation status of each species is based on the most recent online database of the World Conservation Union or International Union for the Conservation of Nature (IUCN), available at www.iucn.org, which was based on an earlier assessment by BirdLife International (2008).

Mammals. Non-volant mammals were sampled using snap-traps and snares. Captured individuals were immediately identified using Heaney et al. (1998), measured, photographed and then marked prior to release. Large mammals were observed directly (including their tracks and excreta), where possible.

On the other hand, bats were sampled using mist nets measuring 12m x 2m, with 36mm mesh-size. To maximize capture efficiency, the nets were set across likely paths, such as clearings, along ridges, or by water (Heaney et al., 1989), at heights ranging from 1m to 10 m above the ground. The nets were opened before dusk, checked regularly at 3-hr intervals, and then closed early morning to constitute a one-net night. A species discovery-curve was constructed to determine the sufficiency of the sampling effort. Captured bats were placed in cloth bags to minimize stress.

Each individual was identified (using Ingle & Heaney, 1992), sex determined by observing the genitalia and nipples, and aged (to adult or juvenile) by examining the ossification of the joints of the digits of the wing. Pregnant females were determined through palpitation. Lengths were measured using vernier calipers and weights determined using a digital weighing scale. Each examined individual was given sucrose (dissolved table sugar) as supplemental diet prior to release.

Amphibians and Reptiles. Cruising and quadrat methods (Alcala et al., 2004) were employed to survey the amphibians and reptiles. Captured individuals were identified up to the species level following Alcala and Brown (1998), Alcala (1986), and Brown and Alcala (1978, 1980) as guides, and photographed before releasing them back to the environment. Likewise, the male-call method (Alcala & Alcala, 2005) was used primarily to survey amphibians at night.

RESULTS AND DISCUSSION

Avifauna. This study documented a total of 129 bird species (Table 1), about 57% of the total bird species (based on 225 species listed in www.avibase.org) known in Negros Island (Kennedy et al., 2000). Many of the migrants utilized the marsh in Cavan, Pulupandan as foraging and roosting area. Details on the avifauna are presented in a separate paper (in this issue).

Mammals. There were 10 species of bats in the study area belonging to two families (Table 2): Pteropodidae (fruit bats) and Vespertilionidae (insect bats). The most abundant in all stations was *C. brachyotis* (73.35%), followed by *P. jagori* (12.33%), and *M. minimus* (10.8%). There were only two species of insect bats captured, *Scotophilus kuhlii* and *Murina cyclotis*. The former was recorded in three stations (Kumaliskis, Lopez Jaena, and Damsite), while the latter was found only in Damsite.

The non-volant mammals consisted of three rodents belonging to two families and the Long-tailed Macaque *Macaca fascicularis*. *Rattus tanezumi* was common in all stations while *S. murinus* was found in Damsite and Lag-asan. The Long-tailed Macaque was sighted only in Kumalislis.

Amphibians and Reptiles. Eight species of amphibians belonging to five families were observed in Bago River (Table 3), including two introduced species, the Marine Toad (*Rhinella marina*, formerly *Bufo marinus*) and the Common Green Frog (*Hylarana erythraea*), and one Philippine endemic species *Limnonectes visayanus*. The latter species is presently considered vulnerable by the IUCN (2010). The rest are the common species that can be found in areas near human habitations such *Kaloulapicta, Occidozyga laevis*, and *Polypedates leucomystax*. Only *Hylarana erythraea* was recorded in all stations. *L. visayanus* was noted only in Kumaliskis and Lopez Jaena, while *F. cancrivora* was found only in the estuary (Lag-asan, Bago). The highest number of species was recorded in Damsite (six species), followed by Kumaliskis (five species), Lopez Jaena (three species), and Lag-asan (two species).

There were 19 species of reptiles belonging to eight families, 11 species of which are Philippine endemics and one introduced species, the Chinese soft-shelled turtle *Pelodiscus sinensis*. The rest of the reptiles observed in the Bago River were either species that thrive

in degraded forests (e.g. *Lamprolepis smaragdina*) or those associated with humans (e.g. *Gekko gecko*, *Hemidactylus frenatus*).

Very little comparison can be made between the present survey and the previous surveys done in Negros such as those by Brooks et al. (1992), Paguntalan et al. (2000), Turner et al. (2003), because the earlier surveys focused on higher elevation (500-1500masl) while the present study surveyed areas from about 300m down to the coastal marsh in Cavan, Pulupandan.

