RIVERINE CATFISHES OF KALIMANTAN, PANGASIIDAE: DIAGNOSIS, DISTRIBUTION, AND ECOLOGY

Rudhy Gustiano*) and Laurent Pouyaud**)

ABSTRACT

The main constrain to cultivate wild species and optimize the production of cultured species is to due poorly documented of genetic resources. In the current study, it presents the diversity of pangasiids catfishes from Kalimantan. Nine hundreds and ninety nine specimens formed the core of the material examined during this study. On each specimen, 35 point to point measurement, covering the possible variation of the body conformation were taken using dial calipers. Data were subjected to principal component analysis. Data analysis consisted in characterizing groups from scatter plots between pairs of structuring characters for subsequent use in generic identification keys. Three genera with fourteen species exist in eigth main rivers, Barito; Kahayan; Kapuas; Batang Rajang; Kinabatangan; Kayan; Berau, and Mahakam. They are *Helicophagus typus*, *Pteropangasius micronemus*, *Pangasius polyuranodon*, *P. kunyit*, *P. djambal*, *P. macronema*, *P. nasutus*, *P. lithostoma*, *P. humeralis*, *P. kinabatangensis*, *P. sabahensis*, *P. rheophilus*, *P. nieuwenhuisii*, and *P. mahakamensis*. The diagnosis of the species, identification key, distribution, and ecology are given.

KEYWORDS: **diversity, Pangasiidae, catfish, Kalimantan**

INTRODUCTION

The family of the Pangasiidae belongs to the suborder Siluroidei, order Siluriformes, and superorder Ostariophysi (Fink & Fink, 1981; Nelson, 1994; Teugels, 1996). In general, Pangasiids are riverine catfishes generally occurring in freshwater from the Indian subcontinent to the Indonesian Archipelago. As a consequence of human activities and heavy exploitation, many species in this family are presently being threatened with extinction. The World Conservation Union (IUCN) already lists some species as endangered. Thus, the extraordinary diversity and distribution pattern of the Pangasiidae based on a long evolutionary process is now being rapidly modified under human threats.

In the Mekong Delta, the aquaculture production of *Pangasius* significantly exceeds the production from capture fisheries, showing the economical importance of their aquaculture in the global fisheries sector. Meanwhile, in Indonesia, although more than 10 Pangasiid species have been listed, the only *Pangasius* cultured remained *Pangasianodon hypophthalmus*, introduced from Thailand (Legendre, 1999). Of the 14 valid species from Kalimantan, few have been reproduced successfully: *Pangasius nasutus, P. nieuwenhuisii, and P. djambal*. Objectives of the study are to present all species and genera of pangasiid catfishes of Kalimantan including their distribution and ecology for aquaculture purposes.

MATERIALS AND METHODS

Nine hundred and ninety nine specimens, collected during the "Catfish Asia" project (Legendre, 1999), formed the core of the material examined during this study. On each specimen, 35 point to point measurements covering the possible variation of the body confirmation were taken using dial calipers as follows: standard length (SL) from tip of snout to caudal peduncle; head length (HL) from tip of snout to posterior border of operculum; snout length (SNL) from tip of snout to anterior eye border; anterior snout width (SNW1) taken between the anterior nostrils; the posterior snout width (SNW2) taken between posterior nostrils; head depth (HD) taken at the level of the posterior eye border; head width (HW) inter-orbital length taken on frontal part of the head; predorsal distance (PDL) from tip of snout to base of first dorsal spine; caudal peduncle length (CPL) from base of last anal fin ray to middle of caudal peduncle; caudal peduncle depth (CPD) taken as minimum body depth; pectoral spine length (PESL) from its base to its tip; pectoral fin length (PEFL) from pectoral spine base to tip of fin; dorsal spine length (DSP) from base of first dorsal spine to tip; dorsal fin length (DFL) from base of first dorsal spine to tip of fin; pelvic fin length (PFL) from base to tip of fin; anal fin height (AFH) from base of first anal fin ray to tip of longest ray; anal fin length (AFL) from base of first ray to base of last anal ray; adipose fin height (ADFH) from base to tip; maximal adipose fin width (ADFW); maximal orbital diameter (ED); mouth width (WM); lower jaw length (LJL) from tip of snout to corner of mouth; interorbital distance (WT) taken between the eyes; distance snout to isthmus (DSI) from tip of snout to isthmus with a closed mouth; postocular length (OL) from posterior border of eye to posterior border of operculum; maxillary barbel length (MBL); mandibular barbel length (MABL); body width (BW) from left to right scapular excrescence bones close to pectoral spine base; prepectoral length (PPEL) from tip of snout to pectoral spine base; prepelvic length (PPL) from tip of snout to first pelvic fin ray base; vomerine width

*) Research Institute For Freshwater Aquaculture (BRPBAT)
**) Institute de Recherches pour le Developpement (IRD)