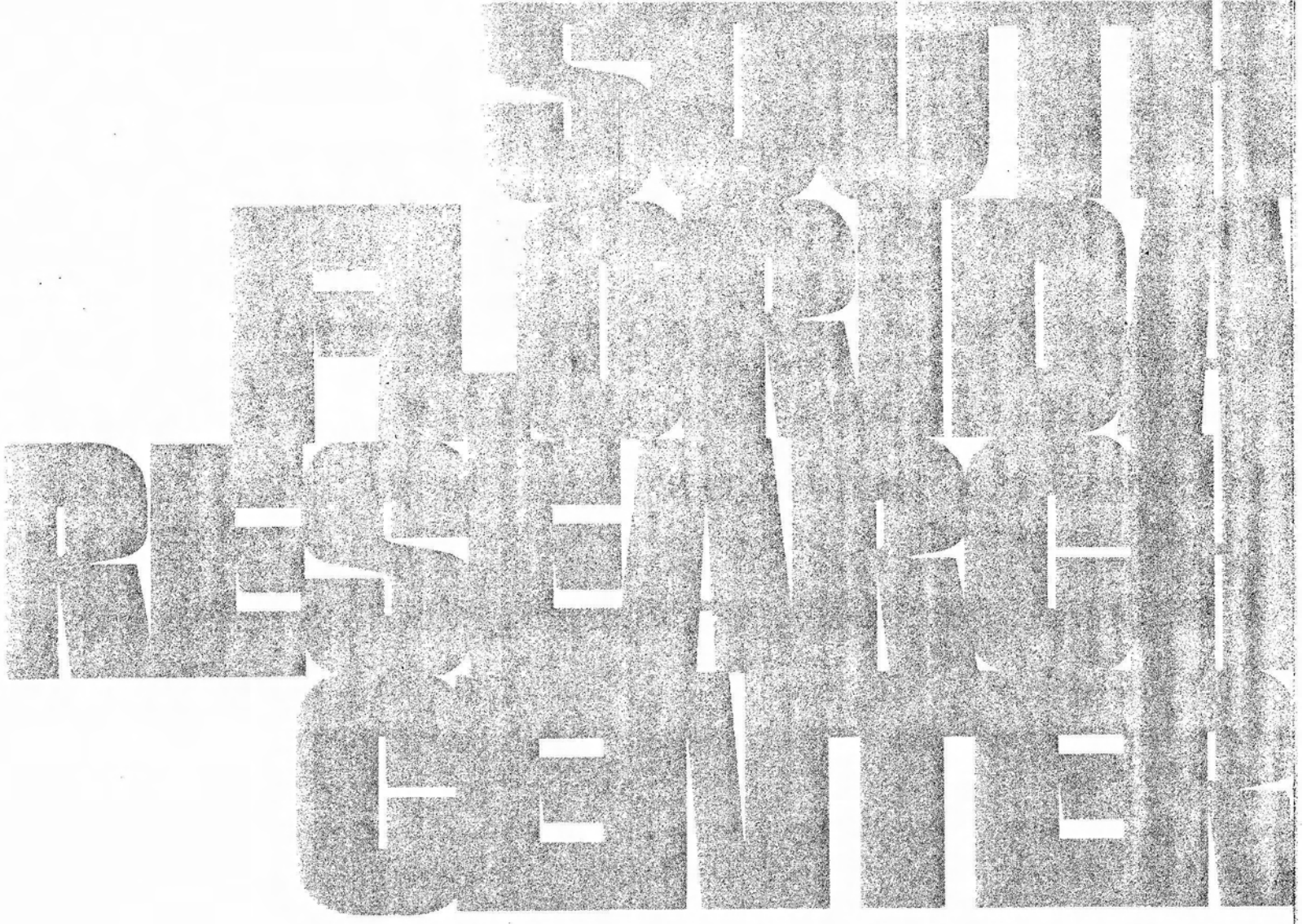

Report T–522

Mortality Associated with Declawing Stone Crabs, Menippe mercenaria

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MORTALITY ASSOCIATED WITH DECLAWING STONE CRABS, *MENIPPE MERCENARIA*

Report T-522

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Mortality Associated with Declawing

Stone Crabs, Menippe mercenaria

ABSTRACT

Claws greater than 7.0 cm propodus length were removed from 201 stone crabs, Menippe mercenaria, using commercially accepted techniques. The crabs were held in aquaria before and after declawing. Forty-seven of 101 crabs that had both claws removed died, and 28 of 100 single claw amputees died. Seventy six percent of the casualties died within 24 hours of declawing. The claws constituted 51% of the total weight of the crabs before declawing. Declawing wound width was significantly correlated with survival. Instantaneous crab mortality estimated from measured declawing wounds of four commercial fishermen ranged from 23 to 51 percent.

