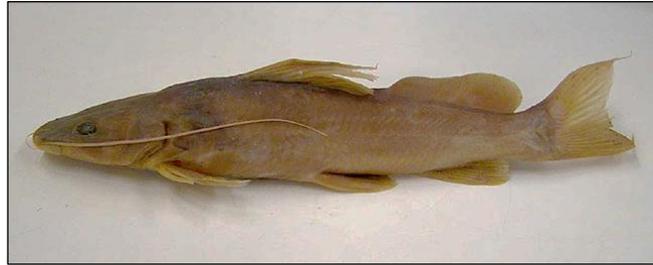
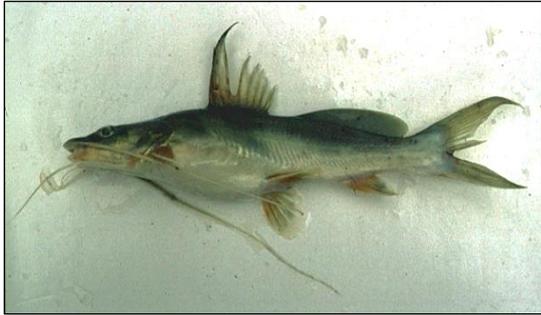


Bagrus docmak (Fabricius, 1775)



Left: Malagarasi River, Tanzania (photo by L. De Vos). Right: collection specimen from the Sanaga River at Belabo in Cameroon. Both images © Royal Museum for Central Africa.

Synonyms

Silurus docmak Fabricius, 1775
Bagrus koenigi Pietschmann, 1932
Bagrus docmac docmac (Fabricius, 1775)
Bagrus docmak niger Daget, 1954

FAO names

Semutundu

Local names

Adangme: Yalefo (Ghana)
Amharic: Fergus (Ethiopia)
Arabic: Aboushanap (Cameroon), Ab chanap (Chad), Abu shanad (Sudan), Bayad (Sudan), Kabarocce (Sudan), Kabarus (Sudan)
Bata: Bawe (Cameroon), Wawe (Cameroon)
Chiga (Kiga): Semutundu (Uganda)
Creole (English): Male belly up (Cameroon)
Dama: Bobo (Cameroon), Njoka (Cameroon), Nzarou (Cameroon)
Dinka, Northeastern (Dinka): Adwar (Sudan), Alau (Sudan)
El Molo: Lisi (Kenya)
English: Semutundu (official FAO and AFS name), Silver catfish (Cameroon, Ghana, Nigeria), Sudan catfish (Kenya), Cat-fish (Uganda)
Ewe: Yalefo (Ghana)
Fulfulde, Pulaar: Lazeou (Cameroon), Lazio (Cameroon), Safdu baleeru (Senegal)
Ga: Yalefo (Ghana)
Ganda: Ganda (Uganda)
Gungu: Oreko (Uganda)
Hausa: Doya (Cameroon), Doza (Cameroon), Dinko (Nigeria), Ragon ruwa (Nigeria), Shambami (Nigeria)
Ijo: Aboro (Nigeria), Asa-oboro (Nigeria)
Jukun Takum (Djoukoun): Ndarka (Cameroon)
Jula: Samufin (Burkina Faso)
Kanuri: Damalo (Cameroon)
Kenya (Lunyoro, Luruli, Lunyara and Ludope): Mboli (Uganda)
Kim: Dai (Chad), De (Chad), Deïng (Chad)
Konzo: Omukocho (Uganda)

Kotoko: Mésigélé (Cameroon), Woulo segayo (Cameroon)
Lango: Obanga (Uganda)
Luo: Seu (Kenya)
Mambai: Waza (Cameroon)
Masana: Melagenna (Cameroon)
Mòoré: Kuilsiuugu (Burkina Faso)
Mundang: Sihin sou (Cameroon)
Musgu: Malou (Cameroon)
Language not specified: Lisi (Kenya), Sewu (Kenya)
Nubian: Dushko (Sudan)
Nuer: Lam (Sudan)
Nupe: Ebiti (Nigeria)
Nyankore: Omukora (Uganda)
Nyoro (Lunyoro and Luruli): Semutundu (Uganda)
Ruuli: Semutundu (Uganda)
Shilluk: Adwar (Sudan)
Soninké: Silanne (Senegal)
Swahili: Mpono (Congo Dem Rp), Sew (Kenya), Kibogobogo (Tanzania), Mbofu (Tanzania), Semutundu (Tanzania), Sewu (Tanzania)
Tupuri: Bandjaho (Cameroon)
Turkana: Loruk (Kenya)
Wolof: Wallouce (Senegal)
Yoruba: Abagun (Nigeria), Iko (Nigeria)
Zande: Yerengirimo (Sudan)

