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**BIOLOGICAL DATA ON PINK SHRIMP, *PENAEUS DUORARUM*, OF NORTH FLORIDA
BAY AND ADJACENT ESTUARIES IN MONROE COUNTY, FLORIDA, SEPTEMBER,
1957 - MARCH, 1962**

by

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The Marine Laboratory
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Miami 49, Florida

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**BIOLOGICAL DATA ON PINK SHRIMP, *PENAEUS DUORARUM*, OF NORTH FLORIDA
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A study of the ecology of northern Florida Bay and adjacent estuaries in Everglades National Park, Monroe County, Florida, was conducted during July, 1957 through May, 1962. This study was supported by the Florida State Board of Conservation.

During the course of the ecological study, it became apparent that the pink shrimp was abundant in the study area and formed an important item in the diet of many of the major sport and commercial fish species of the region. In addition, the pink shrimp of northern Florida Bay were suspected of contributing to the landings of the commercial catch of the species in the Tortugas grounds northwest of Key West, Florida. That they do actually move from the mainland to the Tortugas has since been confirmed (Costello and Allen, 1960; Tabb, Dubrow and Jones, in press).

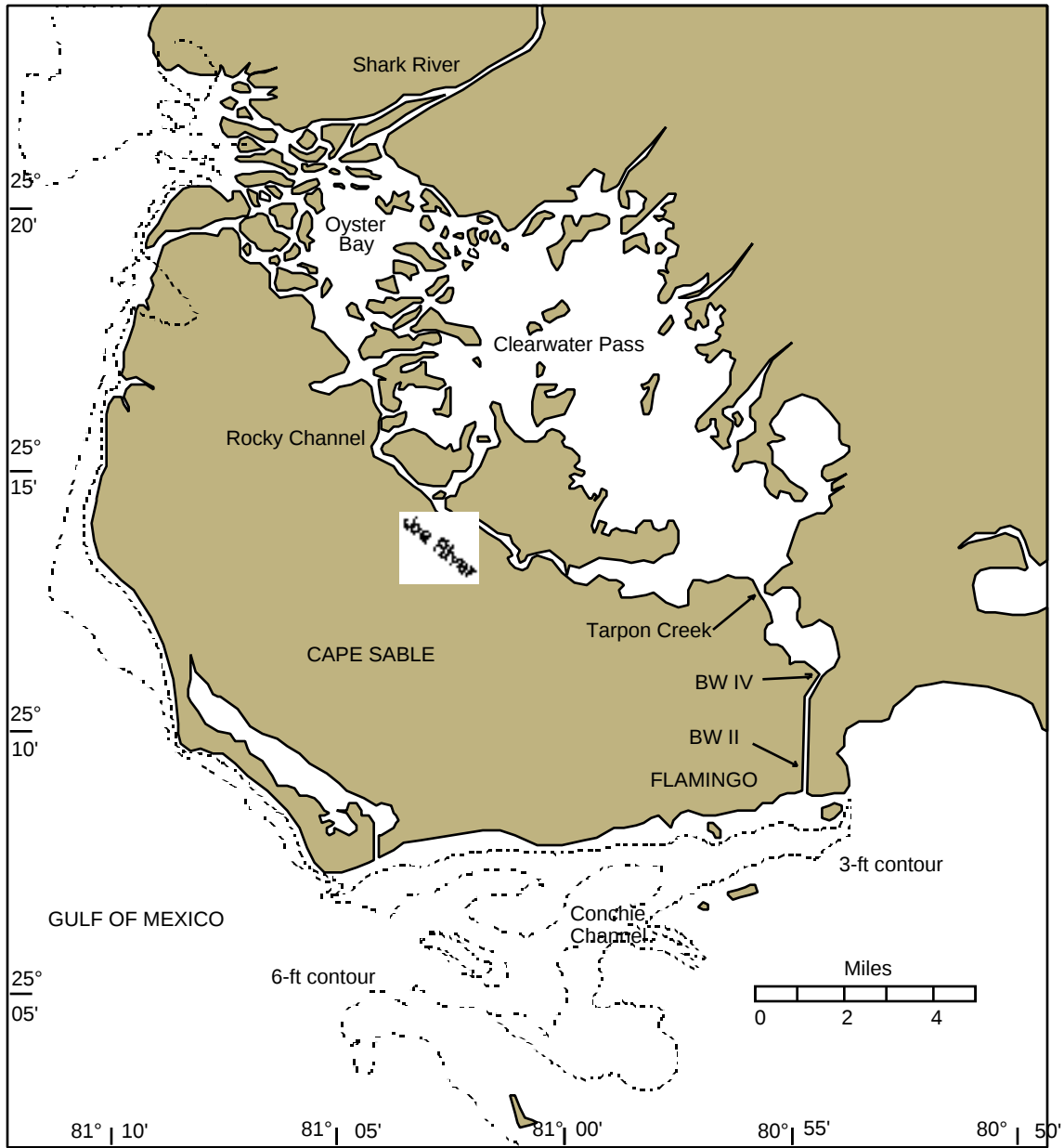
The results of the studies on shrimp biology have been presented (Tabb, *et al. Ibid*). However, during the course of the study a large amount of field data pertaining to meteorology, tide stage, salinity and temperature of the water at sampling, and comments on shrimp behavior, were collected. We believe that these data plus the data on size and sex would be useful to other workers.

The study area is shown by the following figure. Field data on the hydrography of the entire study area for the five-year period have been summarized (Tabb, Dubrow and Manning, 1959; Tabb and Dubrow, mimeo, in prep.), and made ready for publication (Tabb and Dubrow, ms.).

The shrimp were collected mainly with dipnets but the following data provide samples taken by small "otter" trawl, channel nets and roller-frame trawls as well. All measurements of length are carapace lengths, measured from the posterior margin of the orbital notch to the postero-dorsal margin of the carapace or "head". This eliminates errors in measurement inherent in total length determination, where the rostrum may be broken or the shrimp abdomen may be curled by fixation.

Table I, pages 3 through 12, presents a continuous monthly summary of length frequency data on shrimp taken at Buttonwood Canal IV (BW IV), Daily logs of observations and breakdown of samples by sex and size are given in the remainder of the paper.

Salinity and water temperature determinations taken at the beginning of the sampling period are given as well as the minimum air temperature observed during the collecting period.



Map of the Cape Sable region, Monroe County, Florida, showing the places where shrimp samples were taken. [SIMPLIFIED FROM ARCHIVED COPY.]

Table I

Monthly summaries of shrimp carapace length frequency data, including males, females and unsexed individuals. Data for September and October, 1957, from Tarpon Creek (old northwest exit from Coot Bay). Remaining data from Station BW IV (Buttonwood Canal at Coot Bay.)

Carapace length in mm.	September 1957	October 1957	November 1957	December 1957	January 1956	February 1958
3	-	-	-	-	-	-
4	-	-	11	1	-	-
5	-	1	79	8	-	-
6	-	-	123	10	1	-
7	2	2	70	13	1	1
8	2	-	41	8	2	-
9	2	-	35	5	13	8
10	3	-	15	9	35	24
11	8	1	5	3	37	37
12	11	2	1	3	38	67
13	16	3	5	3	45	76
14	23	3	4	-	39	105
15	27	13	5	1	47	130
16	22	13	13	1	41	109
17	29	20	18	2	37	109
18	38	12	36	1	29	55
19	28	8	19	4	21	19
20	17	2	11	2	15	10
21	15	6	12	2	8	6
22	3	5	4	2	8	2
23	5	-	1	-	5	2
24	-	-	2	-	1	-
25	1	1	-	-	-	1
26	-	1	1	-	1	1
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	1
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Totals	252	93	511	78	424	763

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	March 1958	April 1958	May 1958	June 1958	July 1958	August 1958
3	-	-	-	-	-	69
4	-	-	-	-	1	77
5	-	-	-	-	4	58
6	10	2	-	-	14	122
7	13	2	-	-	42	174
8	17	2	-	-	33	79
9	21	10	2	-	68	102
10	31	27	1	2	111	105
11	43	33	3	-	125	155
12	56	61	4	4	126	191
13	79	90	24	5	102	158
14	117	65	35	3	62	90
15	150	71	51	8	32	41
16	91	47	60	3	25	6
17	65	33	50	1	15	3
18	19	9	40	-	10	-
19	14	6	13	1	5	1
20	3	2	4	-	1	-
21	1	3	2	-	-	-
22	1	2	-	-	-	-
23	-	-	-	-	1	-
24	1	-	-	-	-	-
25	1	-	1	-	-	-
26	-	-	-	-	-	-
27	1	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Totals	737	465	290	27	777	1431

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	September 1958	October 1958	November 1958	December 1958	January 1959	February 1959
3	-	-	-	1	-	-
4	-	-	-	-	-	-
5	3	11	5	-	-	-
6	9	14	8	-	1	-
7	16	23	35	1	-	1
8	14	9	32	8	3	-
9	21	2	29	11	-	1
10	36	6	17	5	4	4
11	61	11	16	5	3	2
12	62	36	16	5	4	4
13	56	26	23	13	1	3
14	31	13	39	19	-	4
15	17	22	51	35	7	4
16	19	6	38	62	10	5
17	5	3	18	57	8	13
18	3	1	10	22	20	26
19	7	1	7	16	17	25
20	1	1	4	8	21	40
21	-	-	1	3	11	20
22	-	-	1	3	8	11
23	-	-	-	1	5	6
24	-	-	-	1	1	4
25	-	-	-	-	-	1
26	-	-	-	-	1	2
27	-	-	-	-	-	-
28	-	-	-	1	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Totals	361	185	350	277	125	176

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	March 1959	April 1959	May 1959	June 1959	July 1959	August 1959
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	1
7	-	-	-	1	2	6
8	1	-	-	1	3	21
9	-	-	-	4	6	45
10	1	-	1	9	23	94
11	2	1	-	14	32	84
12	1	-	4	8	41	61
13	3	1	9	17	52	41
14	4	8	5	21	38	29
15	12	18	8	31	40	62
16	16	33	3	44	20	38
17	17	87	13	86	6	28
18	16	105	25	90	1	27
19	15	70	26	45	-	13
20	12	52	63	49	1	2
21	8	14	40	24	-	-
22	2	9	49	15	-	1
23	2	2	17	6	-	-
24	-	-	12	2	-	-
25	-	-	3	2	-	-
26	-	1	5	-	-	-
27	-	-	2	-	-	-
28	-	-	1	1	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
Totals	112	401	286	470+*	265+D	553+‡

* June, 1959 sample, add 163 shrimp counted but not measured, for monthly total.

