Preliminary Study of Age and Growth of Select Elasmobranch Fishes in Sri Lanka Based on Vertebral Growth Rings

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Though Sri Lanka has a high diversity of elasmobranchs, species-specific studies are relatively few. Present study investigated the preliminary suitability of species for comprehensive age-growth studies as a first step for larger scale data collection. A systematic analysis of vertebrae obtained from fisheries bycatch was conducted to determine the optimum vertebrae and processing for best ring visibility as determined by three independent readers. *Acroteriobatus variegatus* (AV), *Carcharhinus leucas* (CL), *Centrophorus sp*. (GC), *Himantura leoparda* (HL), *Himantura uarnak* (HM), *Isurus paucus* (IP), *Maculabatis arabica* (MA), *Maculabatis gerrardi* (MG), *Mobula mobular* (MM), *Mobula tarapacana* (MT), *Neotrygon indica* (NI), *Pastinachus ater* (PA), *Pateobatis jenkinsii* (PJ), *Prionace glauca* (PG) and *Rhinoptera javanica* (RJ) were studied. According to the one-way ANOVA test, the central region had the best visibility for AV. There was no significant difference in ring visibility for PJ, HL and NI among the three regions. Also there was no significant difference in both bleaching and drying methods for all species. The vertebrae ring count method was not successful for GC. Vertebral ring counts for other sectioned species revealed that females live longer than males. The Von Bertalanffy growth curve was partially developed for AV and PJ, which accounted for more than 30 specimens each. However, a lack of young individuals prevented a complete life-history curve. Maximum age for male AV and PJ were estimated at 10 and 14 years, respectively, while for females it was 13 and 15 years, respectively. Analyses of preliminary data suggest that the central section of AV, with no bleaching or drying, is the most optimum method for ageing these species. Based on this study and other existing methodological procedures, it is recommended that the feasibility of counting rings be conducted for each species before proceeding to larger sample collections to support conclusions.

Keywords: Conservation, Guitarfish, Indian Ocean, Life-history, Von Bertalanffy

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