Setting Priority Conservation Areas
# for Fish Species in Gabon

By: Yves Fermon

Gabon includes 73 main watersheds that drain into the Atlantic ocean or the Gulfe of Guinea, and can be combined into 33 areas. The most important basin is the Ogooué, which includes several large sub-basins such as Ivindo and Ngounie.

Following diverse information sources (Fishbase[1], Faunafri[2], Stiassny et al. 2007[3], etc.), Gabon is included in Lower Guinea ichtyoregion and 407 fresh – and brackish water described species of fishes, of which 31 seem endemic and 5 have been introduced, are known from Gabon. However, some of them need to have their identification confirmed while others remain undescribed, especially those from mormyrids genus *Paramormyrops* and "killis' fish. It is likely that several other endemic species with limited range are still to be discovered as the poeciliid *Plataplochilus*, or nothobranchiids (killifishes).

So far, studies show that the Ogooué basin has the highest absolute species richness, especially its large sub-basins Ivindo and Ngounié, which are also important in terms of presence of endemic species.

The Nyanga river also show relatively high values of endemism despite average sampling efforts, while, at the opposite, the Ntem and Woleu basins show a relatively low species richness despite a relatively high sampling effort.

Smaller basins where sampling efforts have been limited, show a significant biodiversity, such as the Iboundji basin, or the Lassio river with 14 and 27 species recorded in only 3 visits, respectively. However, weighting by sampling effort, the richest basins in total number of species also seem
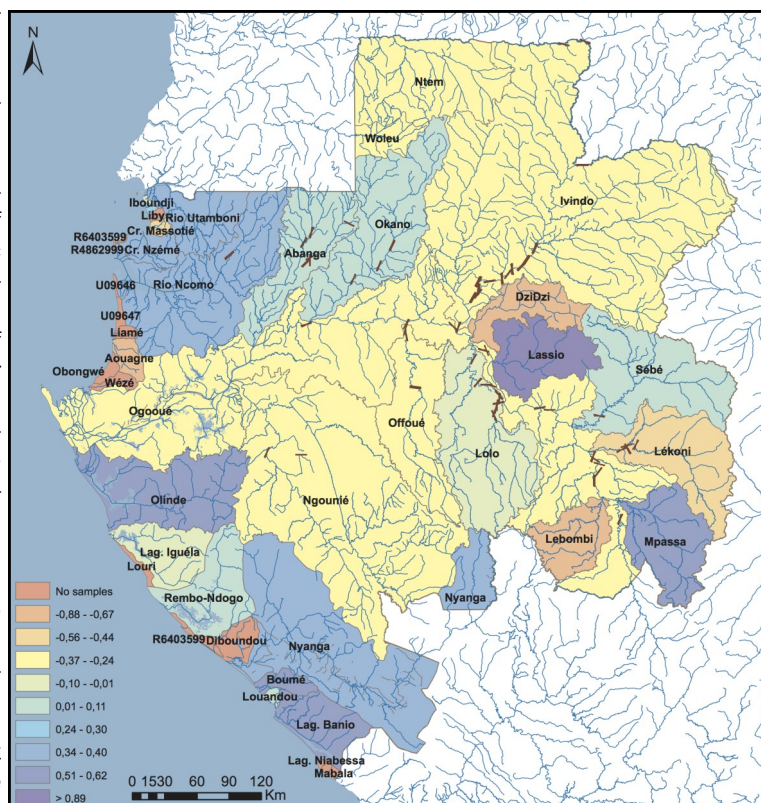
Distribution of weighted fish species richness throughout Gabon (residuals total species richness / sampling station number)

the lowest in weighted specific richness despite higher sampling efforts compared to others. Nevertheless, numerous specimen from these basins are still in collection or being identified, with potential new species to be described.

YVES FERMON

Researcher, Assoc. Aimara & attached to DPMA, National Museum of Natural History, Paris, France.

PhD on General Ichthyology from the National Museum of Natural History, Yves Fermon is working since 1987, on different scientific themes about tropical continental fishes, including ecology, behavior studies, systematics, fisheries and aquaculture for watershed management, biodiversity knowledge and also food security in different tropical countries, mainly in Africa. For more information: http://www.yves-fermon.com

AIMARA

(Association of specialists working for the development and the application of knowledge about fish and Man-Nature relationships)

Aimara is an NGO which goals are research on ichthyology, diffusion of knowledge on fish and sustainable management of environment and resources. Members of this NGO are researchers working on different research fields, and who belong mainly to high international research institutes like the CNRS, IRD or MNHN. For more information: http://www.asso-aimara.org

[1] www.fishbase.org
[2] www.poissons-affrique.ird.fr/faunafri
[3] Stiassny M.L.J., Teugels G.G., Hopkins C.D. 2007 Poissons d'eau douce et saumâtres de Basse Guinée, Ouest de l'Afrique Centrale—Volumes 1 et 2. IRD Editions/ MNHN. Collection Faune et Flore tropicales.