D July, 1959 sample, add 590 shrimp counted but not measured, for monthly total.

‡ August, 1959 sample, add 619 shrimp counted but not measured, for monthly total.

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	September 1959	October 1959	November 1959	December 1959	January 1960	February 1960
3	-	4	-	-	-	-
4	-	48	-	-	-	-
5	2	167	1	-	-	-
6	7	215	3	1	-	-
7	31	101	3	1	2	-
8	22	29	1	-	6	-
9	11	21	3	-	6	-
10	26	17	9	1	3	5
11	42	23	11	-	2	3
12	53	25	5	2	6	8
13	55	27	5	-	5	14
14	35	34	3	1	9	13
15	35	20	7	3	10	19
16	26	13	2	1	20	42
17	15	9	2	2	31	65
18	11	4	2	-	34	106
19	6	4	-	-	33	148
20	4	2	1	-	17	127
21	1	1	-	-	7	72
22	1	2	-	-	6	53
23	-	2	-	-	5	28
24	-	-	-	-	-	14
25	-	-	-	-	-	6
26	-	2	-	-	-	-
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Totals	383	770	58	12	202	723

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	March 1960	April 1960	May 1960	June 1960	July 1960	August 1960
3	-	-	-	-	-	-
4	-	-	-	1	-	3
5	-	-	-	1	-	5
6	-	-	-	6	1	10
7	-	-	-	23	1	36
8	-	-	-	21	12	29
9	1	1	1	42	14	44
10	7	1	4	82	58	91
11	3	6	-	78	74	90
12	12	1	1	101	106	122
13	17	3	3	91	75	149
14	29	7	13	57	63	119
15	46	23	45	49	34	82
16	87	36	39	28	24	46
17	133	59	75	14	10	38
18	166	39	55	4	11	9
19	115	11	27	1	3	6
20	65	10	15	1	5	5
21	16	-	7	-	3	5
22	8	1	1	-	3	2
23	3	-	-	-	1	1
24	1	-	-	-	1	-
25	-	-	-	-	-	-
26	-	-	-	-	-	2
27	-	-	-	-	-	-
-28	-	-	-	-	-	-
-29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	-	-	1	-	-	-
Totals	553 +*	198 +D	287 +‡	600	496 +❖	894 +▼

* March, 1960 sample, add 619 shrimp counted but not measured, for monthly total.

D April, 1960 sample, add 799 shrimp counted but not measured, for monthly total.

‡ May, 1960 sample, add 574 shrimp counted but not measured, for monthly total.

❖ July, 1960 sample, add 527 shrimp counted but not measured, for monthly total.

▼ August, 1960 sample, add 654 shrimp counted but not measured, for monthly total.

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	September 1960*	October 1960D	November 1960	December 1960‡	January 1961❖	February 1961▼
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	2	-	-	-
7	-	-	-	-	-	-
8	-	-	1	-	-	-
9	-	-	2	-	-	-
10	-	-	2	-	-	-
11	-	-	1	-	-	-
12	-	-	1	-	-	-
13	-	-	7	-	-	-
14	-	-	2	-	-	-
15	-	-	9	-	-	-
16	-	-	6	-	-	-
17	-	-	7	-	-	-
18	-	-	2	-	-	-
19	-	-	7	-	-	-
20	-	-	3	-	-	-
21	-	-	1	-	-	-
22	-	-	1	-	-	-
23	-	-	-	-	-	-
24	-	-	-	-	-	-
25	-	-	1	-	-	-
26	-	-	-	-	-	-
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	1	-	-	-
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Totals	-	-	56	-	-	-

* Hurricane Donna struck Flamingo the night of September 9-10, 1960.

D Only 7 shrimp caught or observed during dipping period.

‡ No shrimp observed during 4 man hours of observation on the ebb tide.

❖ No trip.

▼ Only 6 shrimp observed during 3 hours of observation.

Table I (cont.)

Monthly summaries of shrimp carapace length frequency

Carapace length in mm	March 1962
3	-
4	-
5	-
6	3
7	2
8	7
9	13
10	19
11	22
12	37
13	46
14	57
15	63
16	56
17	54
18	65
19	60
20	59
21	42
22	28
23	23
24	9
25	11
26	5
27	-
28	2
29	1
30	-
31	-
32	1
Totals	685

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ENP Shrimp Log

<u>Date:</u>	Sept. 23, 1957	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	Tarpon Creek				
<u>Time:</u>	1930 - 2430				
<u>Moon phase:</u>	New moon	10	-	1	1
<u>Tide stage:</u>	First of ebb	11	-	1	1
<u>Water temperature:</u>		12	1	-	1
Surface:	31.5 °C	13	2	1	3
Bottom:	31.8 °C	14	3	7	10
<u>Salinity:</u>		15	4	4	8
Surface:	36.8 ppt	16	1	5	6
Bottom:	36.8 ppt	17	5	12	17
<u>Air temperature:</u>	27.7 °C (81.9 °F)	18	4	10	14
<u>No. men dipping:</u>	Two	19	4	6	10
<u>Catch per man hour:</u>	8.3 shrimp	20	3	5	8
		21	2	1	3
		22	-	-	-
		23	1	-	1
		24	-	-	-
		Total	30	53	83

<u>Date:</u>	Sept. 24, 1957	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	Tarpon Creek				
<u>Time:</u>	1950 - 2050				
<u>Moon phase:</u>	New moon	10	-	-	-
<u>Tide stage:</u>	Ebb	11	-	1	1
<u>Water temperature:</u>		12	-	-	-
Surface:	31.2 °C	13	-	-	-
Bottom:	31.2 °C	14	-	-	-
<u>Salinity:</u>		15	-	2	2
Surface:	30.4 ppt	16	2	-	2
Bottom:	30.3 ppt	17	-	3	3
<u>Air temperature:</u>	27.7 °C (81.9 °F)	18	2	6	8
<u>No. men dipping:</u>	One	19	3	3	6
<u>Catch per man hour:</u>	32 shrimp	20	1	2	3
		21	2	2	4
		22	-	-	-
		23	1	2	3
		24	-	-	-
		Total	11	21	32

Date: Sept. 26, 1957

Station: Tarpon Creek

Time: 1900 - 2400

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 31.5 °C

Bottom: 31.5 °C

Salinity:

Surface: 35.0 ppt

Bottom 36.5 ppt

Air temperature: 27.7 °C (81.9 °F)

No. men dipping: One

Catch per man hour: 27.4 shrimp

Carapace
length in
mm

Females

Males

Combined

7	1	1	2
8	2	-	2
9	1	1	2
10	2	-	2
11	4	2	6
12	3	7	10
13	9	4	13
14	5	8	13
15	4	13	17
16	7	7	14
17	6	3	9
18	3	13	16
19	8	4	12
20	5	1	6
21	2	6	8
22	3	-	3
23	1	-	1
24	-	-	-
25	1	-	-
Total	67	70	137

Date: October 7, 1957

Station: Tarpon Creek

Time: 1930 - 2130

Moon phase: Full moon

Tide stage: Ebb (began 1830 hours)

Water temperature:

Surface: 28.6°C

Bottom: 28.8 °C

Salinity:

Surface: 29.5 ppt

Bottom 30.2 ppt

Air temperature: 26.7 °C (76.0 °F)

No. men dipping: Two

Catch per man hour: 11 shrimp

Carapace
length in
mm

Females

Males

Combined

5	1	-	1
6	-	-	-
7	1	-	1
8	-	-	-
9	-	-	-
10	-	-	-
11	-	-	-
12	-	1	1
13	-	1	1
14	1	2	3
15	2	4	6
16	1	4	5
17	5	5	10
18	1	5	6
19	1	1	2
20	-	1	1
21	4	-	4
22	2	-	2
Total	20	24	44

<u>Date:</u>	October 9, 1957	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	Tarpon Creek				
<u>Time:</u>	1930 - 2230				
<u>Moon phase:</u>	Full moon (very bright)	11	1	-	1
<u>Tide stage:</u>	Ebb (began 1920 hours)	12	-	-	-
<u>Water temperature:</u>		13	1	1	2
Surface:	30.0 °C	14	-	-	-
Bottom:	29.7 °C	15	1	2	3
<u>Salinity:</u>		16	-	2	2
Surface:	29.9 ppt	17	1	2	3
Bottom	29.8 ppt	18	2	-	2
<u>Air temperature:</u>	26.7 °C (76.0 °F)	19	-	-	-
<u>No. men dipping:</u>	Two	20	-	-	-
<u>Catch per man hour:</u>	3 shrimp	21	1	1	2
		22	-	1	1
		Total	7	9	16

