



Figure 4. Enlargement of area A in Fig. 3, showing Port Moresby and Kemp Welch River area of southeastern Papua New Guinea. The shaded area represents elevation above 200 m., the heavy dotted line shows the watershed limit of the Owen Stanley Ranges. Localities: 1. Laloki River, Port Moresby; 2. Sogeri, Laloki River; 3. Bore, Kemp Welch River; 4. Launa Kalana, Kemp Welch River.

River basin is an area of relatively high rainfall and mesic lowland alluvial forests, and is separated from the Laloki River and the Port Moresby region by a relatively xeric area of low rainfall and savannah vegetation. The Kemp Welch River basin has recently been found to harbor an isolated new species of freshwater turtle, *Chelodina* sp., which is most closely related to *C. longicollis* of Australia (Rhodin, In press).

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A Ranching Project for Freshwater Turtles in Costa Rica

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In September, 1991, I had the opportunity to visit the Caño Negro Nature Reserve, located beside the Río Frio in northern Costa Rica, close to the Nicaraguan border. Río Frio is an affluent of Lake Nicaragua, and is the habitat of the

newly described cooter subspecies *Pseudemys scripta emolli* Legler, 1990, now generally referred to the genus *Trachemys*.

The water was high, but in the course of the boat trip from Los Chiles to Caño Negro we saw a number of basking turtles - mostly large females. Within the Reserve itself there is a substantial human population, and a turtle ranching program devised by Jorge Cabrera of the Universidad Nacional, based upon the collection and artificial incubation of eggs from the wild. Thirty percent of the hatchlings are released, and the remainder sold in Costa Rican pet shops, where they are apparently more attractive and less expensive than the imported *Trachemys scripta elegans* traditionally sold. 310 nests were collected in 1991 (the first season of operation), containing an average of about 20 eggs (range: 12-33). They are collected within 24 hours of deposition (in part because they are hard to find later than this), and are re-buried in soil in an enclosed area. In 1991, a hatching rate of about 80% was realized. These hatchlings were sold in San José.

The program has certain merits. It involves the local people, dependent upon park resources, in an aspect of wildlife management. They are paid for their egg-collecting services by receiving 50% of the funds generated by the sale of the turtles. Moreover, there is a real potential for displacing the importation of *T. s. elegans* - the attractively marked hatchling *T. s. emolli* are sold for only 70 colones (about 55 cents US) each. The ultimate fate of the tens of thousands of hatchling *T. s. elegans* imported into Costa Rica in recent years is undocumented, but the danger of release of at least some of them into natural *Trachemys* habitat would seem to be very real.

Until recently, the adult *T. s. emolli* in Caño Negro were subject to heavy seasonal hunting pressure from visiting Guatuso Indians, as documented by Mora and Ugalde (1991). However, it was reported to me that, with the advent of the ranching project, this has stopped. The adults continue to be predated by coatis and other mammals during their dry season (January to May) nesting excursions; the coatis overturn the turtles, then rip open the inguinal area to reach the eggs, and typically leave the carcass with head missing and femora and humeri bitten through. I saw five shells of adult females, the largest with straight carapace length of 36.5 cm - slightly smaller than Legler's (1990) largest specimen from Lake Nicaragua (37.2 cm).

The resident biologist in charge of the project is Vicente Meza Garcia (address: 400 m. norte del Hospital San Rafael, Alajuela, Costa Rica).

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