INTRODUCTION

The stone crab, Menippe mercenaria, is heavily harvested in south Florida, yet little work has been done on the effect of current fishery management programs on crab stocks. Most studies have dealt with various aspects of growth, life history, claw regeneration and reproduction (Manning 1961, Bender 1971, Cheung 1973, and Savage 1971).

The stone crab fishery in Everglades National Park shows signs of stock depletion. While the number of traps fished in the Park remained stable, catch per unit of fishing effort (grams of claws/trapnight) fell from 113 g to 29 g in less than four seasons (Davis in press). In the 1976-77 trapping season, about 50,000 kg of claws were harvested in the Park (Davis and Thue 1977). This was probably less than 5% of the total Florida harvest, which has averaged over one million kilograms since 1974 (Florida Department of Natural Resources 1977).

Current state fishing regulations (FL Stat. 370.12) require declawing of stone crabs at the point of capture, and returning the clawless bodies to the water. The mortality associated with declawing by fishermen is unknown, but may be quite high. The occurrence of regenerated claws in the fishery harvest is low, less than 10% (Savage and Sullivan 1975), suggesting that declawing is of limited value as a fishery management technique. Cheung (1973) concluded that harvesting regenerated claws was unpractical since legal-sized crabs are so close to terminal molt. This experiment was designed to measure the mortality of declawing stone crabs, using standard commercial techniques, under laboratory conditions, as a precursor to a field investigation.

METHODS AND MATERIALS

From April 1977 to March 1978, specimens for the experiment were collected in Florida Bay, Everglades National Park, using wooden-slat or plastic stone crab traps, and returned to the laboratory in insulated ice chests. Each crab had two legal-sized claws (propodus length > 7.0 cm) or one legal-sized major claw (Cheung 1976) in the single amputation experiment, and no substantial injuries. The crabs were maintained in 190 liter glass aquaria equipped with undergravel filters, protein skimmers, and 450 l/hr outside charcoal filters. A layer of shell fragments approximately 13 cm deep was placed in each aquarium as substrate material. Each aquarium was divided into five equal compartments (38 cm x 7 cm x 38 cm) by 0.2 cm thick opaque lucite sheets drilled with 1.1 cm diameter holes to allow water flow between compartments. Initially, 0.2 cm thick plywood coated with fiberglass resin was used for partitions, but the crabs quickly destroyed them.

Temperature, salinity, pH, dissolved oxygen and nitrites were tested weekly in each aquarium. A Beckman Electrodeless Induction Salinometer was used to measure temperature and salinity. Dissolved oxygen was determined with a Yellow Springs Instrument Co. Model 54 oxygen meter, and a Hach Kit Model DR-EL was used for pH and nitrites.

To begin each replicate of the experiment, five crabs were weighed on a triple beam balance to 1.0 gram, placed in an aquarium, and allowed to acclimate for ten days. On the tenth day, four of the crabs in each aquarium were declawed. One

crab was left as a control animal. The declawing procedure began by weighing and remeasuring the specimens. Claws were then removed by snapping the claw downward away from the crab. To insure a clean break along the fracture line, one finger was placed on the basal cheliped joint. With the cheliped fully extended, a quick, firm downward motion would normally remove the claw cleanly. The break usually occurred at the basi-ischum between the coxa and the merus. The declawed crabs were placed in an aerated bucket of sea water for ten minutes. The declawed crab and claws were then weighed again. The maximum width of the largest wound was recorded and the crab returned to its original compartment in the aquarium. Surviving animals were returned to the field after ten days. Every crab was exposed to the same procedure, control crabs were spared only the trauma of declawing.