<u>Date:</u>	October 10, 1957	Carapace length in mm	Females	Males	Combined
(FIRST NIGHT THAT DIPPING WAS POSSIBLE AT BW IV.)					
<u>Station:</u>	Tarpon Creek	7	1-	-	1
<u>Time:</u>	2030 - 2330	8	-	-	-
<u>Moon phase:</u>	Full moon (waning)	9	-	-	-
<u>Tide stage:</u>	Ebb	10	-	-	-
<u>Water temperature:</u>		11	-	-	-
Surface:	29.6 °C	12	1	-	1
Bottom:	29.6 °C	13	-	-	-
<u>Salinity:</u>		14	-	-	-
Surface:	28.9 ppt	15	1	3	4
Bottom	29.3 ppt	16	1	5	6
<u>Air temperature:</u>	26.7 °C (76.0 °F)	17	2	5	7
<u>No. men dipping:</u>	Two	18	-	4	4
<u>Catch per man hour:</u>	5.5 shrimp	19	3	3	6
		20	-	1	1
		21	-	-	-
		22	1	1	2
		23	-	-	-
		24	1	-	1
		Total	11	22	33

Date: November 20, 1957

Station: BW IV

Time: 2000 - 2200

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 26.0 °C

Bottom: 26.3 °C

Salinity:

Surface: 27.2 ppt

Bottom 27.2 ppt

Air temperature: 23.7 °C (74.7 °F)

No. men dipping: Two

Catch per man hour: 38 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

4	-	-	1	1
5	-	-	10	10
6	-	-	25	25
7	-	-	19	19
8	-	-	20	20
9	-	-	18	18
10	-	-	7	7
11	-	-	-	-
12	-	-	1	1
13	-	-	4	4
14	-	-	2	2
15	-	1	-	1
16	-	5	-	5
17	3	7	-	10
18	3	8	-	11
19	5	1	-	6
20	7	-	-	7
21	3	-	-	3
22	-	1	-	1
23	1	-	-	1
Total	41	37	281	359

Date: November 21, 1957

Station: BW IV

Time: 1800 - 2100

Moon phase: New moon

Tide stage: First of ebb

Water temperature:

Surface: 25.3 °C

Bottom: 25.3 °C

Salinity:

Surface: 23.9 ppt

Bottom: 23.5 ppt

Air temperature: 23.7 °C (74.7 °F)

No. men dipping: Two

Catch per man hour: 59 shrimp

Carapace

length in

mm

Females

Males

Unsexed

Combined

3	-	-	-	0
4	-	-	10	10
5	-	-	69	69
6	-	-	98	98
7	-	-	51	51
8	-	-	21	21
9	-	-	17	17
10	-	-	8	8
11	-	-	5	5
12	-	-	-	-
13	1	-	-	1
14	-	1	1	2
15	2	1	1	4
16	4	4	-	8
17	4	4	-	8
18	12	13	-	25
19	6	7	-	13
20	1	3	-	4
21	7	2	-	9
22	3	-	-	3
23	-	-	-	-
24	1	1	-	2
25	-	-	-	-
26	-	1	-	1
Total	22	23	107	152

Date: December 16 - 19, 1957

Station: BW IV

Time: No time record kept

Moon phase: Last quarter

Tide stage: Ebb

Water temperature:

Surface: 18.2-20.3 °C

Bottom: 19.4-20.3 °C

Salinity:

Surface: 21.9-26.0 ppt

Bottom: 22.2-25.8 ppt

Air temperature: 18.8 °C (66.0 °F)

No. men dipping: Two

Catch per man hour: No record

Carapace
length in
mm

Females

Males

Combined

4	-	-	1
5	-	-	8
6	-	-	10
7	-	-	13
8	-	-	8
9	-	-	5
10	-	-	9
11	-	-	3
12	-	-	3
13	-	-	3
14	-	-	-
15	-	-	1
16	-	-	1
17	-	-	2
18	-	-	1
19	-	-	4
20	-	-	2
21	-	-	2
22	-	-	2
Total	-	-	78

Date: January 27, 1958

Station: BW IV

Time: 2300 - 0600

Moon phase: First quarter

Tide stage: Entire ebb period

Water temperature:

Surface: 17.5 °C

Bottom: 20.6 °C

Salinity:

Surface: 20.6 ppt

Bottom: 24.0 ppt

Air temperature: 16.7 °C (62.0 °F)

19.5 °C at dip period)

No. men dipping: Two

Catch per man hour: 10.6 shrimp

Carapace
length in
mm

Females

Males

Combined

8	1	-	1
9	1	1	2
10	4	5	9
11	3	6	9
12	2	5	7
13	7	10	17
14	2	5	7
15	9	11	20
16	6	12	18
17	8	9	17
18	6	8	14
19	5	7	12
20	5	3	8
21	1	1	2
22	-	2	2
23	1	1	2
24	-	1	1
25	-	-	-
26	1	-	1
Total	62	87	149

Date: January 29, 1958

Station: BW IV

Time: 2400 - 0500 hours

Moon phase: Second quarter

Tide stage: Entire ebb period

Water temperature:

Surface: 18.4 °C

Bottom: 18.4 °C

Salinity:

Surface: 19.4 ppt

Bottom: 19.4 ppt

Air temperature: 16.7 °C (62.0 °F)

No. men dipping: Two

Catch per man hour: 14.8 shrimp

Carapace
length in
mm

Females

Males

Combined

6	-	1	1
7	-	1	1
8	1	-	1
9	9	1	10
10	9	11	20
11	6	8	14
12	9	13	22
13	14	10	24
14	11	11	22
15	8	9	17
16	3	5	8
17	4	3	7
18	-	1	1
19	-	-	-
20	-	1	1
Total	74	74	148

Date: January 31, 1958

Station: BW IV

Time: 0130 - 0430 hours

Moon phase: Second quarter

Tide stage: Ebb

Water temperature:

Surface: 18.7 °C

Bottom: 18.4 °C

Salinity:

Surface: 19.2 ppt

Bottom: 20.0 ppt

Air temperature: 16.7 °C (62.0 °F)

No. men dipping: Two

Catch per man hour: 21.1 shrimp

Carapace
length in
mm

Females

Males

Combined

9	-	1	1
10	3	3	6
11	9	5	14
12	5	4	9
13	3	1	4
14	6	4	10
15	3	7	10
16	6	9	15
17	8	5	13
18	6	8	14
19	2	7	9
20	6	-	6
21	2	4	6
22	5	1	6
23	3	-	3
Total	67	59	126

Date: February 12, 1958

Station: BW IV

Time: 0100 - 0300 hours

Moon phase: Last quarter
(rose 2400 hours)

Tide stage: Ebb

Water temperature:

Surface: 17.0 °C

Bottom: 16.8 °C

Salinity:

Surface: 19.4 ppt

Bottom: 19.3 ppt

Air temperature: 15.4 °C (59.7 °F)

No. men dipping: Two

Catch per man hour: 18.5 shrimp

Carapace
length in
mm

Females

Males

Combined

10	1	1	1
11	1	-	1
12	4	3	7
13	4	-	4
14	5	3	8
15	4	4	8
16	3	6	9
17	3	4	7
18	3	1	4
19	3	6	9
20	4	2	6
21	3	2	5
22	1	-	1
23	1	-	1
24	-	-	-
25	-	-	-
26	1	-	1
27	-	-	-
28	-	-	-
29	1	-	1
Total	42	32	74

Date: February 26, 1958

Station: BW IV

Time: 0100 - 0300 hours

Moon phase: First quarter
(set around 2400 hours)

Tide stage: Ebb

Water temperature:

Surface: 22.2 °C

Bottom: 22.5 °C

Salinity:

Surface: 21.0 ppt

Bottom: 21.4 ppt

Air temperature: 15.4 °C (59.7 °F)

No. men dipping: Two

Catch per man hour: 83.7 shrimp

Carapace
length in
mm

Females

Males

Combined

9	3	2	5
10	8	5	13
11	9	10	19
12	20	15	35
13	18	26	44
14	27	26	53
15	32	24	56
16	22	21	43
17	28	20	48
18	10	6	16
19	2	1	3
Total	180	155	335

Date: February 28, 1958

Station: BW IV

Time: 0115 - 0315 hours

Moon phase: Second quarter
(set around 0200 hours)

Tide stage: Ebb

Water temperature:

Surface: 23.2 °C

Bottom: 23.1 °C

Salinity:

Surface: 18.7 ppt

Bottom 19.0 ppt

Air temperature: 15.4 °C (59.7 °F)

No. men dipping: Two

Catch per man hour: 88.5 shrimp

Carapace
length in
mm

Females

Males

Combined

7	1	-	1
8	-	-	-
9	1	2	3
10	6	3	9
11	10	7	17
12	13	12	25
13	10	18	28
14	26	18	44
15	39	27	66
16	28	29	57
17	28	26	54
18	17	18	35
19	4	3	7
20	3	1	4
21	-	1	1
22	1	-	1
23	1	-	1
24	-	-	-
25	-	1	1
Total	187	167	354

Date: March 11, 1958

Station: BW IV

Time: 2215 - 2415 hours

Moon phase: Last quarter
(rose 2430 hours)

Tide stage: Ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 21.1 °C (70.0 °F)

