

Quirino Protected Landscape

The Quirino Protected Landscape (QPL) was proclaimed as a protected area under the NIPAS framework on February 3, 2004 (Presidential Proclamation No. 548) covering a total area of 206,875 hectares. It encompassed 52 barangays within the five municipalities of Diffun, Cabarroguis, Aglipay, Maddela and Nagtipunan in Quirino Province. However in February 9, 2005, by virtue of Presidential Proclamation No. 779, QPL was sub-divided into three parcels, to make way for the mining development in the area, with a total remaining aggregate area of only 175,943 hectares. The remaining forested area within the province of Quirino covers approximately 157,363 has (119,411 has., 76%, second growth and 37,952 has., 24%, old growth). Bulk of the forestlands is located within the protected area.

QPL is located at the central section of the Sierra Madre Mountain Range and forms an integral part of the Sierra Madre Biodiversity Corridor. It is considered a major watershed area because it is the headwater of the Cagayan River, the longest river in the Philippines that supports the development of the Cagayan Valley Region. There are three major river systems of economic importance that originates within the PA, the upper Cagayan River, the Addalam River and Ganano River. These bodies of water are the major source of water for irrigation, domestic, and industrial uses in the province and in the Cagayan Valley area.

The Sierra Madre Biodiversity Corridor Design and Implementation Framework published in 2004 enumerate the strategies for the conservation of nine identified key biodiversity areas, which includes QPL, which span the Sierra Madre Mountain Range. These strategies were adopted and further elaborated in the protected area management plan that was completed in 2008. Realizing the important contribution of forestry in the development of Quirino province, a Quirino Forestry Master Plan has also been drafted and is currently awaiting the final endorsement of the provincial government.

Biodive Significance

The QPL harbors various threatened and endangered species of plants and animals, many of which are endemic to the country or restricted to the island of Luzon (Table xx). Based on the 2009 IUCN Red List of Threatened species, at least 41 threatened species (24- plants and 17- animals) has been recorded to occur within the protected area. This includes two critically endangered endemic birds, Philippine Eagle (*Pithecophaga jefferyi*) and the Isabela Oriole (*Oriolus isabellae*). The endangered Cantor's Soft-shelled Turtle (*Pelochelys cantori*) has been observed in the river systems traversing the area. Of the 14 vulnerable species of animals, five species are endemic to the island of Luzon while the rest have a more widespread distribution that is restricted only to the country. One species of gecko, *Luperosaurus kubli*, which was only described in 2007, is so far only known to occur within the protected area. The eleven species of critically endangered plants are trees that occur within the lowland rainforest of QPL and are the source of premium timber. A new species of *Rafflesia*, a parasitic plant that produces the largest known flower, was recently discovered to be occurring in the lowland dipterocarp forest of QPL. A commercially important species of fish that commands a very high price in the local market is also found in the rivers of the QPL. This is the Lobed River Mullet (*Cestraeus plicatilis*) which

is locally known as banak or ludong. The known distribution of this species within the country is confined only to the rivers of Northern Luzon.

Key threats/issues

One of the biggest threats to the remaining forests within the protected area is the expansion of agricultural areas. Agricultural development encroachment in the uplands is increasing particularly with the promotion of advance technologies in the production of agricultural crops. Majority of the farmers engage in unsustainable farming practices to increase crop yields and income. This include the use of chemical-based fertilizers and pesticides that pollutes freshwater resources and contributes to the soil and water degradation and planting of fancy varieties of commercial crops that poses a threat to the survival of the unique wildlife in the area. These practices threaten the integrity of the watersheds and the sustainability of the environment. In addition, there is great demand for the timber resource and both the lowland and upland communities continue to extract timber for construction, fuelwood, charcoal and housing purposes. Other threats to the forests include mining, land conversion for human settlement, and a mix of legal and illegal hunting and/or harvesting of wildlife for the pet trade and decorative/ornamental plants. These activities not only lead to habitat degradation and loss of biodiversity but also results in natural calamities like landslides and flash floods to occur more frequently, causing loss of lives and destruction to properties, crops and agricultural lands. Imminent threats are perceived to have increased following the opening up of the excised part of the QPL for mining which have invited the attention and interest of the adjacent communities, neighboring towns and provinces to encroach and settle in the nearby areas to take advantage of the economic opportunities offered by the mining operation.

