

APPENDIX 2

LIZARD TRAPPING RESULTS FOR AREA 50, NORTHWEST FIELD

PERIOD COVERED: April 1998

SUMMARY

This report summarizes the results of the second lizard trapping session conducted in Area 50, Northwest Field, Guam, in April 1998. Initial trapping was conducted in April and May 1997 (Wiles 1998).

Environmental conditions in the study area this year were considerably different from 1997. In December 1997, Supertyphoon Paka severely damaged forests throughout northern Guam, including the one in Area 50. Canopy trees such as *Elaeocarpus joga* suffered the most damage, with most trees losing limbs and foliage and a few being blown down. The storm was followed immediately by an extended period of dry weather, which continued through April. Thus, the lizard trapping grid was considerably drier and less shady in 1998 than in 1997.

Several management programs have progressed in Area 50 during the past year. Large numbers of snakes have been removed through intensive trapping along the perimeter fenceline and grid system running through the site. About 430 snakes were removed during this period, resulting in a dramatic reduction in the number of snakes being caught by April 1998. The results of a small mammal trapping session in early April 1998 found that rat (*Rattus rattus*) numbers have begun to increase in Area 50, which coincides with the reduction of snakes (G. Beauprez, unpubl. data). Attempts to remove all deer and feral pigs from the area have continued. To date, both species have been reduced but not eradicated.

METHODS

Trapping methodology followed that described in Wiles (1998). Traps were set at the same sites as in 1997. Autotomized tails found on adhesive traps were identified to species and considered as trapped animals (tails were not found on traps in 1997). Two workers again took part in the study, with each assigned one transect per day. Trapping was conducted along Transects B and D on 14 April and along Transects A and C on 16 April.

Emoia and *Carlia* were considered adults if they had snout-vent lengths greater than 43 mm and 50 mm, respectively (McCoid 1997). The size used here for *Carlia* has been revised slightly from that used in Wiles (1998).

Weather Conditions - All transects were done under hot, mostly sunny, and breezy (10-15 mph winds) conditions. A rain shower of moderate intensity fell for several minutes in the afternoon on Transects B and D. A light rain also fell during trapping on the night of 16-17 April.

RESULTS AND DISCUSSION

A total of 299 lizards representing four species were caught during this trapping period (Table 1). *E. caeruleocauda* was again the most common species recorded, comprising 78.6% of all individuals. Other species collected included *C. fusca* (19.4%), *H. frenatus*

(1.7%), and *Gehyra mutilata* (0.3%). Total numbers of lizards caught on the four transects showed much more variability than in 1997, ranging from 55 to 98 animals (Table 1), but differences between transects were not significant ($G = 6.2$, $df = 3$, $P = 0.103$). *Emoia* comprised 63.6-87.8% of the animals captured on each trap line (Table 1). The total number of *Carlia* caught was more than double last year's amount.

Table 1. Total numbers of lizards captured on Transects A-D in Area 50, April 1998.

Transect	<i>Emoia caeruleocauda</i>	<i>Carlia fusca</i>	<i>Gehyra mutilata</i>	<i>Hemidactylus frenatus</i>	Total
A	56	16	0	0	72
B	79	18	1	0	98
C	65	9	0	0	74
D	35	15	0	5	55
Total	235	58	1	5	299

Size classes of captured *Emoia* and *Carlia* are shown in Figures 1 and 2. Adults comprised a large portion (77.3%) of the *Emoia* population. All brown-tailed individuals were adults, in contrast to 47.5% of the animals with blue tails.

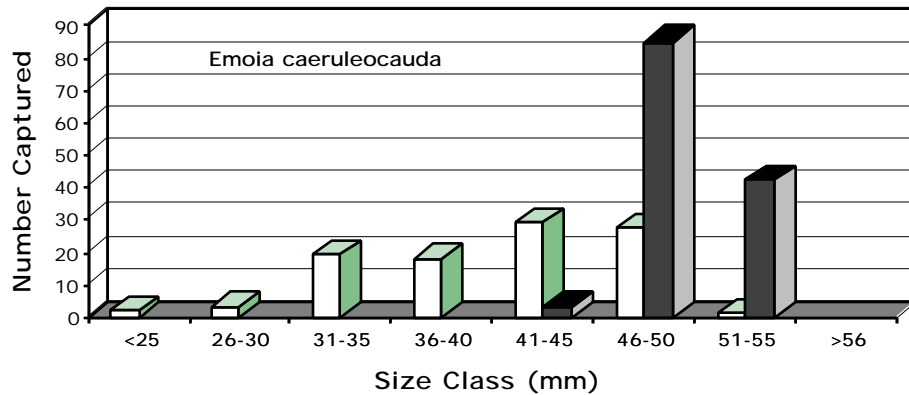


Figure 1. Size frequency distribution of *Emoia caeruleocauda* with blue tails (n=99; white bars) and brown tails (n=130; dark bars) captured on Transects A-D in Area 50, April 1998.