Apparently, large bodied vertebrates that are presently considered endangered such as the Visayan Warty Pig (*Sus cebifrons*), Visayan Spotted Deer (*Rusa alfredi*), and the Philippine Crocodiles (*Crocodilus mindorensis*) were not encountered during the survey. The population of these vertebrates are expectedly small and are close to extinction (IUCN 2010) which could be attributed to several factors, primarily habitat loss (Alcala et al., 2004) and intense hunting pressure as food in the case of the wild pig *S. cebifrons* populations in Negros and Panay (Oliver, 1992).

CONCLUSION AND RECOMMENDATIONS

Despite on-going deforestation due to intensive agriculture and expanding human settlements along its banks, the Bago River System still hosts a considerable number of vertebrates, of which two Philippine endemic birds were documented, namely the Visayan Flowerpecker (*D. haematostictum*) and the Philippine Duck (*Anas luzonica*). These species are presently considered Vulnerable (BirdLife International, 2008; IUCN, 2010).

It is possible for certain sites along the Bago River to be declared protected areas to ensure survival of the threatened species such as in Cavan marsh where the Philippine Duck can be found in relatively high numbers. However, indigenous traps for ground birds, wild ducks, and varanid lizards were documented by the survey team in Cavan marsh, indicating continued hunting activities although hunting by means of airguns have been eliminated in the area.

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Table 1.

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station			
			1	2	3	4
Podicipedidae	Little Grebe	*Tachybaptus ruficollis*	—	—	—	x
Anatidae	Wandering Whistling-Duck	*Dendrocygna arcuata*	—	—	—	xx
	PHILIPPINE DUCK	*Anas luzonica,* Vu	x	x	--	xx
	Garganey	*Anas querquedula,* M	—	—	—	xx
	Northern Pintail	*Anas acuta,* M	—	—	—	x
Ardeidae	Great Egret	*Egretta alba,* M	—	—	—	x
	Intermediate Egret	*Egretta intermedia,* M	—	—	—	xx
	Little Egret	*Egretta garzetta,* M	xx	xx	x	xx
	Cattle Egret	*Bubulcus ibis,* M	xx	xx	x	xx
	Black-Crowned Night-Heron	*Nycticorax nycticorax,* M	—	x	x	xx
	Rufous Night-Heron	*Nycticorax caledonicus*	—	—	—	x
	Little Heron	*Butorides striatus,* M	x	xx	x	xx
	Javan Pond-Heron	*Ardeola speciosa*	—	—	x	xx
	Chinese Pond-Heron	*Ardeola bacchus,* M	—	x	—	x
	Purple Heron	*Ardea purpurea*	—	—	—	xx
	Schrenck's Bittern	*Ixobrychus eurythmus,* M	—	xx	x	—
	Yellow Bittern	*Ixobrychus sinensis*	—	—	x	xx
	Cinnamon Bittern	*Ixobrychus cinnamomeus*	x	xx	—	xx
Accipitridae	Crested Goshawk	*Accipiter trivirgatus,* M	x	x	—	—
	Black-winged Kite	*Elanus caeruleus*	x	—	—	—
	Osprey	*Pandion haliaetus,* M	—	—	—	x
	Brahminy Kite	*Haliastur Indus*	xx	x	—	—

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station 1	2	3	4
Falconidae	PHILIPPINE FALCONET	*Microhier axerythrogenys*	—	x	—	—
Turnicidae	Barred Buttonquail	*Turnix suscitator*	xx	x	—	—
Phasianidae	Blue-Breasted Quail	*Coturnix chinensis*	xx	—	—	—
Rallidae	Barred Rail	*Gallirallus torquatus*	—	x	xx	xx
	Slaty-breasted Rail	*Gallirallus striatus*	—	x	—	—
	White-browed Crake	*Porzana cinerea*	—	—	—	xx
	Ruddy-breasted Crake	*Porzana fusca*	—	x	—	—
	White-breasted Waterhen	*Amaurornis phoenicurus*	xx	xx	xx	xx
	Common Moorhen	*Gallinula chloropus*	—	—	—	xx
Scolopacidae	Broad-billed Sandpiper	*Limicola falcinellus*, M	—	x	—	x
	Common Redshank	*Tringa totanus*, M	—	—	—	xx
	Common Greenshank	*Tringa nebularia*, M	—	—	—	xx
	Wood Sandpiper	*Tringa glareola*, M	—	—	—	x
	Curlew Sandpiper	*Calidris ferruginea*, M	—	—	—	xx
	Common Sandpiper	*Actitis hypoleucos*, M	xx	xx	--	xx
	Terek Sandpiper	*Xenus cinereus*, M	—	—	—	xx
	Grey-tailed Tattler	*Heteroscelus brevipes*, M	—	—	—	xx
	Ruddy Turnstone	*Arenaria interpres*, M	—	—	—	xx
	Swinhoe's Snipe	*Gallinago megala*, M	—	x	—	—
	Whimbrel	*Numenius phaeopus*, M	—	—	—	xx
	Black-tailed Godwit	*Limosa limosa*, M	—	—	—	xx
Glareolidae	Oriental Pratincole	*Glareola maldivarum*, M	—	—	—	x