Four parameters were tested as potential precursors to mortality: activity level, food consumption, fluid loss and wound width. Activity level was recorded as a response to a physical stimulus. Activity was monitored daily at 0800 hours by dropping a meterstick raised 5 cm above the crab so that it struck the crab on the central anterior carapace. On days when crabs were declawed, activity was recorded before declawing. The categories used to describe activity are listed in Table 1. Food consumption was estimated three times a week when each crab was fed approximately 10 grams of queen conch, Strombus gigas. Food was placed in each compartment at 0830 hours and the remains were retrieved seven hours later and reweighed immediately. The amount of haemolymph lost was determined by weighing the whole crab before declawing and then weighing the declawed body and claws after declawing. The difference between the weights before and after declawing was termed fluid loss. The maximum width of the declawing wound was

measured with vernier calipers to the nearest 0.1 mm just prior to returning the crab to its compartment, at the completion of the declawing procedure. To relate the laboratory results to fishery practices, wounds were measured on crabs declawed by commercial fishermen during their normal work schedule.

RESULTS AND DISCUSSION

Water quality conditions in the five aquaria remained relatively stable throughout the experiment. The mean salinities ranged from 32.5 ppt to 34.3 ppt; temperature from 23.2°C to 23.5°C; dissolved oxygen from 6.2 ppm to 6.5 ppm; pH from 7.3 to 7.4; and nitrites from 2.2 ppm to 13.0 ppm (Table 2). Nitrite level was the only parameter that showed significant variation. The variation was attributed primarily to the decay of dead crabs. Frequently crabs died in the early evening, and were not removed from the tank until the next morning. Within this short time period, the crab began to decompose and the nitrite levels rose rapidly. Addition of two air stones reduced the nitrite levels to 1.0 ppm or less. These sudden changes in nitrite levels appeared to have no detrimental effects on the other crabs in the aquarium.

Both claws were removed from 101 stone crabs, and 47 of them died. One claw was removed from 100 crabs, and 28 of them died. There was considerable variation in mortality rates between replicates (Table 3), but the experimental techniques did not appear to introduce a bias. There was no significant difference in mortality rates between aquaria ($F = 1.16$, $P > 0.25$ double declawing; $F = 1.28$, $P > 0.10$ single declawing), or between the three technicians who conducted the double declawing ($F = 1.66$, $P = 0.25$), or the two who conducted the single declawing ($t = 1.54$, $P > 0.10$).

Activity level before and after declawing was compared for all crabs. Food consumption was similarly compared for 70 crabs during the double declawing experiment. There was no discernible difference in the amount of food consumed between survivors and casualties of the declawing (Table 4). Before the declawing procedure, all three groups (survivors, casualties, and controls) exhibited essentially the same mean activity levels. Slightly higher mean temperatures during the double declawing were probably responsible for the higher pre-treatment levels during that experiment. After the declawing procedure, the declawed crabs had significantly lower activity levels, while the control crabs were essentially unchanged (Table 5).

Fluid loss was measured on all 201 experimental crabs. The mean fluid loss for fatalities was nearly twice that of survivors (Table 6).

Wound width was measured on 134 of the experimental crabs (Table 6). There was a significant difference between the wound widths of survivors and casualties. The mean maximum wound width for crabs that died was 18.6 mm, whereas the mean width for survivors was 11.0 mm. Only 15% of the survivors had wound widths > 14.6 mm, whereas 85% of fatalities' wounds were as large (Table 7). Wound widths are easily measured in the field and could reliably indicate minimum declawing caused crab mortality in the fishery.

The mean carapace width of the experimental crabs was 108.7 mm (Table 8). Survivors were slightly smaller than casualties ($t = 2.62$, $P = 0.01$).

CONCLUSIONS

Over 50% of the total weight of a harvestable stone crab is in the claws (Table 8). Removal or loss of the claws constitutes a significant stress to the crab. Under the protected laboratory conditions used in this study, 47% of the declawed crabs died from the trauma of double amputation and 28% from single amputation. The survivors showed reduced alertness. In the wild, where declawed crabs must compete for food, mates, and shelter, and avoid predators, the mortality rate must be even higher. The results of this experiment cast further doubt on the efficacy of declawing as a stone crab fishery management tool.

Measurements of wound width was a good indicator of the subsequent mortality of individual crabs from the trama of declawing. Wound widths greater than 14.6 mm were fatal 70.8% of the time. Table 9 shows the mean wound widths and estimated instantaneous mortality associated with declawing of 400 stone crabs by four commercial fishermen in the field. Declawing technique appeared to be the major factor determining the differences in mortality rates between fishermen.

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Table 1. Criteria used to evaluate stone crab activity.

