COMUNICACIONES

Morphometric relationships and yield in Costa Rican
Procambarus clarkii (Decapoda: Cambaridae)

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Resumen: Se presentan las ecuaciones para la relación longitud de cefalotorax-peso, peso total-peso cola y longitud de cefalotorax-rendimiento para una población de 802 machos y 1107 hembras de *Procambarus clarkii,* recolectados al azar entre 1985 y 1989, en el embalse Cachí, Cartago, Costa Rica.

Key words: *Procambarus*, Morphometric models, yield.

The red crawfish, *Procambarus clarkii* (Girard 1852) is native of northeastern Mexico and south-central U.S.A.. It has been successfully introduced in other areas of the U.S.A. (fifteen states), Mexico (Sonora), Guatemala, Belize, Nicaragua, Costa Rica, Colombia, Venezuela, Brazil, Dominican Republic, Great Britain, Portugal, Spain (Sevilla), France, Sweden, Japan, Taiwan and Africa (Kenya and Uganda). (Hobb 1972, Nikokola 1978, Huner and Avault 1979, Huner 1981, Hobb *et al.* 1989).

The equatorial populations mature at 55 - 125 mm (caparace length) and may produce three generations per year, while those from 40º north (latitude) produce only one. (Huner and Romaine 1979, Huner 1981).

In Costa Rican provinces the red crawfish normally lives in lentic and lotic 2 habitats in Cartago; lentic habitats in Heredia, and lotic habitats in Alajuela, Guanacaste and Limón.

The morphometric relationships and yield of Costa Rican populations are not available.

This paper presents measurements from 1909 red crawfish (26 - 115 mm, caparace length) of random samples collected in the Cachí Reservoir between 1985 and 1989 (802 males, 1107 females). They were captured alive, kept in ice and measured within 12 hr. Caparace length was measured to nearest 0.01

mm and tail weight and total weight to nearest 0.05 g. Individuals smaller than 25 mm in caparace length were discarded.

The model $W= aL^b$ was used to express the relationships between caparace length (L) and total weight, Y= tail weight (T) / total weight (W) was used to express the yield (Y). The equation T= a + bW was used to express the relationship between total weight-tail weight, because this appeared to be linear for this range of sizes and exponential for the relationship caparace length-yield ($L= a\ e^{-bL}$). Equations appear in Table 1.

TABLE 1

Relationships of caparace, weight and yield,
P. clarkii, *Costa Rica*

Relations	Equations	Sex	Standard error of regression coefficient
L - W	$W= 1.3 \times 10^{-5} L^{3.4}$	Males	0.005
	$W= 1.8 \times 10^{-4} L^{2.7}$	Females	0.008
W -T	T= 1.92 +0.12 W	Males	0.003
	T= 1.77 + 0.17 W	Female	0.005
L - Y	$Y= 0.508\ E^{-0.011L}$	Males	0.009
	$Y= 0.783\ e^{-0.024L}$	Females	0.008

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