Geographical distribution

Widely distributed throughout Tchad, Niger, the Volta basin, Senegal (Risch 2003), Mono, Oueme, Cross and Sanaga Rivers, as well as the Rift Valley Lakes Edward, George, Albert, Victoria and Tanganyika (Vreven & Risch 2007), but absent from Lake Kivu (De Vos et al 2001). Widely distributed in the Nile system (Boulenger 1907; Bailey 1994; Getahun 2007). In the Lukuga River (Lake Tanganyika outflow), known up to the Kisimba-Kilia rapids (Kullander & Roberts 2012).

Key features

Head depressed (Abdel-Latif 1974), broad, its width 1.4-1.6 times in head length (Dankwa et al 1999; Risch 2003). Head width measured at base of preopercle 58.9-71.8% head length (Vreven & Risch 2007). Body slightly elongated, 5-6 times longer than deep (Risch 1992, 2003; Vreven & Risch 2007). Four pairs of barbels (Van Oijen 1995). Premaxillary tooth plate 5-7 times longer than wide, a little shorter than and about as broad as the band of vomerine teeth (Boulenger 1911). Premaxillary toothplate width less than 2.5 times in head length (Risch 2003). Occipital process 3-5 times longer than wide (Risch 2003; Vreven & Risch 2007). Predorsal length 2.4-2.7 times in SL; 8-11 branched dorsal fin rays, not or only slightly filamentous (Van Oijen 1995; Risch 2003; Vreven & Risch 2007). Adipose fin long (Van Oijen 1995), narrowly separated from the dorsal fin (Mahy 1979). SL/caudal peduncle length 2.4-2.7 (Risch 2003).

Habitat and Biology

Inhabits lakes, swamps and rivers (Olaosebikan & Raji 1998). Widespread in both shallow and deep waters (Witte & de Winter 1995). Probably associated with rocky bottoms/coarse substrates (Lock 1982). Mostly active during the night and the twilight hours (Baensch & Riehl 1985). Juveniles may frequent exposed rocky shores (Corbet 1961). Feeds on insects, crustaceans, mollusks and fish. Some debris and vegetable matter may also be ingested (Bailey 1994). IUCN red list status least concern (Geelhand & Lalèyè 2020).

Interest to fisheries

FAO (2024) does not hold separate catch statistics for *Bagrus docmak*. FAO (2024) reports include Bagridae (Burkina Faso) and *Bagrus* spp. (Burkina Faso, Ethiopia, Kenya, Niger, Nigeria, Senegal, Tanzania and Uganda), but all of these countries have several species of *Bagrus* in their freshwaters (commonly *B. bajad* and *B. docmak* in West and North Africa, but also *B. degeni*, *B. meridionalis* and *B. orientalis* in East Africa) and thus the reported data cannot be attributed to any specific species. *Bagrus docmak* (but also *B. bayad*) is an important commercial fisheries species and candidate species for aquaculture development. It is valued for food, as well as an important component of recreational-based fisheries, with high economic importance and market acceptability (Anja et al 2009; Aruho et al 2013; Mwanja et al 2014; El-Drawany & Elnagar 2015; Basiita 2016). The species has been reported as being under threat in East Africa, largely due to overexploitation, climatic change and other associated anthropogenic activities (Bundy & Pitcher 1995; Goudswaard & Witte 1997; Balirwa et al 2003; Outa et al 2020). Predation by Nile perch (*Lates niloticus*) and competition with this species (for haplochromines) may also have an impact (Witte & de Winter 1995; Goudswaard & Witte 1997).