Code	Description
0	Dead
2	No movement except for sensory appendages and mouth parts.
3	Slight movement detected, crab crouched in corner.
4	Assumes aggressive posture, rears back, extends claws if present.
5	Attacks meterstick, moves around compartment

Table 2. Mean water quality conditions in the aquaria used to measure declawing mortality of stone crabs.

Aquarium	Salinity (ppt)	Temp (C^{o})	Dissolved Oxygen (ppm)	pH	Nitrites (ppm)
A	34.3	23.5	6.4	7.3	13.0
B	33.8	23.3	6.4	7.4	7.0
C	33.0	23.2	6.2	7.4	2.2
D	33.2	23.2	6.2	7.3	4.2
E	32.5	23.3	6.5	7.4	12.8
Mean	33.1	23.3	6.3	7.4	7.8

Table 3. Summary of Stone Crab declawing survival.

Replicate	Number of Claws Removed	Number of Crabs Declawed	Number of Crabs Crabs Survived	Percent Mortality
1	2	3	1	67
2	2	3	2	33
3	2	3	2	33
4	2	3	1	67
5	2	4	3	25
6	2	4	0	0
7	2	4	0	0
8	2	4	4	100
9	2	4	3	25
10	2	4	3	25
11	2	4	0	100
12	2	4	2	50
13	2	4	3	25
14	2	4	1	75
15	2	4	2	50
16	2	4	2	50
17	2	4	1	75
18	2	4	0	100
19	2	3	2	33
20	2	4	3	25
21	2	4	2	50
22	2	4	3	25
23	2	3	2	33
24	2	4	4	0
25	2	3	3	0
26	2	4	2	50
27	2	4	3	25
28	1	4	3	25
29	1	4	3	25
30	1	4	0	100
31	1	4	4	0
32	1	4	3	25
33	1	4	4	0
34	1	4	4	0
35	1	4	3	25
36	1	4	2	50
37	1	4	1	75
38	1	4	2	50
39	1	4	3	25
40	1	4	2	50
41	1	4	4	0

Replicate	Number of Claws Removed	Number of Crabs Declawed	Number of Crabs Crabs Survived	Percent Mortality
42	1	4	4	0
43	1	4	4	0
44	1	4	3	25
45	1	4	3	25
46	1	4	4	0
47	1	4	4	0
48	1	4	3	25
49	1	4	3	25
50	1	4	2	50
51	1	4	2	50
52	1	4	2	50

Table 4. Mean food consumption of stone crabs before and after the declawing procedure (both claws removed).

Treatment	Food Consumed (g) Before (N)	After (N)
Controls	7.5±5.3(18)	9.0±5.1(18)
Experimental	7.5 (52)	7.2 (34)
Survivors	8.4±4.6(25)	7.1±4.4(25)
Fatalities	6.6±7.3(27)	7.6±4.5(9)

Table 5. Comparison of mean activity levels of experimental and control stone crabs before and after declawing.

Treatment	Number of Crabs	Mean Activity Level Before Declawing Procedure	"t"	After Declawing Procedure
Double Amputation				
Controls	18	4.1	1.18	3.8
Survivors	24	4.2	11.23*	3.3
Fatalities	27	4.2	7.02*	3.3
Single Amputation				
Controls	25	3.9	1.93	4.0
Survivors	72	3.7	8.31*	3.4
Fatalities	28	3.7	1.14	3.4

* Significant, $P < 0.001$.

Table 6. Comparisons of mean body fluid losses and wound widths of declawed stone crabs.

	Survivors (N)	"t"	Fatalities (N)
Double Amputation			
Fluid loss (g)	4.7 (54)	2.86*	7.7 (47)
Wound width (mm)	11.4 (22)	6.94*	18.2 (12)
Single Amputation			
Fluid loss (g)	4.32 (72)	1.88	7.8 (28)
Wound width (mm)	10.9 (72)	7.03*	18.8 (28)

*Significant, $P < 0.01$

Table 7. Comparison of the distribution of declawing wound widths of stone crabs survivors and fatalities.

Wound Width (mm)	Number of Stone Crabs		
	Survivors	Fatalities	Total
≤ 14.6	80	6	86
> 14.6	14	34	48
Total	94	40	134

Table 8. Summary of the mean size and weight of control and experimental stone crabs.

