Chapter 8

Fishes of the Palumeu River, Suriname

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SUMMARY

Eighteen sites near three camps along the Upper and Middle Palumeu River, Suriname, were sampled between 9 and 25 March, 2012. We recorded 94 species of fishes, and, in combination with a collection of fishes from Lower Palumeu River by Covain et al. in 2008, 128 species are now known to occur in Palumeu River. This diversity is high compared to the rest of the world, but is typical for a medium-sized river of the Guiana Shield. Alpha diversity was high in the Upper Palumeu River (71 species), while two sites in the Middle Palumeu River had low α diversity probably because they could not be assessed adequately due to high water level and strong current that reduced sampling effectiveness, especially in the rapids. We collected eleven species of fishes potentially new to science, including a *Bryconops* species with red fins, a small *Parotocinclus* catfish (*Parotocinclus* aff. *collinsae*), and a head-and-tail-light tetra (*Hemigrammus* aff. *ocellifer*). Of these eleven species, gen.nov. sp.n. aff. *Parotocinclus* was collected before in the Upper Marowijne River, but both this species and its genus are still undescribed. Two species are new records for Suriname: *Hyphessobrycon heterorhabdus* and *Laimosemion geayi*; a third and fourth species, *Ituglanis nebulosus* and *Pimelodella megalops*, may also represent new species for Suriname if their identity is confirmed. One species, *Aequidens paloemeuensis*, is endemic to Palumeu River, while an additional 6 species are endemic to the Marowijne River System, which includes Palumeu River: *Cyphocharax biocellatus*, *Semaprochilodus varii*, *Jupiaba maroniensis*, *Moenkhausia moisae*, gen.nov. sp.n. *Parotocinclus* and *Pimelodella procera*. An additional five species of Palumeu River collected by Covain et al. in 2008 are also endemic to the Marowijne River System: *Hemiodus hurault*i, *Corydoras* aff. *breei*, *Hemiancistrus medians*, *Pimelabditus moli* and *Platydoras* sp. We collected 71 species in Upper Palumeu River and tributaries (Site 1), 16 species in the Makrutu and Tapaje creeks (Site 3), and 49 species at the Kasikasima site (Site 4). The differences in the number of species among the three sites probably reflect differences in opportunity to sample effectively with seine net in shallow water at the three sites, diversity of habitat types that could be sampled at each site and total sampling time at each site. Species composition varied strongly among sites: sites 3 and 4 included large-sized fishes from the main channel of the Middle Palumeu River, while site 1 had many small-sized species of creek habitat. Overall, large top-level predators were still common in Palumeu River, indicating intact ecosystems. The primary threat to the fishes of Palumeu River is the so-called Tapajai Project, which proposes to build one or more dams in the Tapanahony River in order to divert its water via Jai Creek to Brokopondo Reservoir and thus increase power generation by the hydroelectric station at Afobaka. The dam(s) would directly affect migratory fishes, fishes of running water and creek habitats and fishes downstream of the dam(s). Several migratory fish species, which people throughout Suriname depend upon for food, may require the pristine headwaters of Southeastern Suriname for spawning, although very little is known. Furthermore, the dam(s) would effectively mix the fish faunas of the Marowijne River System and the Suriname River System, which each support distinct communities with endemic species, possibly leading to species declines or extinctions.

INTRODUCTION

Fishes are a critical source of protein to the Trio and Wayana people in villages along the Tapanahony and Palumeu rivers. They are a common and highly-valued component of many meals. Large and medium-sized fish species that are routinely eaten have local names. However, most fish species are small and often ignored by local people. However, many of these small species are highly valued in the aquarium hobby and could play an important role in the development of the area if fisheries for these species are strictly regulated. Fish species are an important component of the aquatic ecosystem. Large top-predators like anyumara (*Hoplias aimara*) (see page 19) and detritivores like kwimata (*Prochilodus* and *Semaprochilodus*) are often keystone species in aquatic ecosystems (Schindler 2007); as popular food fishes they are also most vulnerable to overfishing. Smaller fishes forage on aquatic invertebrates and serve as prey for larger fishes, caiman, and