

Population size structure indices and growth standards for



The purpose of this study was to provide reference data on the growth and population structure of brown trout *Salmo (trutta) trutta* Linnaeus, in Central Italy. Standards for growth (percentiles and a standard growth model) were developed from the von Bertalanffy growth model by using length-at-age data obtained from 122 sampling sites in the River Tiber basin. Length-frequency indices provide a numeric estimation for deviations of the population structure from a balanced population. We adapted the traditional North American Relative Stock Density (RSD) and Proportional Stock Density (PSD) indices to brown trout populations in Central Italy by means of two methods. In the first method, the benchmarks of length categories were established by using percentages applied to the largest individual in the dataset. In the second method, asymptotic length and size at maturity were used to define the length categories for index calculation. Both methods were tested on length-frequency data from 263 sampling sites in the River Tiber basin. The results showed that the PSD calculated by the first method provided a better insight into the population structures of brown trout. These results provide tools that will help ichthyologists and fish managers to compare the growth and population structure of

brown trout throughout Central Italy.

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