	Number of Crabs	Mean Carapace Width (mm)	Mean Propodus Length (mm)		Mean Weight (g)	
			Right	Left	Total	Claws
Double Amputation						
Control	31	106.2	102.9	87.3	522.5	--
Experimental	101	111.2	105.1	91.4	538.3	274.7
Survivors	54	109.9	104.8	90.3	524.2	267.0
Fatalities	47	112.6	106.4	92.4	553.7	283.4
Single Amputation						
Control	25	106.6	96.0	83.3	451.7	--
Experimental	100	106.2	97.5	86.1	467.3	149.4
Survivors	72	105.2	96.0	85.1	451.4	143.2
Fatalities	28	108.8	101.3	88.7	508.2	165.1

Table 9. Comparison of mean wound widths incurred from declawing by commercial fishermen.

Date Sampled	Firm/ Declawer	No. of Crabs Sampled	Mean Carapace Width	Number of Wounds Measured	Mean Wound Width	Mortality[a]
2-17-78	Charlie Brown/ Bruce	100	109.8	196	12.7	.38
3-24-78	Jimmy Kelly/ J.K.	100	112.8	192	12.6	.29
3-29-78	Kit Johnson/ R.E.	100	95.3	134	13.5	.51
3-29-78	Kit Johnson/ R.W.	100	94.7	151	10.8	.23

[a]Mortality was estimated as 70.8% of the crabs that had a wound width greater than 14.6 mm.

Addendum - Sex, size, handedness, wound width, and fate of 201 declawed, and 56 control stone crabs

Tag Number	Sex	Carapace Width (mm)	Measurements Propodus Length (mm) Right		Left		Wound Width (mm)	Result[a]	Weight Declawed Body	Weight Claws R	Weight Claws L
Double Amputees											
2133	M	107.5	(2)[b]	90.0	(1)	104.4	NM	S	218	141	110
2149	M	114.8	(1)	103.0	(2)	87.0	NM	D, 312 hrs.	269	151	96
2139	M	131.2	(1)	131.2	(2)	109.1	NM	D, 48	407	281	181
2136	M	104.7	(2)	86.3	(2)	103.5	NM	S	229	94	152
2151	M	99.9	(1)	88.3	(2)	75.9	NM	D, 24	190	106	69
2152	M	113.4	(1)	105.1	(2)	88.5	NM	S	277	160	78
2137	M	120.5	(1)	129.0	(2)	96.4	NM	D, 24	715	256	130
2159	M	114.5	(1)	112.9	(2)	94.4	NM	S	272	183	114
2142	M	119.9	(1)	115.7	(2)	100.5	NM	S	299	208	129
2158	M	92.1	(1)	81.5	(2)	71.1	NM	S	148	79	51
2123	M	111.9	(1)	104.3	(2)	84.8	NM	D, 192	254	142	84
2119	M	97.9	(1)	86.5	(2)	72.5	NM	D, 24	160	105	61
2161	M	123.7	(1)	124.8	(2)	100.8	NM	S	351	209	131
2167	M	97.2	(1)	85.1	(2)	72.4	NM	S	174	99	61
2165	M	100.8	(1)	92.7	(2)	79.6	NM	S	205	115	70
2164	M	113.8	(1)	106.2	(2)	81.6	NM	D, 24	294	153	74
2241	M	127.1	(1)	129.3	(2)	107.4	NM	D, 1	355	254	158
2255	M	117.7	(1)	120.0	(2)	103.6	NM	D, 0	294	229	147
2240	M	127.9	(1)	126.0	(2)	103.0	NM	D, 0	346	273	157
2249	M	122.6	(1)	130.1	(2)	104.2	NM	D, 0	348	253	135
2246	M	NM	(1)	87.0	(2)	75.9	NM	D, 0	171	100	65
2242	M	117.4	(1)	119.5	(2)	99.2	NM	D, 2	306	215	130
2253	M	108.7	(1)	108.9	(2)	90.8	NM	D, 0	236	167	102
2251	M	119.5	(1)	125.9	(2)	101.9	NM	D, 24	340	235	110
2266	M	105.6	(2)	81.2	(1)	99.1	NM	S	250	91	150
2272	M	119.4	(1)	116.9	(2)	87.2	NM	S	256	162	102
2269	M	116.0	(1)	124.9	(2)	114.2	NM	S	292	202	130
2278	M	95.7	(1)	86.5	(2)	72.7	NM	S	183	100	59
2274	M	115.6	(1)	94.6	(4)	70.5	NM	S	217	149	60