No. men dipping: Two

Catch per man hour: 117.5 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	3	3
6	-	-	9	9
7	-	-	7	7
8	4	-	4	8
9	5	4	-	9
10	6	1	-	7
11	11	17	-	28
12	18	19	-	37
13	23	36	-	59
14	32	41	-	73
15	41	66	-	107
16	29	30	-	59
17	23	14	-	37
18	9	3	-	12
19	7	1	-	8
20	2	1	-	3
21	1	-	-	1
22	1	-	-	1
23	-	-	-	-
24	1	-	-	1
26	-	-	-	-
27	1	-	-	1
Total	215	233	23	471

Date: March 15, 1958

Station: BW IV

Time: 0020 - 0220 hours

Moon phase: Last quarter
(rose 0315 hours)

Tide stage: First of ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 21.1 °C (70.0 °F)

No. men dipping: Two

Catch per man hour: 39.0 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	1	1
7	-	-	5	5
8	1	1	2	4
9	2	2	-	4
10	6	4	-	10
11	5	1	-	6
12	7	3	-	10
13	3	3	-	6
14	11	21	-	32
15	15	12	-	27
16	8	13	-	21
17	7	15	-	22
18	5	-	-	5
19	3	-	-	3
Total	73	75	8	156

Date: March 25, 1958

Station: BW IV

Time: 2200 - 2315 hours

Moon phase: First quarter

Tide stage: First of ebb

Water temperature:

Surface: 23.0 °C

Bottom: 22.5 °C

Salinity:

Surface: 21.9 ppt

Bottom: 23.3 ppt

Air temperature: 21.1 °C (70.0 °F)

No. men dipping: Two

Catch per man hour: 43.6 shrimp

Carapace
length in

mm Females Males Unsexed Combined

7	-	-	1	1
8	-	-	5	5
9	-	-	8	8
10	9	5	-	14
11	3	6	-	9
12	1	8	-	9
13	3	11	-	14
14	7	5	-	12
15	8	8	-	16
16	5	6	-	11
17	4	2	-	6
18	1	1	-	2
19	2	1	-	3
Total	43	52	14	109

Date: April 7, 1958

Station: BW IV

Time: 2100 - 2300 hours

Moon phase: Third quarter
(rose 2300 hours)

Tide stage: Ebb
(very sluggish)

Water temperature:

Surface: 28.4 °C

Bottom: 28.2 °C

Salinity:

Surface: 20.2 ppt

Bottom: 20.2 ppt

Air temperature: 23.2 °C (73.8 °F)

No. men dipping: Two

Catch per man hour: 12 shrimp

Carapace
length in

mm Females Males Unsexed Combined

6	-	-	1	1
7	-	-	1	1
8	-	-	-	-
9	1	-	2	3
10	6	-	-	6
11	4	1	-	5
12	4	6	-	10
13	5	2	-	7
14	3	-	-	3
15	-	3	-	3
16	-	2	-	2
17	1	3	-	4
18	-	-	-	-
19	1	1	-	2
20	-	-	-	-
21	-	1	-	1
Total	25	19	4	48

Carapace
length in
mm

Station: BW IV

Frequency

Time: 2315 - 2415 hours

Moon phase: Last quarter
(rose 2415 hours)

Tide stage: Ebb

Water temperature:

Surface: 28.5 °C

Bottom: 27.8 °C

Salinity:

Surface: 25.0 ppt

Bottom 28.5 ppt

Air temperature: 23.2 °C (73.8 °F)

** This is an experiment with a 60-foot channel net (one inch stretched mesh) hence no comparative catch rate calculation is possible.

6	1
7	1
8	-
9	3
10	6
11	7
12	15
13	12
14	6
15	4
16	3
17	4
18	1
19	2
20	-
21	1
Total:	66

Date: April 21, 1958

Station: BW IV

Carapace
length in
mm

Females

Males

Combined

Time: 2100 - 2300

Moon phase: New moon
(set 2045 hours)

Tide stage: Ebb (1st two hours)

Water temperature:

Surface: 25.0 °C

Bottom: 25.2 °C

Salinity:

Surface: 19.3 ppt

Bottom 20.1 ppt

Air temperature: 23.2 °C (73.8 °F)

9	1	1	2
10	2	-	2
11	2	1	3
12	-	5	5
13	7	8	15
14	4	10	14
15	10	5	15
16	1	3	4
17	1	2	3
18	1	-	1
19	1	-	1
20	-	-	-
21	1	-	1
Total	31	35	66

No. men dipping: Two

Catch per man hour: 16.5 shrimp

Comment: Ebb tide very sluggish, water coffee color but clear.

<u>Date:</u>	April 23, 1958	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2100 - 2300				
<u>Moon phase:</u>	New moon (set 2230 hours)	7	-	-	-
		8	2	-	2
		9	1	1	2
<u>Tide stage:</u>	Ebb	10	7	6	13
		11	12	6	18
<u>Water temperature:</u>		12	17	14	31
Surface:	25.0 °C	13	29	27	56
Bottom:	25.2 °C	14	17	25	42
		15	24	25	49
<u>Salinity:</u>		16	18	20	38
Surface:	19.3 ppt	17	15	7	22
Bottom	20.1 ppt	18	6	1	7
		19	-	1	1
<u>Air temperature:</u>	23.2 °C (73.8 °F)	20	2	-	2
		21	-	-	-
<u>No. men dipping:</u>	Two	22	1	1	2
<u>Catch per man hour:</u>	71.0 shrimp	Total	151	134	285

Comment: Strong ebb tide, estimated at 2 mph.

<u>Date:</u>	April 24, 1958 **	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	Conchie Channel				
<u>Time:</u>	1000 - 1500 hours				
<u>** Comment:</u>	Trawl catch collected on <i>Thalassia</i> flats for comparison with catches from BW IV a night earlier.	9	1	-	1
		10	2	-	2
		11	-	-	-
		12	-	-	-
<u>Water temperature:</u>		13	2	1	3
Surface:	26.9 °C	14	3	1	4
Bottom:	27.2 °C	15	-	2	2
		16	2	2	4
<u>Salinity:</u>		17	3	5	8
Surface:	31.6 ppt	18	7	5	12
Bottom	31.3 ppt	19	2	-	2
		20	2	-	2
		21	-	-	-
		22	-	-	-
		23	1	-	1
		Total	25	16	41

Date: May 5, 1958

Station: BW IV

Time: 2100 - 2300 hours

Moon phase: Full

Tide stage: Ebb
(turned 2045 hours)

Water temperature:

Surface: -
Bottom: 28.5 °C

Salinity:

Surface: -
Bottom 32.4 ppt

Air temperature: 25.2 °C (77.4 °F)

No. men dipping: Two

Catch per man hour: 39.3 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	-	1
10	1	-	1
11	2	1	3
12	3	1	4
13	5	14	19
14	12	12	24
15	11	12	23
16	11	12	23
17	8	6	14
18	3	2	5
19	1	-	1
Total	58	60	118

Date: May 8, 1958

Station: BW IV

Time: 2100 - 2300 hours

Moon phase: Third quarter
(rose 2330 hours)

Tide stage: Ebb
(turned 2100 hours)

Water temperature:

Surface: 27.9 °C
Bottom: 27.5 °C

Salinity:

Surface: 26.4 ppt
Bottom 32.0 ppt

Air temperature: 25.2 °C (77.4 °F)

No. men dipping: Two

Catch per man hour: 17.0 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	-	1
10	-	-	-
12	-	-	-
11	-	-	-
13	2	3	5
14	2	3	5
15	7	6	13
16	9	15	24
17	9	4	13
18	4	1	5
19	2	-	2
Total.	36	32	68

Date: May 21, 1958

Station: BW IV

Time: 2000 - 2200 hours

Moon phase: First quarter
(set 2115 hours)

Tide stage: Ebb

Water temperature:

Surface: 28.3 °C

Bottom: 28.2 °C

Salinity:

Surface: 33.9 ppt

Bottom: 34.9 ppt

Air temperature: 25.2 °C (77.4 °F)

No. men dipping: Two

Catch per man hour: 12.25 shrimp

Carapace
length in
mm

Females

Males

Combined

14	1	3	4
15	3	3	6
16	3	6	9
17	6	7	13
18	6	5	11
19	3	3	6
Total	22	27	49

Date: May 22, 1958

Station: BW IV

Time: 2200 - 2400 hours

Moon phase: First quarter
(set 2205 hours)

Tide stage: Ebb

Water temperature:

Surface: 32.1 °C

Bottom: 32.4 °C

Salinity:

Surface: 26.4 ppt

Bottom: 28.7 ppt

Air temperature: 25.2 °C (77.4 °F)

No. men dipping: Two

Catch per man hour: 13.75 shrimp

Carapace
length in
mm

Females

Males

Combined

14	1	1	2
15	5	4	9
16	-	4	4
17	3	7	10
18	10	9	19
19	1	3	4
20	3	1	4
21	2	-	2
22	-	-	-
23	-	-	-
24	-	-	-
25	-	1	1
Total	25	30	55

Date: June 23, 1958

Station: BW IV

Time: 2300 - 0100 hours

Moon phase: First quarter
(set 2330 hours)

Tide stage: Ebb

Water temperature:

Surface: 30.6 °C

Bottom: -

Salinity:

Surface: 19.0 ppt

Bottom: -

Air temperature: 27.0 °C (80.6 °F)

No. men dipping: Two

Catch per man hour: 6.75 shrimp

Carapace
length in
mm

Females

Males

Combined

10	1	1	2
11	-	-	-
12	2	2	4
13	2	3	5
14	-	3	3
15	4	4	8
16	-	3	3
17	1	-	1
18	-	-	-
19	1	-	1
Total	11	16	17

Date: July 10, 1958

Station: BW IV (canal bridge)**

Time: 2100 - 2200 hours

Tide stage: Ebb

** Sample taken from 60 foot channel net for comparison with dipnet samples. Net deep enough (8 feet) and wide enough to completely block the canal. No catch rate available from this gear that is useful for comparison with dipnet catches.