Interventions

In 2007, Conservation International Philippines established an initial 20 hectares of pilot Afforestation/ Reforestation Clean Development Mechanism (AR/CDM) carbon sequestration project, as part of a proposed 13,000 has Carbon Project within the province of Quirino that will contribute to addressing climate change and global warming concerns. Half of the pilot area was reforested and planted with various species of forest trees, and the other half was dedicated to agro-forestry which was planted with fruit trees. In 2009, additional funding from a Japanese artist group, More Trees, provided ~US\$270,000 for a similar small-scale AR/CDM project under the Voluntary Emission Reduction Standard (VERS) scheme. According to the terms of the agreement entered into between MoreTrees and CI, funds provided are for the initial 41 hectares carbon development, 26 hectares of forests tree plantation and 15 hectares agroforestry farm development. This is to produce Voluntary Carbon Unit (VCUs) under the Voluntary Carbon Standards (VCS). The project is being implemented by CI together with the Divisorla Sur Agroforestry Farmers Association (DSAFA) and Sto. Niño Integrated Social Forestry Association (STISFA).

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Quirino Forestry Master Plan (2nd Draft)

Table xx. List of threatened and restricted range species found within the Quirino Protected Landscape. (**CR**- Critically Endangered, **EN** – Endangered, **VU**-Vulnerable, **NT**- Near Threatened, **DD** – Data Deficient)

Taxonomic Group	Scientific Name	Common Name	Conservation Status	
			IUCN 2009	Distribution
Amphibians				
	<i>Kaloula kalingensis</i>	Kalinga Narrow-mouthed Toad	VU	Luzon endemic
	<i>Platymantis sierramadrensis</i>	Sierra Madre Forest Frog	VU	Luzon endemic
	<i>Hylarana tipanan</i>	Brown and Alcalá's Sierra Madre Frog	VU	Philippine endemic
	<i>Platymantis pygmaeus</i>	Pygmy Forest Frog	VU	Philippine endemic
	<i>Rhacophorus bimaculatus</i>	Blue-spotted Tree Frog	VU	Philippine endemic
	<i>Hylarana luzonensis</i>	Luzon Slender Stream Frog	NT	Luzon endemic
	<i>Limnonectes macrocephalus</i>	Giant Luzon Woodland Frog	NT	Luzon endemic
	<i>Platymantis luzonensis</i>	Luzon Forest Frog	NT	Luzon endemic
	<i>Hylarana similis</i>	Variable-backed Frog	NT	Philippine endemic
	<i>Platymantis corrugatus</i>	Rough-backed Forest Frog		Philippine endemic
<i>Platymantis dorsalis</i>	Common Forest Frog		Philippine endemic	
Retiles				
	<i>Pelochelys cantorii</i>	Cantor's Soft-shelled Turtle	EN	
	<i>Varanus olivaceus</i>	Monitor Lizard	VU	Luzon endemic
	<i>Sphenomorphus cumingi</i>	Cuming's Eared Skink		Philippine endemic
	<i>Luperosaurus kubli</i>			Site endemic
Birds				
	<i>Oriolus isabellae</i>	Isabela Oriole	CR	Luzon endemic
	<i>Pithecophaga jefferyi</i>	Philippine Eagle	CR	Philippine endemic
	<i>Bubo philippensis</i>	Philippine Eagle-Owl	VU	Philippine endemic
	<i>Ceyx melanurus</i>	Philippine Dwarf-Kingfisher	VU	Philippine endemic
	<i>Pitta kochi</i>	Whiskered Pitta	VU	Luzon endemic
	<i>Rhyacornis bicolor</i>	Luzon Water-redstart	VU	Luzon endemic
	<i>Spizaetus philippensis</i>	Philippine Hawk Eagle	VU	Philippine endemic
	<i>Zoothera cinerea</i>	Ashy Ground Thrush	VU	Philippine endemic
	<i>Hypothymis coelestis</i>	Celestial Monarch	VU	Philippine endemic
	<i>Prioniturus luconensis</i>	Green Racquet-tail	VU	Philippine endemic
	<i>Ducula poliocephala</i>	Pink-Bellied Imperial Pigeon	NT	Philippine endemic
	<i>Ptilinopus merrilli</i>	Cream-bellied Fruit-Dove	NT	Luzon endemic
	<i>Buceros hydrocorax</i>	Rufous Hornbill	NT	Philippine endemic
	<i>Centropus unirufus</i>	Rufous Coucal	NT	Luzon endemic
	<i>Gallinolumba luzonica</i>	Luzon Bleeding Heart	NT	Luzon endemic
	<i>Ichthyophaga ichthyaetus</i>	Grey-headed Fish-Eagle	NT	
	<i>Napothera rabori</i>	Rabor's Wren-Babbler		Luzon endemic
	<i>Otus longicornis</i>	Luzon Scops-Owl	NT	Luzon endemic
	<i>Stachyris dennistouni</i>	Golden-Crowned Babbler	NT	Luzon endemic
<i>Coracina coerulescens</i>	Blackish Cuckoo-shrike		Philippine endemic	

