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> J Fish Biol. 2020 Jul;97(1):265-272. doi: 10.1111/jfb.14372. Epub 2020 Jun 2.

Feeding of Arapaima sp.: integrating stomach contents and local ecological knowledge

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PMID: 32383478 DOI: 10.1111/jfb.14372

Abstract

The giant arapaima (*Arapaima* sp.) has been described as a fish of change in Amazonia because of its important role in the conservation of floodplains, food security and income generation for rural communities. Nonetheless, despite the cultural, ecological and economic importance of arapaima, data on diet are scarce. Aiming to expand knowledge about arapaima diet in western Amazonia, scientific knowledge was integrated with the knowledge of local dwellers. During the low-water period (September 2018) and the falling-water period (June 2019), arapaima stomachs were collected from 11 floodplain lakes in the middle Juruá River. All fishes were measured [TL (total length)] and sexed. Food items from each stomach were categorized as fishes, invertebrates, plants and bone remains and weighed. Also, in the latter period, experienced local fishers were interviewed about arapaima feeding. This integrated approach revealed that young arapaima eat fish and invertebrates but adult arapaima eat fish of a wide range of species, which were mainly of low and intermediate trophic positions. This study reports the first case of cannibalism for arapaima and also shows that during the low-water period, many individuals had empty stomachs or only some small fish-bone remains and/or plant material. Arapaima sex and TL had no influence on the absence of prey in stomach contents. Overall, it can be concluded that local people had consistent ethnobiological knowledge of arapaima feeding ecology that could be useful within management projects in the region.

Keywords: Amazon; diet; ethnobiology; ichthyology; predator.

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