Water temperature:

Surface: 31.2 °C

Bottom: 31.0 °C

Salinity:

Surface: 23.0 ppt

Bottom: 23.7 ppt

Air temperature: 28.1 °C (82.7 °F)

Carapace
length in
mm

Combined

9	1
10	-
11	-
12	6
13	4
14	3
15	5
16	5
17	6
18	-
19	1
Total.	31

<u>Date:</u>	July 17, 1958	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2030 - 2230 hours	mm	Females	Males	Combined
<u>Moon phase:</u>	New moon	6	1	-	1
<u>Tide stage:</u>	Ebb	7	1	5	6
	(turned at 1800 hours)**	8	3	-	3
<u>Water temperature:</u>		9	5	2	7
Surface:	32.2 °C	10	9	4	13
Bottom:	32.3 °C	11	17	6	23
<u>Salinity:</u>		12	3	9	12
Surface:	16.2 ppt	13	8	9	17
Bottom:	16.4 ppt	14	10	4	14
<u>Air temperature:</u>	28.1 °C (82.7 °F)	15	5	4	9
<u>No. men dipping:</u>	Two	16	7	9	16
		17	7	5	12
		18	3	4	7
		19	3	1	4
		Total	82	62	144
<u>Catch per man hour:</u>	36 shrimp				

** Still daylight at 1830 hours when tide turned to ebb stage. No shrimp observed until full dark at 2030 hours. No moon during dipping period.

<u>Date:</u>	July 28, 1958	Carapace				
<u>Station:</u>	BW IV	length in				
<u>Time:</u>	2000 - 2115 hours	mm	Females	Males	Unsexed	Combined
<u>Moon phase:</u>	Nearly full	6	-	-	7	7
<u>Tide stage:</u>	Ebb	7	-	-	11	11
<u>Water temperature:</u>		8	-	-	17	17
Surface:	-	9	-	-	28	28
Bottom:	-	10	-	-	27	27
<u>Salinity:</u>		11	5	15	1	21
Surface:	-	12	11	26	-	37
Bottom:	-	13	6	11	-	17
<u>Air temperature:</u>	28.1 °C (82.7 °F)	14	9	5	-	14
<u>No. men dipping:</u>	Two	15	3	3	-	6
<u>Catch per man hour:</u>	76.8 shrimp	16	4	1	-	5
<u>Comment:</u>	Broken hydrometer	17	1	-	-	1
		18	-	-	-	-
		19	-	-	-	-
		20	-	-	-	-
		21	-	-	-	-
		22	-	-	-	-
		23	1	-	-	1
		Total	40	61	91	192

Date: July 29, 1958

Station: BW IV

Time: 1945 - 2045 hours

Moon phase: Full

Tide stage: Ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 28.1 °C (82.7 °F)

No. men dipping: Two

Catch per man hour: 162.5 shrimp

Comment: Broken hydrometer

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	5	5
6	-	-	6	6
7	-	-	11	11
8	-	-	10	10
9	-	-	25	25
10	-	-	56	56
11	32	33	-	65
12	23	38	-	61
13	13	31	-	44
14	11	8	-	19
15	11	3	-	14
16	4	-	-	4
17	2	-	-	2
18	3	-	-	3
19	-	-	-	-
20	1	-	-	1
Total	100	113	112	325

Date: July 31, 1958

Station: BW IV

Time: 2030 - 2130 hours

Moon phase: Full

Tide stage: Ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 28.1 °C (82.7 °F)

No. men dipping: Two

Catch per man hour: 48.5 shrimp

Comment: Broken hydrometer

Carapace
length in
mm

Females Males Unsexed Combined

4	-	-	1	1
5	-	-	2	2
6	-	-	-	-
7	-	-	3	3
8	-	-	3	3
9	-	-	8	8
10	-	-	15	15
11	10	6	-	16
12	6	10	-	16
13	10	14	-	24
14	2	3	-	5
15	2	1	-	3
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	1	-	-	1
Total	31	34	32	97

Date: August 13, 1958

Station: BW IV

Time: 2030-2130 hours

Moon phase: Last quarter
(set 1720 hours)

Tide stage: Second hour of ebb

Water temperature:

Surface: 27.9 °C

Bottom: 28.0 °C

Salinity:

Surface: 16.0 ppt

Bottom: 25.0 ppt

Air temperature: 28.7 °C (83.6 °F)

No. men dipping: Two

Catch per man hour: 220.5 shrimp

Carapace
length in
mm

	Females	Males	Unsexed	Combined
1	-	-	3	3
2	-	-	12	12
3	-	-	52	52
4	-	-	34	34
5	-	-	23	23
6	-	-	47	47
7	-	-	54	54
8	-	-	26	26
9	-	-	30	30
10	12	10	-	22
11	23	10	-	33
12	11	19	-	30
13	16	14	-	30
14	18	11	-	29
15	9	4	-	13
16	1	-	-	1
17	1	-	-	1
18	1	-	-	1
Total	92	68	281	441

Date: August 13, 1958

Station: BW IV

Time: 2130-2230 hours

Moon phase: Last quarter
(set 1720 hours)

Tide stage: Third hour of ebb

Water temperature:

Surface: 27.9 °C

Bottom: 28.0 °C

Salinity:

Surface: 16.0 ppt

Bottom: 25.0 ppt

Air temperature: 28.7 °C (83.6 °F)

No. men dipping: Two

Catch per man hour: 94 shrimp

Carapace
length in
mm

	Females	Males	Unsexed	Combined
3	-	-	1	1
4	-	-	11	11
5	-	-	11	11
6	-	-	22	22
7	-	-	31	31
8	-	-	11	11
9	-	-	10	10
10	4	7	-	11
11	10	11	-	21
12	7	17	-	24
13	6	13	-	19
14	3	5	-	8
15	5	2	-	7
16	1	-	-	1
Total	36	55	97	188

<u>Date:</u>	August 14, 1958	Carapace			
<u>Station:</u>	Tarpon Creek	length in			
<u>Time:</u>	2000-2100 hours	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	New moon				
<u>Tide stage:</u>	Ebb				
<u>Water temperature:</u>					
Surface:	31.8 °C	6	-	-	5 5
Bottom:	31.8 °C	7	-	-	15 15
<u>Salinity:</u>		8	-	-	27 27
Surface:	9.5 ppt	9	-	-	20 20
Bottom:	10.4 ppt	10	4	2	- 6
<u>Air temperature:</u>	28.7 °C (83.6 °F)	11	1	6	- 7
<u>No. men dipping:</u>	Two	12	8	6	- 14
<u>Catch per man hour:</u>	64.0 shrimp	13	7	4	- 11
<u>Comment:</u>	This sample taken for comparison with samples from BW IV a night earlier.	14	7	9	- 16
		15	1	3	- 4
		16	2	1	- 3
		Total	30	31	67 128

<u>Date:</u>	September 11, 1958	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	1930 - 2030 hours	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	Last quarter (set 1640 hours)				
<u>Tide stage:</u>	Last quarter of ebb				
<u>Water temperature:</u>					
Surface:	32.4 °C	5	-	-	3 3
Bottom:	31.2 °C	6	-	-	9 9
<u>Salinity:</u>		7	-	-	16 16
Surface:	16.3 ppt	8	-	-	14 14
Bottom:	18.6 ppt	9	-	-	21 21
<u>Air temperature:</u>	27.7 °C (81.9 °F)	10	14	22	- 36
<u>No. men dipping:</u>	Two	11	28	33	- 61
<u>Catch per man hour:</u>	180.5 shrimp	12	25	37	- 62
		13	20	36	- 56
		14	20	11	- 31
		15	8	9	- 17
		16	10	9	- 19
		17	3	2	- 5
		18	1	2	- 3
		19	4	3	- 7
		20	1	-	- 1
		Total	134	164	63 361

<u>Date:</u>	September 24, 1958	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	Near mouth of Little Shark River**				
<u>Time:</u>	1930 - 2130 hours	9	1	1	2
<u>Moon phase:</u>	Second quarter	10	1	2	3
<u>Tide stage:</u>	First two hours of ebb	11	1	1	2
<u>Water temperature:</u>		12	3	1	4
Surface:	28.8 °C	13	-	9	9
Bottom:	29.1 °C	14	4	4	8
<u>Salinity:</u>		15	5	4	9
Surface:	23.7 ppt	16	1	-	1
Bottom	26.5 ppt	17	1	-	1
<u>Air temperature:</u>	27.7 °C (81.9 °F)	18	2	-	2
<u>No. men dipping:</u>	Two	19	-	-	-
<u>Catch per man hour:</u>	10.5 shrimp	20	-	-	-
		21	-	-	-
		22	1	-	1
		Total	20	22	45

** Sample collected for comparison with those collected in BW IV. Depth of water at sampling site averaged seven feet. Coot Bay averages about 3 feet.

