Microhabitat segregation of *Porphyrio porphyrio* and *Hydrophasianus chirurgus* in Anaiwilundawa tank in Puttalum District

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Spatial distribution and segregation of an organism is defined by its biology and ecology in combination with the habitat structure. The study was intended to assess the spatial partitioning observed between *Porphyrio porphyrio* (*Pp*) and *Hydrophasianus chirurgus* (*Hc*) in Anaiwilundawa tank in the Puttalum District.

The hypothesis that microhabitat (mh) utilization of *Pp* is different from that of *Hc* was tested. Abundance data were obtained in combination with mh occupancy, for both *Pp* and *Hc*. Five 0.01 km^2 stratified grid plots were laid randomly in which the vegetation profile was mapped. To determine the contributing factors ten individuals of each species were sampled on their behavioural acts and occupancy for 12 h continuously.

Niche breadth of *Pp* (2.38) is broader than that of *Hc* (1.3). The probability of obtaining the species utilization curve of *Pp* from that of *Hc* is $2.72x10^{-4}$ and the probability of obtaining the species utilization curve of *Hc* from that of *Pp* is 0.24. The hypothesis of complete overlap (specific overlap index x^2, 4df,P=0.05) was rejected. Niche overlap (Levins index) of *Hc* on to *Pp* is complete (1.00) where as niche overlap of *Pp* on to *Hc* is partial (o.46). Fundamental niche of mh utilization of *Hc* is completely included within that of *Pp* with partial overlap. *Pp* and *Hc* have different utilization curves, thus *Pp* and *Hc* are segregated with respect to mh utilization in the Anaiwilundawa tank.

Pp used both *Eichhornia* (45.18%) and mixed (45.85%) mh s in equal proportions. Utilization of *Salvinia* (7.72%) and grass (1.23%) *mh* s was less. *Hc* utilized mixed, *Salvinia* and grass mh s. 95.08% of mh use of *Hc* was restricted to the mixed category. Use of grass microhabitat and the *Salvinia* mh (4.36%) was less. *Hc* did not utilise *Eichhornia* mh and both species did not utilize the open water mh. In the behavioural analysis *Pp* used both *Eichhornia* and mixed mh (44.54%). 95.74% of behaviours of *Hc* was entirely restricted to the mixed mh. Nesting was exclusively restricted to the *Eichhornia* mh in *Pp* and mixed in *Hc*. The two species are completely segregated in nesting and roosting mh s. With regard to feeding zones a partial separation exists. The factors contributing towards mh segregation of *Pp* and *Hc* are sites of nesting, sites of roosting, zones of feeding, and other behaviours.

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