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station 1	2	3	4
Charadriidae	Little Ringed-Plover	*Charadrius dubius*, M	—	—	—	xx
	Kentish Plover	*Charadrius alexandrinus*, M	—	—	XX	xx
Charadriidae	Grey Plover	*Pluvialis squatarola*, M	—	—	—	xx
	Asian Golden-Plover	*Pluvialis fulva*, M	—	—	—	xx
Recurvirostridae	Black-winged Stilt	*Himantopus himantopus*, M	—	—	—	xx
Sternidae	Gull-billed Tern	*Gelochelidon nilotica*, M	—	—	—	x
	Great Crested Tern	*Sterna bergii*, M	—	—	—	xx
	Common Tern	*Sterna hirundo*, M	—	—	—	xx
	Little Tern	*Sterna albifons*, M	—	x	—	x
	Whiskered Tern	*Chlidonias hybridus*, M	—	—	—	xx
Columbidae	Pink-necked Green-Pigeon	*Treron vernans*	—	—	xx	xx
	WHITE-EARED BROWN-DOVE	*Phapitreron leucotis*	xx	—	x	—
	Pied Imperial-Pigeon	*Ducula bicolor*	xx	—	—	—
	Island Collared-Dove	*Streptopelia bitorquata*	xx	xx	—	xx
	Spotted Dove	*Streptopelia chinensis*	xx	xx	x	xx
	Red Turtle Dove	*Streptopelia tranquebarica*	—	—	—	xx
	Zebra Dove	*Geopelia striata*	xx	xx	xx	xx
	Reddish Cuckoo Dove	*Macropygia phasianella*	xx	—	—	—
	Common Emerald Dove	*Chalcophaps indica*	xx	x	—	—
Cuculidae	Brush Cuckoo	*Cacomantis variolosus*	—	—	x	xx
	Plaintive Cuckoo	*Cacomantis merulinus*	—	x	x	—

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station			
			1	2	3	4
	PHILIPPINE COUCAL	*Centropus viridis*	x x	x x	x x	x x
	Hodgson's Hawk-cuckoo	*Cuculus fugax*	—	—	x	—
Caprimulgidae	Philippine Nightjar	*Caprimulgus manillensis*	x	—	—	—
Strigidae	PHILIPPINE SCOPS-OWL	*Otus megalotis nigrorum*	x	—	—	—
	PHILIPPINE HAWK-OWL	*Ninox philippensis*	x	—	—	—
Tytonidae	Grass Owl	*Tyto capensis*	—	—	—	x
Apodidae	House swift	*Apus affinis*	—	x	—	x x
	Glossy Swiftlet	*Collocalia esculenta*	x x	x x	x x	x x
	Asian Palm Swift	*Cypsiurus balasiensis*	—	x	—	—
	PYGMY SWIFTLET	*Collocalia troglodytes*	—	—	x x	—
Alcedinidae	Common Kingfisher	*Alcedo atthis*, M	x	x	x	x x
	White-collared Kingfisher	*Halcyon chloris*	x x	x x	x x	x x
	White-throated Kingfisher	*Halcyon smyrnensis*, M	—	x	—	—
Meropidae	Blue-throated Bee-eater	*Merops viridis*	x x	x	—	—
	Blue-tailed Bee-eater	*Merops philippinus*	x	x	x x	x x
Ramphastidae	Coppersmith Barbet	*Megalaima haemacephala intermedia*	x x	—	—	—
Pittidae	Hooded Pitta	*Pitta sordida*	—	x	—	—
Hirundinidae	Barn Swallow	*Hirundo rustica*, M	x x	x x	x x	x x
	Red-rumped Swallow	*Hirundo daurica*, M	x	—	—	—
	Pacific Swallow	*Hirundo tahitica*	x	x	x x	x x
Campephagidae	Pied Triller	*Lalage nigra*	x x	—	x x	x x