<u>Date:</u>	October 13, 1958	Carapace length in mm	Females	Males	Unsexed	Combined
<u>Station:</u>	BW IV					
<u>Time:</u>	1830 - 2030 hours	4	-	-	4	4
<u>Moon phase:</u>	New moon	5	-	-	6	6
<u>Tide stage:</u>	First of ebb	6	-	-	5	5
<u>Water temperature:</u>		7	-	-	5	5
Surface:	27.2 °C	8	-	-	2	2
Bottom:	-	9	-	-	1	1
<u>Salinity:</u>		10	4	-	-	4
Surface:	18.2 ppt	11	3	2	-	5
Bottom	-	12	12	13	-	25
<u>Air temperature:</u>	24.8 °C (76.6 °F)	13	7	10	-	17
<u>No. men dipping:</u>	Two	14	5	3	-	8
<u>Catch per man hour:</u>	25.7 shrimp	15	8	6	-	14
		16	-	2	-	2
		17	2	1	-	3
		18	1	-	-	1
		19	-	1	-	1
		Total	42	38	23	103

Date: October 14, 1958

Station: BW IV

Time: 1900 - 2000 hours

Moon phase: New moon

Tide stage: First of ebb

Water temperature:

Surface: 27.2 °C

Bottom: -

Salinity:

Surface: 18.4 ppt

Bottom -

Air temperature: 24.8 °C (76.6 °F)

No. men dipping: Two

Catch per man hour: 43.0 shrimp

Carapace
length in

mm Females Males Unsexed Combined

5	-	-	5	5
6	-	-	6	6
7	-	-	18	18
8	-	-	7	7
9	-	-	1	1
10	2	-	-	2
11	5	1	-	6
12	6	5	-	11
13	5	4	-	9
14	2	3	-	5
15	6	2	-	8
16	3	1	-	4
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	1	-	-	1
Total	30	16	40	86

Date: October 17, 1958

Station: Oyster Bay **

Water temperature:

Surface: 25.7 °C

Bottom: 25.7 °C

Salinity:

Surface: 24.8 ppt

Bottom 24.9 ppt

Air temperature: 24.8 °C (76.6 °F)

Carapace
length in

mm Females Males Combined

8	6	5	11
9	5	3	8
10	3	5	8
11	3	2	5
12	2	2	4
13	4	5	9
14	-	2	2
15	3	-	3
16	4	1	5
17	-	1	1
18	1	2	3
19	-	-	-
20	-	-	-
21	-	-	-
22	1	-	1
Total	32	28	60

Date: October 16, 1958

Station: Joe Kemp Channel**

** Daylight trawl catch made on the *Thalassia* flats of Florida Bay for comparison with BW IV samples.

A sample of 67 *Trachypenaeus constrictus* were collected with these pink shrimp. For their size distribution, see appropriate section of text.

Water temperature:

Surface: 25.1 °C

Bottom: 25.1 °C

Salinity:

Surface: 34.8 ppt

Bottom: 34.8 ppt

Air temperature: 24.8 °C (76.6 °F)

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	2	2
8	4	1	7	12
9	11	3	-	14
10	3	4	-	7
11	3	3	-	6
12	3	3	-	6
13	1	2	-	3
14	-	3	-	3
15	2	2	-	4
16	1	1	-	2
17	1	1	-	2
18	1	1	-	2
19	-	1	-	1
20	-	-	-	-
21	-	1	-	1
22	-	1	-	1
Total	30	27	9	66

Date: November 10, 1958

Station: BW IV

Time: 1830 - 1930 hours**

Moon phase: New moon (compare this catch with full moon catch November 26, 1958.)

Tide stage: Ebb

Water temperature:

Surface: 29.0 °C

Bottom: -

Salinity:

Surface: 14.4 ppt

Bottom: -

Air temperature: 24.3 °C (75.8 °F)

No. men dipping: Two

Catch per man hour: 112.0 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	3	3
6	-	-	5	5
7	-	-	15	15
8	-	-	17	17
9	-	-	12	12
10	6	5	-	11
11	2	8	-	10
12	1	10	-	11
13	6	10	-	16
14	16	12	-	28
15	20	15	-	35
16	15	16	-	31
17	12	2	-	14
18	5	3	-	8
19	4	-	-	4
20	2	-	-	2
21	1	-	-	1
22	1	-	-	1
Total	91	81	52	224

** First hour of a two hour period, kept separate in order to show the rate of decline in numbers of shrimp following the turn of the ebb tide (see next distribution for second hour's catch).

<u>Date:</u>	November 10, 1958	Carapace				
<u>Station:</u>	BW IV	length in				
<u>Time:</u>	1930 - 2030 hours**	mm	Females	Males	Unsexed	Combined
<u>Moon phase:</u>	New moon	5	-	-	2	2
<u>Tide stage:</u>	Second hour of ebb	6	-	-	3	3
<u>Water temperature:</u>		7	-	-	15	15
Surface: 29.5 °C		8	-	-	14	14
Bottom: -		9	-	-	13	13
<u>Salinity:</u>		10	5	-	-	5
Surface: 14.2 ppt		11	3	2	-	5
Bottom -		12	3	1	-	4
<u>Air temperature:</u>	24.3 °C (75.8 °F)	13	3	3	-	6
<u>No. men dipping:</u>	Two	14	3	6	-	9
<u>Catch per man hour:</u>	49.0 shrimp	15	4	7	-	11
		16	-	5	-	5
		17	-	2	-	2
		18	2	-	-	2
		19	-	2	-	2
		Total	23	28	47	98

** Second hour's catch of a two hour sample. See preceding distribution.

<u>Date:</u>	November 11, 1958	Carapace				
<u>Station:</u>	Joe Kemp Channel	length in				
<u>Time:</u>	1830 - 1930 hours	mm	Females	Males	Unsexed	Combined
<u>Moon phase:</u>	New moon	6	-	-	4	4
<u>Tide stage:</u>	Ebb	7	-	-	20	20
<u>Water temperature:</u>		8	-	-	13	13
Surface: 27.7°C		9	-	-	9	9
Bottom: -		10	3	2	-	5
<u>Salinity:</u>		11	2	-	-	2
Surface: 31.2 ppt		12	3	1	-	4
Bottom -		13	2	3	-	5
<u>Air temperature:</u>	24.3 °C (75.8 °F)	14	1	2	-	3
<u>No. men dipping:</u>	Two	15	3	2	-	5
<u>Catch per man hour:</u>	48.0 shrimp	16	1	4	-	5
		17	2	4	-	6
		18	3	2	-	5
		19	2	-	-	2
		20	3	2	-	5
		21	-	-	-	-
		22	1	-	-	1
		23	-	-	-	-
		24	-	-	-	-
		25	1	-	-	1
		26	-	-	-	-
		27	-	-	-	-
		28	1	-	-	1
		Total	28	22	46	96

Date: November 11, 1958

Station: Joe Kemp Channel**

** Five minute trawl drag at night (1945 hours).

Carapace length in mm	Females	Males	Unsexed	Combined
5	-	-	1	1
6	-	-	4	4
7	-	-	12	12
8	-	-	15	15
9	-	-	14	14
10	5	6	-	11
11	11	4	-	15
12	3	4	-	7
13	-	3	-	3
14	-	1	-	1
15	-	1	-	1
16	2	-	-	2
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-
21	-	-	-	-
22	-	1	-	1
Total	21	20	46	87

Date: November 26, 1958

Station: BW IV

Time: 2030 - 2130 hours

Moon phase: Full-very bright during dipping period. Compare with BW IV catch on Nov. 11.

Tide stage: Ebb

Water temperature:

Surface: -
Bottom: 25.5 °C

Salinity:

Surface: -
Bottom 20.2 ppt

Air temperature: 24.3 °C (75.8 °F)

No. men dipping: Two

Catch per man hour: 14 shrimp

Carapace length in mm	Females	Males	Unsexed	Combined
7	2	3		5
8	1	-		1
9	2	2		4
10	-	1		1
11	1	-		1
12	1	-		1
13	-	1		1
14	1	1		2
15	2	3		5
16	-	2		2
17	2	-		2
18	-	-		-
19	1	-		1
20	1	1		1
Total	14	14		28

<u>Date:</u>	November 12, 1958	Carapace length in			
<u>Station:</u>	Joe River	mm	Females	Males	Unsexed Combined
<u>Time:</u>	1830 - 1930 hours**				
<u>Moon phase:</u>	New moon	5	-	-	2 2
<u>Tide stage:</u>	Ebb	6	-	-	- -
<u>Water temperature:</u>		7	-	-	1 1
Surface:	25.2 °C	8	-	-	- -
Bottom:	25.0 °C	9	-	-	2 2
<u>Salinity:</u>		10	1	1	- 2
Surface:	20.0 ppt	11	2	-	- 2
Bottom	20.2 ppt	12	2	2	- 4
<u>Air temperature:</u>	24.3 °C (75.8 °F)	13	3	1	- 4
<u>No. men dipping:</u>	Two	14	4	5	- 9
<u>Catch per man hour:</u>	160.5 shrimp	15	11	13	- 24
** Sky hazy; wind 12-15 mph ENE. Shrimp still passing in large numbers at end of tagging period (2200 hours).		16	18	20	- 38
		17	18	21	- 39
		18	23	20	- 43
		19	27	20	- 47
		20	20	28	- 48
		21	17	11	- 28
		22	13	3	- 16
		23	4	1	- 5
		24	2	-	- 2
		25	2	-	- 2
		26	1	-	- 1
		Total	170	146	5 321

Date: November 13, 1958

Station: Joe River

Time: 1830 - 1930 hours**

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 25.3 °C

Bottom: 25.0 °C

Salinity:

Surface: 18.9 ppt

Bottom: 19.2 ppt

Air temperature: 24.3 °C (75.8 °F)

No. men dipping: Two

Catch per man hour: 274.5 shrimp

Carapace
length in

mm Females Males Unsexed Combined

**291 shrimp smaller than 18 mm head length were taken with the following 258 tagged individuals. Since these were from the same population that was measured the previous night, no measurement was made.