Tag Number	Sex	Carapace Width (mm)	Measurements Propodus Length (mm) Right		Left		Wound Width (mm)	Result[a]	Weight Declawed Body	Claws R	Claws L
2276	M	113.4	(1)	92.1	(2)	78.7	NM	D, 48	210	134	83
2282	M	95.3	(1)	82.7	(2)	71.1	NM	S	167	94	58
2284	M	113.1	(1)	113.2	(2)	93.5	NM	S	265	204	117
2359	M	118.7	(1)	123.9	(2)	101.3	NM	S	309	235	138
2354	M	98.2	(1)	87.8	(2)	75.7	NM	S	186	101	63
2344	M	108.5	(2)	87.4	(1)	103.1	NM	D, 0	236	103	173
2343	M	109.9	(1)	110.3	(2)	95.2	NM	S	265	183	120
2337	M	109.9	(1)	104.6	(2)	89.2	NM	D, 144	248	165	99
2348	M	108.6	(1)	101.5	(2)	85.8	NM	D, 0	246	138	91
2356	M	124.7	(1)	123.4	(2)	103.2	NM	D, 0	214	91	147
2339	M	129.8	(1)	130.5	(2)	110.3	NM	D, 22	395	290	180
2412	M	108.1	(1)	100.8	(2)	86.0	NM	D, 96	229	135	88
2403	F	100.4	(1)	88.6	(2)	71.0	NM	S	195	102	55
2098	M	107.6	(1)	99.1	(2)	82.0	NM	S	241	144	76
2411	M	101.3	(1)	92.3	(2)	78.9	NM	D, 48	204	110	69
2471	M	95.1	(1)	79.5	(2)	70.4	NM	D, 48	156	87	56
2554	M	98.4	(1)	95.2	(2)	78.0	NM	S	181	123	70
2093	M	109.2	(1)	93.3	(2)	79.0	NM	S	234	134	83
2472	M	107.2	(1)	107.2	(2)	85.9	NM	S	229	173	96
2094	M	115.8	(4)	94.8	(1)	117.9	NM	D, 0	292	110	188
2473	M	124.8	(1)	124.4	(3)	104.4	NM	D, 0	355	250	158
2084	M	129.7	(1)	131.2	(2)	107.3	NM	D, 48	378	300	170
2474	M	121.9	(1)	125.3	(2)	102.9	NM	S	333	245	158
2588	M	102.0	(1)	90.1	(2)	78.1	NM	S	213	106	67
2691	M	117.8	(1)	120.5	(2)	100.0	NM	D, 48	268	233	130
2582	M	105.5	(2)	81.9	(1)	96.7	NM	D, 72	214	84	133
2577	M	103.8	(1)	95.1	(2)	78.1	NM	S	209	135	82
2469	M	103.2	(1)	96.7	(2)	78.1	NM	S	199	127	72
2598	M	105.8	(1)	106.3	(2)	89.3	NM	S	225	147	90
2595	M	110.2	(2)	91.5	(1)	106.6	NM	D, 0	240	170	115
2580	M	101.5	(1)	101.4	(2)	82.8	NM	D, 0	195	142	80
2606	F	113.3	(1)	101.3	(2)	87.0	NM	D, 0	281	144	91