Before the 1960s, the Lake Victoria fishery was dominated by demersal and benthopelagic species, including *B. docmak*, which was the most fished species, together with the tilapiines (Goudswaard & Witte 1997). The present-day commercial fishery, however, is dominated by the introduced Nile perch and Nile tilapia (*Oreochromis niloticus*) and the native silver cyprinid (*Rastrineobola argentea*) (Lake Victoria Fisheries Organisation 2016). The numbers of indigenous catfish have decreased drastically since the beginning of the 1980s (Dadzie & Ochieng-Okach 1989; Goudswaard & Witte 1997). Benda (1979) already reported declining stock densities of *B. docmak* in the late 1970s, with a decline to only 15% of initial densities in less than 10 years. Stock densities of *B. docmak* and percentage contribution to the fisheries reportedly decreased to less than 1% of the initial stock densities and percentage contribution by the early 1980s (FAO 1985, 1988, 1990), and catches declined to less than 5% of original catches by the end of the 1980s (Goudswaard & Witte 1997). Although the catches in the Ugandan part of Lake Victoria initially rose from 15000-20000 tonnes per year in the early 1980s to about 25000 in the mid 1980s, there was a strong and rapid decrease in the late 1980s, down to a negligible quantity since the early 1990s (Natugonza et al 2020, 2022). Although the numbers are different, these increased catches in the early 1980s followed by a sharp and permanent decline are also visible in the data from FAO (1988) and the Uganda Fisheries Department, published in FAO (1992).

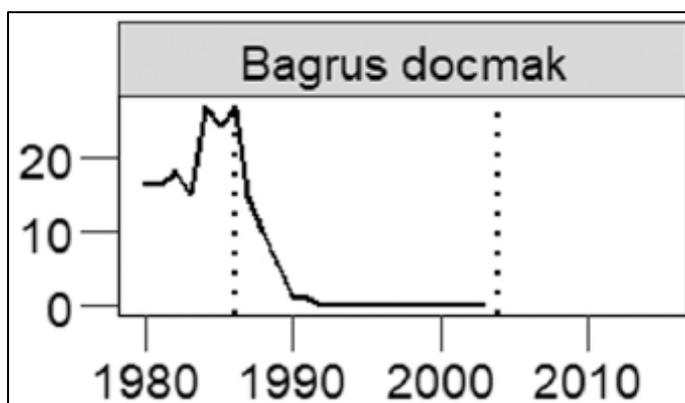


Figure 1: Total annual catches (thousand tonnes) of *Bagrus docmak* in Lake Victoria over time. Image from Natugonza et al 2022.

The average individual weight of fishes from trawl catches increased over the period 1981-1987 (FAO 1985; Goudswaard & Witte 1997) but slightly fell in commercial catches from 1981 to 1983, from 1.0 to a stable 0.7 kg (FAO 1985). While trawlers in 1982/83 still caught a large size range, the

average length by 1987 increased from 35 cm to more than 55 cm fork length (FL), indicating a decrease in the number of small fishes. Most fish caught by artisanal fishermen with gill nets and hook and line in 1974 were between 35 and 50 cm FL, while in 1987 most fish caught were between 50 and 70 cm FL.

In Lake Kyoga, downstream of Lake Victoria, *B. docmak* was the fourth most important species in the fisheries until the early 1950s (FAO 1985). The catch of *B. docmak* in Lake Kyoga fell from 233 tons per annum in 1961 to only 4.8 tons in 1965 (Stoneman and Rogers 1970; Ogutu-Ohwayo 1985). A preliminary survey of the fish stocks of Lake Kyoga (FAO 1985) did not encounter this species at all. On the DRC side of Lake Edward, *Bagrus* is the second most important species, preceded only by catches of tilapia (Vakily 1989; NELSAP 2020). *Bagrus docmak* is the most important species in catches from the Ugandan side of Lake Edward (NELSAP 2020; Musinguzi et al 2021) and in the Kazinga Channel, and the second most important in Lake George, after marbled lungfish (Musinguzi et al 2021). In Lake Edward, a stable CPUE was observed, despite the declining biomass, which is probably due to an unquantified increase in fishing effort (effort creep). An assessment of commercial fish stocks of the George-Edward-Kazinga area concluded that stock recruitment is impaired in Lake George and stocks are collapsed in Lake Edward and the Kazinga Channel (Musinguzi et al 2021). However, Nakiyende et al (2020) showed a steady increase in annual catch from 2011 to 2019 in Lake George and the Kazinga Channel, and a strong increase in Lake Edward, attributed to progressive recruitment and fish stock recovery.

According to the Fisheries Department of Tanzania (2021), *B. docmak* represents the fourth most important species in Lake Tanganyika, but with only 3.06% of the catches it is far less important than *Stolothrissa tanganicae* (44%), *Lates stappersii* (32%) and *Limnothrissa miodon* (9%).