19	14	16	-	30
20	31	47	-	78
21	38	18	-	56
22	30	9	-	39
23	17	5	-	22
24	14	4	-	18
25	6	1	-	7
26	4	1	-	5
27	1	-	-	1
28	1	-	-	1
29	1	-	-	1
Total	157	101	-	258

Date: November 24, 1958

Station: Tarpon Creek

Time: 2000 - 2200 hours

Moon phase: Full moon

Tide stage: Ebb (first quarter)

Water temperature:

Surface: 26.8 °C

Bottom: 26.8 °C

Salinity:

Surface: 15.4 ppt

Bottom: 15.4 ppt

Air temperature: 24.3 °C (75.8 °F)

No. men dipping: Two

Catch per man hour: 8.5 shrimp

Carapace
length in

mm Females Males Combined

7	2	1	3
8	1	-	1
9	-	-	-
10	1	-	1
11	-	-	-
12	-	1	1
13	-	1	1
14	1	3	4
15	3	4	7
16	-	4	4
17	1	6	7
18	2	1	3
19	-	1	1
20	-	-	-
21	-	-	-
22	1	-	1
Total	12	22	34

Date: December 8, 1958

Station: BW IV

Time: 2030 - 2130 hours

Moon phase: Last quarter
(set 1520 hours)

Tide stage: Ebb

Water temperature:

Surface: 26.2 °C

Bottom: 26.1 °C

Salinity:

Surface: 15.4 ppt

Bottom: 17.2 ppt

Air temperature: 20.6 °C (69.1 °F)

No. men dipping: Two

Catch per man hour: 11.5 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

8	-	-	1	1
9	-	-	2	2
10	-	-	-	-
11	-	-	-	-
12	-	1	-	1
13	-	-	-	-
14	1	1	-	2
15	2	1	-	3
16	3	2	-	5
17	3	4	-	7
18	-	-	-	-
19	1	-	-	1
20	-	1	-	1
Total	10	10	3	23

Date: December 15, 1958

Station: BW IV

Time: 2040 - 2240 hours**

Moon phase: First quarter
(set 2210 hours)

Tide stage: Ebb
(turned on ebb at 2030 hours)

Water temperature:

Surface: 20.0 °C

Bottom: 20.5 °C

Salinity:

Surface: 14.8 ppt

Bottom: 16.4 ppt

Air temperature: 20.6 °C (69.1 °F)
15.5 °C at dipping

No. men dipping: Two

Catch per man hour: 18.0 shrimp

** Sky cloudy, misting rain, wind 15-20 mph
NW.

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	1	1
8	-	-	5	5
9	-	-	2	2
10	3	-	-	3
11	-	2	-	2
12	-	-	-	-
13	1	2	-	3
14	1	5	-	6
15	1	5	-	6
16	6	8	-	14
17	3	7	-	10
18	5	3	-	8
19	3	1	-	4
20	1	1	-	2
21	-	1	-	1
22	2	-	-	2
23	1	-	-	1
24	-	1	-	1
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	1	-	-	1
Total	28	36	8	72

<u>Date:</u>	December 17, 1958	Carapace				
<u>Station:</u>	BW IV	length in				
<u>Time:</u>	2330 - 0130 hours**	mm	Females	Males	Unsexed	Combined
		3	-	-	1	1
<u>Moon phase:</u>	First quarter	4	-	-	-	-
	(set 2400 hours)	5	-	-	-	-
		6	-	-	-	-
<u>Tide stage:</u>	Ebb	7	-	-	-	-
	(turned on ebb at 2330 hours)	8	-	-	2	2
		9	-	-	7	7
<u>Water temperature:</u>		10	2	-	-	2
Surface:	16.0 °C	11	3	-	-	3
Bottom:	16.0 °C	12	2	2	-	4
		13	3	7	-	10
<u>Salinity:</u>		14	4	7	-	11
Surface:	19.2 ppt	15	10	16	-	26
Bottom	19.2 ppt	16	23	20	-	43
<u>Air temperature:</u>	20.6 °C (69.1 °F)	17	23	17	-	40
		18	8	6	-	14
<u>No. men dipping:</u>	Two	19	5	6	-	11
		20	1	4	-	5
<u>Catch per man hour:</u>	45.5 shrimp	21	1	1	-	2
		22	1	-	-	1
		Total	86	86	10	182

** Observed flood tide for two hours prior to high slack. Saw two shrimp

<u>Date:</u>	January 13, 1959	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2010 - 2210 hours				
<u>Moon phase:</u>	First quarter (set 2145 hours)	6	1	-	1
		7	-	-	-
		8	3	-	3
		9	-	-	-
<u>Tide stage:</u>	Ebb	10	2	2	4
	(tide turned on ebb at 2010 hours)	11	2	1	3
		12	3	1	4
		13	-	1	1
<u>Water temperature:</u>		14	-	-	-
Surface:	19.4 °C	15	2	5	7
Bottom:	19.0 °C	16	2	8	10
		17	4	4	8
<u>Salinity:</u>		18	5	15	20
Surface:	20.3 ppt	19	7	10	17
Bottom	22.5 ppt	20	11	10	21
		21	7	4	11
<u>Air temperature:</u>	18.8 °C (65.9 °F)	22	6	2	8
		23	4	1	5
<u>No. men dipping:</u>	Two	24	1	-	1
		25	-	-	-
<u>Catch per man hour:</u>	31.25 shrimp	27	1	-	1
		Total	61	64	125

<u>Date:</u>	February 9, 1959	Carapace		
<u>Station:</u>	BW IV	length in		
<u>Time:</u>	2100 - 2300 hours	mm	Females	Males
				Combined
<u>Moon phase:</u>	New moon	7	-	1
<u>Tide stage:</u>	Ebb (turned at 2100 hours)	8	-	-
<u>Water temperature:</u>		9	1	-
Surface:	26.2 °C	10	4	-
Bottom:	-	11	1	1
<u>Salinity:</u>		12	3	1
Surface:	31.9 ppt	13	2	1
Bottom	-	14	3	1
<u>Air temperature:</u>	22.7 °C (72.8 °F)	15	-	4
<u>No. men dipping:</u>	Two	16	-	5
<u>Catch per man hour:</u>	44.0 shrimp	17	2	11
		18	10	16
		19	14	11
		20	16	24
		21	11	9
		22	9	2
		23	6	-
		24	4	-
		25	1	-
		26	2	-
		Total	89	87
				176

<u>Date:</u>	March 9, 1959	Carapace		
<u>Station:</u>	BW IV	length in		
<u>Time:</u>	2100 - 2300 hours	mm	Females	Males
<u>Moon phase:</u>	New moon			Combined
<u>Tide stage:</u>	Ebb			
<u>Water temperature:</u>		8	1	-
Surface:	-	9	-	-
Bottom:	25.0 °C	10	-	1
<u>Salinity:</u>		11	-	2
Surface:	-	12	-	1
Bottom	27.1 ppt	13	2	1
<u>Air temperature:</u>	21.3 °C (70.4 °F)	14	2	2
<u>No. men dipping:</u>	Two	15	5	7
<u>Catch per man hour:</u>	28 shrimp	16	9	7
		17	7	10
		18	2	14
		19	5	10
		20	8	4
		21	4	4
		22	2	-
		23	2	-
		Total	49	63
				112

<u>Date:</u>	April 6, 1959	Carapace		
<u>Station:</u>	BW IV	length in		
<u>Time:</u>	2000 - 2100 hours**	mm	Females	Males
<u>Moon phase:</u>	Last quarter			Combined
	(set 1705 hours)			
<u>Tide stage:</u>	Middle of ebb	10	-	-
<u>Water temperature:</u>		11	1	-
Surface:	26.0 °C	12	-	-
Bottom:	26.0 °C	13	1	-
<u>Salinity:</u>		14	2	1
Surface:	27.0 ppt	15	2	8
Bottom	27.0 ppt	16	5	16
<u>Air temperature:</u>	23.8 °C (74.8 °F)	17	18	19
<u>No. men dipping:</u>	Two	18	16	32
<u>Catch per man hour:</u>	94.5 shrimp	19	15	13
		20	15	11
		21	7	2
		22	2	2
		23	1	-
		Total	85	104
				189

** This is the first hour's catch of a two hour dipping period (see next distribution). The combined catch rate for the two hours = 56.0 shrimp.

<u>Date:</u>	April 6, 1959	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2100 - 2200 hours**				
<u>Moon phase:</u>	Last quarter (set 1705 hours)	17	3	5	8
		18	3	6	9
		19	4	1	5
<u>Tide stage:</u>	Middle of ebb	20	3	2	5
		21	1	-	1
<u>Water temperature:</u>		22	5	-	5
Surface:	26.0 °C	23	1	-	1
Bottom:	26.0 °C	24	-	-	-
		25	-	-	-
<u>Salinity:</u>		26	1	-	1
Surface:	27.0 ppt				
Bottom	27.0 ppt	Total	21	14	35

Air temperature: 23.8 °C (74.8 °F)

No. men dipping: Two

Catch per man hour: 17.5 shrimp

** This is the second hour's catch of a two hour period. Catch per man hour in the first hour = 94.5 shrimp. This shows the rapid drop in numbers following the start of the ebb tide, and the larger size of shrimp the second hour.