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	<i>Cyornis herioti</i>	Blue-breasted Flycatcher		Luzon endemic
	<i>Hypothymis helenae</i>	Short-crested Monarch		Philippine endemic
	<i>Oriolus albiloris</i>	White-lored Oriole		Philippine endemic
	<i>Parus semilarvatus</i>	White Fronted Tit	NT	Philippine endemic
	<i>Penelopides manillae</i>	Tarctic Hornbill		Philippine endemic
	<i>Phaenicophaeus cumingi</i>	Scale feathered Malkoha		Luzon endemic
	<i>Phaenicophaeus superciliosus</i>	Red Crested Malkoha		Luzon endemic
	<i>Rhabdornis grandis</i>	Long-billed Rhabdornis		Luzon endemic
	<i>Stachyris striata</i>	Luzon Striped-babbler		Luzon endemic
Mammals				
	<i>Sus philippensis</i>	Philippine Warty Pig	VU	Philippine endemic
	<i>Haplonycteris fischeri</i>	Philippine Pygmy Fruit Bat		Philippine endemic
	<i>Otopteropus cartilagonodus</i>	Luzon Pygmy Fruit Bat		Luzon endemic
	<i>Coelops hirsutus</i>	Philippine tailless bat	DD	Philippine endemic
	<i>Chrotomys whiteheadi</i>	Luzon Striped Shrew Rat		Luzon endemic
	<i>Ptenochirus jagori</i>	Greater Musky Fruit Bat		Philippine endemic
	<i>Hipposideros obscurus</i>	Philippine Forest Roundleaf Bat		Philippine endemic
	<i>Rhinolophus virgo</i>	Yellow-Faced Horseshoe Bat		Philippine endemic
	<i>Bullimus luzonicus</i>	Large Luzon Forest Rat		Luzon endemic
	<i>Apomys sp.</i>			Philippine endemic
	<i>Rattus everetti</i>			Philippine endemic
	<i>Cervus marrianus</i>			Philippine endemic
Plants				
	<i>Dipterocarpus gracilis</i>	Panau	CR	
	<i>Dipterocarpus grandiflorus</i>	Apitong	CR	
	<i>Dipterocarpus hasselti</i>		CR	
	<i>Dipterocarpus kunstleri</i>		CR	
	<i>Dipterocarpus validus</i>	Hagakhak	CR	
	<i>Hopea acuminata</i>		CR	
	<i>Shorea contorta</i>	White Lauan	CR	
	<i>Shorea guiso</i>	Guijo	CR	
	<i>Shorea negrosensis</i>	Red Lauan	CR	
	<i>Shorea palosapis</i>		CR	
	<i>Shorea polysperma</i>	Tanguile	CR	
	<i>Guioa discolor</i>		EN	
	<i>Agathis philippensis</i>	Almaciga	VU	
	<i>Aglaia costata</i>		VU	
	<i>Aphanamixis polystachya</i>		VU	
	<i>Dillenia philippinensis</i>	Katmon	VU	
	<i>Horsfieldia ardisiifolia</i>		VU	
	<i>Lithocarpus ovalis</i>		VU	
	<i>Macaranga caudatifolia</i>		VU	

Taxonomic Group	Scientific Name	Common Name	Conservation Status	
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	<i>Macaranga grandifolia</i>		VU	
	<i>Mitrephora fragrans</i>		VU	
	<i>Palaquium bataanense</i>		VU	
	<i>Pterocarpus indicus</i>		VU	
	<i>Terminalia nitens</i>		VU	