Tag Number	Sex	Carapace Width (mm)	Measurements Propodus Length (mm) Right		Left		Wound Width (mm)	Result[a]	Weight Declawed Body	Claws R	Claws L
2607	M	121.0	(1)	117.8	(2)	99.6	NM	D, 0	322	196	121
2605	M	99.5	(1)	92.9	(2)	77.0	NM	D,24	195	130	65
2602	M	111.8	(1)	114.0	(2)	96.2	NM	S	279	182	110
2677	M	107.7	(1)	105.0	(2)	85.5	15.4	D, 0	242	158	96
2680	M	100.3	(1)	93.5	(2)	75.0	15.5	D, 1	200	127	79
2697	M	112.3	(1)	109.1	(2)	86.1	NM	D, 0	271	182	111
2696	M	104.4	(1)	99.7	(2)	88.1	25.3	D, 2	207	86	139
2689	M	95.1	(2)	71.5	(1)	82.8	NM	D, 5	167	56	89
2708	M	108.0	(4)	87.1	(1)	107.5	17.7	D, 0	214	83	140
2706	M	97.0	(1)	84.6	(2)	70.3	NM	S	155	94	52
2778	M	120.6	(1)	127.7	(2)	103.3	9.2	S	331	240	154
2775	M	127.7	(1)	126.0	(2)	101.1	10.6	S	391	246	155
2777	M	115.9	(2)	100.4	(1)	120.0	11.0	S	287	150	202
2799	M	111.6	(1)	113.3	(2)	89.2	17.7	D, 24	281	192	116
2752	M	118.7	(1)	117.0	(2)	99.0	10.9	D, 72	311	230	137
2753	M	92.2	(4)	73.5	(1)	85.1	15.0	D, 72	169	58	94
2766	M	104.6	(1)	109.5	(2)	92.7	NM	S	229	163	102
2748	M	111.8	(1)	105.0	(2)	86.6	14.1	S	246	156	93
2749	M	112.3	(1)	111.8	(2)	91.1	11.0	S	259	187	105
2756	M	113.6	(1)	131.6	(2)	103.7	13.1	S	258	212	120
2760	M	116.9	(1)	116.4	(2)	99.6	9.8	S	306	190	129
2757	M	111.6	(1)	103.3	(2)	88.2	18.2	D, 24	259	160	100
2804	M	106.8	(1)	108.6	(2)	90.2	26.3	D, 0	222	165	102
2801	M	123.6	(1)	126.2	(3)	106.7	10.8	S	351	257	155
2805	M	120.5	(1)	121.4	(2)	100.7	18.1	S	296	234	154
2820	M	103.7	(1)	94.2	(2)	77.4	9.2	S	209	127	75
2815	M	110.3	(1)	96.2	(2)	81.6	10.0	S	237	142	85
2810	M	105.7	(1)	95.0	(2)	80.0	10.2	S	272	187	115
2808	M	113.0	(1)	114.0	(2)	94.8	9.3	S	237	124	78
15934	M	111.8	(1)	108.9	(2)	93.3	13.3	S	278	190	117
15937	M	112.9	(4)	95.0	(4)	86.7	9.7	S	270	113	96
15928	M	110.4	(1)	112.9	(2)	95.4	9.5	S	271	199	118
15930	M	97.4	(1)	96.7	(2)	78.6	15.3	S	177	121	93
15939	M	103.3	(1)	95.4	(2)	77.3	15.7	D, 24	210	133	78

Tag Number	Sex	Carapace Width (mm)	Measurements Propodus Length (mm) Right		Left		Wound Width (mm)	Result[a]	Declawed Body	Weight Claws R	Claws L
15938	M	113.7	(4)	89.7	(1)	108.0	11.1	S	275	94	163
15935	M	125.4	(1)	133.1	(2)	102.9	20.2	D, 0	375	262	158
15931	M	121.5	(1)	123.9	(2)	102.7	10.3	S	360	243	155
15933	M	116.1	(1)	115.6	(2)	96.7	9.6	S	307	196	119
15932	M	128.8	(1)	133.1	(2)	109.0	20.8	D, 4	400	329	192
15926	M	113.0	(1)	124.1	(2)	101.9	9.9	S	289	201	123
Single Amputees											
14878	M	123.7	(1)	126.3	(2)	100.0	12.2	S	467	232	
14880	M	97.5	(1)	87.4	(2)	75.3	7.9	S	340	97	
14876	M	125.5	(1)	129.8	(2)	109.9	13.9	S	777	244	
14857	M	116.7	(1)	118.2	(2)	100.1	18.2	D, 24	676	225	
14900	M	111.7	(2)	86.0	(1)	108.8	9.9	S	570		174
14886	M	94.4	(1)	87.8	(2)	72.0	8.2	S	326	100	
14888	M	98.7	(1)	79.8	(2)	80.1	15.3	D, 24	368		114
14895	M	109.6	(1)	102.5	(2)	86.3	13.0	S	493	156	
14987	M	120.0	(4)	94.8	(2)	112.7	20.4	D, 80	601		179
14859	M	101.8	(2)	82.4	(1)	96.8	25.7	D, 72	409		130
14913	M	114.4	(1)	114.7	(2)	93.0	20.7	D, 0	599	199	
14925	M	130.8	(1)	136.5	(2)	101.7	21.0	D, 0	849	312	
14901	M	129.6	(4)	114.6	(1)	144.4	10.8	S	878		318
14912	M	103.9	(1)	102.2	(2)	86.3	8.6	S	422	132	
14906	M	113.0	(2)	91.1	(1)	107.4	18.0	S	549		174
14908	M	94.8	(2)	73.6	(1)	91.9	7.8	S	335		108
14874	M	111.9	(1)	107.2	(4)	80.8	10.9	S	485	164	
14860	M	117.8	(1)	102.8	(2)	89.2	10.2	S	566	166	
14861	M	99.2	(4)	74.7	(1)	89.8	8.4	S	347		96
14867	M	123.3	(1)	129.8	(2)	108.1	27.2	D, 24	786	249	
14661	M	112.7	(1)	104.7	(2)	87.1	10.0	S	473	138	
14658	M	96.3	(1)	85.6	(2)	73.0	7.8	S	324	88	
14694	M	93.9	(4)	73.1	(1)	82.7	7.9	S	317		85
14699	M	104.4	(1)	93.6	(2)	79.5	14.4	S	438	134	
14691	M	115.9	(1)	109.6	(4)	87.6	17.9	S	548	173	
14660	M	117.7	(1)	117.7	(2)	97.8	16.6	S	591	192	