To synthesize all the gathered information and set priorities for conservation and/or sustainable management of fish biodiversity, a hierarchical classification has been used taking into account the overall and weighted species richness and the endemism rate per basin.

From this analysis, 5 categories have been defined with category 0 covering all basins that have never been sampled so far, categories 1 and 2 with relatively low and medium specific richness and low endemism rate, and categories 3 and 4 covering basins with the most important biodiversity with, respectively low and medium to high endemism rate.

At this stage, the conclusions of the study on fish biodiversity throughout Gabonese watersheds and priority areas for conservation are partial due to various constraints :

Although available data show that Gabon has a high fish biodiversity, Gabon has been under-sampled for fish biodiversity so far with various sampling bias (eg. sampling stations are mostly located along roads).
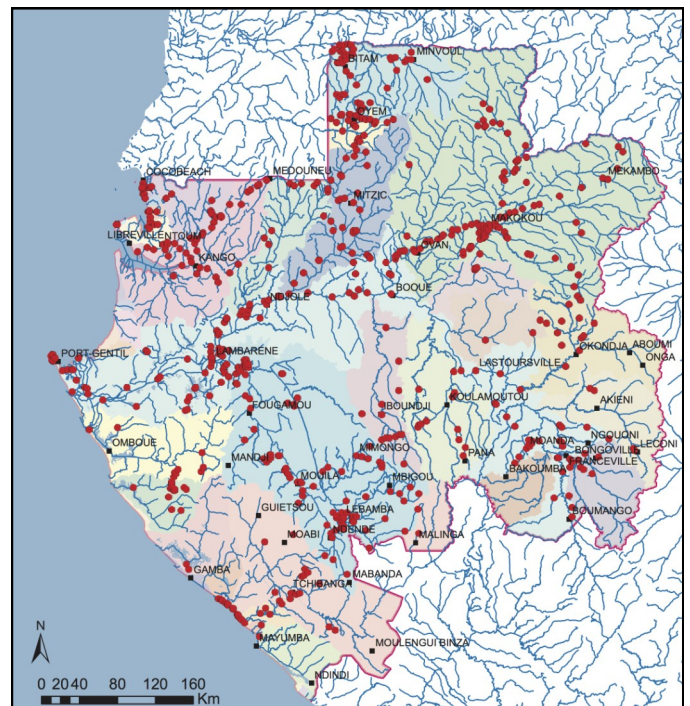
Reliable basin maps lack and the author have had to use and interpret different sets of georeferenced data with subsequent risks of errors.

The reliability of the gathered information is limited with significant loss of information due to non identified specimen in museums, poor / incomplete / false information in the grey littérature and articles, etc.

In that context, conclusions need to be confirmed through additional researches.
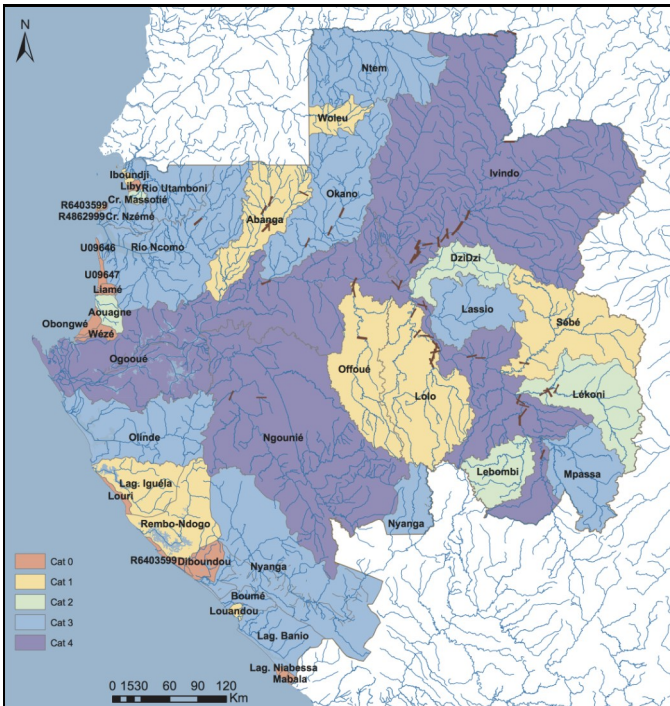
Distribution of conservation priority categories throughout Gabon, set using hierarchical classification per basin.

Plataplochilus sp. (Poeciliidae)

AFRICA BIODIVERSITY COLLABORATIVE GROUP

Find full report of this summary on the ABCG website:
www.abcg.org
Or contact Jocelyn Ziemian, ABCG Coordinator at
jziemian@abcg.org

Distribution of known data collection stations on fish biodiversity in Gabon

Aphyosemion striatum (Nothobranchiidae)