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station 1	2	3	4
Pycnonotidae	Yellow-vented Bulbul	*Pycnonotus goiavier*	x x	x x	x x	x x
	PHILIPPINE BULBUL	*Hypsipetes philippinus guimarasensis*	x x	x x	x x	x
Dicruridae	BALICASSIAO	*Dicrurus balicassius*	x x	—	x	—
Oriolidae	Black-naped Oriole	*Oriolus chinensis*	—	x	—	—
Corvidae	Large-billed Crow	*Corvus macrorhynchos*	x x	—	—	—
Turdidae	Oriental Magpie-Robin	*Copsychus saularis*	x x	x x	x x	x x
	WHITE-BROWED SHAMA	*Copsychus luzoniensis superciliaris*	x x	—	—	—
	Pied Bushchat	*Saxicola caprata*	x	x x	x x	—
Sylviidae	Golden-bellied Flyeater	*Gerygone sulphurea*	—	—	x x	x x
	Arctic Warbler	*Phylloscopus borealis*, M	x	x	x	x
	PHILIPPINE LEAF-WARBLER	*Phylloscopus olivaceus*	x	—	—	—
	Tawny Grassbird	*Megalurus timoriensis*	x x	x x	x	x x
	Striated Grassbird	*Megalurus palustris*	x x	x x	x	x x
	PHILIPPINE TAILORBIRD	*Orthotomus castaneiceps*	x x	x x	x x	x x
	Bright-capped Cisticola	*Cisticola exilis*	x x	x x	x x	x x
	ZittingCisticola	*Cisticola juncidis*	—	x	—	x x
	Oriental Reed-warbler	*Acrocephalus orientalis*, M	—	x	x x	x
Monarchidae	Black-naped Monarch	*Hypothymis azurea*	x	—	x	—
Muscicapidae	Mangrove Blue Flycatcher	*Cyornis rufigastra*	x x	—	x x	—
	Grey-streaked Flycatcher	*Muscicapa griseisticta*, M	x x	x	x	—

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station 1	2	3	4
	Pied Fantail	*Rhipidura javanica*	x x	x x	x x	x x
Motacillidae	White Wagtail	*Motacilla alba*, M	x	x x	—	—
	Grey Wagtail	*Motacilla cinerea*, M	x	x	—	—
	Yellow Wagtail	*Motacilla flava*, M	x x	x	x	—
	Richard's Pipit	*Anthus novaeseelandiae*	—	—	x	x
Artamidae	White-breasted Wood-swallow	*Artamus leucorynchus*	x x	x x	x x	—
Laniidae	Brown Shrike	*Lanius cristatus*, M	x x	x x	x x	x x
	Long-tailed Shrike	*Lanius schach*	x x	x x	—	—
Sturnidae	Asian Glossy Starling	*Aplonis panayensis*	x x	x x	x x	x
	Crested Myna	*Acridotheres cristatellus*	x x	—	—	—
	Coleto	*Sarcops calvus*	x	x	—	—
Nectariniidae	Olive-backed Sunbird	*Nectarinia jugularis*	x x	x x	x x	x x
	Plain-throated Sunbird	*Anthreptes malacensis*	x	—	—	—
	Purple-throated Sunbird	*Nectarinia sperata*	x x	x	—	—
Dicaeidae	VISAYAN FLOWERPECKER	*Dicaeum haematostictum*, Vu	x x	—	—	—
	BICOLORED FLOWERPECKER	*Dicaeum bicolour viridissimum*	x	x	—	—
	Orange-bellied Flowerpecker	*Dicaeum trigonostigma*	x x	—	x	—
Zosteropidae	YELLOWISH WHITE-EYE	*Zosterops nigrorum nigrorum*	x x	—	x x	—
Ploceidae	Eurasian Tree Sparrow	*Passer montanus*	x x	x x	x x	x x
Estrildidae	Java Sparrow	*Padda oryzivora*	x x	x x	x	—

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Table 1. (Continued...)

List of Avifaunal Species Observed in Four Survey Locations along the Bago River.