Bagrus docmak is one of the main target species in Lake Iro (Chad) (Thiaw et al 2016), and is the fourth most important in Lake Chamo (Ethiopia), preceded by Nile tilapia, Nile perch and African catfish (*Clarias gariepinus*) (Tesfaye et al 2021).

Bibliography

- Abdel-Latif, A.-F. (1974). Fisheries of Lake Nasser. Aswan Regional Planning, Lake Nasser Development Centre, Aswan, Arab Republic of Egypt. 235 p.
- Anja, H., E. Dadebo and S. Mengistou (2009). Reproductive biology and condition factor of the catfish *Bagrus docmak* (Forsskål) (Pisces: Bagridae) in Lake Chamo, Ethiopia. SINET: Ethiopian Journal of Science 32(1): 29-36.
- Aruho, C., R.K. Basiita, D. Kahwa, G. Bwanika and J. Rutaisire (2013). Reproductive biology of *Bagrus docmak* in the Victoria Nile, Uganda. African Journal of Aquatic Science 38(3): 263-271.
- Baensch, H.A. and R. Riehl (1985). Aquarien atlas. Band 2. Mergus, Verlag für Natur- und Heimtierkunde GmbH, Melle, Germany. 1216 p.
- Bailey, R.G. (1994). Guide to the fishes of the River Nile in the Republic of the Sudan. Journal of Natural History 28: 937-970.
- Balirwa, J.S., C.A. Chapman, L.J. Chapman, I.G. Cowx, K. Geheb, L. Kaufman, R.H. Lowe-McConnell, O. Seehausen, J.H. Wanink, R.L. Welcomme and F. Witte (2003). Biodiversity and fishery sustainability in the Lake Victoria Basin: an unexpected marriage? Bioscience 53: 703-716.
- Basiita, R.K. (2016). Genetic structure and biogeography of three commercially important African freshwater fishes: *Lates niloticus*, *Bagrus docmak* and *Bagrus bayad*. PhD thesis, James Cook University. 191p.
- Benda, R.S. (1979). Analysis of catch data from 1968 to 1976 from nine fish landings in the Kenya waters of Lake Victoria. Journal of Fish Biology 15: 385-387.
- Boulenger, G.A. (1907). Zoology of Egypt: the fishes of the Nile. Hugh Rees, Limited, London. 578p.
- Boulenger, G.A. (1911). Catalogue of the fresh-water fishes of Africa, Volume 2. British Museum (Natural History), London. 530 p.

