

Rivers of the Caribbean islands harbour a freshwater fauna mainly constituted of migrant diadromous species. In these hyperturbulent ecosystems, the primary producers are mostly represented by a thin epilithic biofilm, mainly composed of diatoms. Comparison of the diatoms available from the environment with the ones consumed and located in the digestive tracts of two gobiid fish, *Sicydium punctatum* Perugia, 1896 and *Sicydium plumieri* (Bloch, 1786) were made at twelve sampling locations, located upstream or downstream of six rivers, in Guadeloupe. One hundred and ninety-one epilithic diatom species were identified. A statistical approach was used to determine diatoms that best characterize the two species digestive tracts content (*i.e.* "diagnostic species") and to evaluate the statistical relationship between species abundances and groups of sites or conditions. Eight taxa belonging to five families were considered as significant diagnostic species of digestive tracts from fish collected upstream (*Achnantheidium subhudsonis*, *Achnanthes rupestoides*, *Diadesmis contenta*, *Diadesmis* sp., *Eolimna* sp., *Navicula (dicta) seminulum*, *Navicula difficillima* and *Nupela* sp.), and five taxa belonging to three families were considered as significant diagnostic species for fish collected downstream (*Gomphonema parvulum*, *Navicula arvensis*, *Navicula cruxmeridionalis*, *Nitzschia frustulum* and *Navicula incarum*). Results indicate selective consumption of epilithic diatoms by the two major fish observed in the mid and upper stream of Caribbean rivers.