

## Can relative gut length be used to predict the feeding habits of fish species in brush parks?

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Relative gut length (RGL) of fish is known to reflect dietary habits of fish that can be used to determine their trophic status. However, when fish species are compelled to feed only on the available food in an area where they get aggregated due to their behavioural patterns, RGL may not reflect feeding habits of fish and correct trophic status. Therefore, in the present study, feeding patterns of selected fish species that are attracted to brush parks were investigated to determine whether their RGL would reflect dietary habits.

Fish samples of three species (*Eplinephelus coioides*, *Etroplus suratensis*, and *Siganus vermiculatus*) were obtained from gill net and brush park catches separately from the Negombo estuary in Sri Lanka. In the laboratory, total length, gut length and body weight of each fish were measured. Length-weight relationship, condition factor and relative gut length and the trophic indices of each species were estimated.

The RGL, body condition (K) and trophic indices (T<sub>i</sub>) of three species in gillnet and brush park fishery was not significantly different. Clustering of the dietary habits of three species using Bray-Curtis similarity and multi-dimensional scaling (MDS) indicated that carnivorous *E. coioides*, caught in gill nets formed a separate cluster compared to those caught in brush parks.

From the principal component analysis (PCA) based on dietary composition, the three fish species caught in gill nets were found to be different from those caught in brush parks suggesting that those attracted to brush parks are disadvantageous in terms of feeding habits, due to the reason that they have to rely on available food in the brush park environment.

Therefore, it can be concluded that RGL of some species associated with brush parks do not reflect their feeding habits and their trophic levels. As such, the findings of the present study provide some evidence for the validity of "ecological trap hypothesis".

**Keywords:** Brush parks, gill nets, relative gut length, feeding habits