- Bundy, A. and T.J. Pitcher (1995). An analysis of species changes in Lake Victoria: did the Nile perch act alone? Pp. 111-135. In: T.J. Pitcher & P.J.B. Hart (eds.). The impact of species changes in African lakes. Chapman & Hall, London, UK. 601p.
- Corbet, P.S. (1961). The food of non-cichlid fishes in the Lake Victoria basin, with remarks on their evolution and adaptation to lacustrine conditions. Proceedings of the Zoological Society London 136: 1-101.
- Dadzie, S. and J.I. Ochieng-Okach (1989). The reproductive biology of a siluroid catfish, *Bagrus docmak* (Forsskal) (Cypriniformes, Bagridae) in the Winam Gulf of Lake Victoria. Journal of African Zoology 103: 143-154.
- Dankwa, H.R., E.K. Abban and G.G. Teugels (1999). Freshwater fishes of Ghana: identification, distribution, ecological and economic importance. Annales du Musée royal de l'Afrique centrale, Sciences zoologiques 283: 1-53.
- De Vos, L., J. Snoeks and D.F.E. Thys van den Audenaerde (2001). An annotated checklist of the fishes of Rwanda (east central Africa), with historical data on introductions of commercially important species. Journal of East African Natural History 90: 41-68.
- El-Drawany, M.A. and W.G. Elnagar (2015). Growth, food and feeding habits of *Bagrus bayad* and *Bagrus docmac* inhabiting Muess Channel, Sharkia Province, Egypt. Journal of aquaculture research and development 2015: 6-7.
- FAO (1985). Committee for Inland Fisheries of Africa. Report of the third session of the Sub-Committee for the development and management of the fisheries of Lake Victoria. Jinja, Uganda, 4-5 October 1984. FAO Fisheries Report 335. 145 p.
- FAO (1988). Committee for Inland Fisheries of Africa. Report of the fourth session of the Sub-Committee for the development and management of the fisheries of Lake Victoria. Kisumu, Kenya, 6-10 April 1987. FAO Fisheries Report 388. 112 p.
- FAO (1990). Committee for Inland Fisheries of Africa. Report of the fifth session of the Sub-Committee for the development and management of the fisheries of Lake Victoria. Mwanza, Tanzania, 12-14 September 1989. FAO Fisheries Report 430. 97 p.
- FAO (1992). Committee for Inland Fisheries of Africa. Report of the sixth session of the Sub-Committee for the development and management of the Fisheries of Lake Victoria. Jinja, Uganda, 10-13 February 1992. FAO Fisheries Report 475. 48p.
- FAO (2024). FishStat: Global capture production 1950-2022. [Accessed on 29 March 2024]. In: FishStatJ. Available at www.fao.org/fishery/en/statistics/software/fishstatj. Licence: CC-BY-4.0.
- Fisheries Department of Tanzania (2021). The annual fisheries statistics report (January- December) 2020. United Republic of Tanzania, Ministry of Livestock and Fisheries, Dodoma, Tanzania. 62 p.
- Geelhand, D. and P. Lalèyè (2020). *Bagrus docmak*. The IUCN Red List of Threatened Species 2020: e.T182237A134765577. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T182237A134765577.en>. Accessed on 13 August 2024.
- Getahun, A. (2007). An overview of the diversity and conservation status of the Ethiopian freshwater fauna. Journal of Afrotropical Zoology Special Issue: 87-96.
- Goudswaard, K.P.C. and F. Witte (1997). The catfish fauna of Lake Victoria after the Nile perch upsurge. Environmental Biology of Fishes 49: 21-43.
- Kullander, S.O. and T.R. Roberts (2012). Out of Lake Tanganyika: endemic lake fishes inhabit rapids of the Lukuga River. Ichthyological Exploration of Freshwaters 22(4): 355-376.
- Lake Victoria Fisheries Organisation (2016). Regional catch assessment survey synthesis report. June 2005 to November/December 2015. 19p.
- Lock, J.M. (1982). The biology of siluriform fishes in Lake Turkana. Pp. 1021-1281. In: A.J. Hospson (ed.) Lake Turkana. A report of the findings of the Lake Turkana Project 1972-1975. ODA, London. Univ. Sterling, Sterling.