Family	Common Name	Scientific Name	Station 1	2	3	4
	White-bellied Munia	*Lonchura leucogastra*	x	x	x	—
	Scaly-breasted Munia	*Lonchura punctulata*	x x	x	x x	x x
	Chestnut Munia	*Lonchura Malacca*	x x	x x	x x	x
Total number of Species: 129			**71**	**77**	**55**	**79**

Table 2.

List of Mammals Observed in Four Stations of Bago River, Negros Occidental

(Note: X–present; number in parenthesis indicates number of individuals captured).

Species	Family	Station			
		1	2	3	4
	Bats (Chiroptera)				
Cynopterus brachyotis	Pteropodidae	x (342)	x (92)	x (322)	x (243)
Eonycteris spelaea	Pteropodidae	x (7)	x (1)	x (2)	x (4)
Harpyionycteris whiteheadi	Pteropodidae	x (4)			
Macroglossus minimus	Pteropodidae	x (55)	x (19)	x (56)	x (18
Murina cyclotis	Vespertilionidae	—	—	x (2)	—
Ptenochirus jagori	Pteropodidae	x (56)	x (8)	x (45)	x (59)
Pteropus hypomelanus	Pteropodidae	x (5)	x (1)	—	—
Pteropus pumilus	Pteropodidae	x (8)	—	—	—
Rousettus amplexicaudatus	Pteropodidae	x (5)	—	—	x (1)
Scotophilus kuhlii	Vespertilionidae	x (3)	x (2)	x (2)	—
Number of Species:	**10**	**9**	**6**	**6**	**5**
	Non-volant Mammals				
Macaca fascicularis	Cercopithecidae	x			
Rattus cf exulans	Muridae	x	x (2)		
Rattus tanezumi	Muridae	x (2)	x (1)	x (10)	x (3)
Suncus murinus	Soricidae			x (1)	x (2)
Number of Species: 4		**3**	**2**	**2**	**2**

Table 3.

List of Amphibians and Reptiles Observed in Four Stations.

Species	Family	Station 1	2	3	4
AMPHIBIANS					
Rhinella marina (Bufomarinus)	Bufonidae	x	x	x	—
Limnonectes visayanus	Dicroglossidae	x	x	—	—
Occidozyga laevis	Dicroglossidae	x	—	x	—
Polypedates leucomystax	Rhacophoridae	x	—	x	—
Rana (Hylarana) erythraea	Ranidae	x	x	x	x
Fejervarya vittigera	Ranidae	—	—	x	—
Fejervarya cancrivora	Ranidae	—	—	—	x
Kaloula picta	Microhylidae	—	—	x	—
Number of species: 8		**5**	**3**	**6**	**2**
REPTILES					
Hydrosaurus pustulatus	Agamidae	x(6)	x(6)	x(3)	—
Calamaria gervaisi	Colubridae	—	—	—	x(5)
Cerberus rynchops	Colubridae	—	x(1)	--	x(1)
Cyclocorus lineatus	Colubridae	x(1)	x(1)	—	—
Dendrelaphis pictus	Colubridae	x(3)	—	—	x
Draco spilopterus	Agamidae	x(1)	—	—	x(1)
Tropidonophis dendrophiops	Colubridae	—	x(1)	—	—
Gehyra mutilata	Gekkonidae	—	x(1)	—	—
Gekko gecko	Gekkonidae	x(2)	x(1)	x(2)	x(1)
Gekko mindorensis	Gekkonidae	—	x(1)	—	—
Hemidactylus frenatus	Gekkonidae	x(1)	x(2)	x(1)	x(1)
Cuora amboinensis	Geoemydinae	—	x(1)	—	—
Brachymeles boulengeri	Scincidae	—	—	—	x(41)
Lamprolepis smaragdina	Scincidae	—	x(1)	—	x(1)
Mabuya multifasciata	Scincidae	x(1)	—	—	x(1)
Ramphotyphlops braminus	Typhlopidae	—	—	—	x(1)
Varanus nuchalis	Varanidae	x(5)	x(1)	x(1)	x(3)
Elaphe (Coelognathus) erythrura	Colubridae	—	x(1)	—	—
Pelodiscus sinensis	Trionychidae	—	x(2)	—	—
Number of species: 19		**8**	**11**	**4**	**10**
Total number of species: 27		**13**	**14**	**10**	**12**