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Length measurements are an integral part of age/length data used for fish population studies. For those species that are rare, threatened, or endangered, using a nonintrusive method to obtain measurements may be imperative in allowing for continued study of the organism. We used measurements from photographs, i.e., photogrammetric techniques, to obtain length measurements of the federally-listed Diamond Darter. We also evaluated the photogrammetric technique on two surrogate darter species, where total length (TL) and body length (BL) were obtained from direct and photogrammetric measurements. For photogrammetry, digital photographs from the dorsal view of each individual were taken using a waterproof camera paired with two parallel lasers. Photogrammetric measurements of TL and BL were conducted with ImageJ software. Agreement between direct and photogrammetric measurements was examined with concordance correlation coefficients (CCCs). Precision and accuracy of measurements were evaluated using Pearson's correlation coefficient and the bias correction factor, respectively. The CCCs for TL and BL were similarly high for both surrogate species, indicating that the photogrammetric technique is an effective method for measuring benthic darter species.