

Comparison of Morphometric Relationships Between Florida and Caribbean Populations of the Spiny Lobster *Panulirus argus* (Latreille, 1804)

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Morphometric equations suitable for the conversion and comparison of length and weight for several distinct body regions were developed for spiny lobsters, *Panulirus argus*, from Florida. Fifty male and 50 female intermolt lobsters in each 5-mm size class between 50 and 100 mm carapace length and 50 lobsters with carapace lengths greater than 100 mm were measured. Seven parameters were measured: carapace length, total length, tail length, tail width, total weight, tail weight, and frozen tail weight. Equations using pairs of parameters were developed for males, females, and both sexes combined. Eight length-length and 24 length-weight relationships for separate sexes and the combined-sex group were developed.

These equations reveal three points concerning spiny lobster biology. First, sexual dimorphism exists in all dimensions examined except within-tail comparisons; that is, there are no differences between tail widths or tail weights of male and female lobsters that have the same tail length. Second, allometric growth changes in carapace length indicate that the onset of sexual maturity in male lobsters occurs at 73 mm. Allometric growth changes were not detected in female lobsters. Third, comparisons of equations developed from Florida lobsters with others developed from Caribbean populations reveal negligible differences in total weight:carapace length relationships. However, graphic comparisons of female carapace length: total length equations reveal differences related to population location. For example, female lobsters of given carapace lengths from Cuba have greater total lengths than do those from Florida and elsewhere in the Caribbean. The statistical significance of these differences could not be determined due to unavailability of raw data from the other studies.

These equations have implications for fishery management. First, tail width is slightly more precise than tail length as a measurement of tails for conversion to carapace length. Tail width, measured across the ventral surface of the second abdominal somite, is morphologically less variable than is tail length. The second management implication is contained in our estimate, within 95% confidence limits, that a lobster with a 76.2-mm (3-inch) carapace length will have a tail length between 128.4 and 152.5 mm; this provides a definite lower limit for tails from Florida lobsters of minimum legal carapace length.