Tag Number	Sex	Carapace Width (mm)	Measurements Propodus Length (mm) Right		Left		Wound Width (mm)	Result[a]	Weight Declawed Body	Claws R	Claws L
14659	M	104.4	(4)	61.7	(1)	90.2	9.4	S	349	99	
14684	M	102.9	(1)	92.3	(2)	80.0	14.4	S	403	121	
14709	M	126.8	(1)	130.0	(4)	68.4	19.0	S	727	298	
14722	M	125.4	(1)	130.3	(2)	103.6	22.3	D, 1	781	288	
14711	M	95.5	(1)	89.5	(2)	72.7	7.5	S	323	99	
14704	M	124.4	(1)	132.7	(2)	110.5	10.5	S	751	238	
14721	M	122.6	(2)	108.4	(1)	129.2	10.2	S	756		255
14689	M	106.7	(1)	96.9	(4)	59.1	15.0	D, 5	395	129	
14719	M	113.1	(1)	113.5	(2)	95.8	8.4	S	536	182	
14720	M	112.8	(1)	111.7	(2)	92.4	9.4	D, 45	562	191	
14677	M	105.2	(1)	94.6	(2)	78.5	26.6	D, 5	424	129	
14725	M	121.5	(1)	118.6	(2)	94.8	14.7	S	728	239	
14662	M	115.4	(1)	108.0	(2)	90.0	19.1	D, 5	590	184	
14686	M	97.0	(1)	86.7	(2)	72.9	15.0	D, 5	316	93	
2919	M	107.2	(1)	104.1	(2)	85.1	16.6	D, 0	456	139	
2920	M	87.5	(1)	72.9	(2)	62.6	10.4	S	213	59	
3055	M	101.5	(1)	103.5	(2)	86.6	8.1	S	456	152	
2910	M	123.7	(1)	128.2	(2)	103.4	20.3	D, 24	665	223	
3018	M	101.9	(1)	95.7	(2)	81.4	8.8	S	419	126	
3016	F	101.4	(1)	85.4	(2)	71.0	15.0	D, 24	332	85	
3017	M	119.2	(1)	114.0	(2)	92.7	10.0	S	584	181	
3015	M	112.2	(1)	114.6	(2)	96.0	11.5	S	608	203	
2951	M	101.3	(1)	95.1	(2)	80.6	16.3	D, 24	411	129	
2953	M	92.7	(1)	84.9	(2)	71.6	7.2	S	308	92	
2977	M	115.1	(1)	114.6	(2)	88.9	13.4	S	587	180	
2978	M	96.8	(2)	73.6	(1)	83.2	15.0	D, 71	324		90
2985	M	105.0	(1)	95.6	(4)	75.0	9.6	S	433	128	
2983	M	98.6	(2)	78.3	(1)	89.7	14.9	S	344		105
3003	M	96.9	(2)	62.5	(1)	82.1	7.6	S	284		77
2968	M	110.4	(1)	109.3	(2)	92.4	11.5	S	565	184	
3033	M	109.8	(1)	106.5	(2)	87.8	9.6	S	512	157	
2967	M	98.5	(1)	94.3	(2)	79.0	8.4	S	389	122	
2932	M	89.0	(1)	78.2	(2)	58.8	11.9	S	247	79	