- Mahy, G. (1979). Biologie et écologie du lac Kivu. Actualisation. Synthèse critique et prévision des connaissances actuelles sur le lac Kivu. *Études Rwandaises* 12(3): 1-108.
- Musinguzi L., S. Bassa, V. Natugonza, M. Van Steenberge, W. Okello, J. Snoeks and R. Froese (2021) Assessment of exploited fish species in the Lake Edward System, East Africa. *Journal of Applied Ichthyology* 37(2): 216-226.
- Mwanja, M.T., C. Aruho, V. Namulawa, R. Ddungu, C. Ondhoro and R.K. Basiita (2014). Morphometric variation among *Bagrus docmak* (Ssemutundu) of the Ugandan major water bodies. *Journal of Fisheries and Aquaculture* 5(1): 167-172.
- Nakiyende, H., W. Nkalubo, S. Bassa, M. Olokotum, E. Nduwayesu, F. Nansereko, A. Basooma, P. Mudondo, A. Endra, E. Arayo, B. Mugeni, A. Mulowoza, A. Bakunda, P. Byamukama, R. Mangeni, E. Kagoya, H. Tumushabe, E. Muhumuza, R. Mangeni-Sande and A. Taabu-Munyaho (2020). Status of commercial fisheries on lakes Edward, George and the Kazinga Channel (Uganda). Poster.
- Natugonza V., C. Ainsworth, E. Sturludóttir, L. Musinguzi, R. Ogutu-Ohwayo, T. Tomasson, C. Nyamweya and G. Stefansson (2020). Ecosystem modelling of data-limited fisheries: How reliable are Ecopath with Ecosim models without historical time series fitting? *Journal of Great Lakes Research* 46(2): 414-428.
- Natugonza, V., C. Nyamweya, E. Sturludóttir, L. Musinguzi, R. Ogutu-Ohwayo, S. Bassae, E. Mlaponi, T. Tomasson & G. Stefansson (2022). Spatiotemporal variation in fishing patterns and fishing pressure in Lake Victoria (East Africa) in relation to balanced harvest. *Fisheries Research* 252: 106355.
- NELSAP (2020). Regional catch assessment survey of 2019 for lakes Edward and Albert (D.R. Congo and Uganda). NELSAP Technical Reports: Basin Development Series 2020-04, June 2020. 37p.
- Ogutu-Ohwayo, R. (1985). The effect of predation by Nile perch, *Lates niloticus* (Linné) introduced into Lake Kyoga (Uganda) in relation to the fisheries of Lake Kyoga and Lake Victoria. *FAO Fisheries report* 335: 18-41.
- Olaosebikan, B.D. and A. Raji (1998). Field guide to Nigerian freshwater fishes. Federal College of Freshwater Fisheries Technology, New Bussa, Nigeria. 106 p.
- Outa, N.O., E.O. Yongo, J.L.A. Keyombe, E.O. Ogello and D.N. Wanjala (2020). A review on the status of some major fish species in Lake Victoria and possible conservation strategies. *Lakes and Reservoirs* 25(1): 105-111.
- Risch, L.M. (1992). Bagridae. p. 395-431. In: C. Lévêque, D. Paugy and G.G. Teugels (eds.) Faune des poissons d'eaux douces et saumâtres d'Afrique de l'Ouest. Tome 2. Coll. Faune Tropicale N° XXVIII. Musée Royal de l'Afrique Centrale, Tervuren, Belgique and O.R.S.T.O.M., Paris, France.
- Risch, L.M. (2003). Bagridae. p. 54-59. In: C. Lévêque, D. Paugy and G.G. Teugels (eds.) Faune des poissons d'eaux douce et saumâtres de l'Afrique de l'Ouest, Tome 2. Coll. Faune et Flore tropicales 40. Musée Royal de l'Afrique Centrale, Tervuren, Belgique, Museum National d'Histoire Naturelle, Paris, France and Institut de Recherche pour le Développement, Paris, France. 815 p.
- Stoneman, J. and J.F. Rogers (1970). Increase in fish production achieved by stocking exotic species (Lake Kyoga, Uganda). *Occasional Papers of the Fisheries Department Uganda* (3): 16-9.
- Tesfaye, M., G. Tesfaye and A. Getahun (2021). Growth and status of Nile tilapia (*Oreochromis niloticus* L.) stock in Lake Chamo, Ethiopia. *Lakes and Reservoirs* 26(3): e12375.
- Thiaw, M., M. Tine, H.D. Diadhiou, O. Magoma and P. Brehmer (2016). Shift of small scale fishing impacts on fish trophic levels in Lake Iro revealed by species-based indicators. *Fisheries and Aquaculture Journal* 7(2): 1000167.
- Vakily, J.M. (1989). Les pêches dans la partie zaïroise du Lac Idi Amin: Analyse de la situation actuelle et potentiel de développement. Rapport Technique des Pêches au Zaïre. Gouvernement de la République du Zaïre, Département des Affaires Foncières, Environnement et Conservation de la Nature, et Commission des Communautés Européennes, Kinshasa/Brussels. 48 p.

- van Oijen, M.J.P. (1995). Appendix I. Key to Lake Victoria fishes other than haplochromine cichlids. p. 209-300. In: F. Witte and W.L.T. van Densen (eds.) Fish stocks and fisheries of Lake Victoria. A handbook for field observations. Samara Publishing Limited, Dyfed, Great Britain. 404p.
- Vreven, E.J. and L. Risch (2007). Bagridae. p. 579-585. In: M.L.J. Stiassny, G.G. Teugels and C.D. Hopkins (eds.) The fresh and brackish water fishes of Lower Guinea, West-Central Africa. Volume I. Collection Faune et Flore tropicales 42. Institut de Recherche pour le Développement, Paris, France, Muséum National d'Histoire Naturelle, Paris, France, and Musée Royal de l'Afrique Centrale, Tervuren, Belgium. 800 pp.
- Witte, F. and W. de Winter (1995). Appendix II. Biology of the major fish species of Lake Victoria. p. 301-320. In: F. Witte and W.L.T. Van Densen (eds.) Fish stocks and fisheries of Lake Victoria. A handbook for field observations. Samara Publishing Limited, Dyfed, Great Britain. 404p.