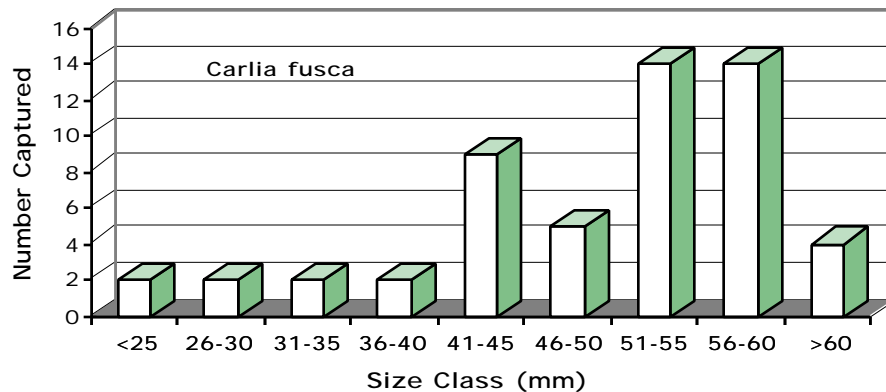


Figure 2. Size frequency distribution of *Carlia fusca* (n=54) captured on Transects A-D in Area 50, April 1998.

Additionally, 56.8% of all *Emoia* had brown tails and 43.2% had blue tails (Table 2, Figure 1). More than half (59.3%) of the *Carlia* captured were adults.

Table 2. Measurements (mm) of lizards captured on Transects A-D in Area 50, April 1998. SVL = snout-vent length; SD = standard deviation; CV = coefficient of variation.

Species	Sample size	Mean SVL length	SD	Size range	CV
<i>E. caeruleocauda</i> (all individuals)	229	45.7	6.3	23 - 55	13.8
<i>E. caeruleocauda</i> (brown-tailed only)	130	49.7	2.1	44 - 55	4.1
<i>E. caeruleocauda</i> (blue-tailed only)	99	40.5	6.2	23-51	15.3
<i>C. fusca</i>	54	49.5	9.8	24 - 62	19.7
<i>H. frenatus</i>	5	50.6	3.6	45-53	7.1
<i>G. mutilata</i>	1	45.0	-	45	-

Mean capture rates (\pm SD) of skinks by trap type were: ground traps, 5.0 ± 2.5 animals per trap per day (range = 1-12 animals); branch traps, 0.7 ± 0.9 animals per trap per day (range = 0-3 animals); and trunk traps, 0.4 ± 0.8 animals per trap per day (range = 0-3 animals). Most *Emoia* were caught on ground traps (77.4%), with far fewer individuals captured on branches (13.6%) and trunks (8.9%) (Table 3). Juveniles were taken in greater numbers ($G = 9.055$, $df = 2$, $P < 0.025$) on branches and trunks (38.5%) than adults (18.1%), indicating that younger animals are more arboreal than older ones. All *Carlia* were taken on ground traps. Among *H. frenatus*, three were captured on tree trunks and two on branches. One *G. mutilata* was caught on a tree trunk.

Widespread habitat disruption in Area 50 caused by Supertyphoon Paka made analyses of habitat use by skinks difficult to conduct this year. Increased forest openness may account for the greater number of *Carlia* captured this year.

During rat trapping, a roof rat (*Rattus rattus*) was found with a freshly eaten adult *E. caeruleocauda* in its stomach. This suggests that increasing densities of rats in Area 50 associated with snake removal may possibly depress skink populations.

Table 3. Numbers of *Emoia caeruleocauda* () and *Carlia fusca* (†) captured per hour in sticky traps placed on tree substrates along Transects A-D in Area 50, April 1998.

SPP	T.L.	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1900	630	Total
	G	38	51	28	19	17	9	12	3	4	1	0	0	182
	B	4	14	3	5	2	1	1	2	0	0	0	0	32
	T	2	7	3	5	2	2	0	0	0	0	0	0	21
	A	44	72	34	29	21	12	13	5	4	1	0	0	235
†	G	19	4	15	6	5	2	3	2	1	1	0	0	58
	A	63	76	49	35	26	14	16	7	5	2	0	0	293

^aKey to trap locations: G = ground; B = branches; T = trunk; A = all trap locations combined; T.L. = Trap Location; and = all skinks.

ACKNOWLEDGEMENTS

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LITERATURE CITED

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Report prepared by: Gary J. Wiles