

$P > 0.10$); 2 recaptures, 6.9 less than expected ($X^2 = 3.02$, $P > 0.05$); and 3 or more recaptures, 6.9 greater than expected ($X^2 = 9.43$, $P = 0.002$).

Individuals were generally less susceptible to second and third captures, but were significantly prone to be captured four or more times. In most marshes box turtle activity seemed to decline markedly after several successive days of catching them. This was followed by a period of the next several days, or even weeks in some marshes, without captures. Marked box turtles apparently moved into seclusion. They could also have become more wary because of my activity during July and August 1965 when the study tract was visited daily, lowering second or third captures. In subsequent sampling periods, after monthly intervals with no human intrusion, normal activity resumed and recaptures increased. Tinkle (1958a) noted that marked *Pseudemys* and *Graptemys* in rivers were warier than unmarked turtles. Sexton (1959b) found marked *Chrysemys picta* difficult to recapture, while unmarked individuals could be approached and netted with relative ease.

Three census techniques were used on the mark-recapture data to estimate the size of the population. The first, a single census method (Petersen or Lincoln index), has been widely used in population estimates. A preliminary sample of animals is marked and released into the population, and a later sample is examined for marked animals.

Fitch (1963, 1965), working with snakes, divided the season's records into monthly intervals and then lengthened the preliminary sampling periods successively, obtaining population estimates at different points in time through a collecting season. Using the same technique I sampled the *T. coahuila* population 10 times between December 1964 and October 1966. Each sampling period was separated by intervals of 2 to 4 months, but records were treated as seven units to obtain workable sample sizes. Successively increasing the length of time of the first (or preliminary) sample periods (Table 12) gave six population estimates by the single census ratio. For example, of the 83 turtles marked from December 1964 through July 1965, 37 were recaptured along with 33 new turtles in the period August 1965 through October

1966, and the Lincoln index formula is: $\frac{P}{83} = \frac{70}{37}$, or $P = 157$. The pop-

ulation estimated by single census ratios ranged from 146 to 171 individuals, or a density of 53.7 to 62.9 turtles per acre (132-155/ha).

Hayne (1949b) presented a modification of the Lincoln index census. With continued sampling of the population, recapture ratios steadily rise as the pool of marked individuals grows. The total population can be estimated by projecting the trend of the increasing propor-