<u>Date:</u>	April 7, 1959	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2100 - 2300 hours**				
<u>Moon phase:</u>	New moon	14	-	3	3
		15	2	6	8
<u>Tide stage:</u>	Middle of the ebb	16	3	6	9
		17	7	14	21
<u>Water temperature:</u>		18	13	11	24
Surface:	24.5 °C	19	12	8	20
Bottom:	24.5 °C	20	3	4	7
		21	-	1	1
<u>Salinity:</u>		Total	40	53	93
Surface:	26.9 ppt				
Bottom	26.9 ppt				

Air temperature: 23.8 °C (74.8 °F)

No. men dipping: Two

Catch per man hour: 46.5 shrimp

** First sample of a two hour dipping period (see next distribution).

Date: April 7, 1959

Station: BW IV

Time: 2200 - 2300 hours**

Moon phase: New moon

Tide stage: Middle of the ebb

Water temperature:

Surface: 24.5 °C

Bottom: 24.5 °C

Salinity:

Surface: 26.9 ppt

Bottom: 26.9 ppt

Air temperature: 23.8 °C (74.8 °F)

No. men dipping: Two

Catch per man hour: 42.0 shrimp

** The second of two samples collected in consecutive hours to illustrate fluctuation in numbers.

Date: May 11, 1959

Station: BW IV

Time: 2020 - 2120 hours**

Moon phase: First quarter
(set 2150 hours)

Tide stage: Ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 25.1 °C (77.1 °F)

No. men dipping: Two

Catch per man hour: 37.0 shrimp

** First hour of a two hour dipping period.

Carapace
length in
mm

Females

Males

Combined

14	2	-	2
15	-	-	-
16	-	3	3
17	7	14	21
18	13	11	24
19	9	8	17
20	7	7	14
21	2	1	3
Total	40	44	84

Carapace
length in
mm

Females

Males

Combined

17	1	2	3
18	2	9	11
19	1	5	6
20	5	11	16
21	7	5	12
22	10	2	12
23	3	-	3
24	6	-	6
25	2	-	2
26	3	-	3
Total	40	34	74

<u>Date:</u>	May 11, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2120 - 2200 hours**	mm	Females	Males	Combined
<u>Moon phase:</u>	First quarter	17	3	2	5
	(set 2150 hours)	18	-	9	9
<u>Tide stage:</u>	Ebb	19	2	6	8
<u>Water temperature:</u>		20	12	16	28
Surface:	-	21	10	8	18
Bottom:	-	22	18	3	21
<u>Salinity:</u>		23	9	-	9
Surface:	-	24	4	-	4
Bottom	-	25	1	-	1
<u>Air temperature:</u>	25.1 °C (77.1 °F)	26	-	-	-
<u>No. men dipping:</u>	Two	27	2	-	2
<u>Catch per man hour:</u>	53.5 shrimp	28	1	-	1
		Total	62	45	107

** Second sample of a two hour period.

<u>Date:</u>	May 14, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2200 - 2300 hours**	mm	Females	Males	Combined
<u>Moon phase:</u>	First quarter	12	4	-	4
	(set 2400 hours)	13	3	4	7
<u>Tide stage:</u>	Ebb	14	3	-	3
<u>Water temperature:</u>		15	3	4	7
Surface:	27.2 °C	16	-	3	3
Bottom:	-	17	1	1	2
<u>Salinity:</u>		18	1	3	4
Surface:	30.5 ppt	19	2	6	8
Bottom	-	20	5	7	12
<u>Air temperature:</u>	25.1 °C (77.1 °F)	21	6	4	10
<u>No. men dipping:</u>	Two	22	7	2	9
<u>Catch per man hour:</u>	37.5 shrimp	23	2	1	3
		24	2	-	2
		25	-	-	-
		26	1	-	1
		Total	40	35	75

** First hour's catch from a two hour sampling period (see next distribution).

<u>Date:</u>	May 14, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2300 - 2400 hours**	mm	Females	Males	Combined
<u>Moon phase:</u>	First quarter	10	-	1	1
	(set 2400 hours)	11	-	-	-
		12	-	-	-
<u>Tide stage:</u>	Ebb	13	2	-	2
		14	-	2	2
<u>Water temperature:</u>		15	-	1	1
Surface:	27.2 °C	16	-	-	-
Bottom:	-	17	-	3	3
		18	-	1	1
<u>Salinity:</u>		19	-	4	4
Surface:	30.5 ppt	20	3	4	7
Bottom	-	21	-	-	-
		22	5	2	7
<u>Air temperature:</u>	25.1 °C (77.1 °F)	23	2	-	2
		24	-	-	-
<u>No. men dipping:</u>	Two	25	-	-	-
		26	1	-	1
<u>Catch per man hour:</u>	15.5 shrimp	Total	13	18	31

** Second sample of a two hour sampling period.

<u>Date:</u>	June 9, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	1955 - 2055 hours**	mm	Females	Males	Combined
<u>Moon phase:</u>	First quarter	9	1	-	1
	(set 2120 hours)	10	2	2	4
		11	6	3	9
<u>Tide stage:</u>	Ebb	12	2	1	3
		13	3	5	8
<u>Water temperature:</u>		14	4	10	14
Surface:	30.0 °C	15	4	11	15
Bottom:	30.0 °C	16	13	11	24
		17	22	29	51
<u>Salinity:</u>		18	28	17	45
Surface:	30.5 ppt	19	16	13	39
Bottom	36.4 ppt	20	22	2	24
		21	11	1	12
<u>Air temperature:</u>	25.1 °C (77.1 °F)	22	12	-	12
		23	1	-	1
<u>No. men dipping:</u>	Two	24	1	-	1
<u>Catch per man hour:</u>	15.5 shrimp	Total	148	105	253

53 not measured +53

** The second sample of a two-hour sampling period. 306

<u>Date:</u>	June 9, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2055 - 2155 hours**	mm	Females	Males	Combined
<u>Moon phase:</u>	First quarter	7	1	-	1
	(set 2120 hours)	8	1	-	1
		9	1	2	3
<u>Tide stage:</u>	Ebb	10	3	2	5
		11	2	3	5
<u>Water temperature:</u>		12	3	2	5
Surface:	30.0 °C	13	6	3	9
Bottom:	30.0 °C	14	7	6	13
		15	5	11	16
<u>Salinity:</u>		16	8	12	20
Surface:	36.4 ppt	17	17	18	35
Bottom	36.2 ppt	18	19	26	45
		19	10	6	16
<u>Air temperature:</u>	26.5 °C (79.7 °F)	20	18	7	25
		21	12	-	12
<u>No. men dipping:</u>	Two	22	3	-	3
		23	5	-	5
<u>Catch per man hour:</u>	166.5 shrimp	24	1	-	1
		25	2	-	2
** Second hour's catch of a two hour dipping		26	-	-	-
period (see preceding distribution). Combined		27	-	-	-
catch for the two hour period = 649 shrimp		28	1	-	1
for an over-all catch rate for the two hour					
period of 162.25 shrimp per man hour		Total	125	98	223
dipping.			110 not measured		+110
					333

<u>Date:</u> July 3, 1959	Carapace length in mm	Females	Males	Unsexed	Combined
<u>Station:</u> BW IV					
<u>Time:</u> 1945-2145 hours					
<u>Moon phase:</u> New moon	7	-	-	2	2
<u>Tide stage:</u> Ebb**	8	-	-	3	3
<u>Water temperature:</u>	9	-	-	6	6
Surface: 30.0 °C	10	11	12	-	23
Bottom: 30.0 °C	11	20	12	-	32
<u>Salinity:</u>	12	22	19	-	41
Surface: 25.1 ppt	13	27	25	-	52
Bottom: 24.7 ppt	14	22	16	-	38
<u>Air temperature:</u> 27.8 °C (82.0 °F)	15	28	12	-	40
<u>No. men dipping:</u> One	16	13	7	-	20
<u>Catch per man hour:</u> 427.5 shrimp	17	5	1	-	6
	18	1	-	-	1
	19	-	-	-	-
	20	1	-	-	1
	Total	150	104	11	265
		390 shrimp not sexed			+590
					855

** Tide turned on the ebb at 1530 hours. Dark enough to dip at 1945 hours. No shrimp observed during the daylight portion of the ebb. Average bottom water temperature for 17 stations in July = 29.9 °C.

<u>Date:</u> August 4, 1959	Carapace length in mm	Females	Males	Unsexed	Combined
<u>Station:</u> BW IV					
<u>Time:</u> 2030 - 2130 hours					
<u>Moon phase:</u> New moon	7	-	-	3	3
<u>Tide stage:</u> Ebb	8	2	-	11	13
<u>Water temperature:</u>	9	14	10	-	24
Surface: -	10	38	19	-	57
Bottom: Average for 23 August stations = 29.85 °C	11	29	23	-	52
<u>Salinity:</u>	12	24	14	-	38
Surface: -	13	12	12	-	24
Bottom: -	14	7	10	-	17
<u>Air temperature:</u> 26.5 °C (79.7 °F)	15	14	26	-	40
<u>No. men dipping:</u> Two	16	12	6	-	18
<u>Catch per man hour:</u> 312.0 shrimp	17	5	9	-	14
	18	13	9	-	22
	19	3	4	-	7
	20	-	1	-	1
	21	-	-	-	-
	22	1	-	-	1
	Total	174	143	13	331
		390 shrimp not sexed			+293
					624

Date: August 6, 1959

Station: BW IV

Time: 2030 - 2230 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 29.5 °C

Bottom: 30.5 °C

Salinity:

Surface: 23.8 ppt

Bottom: 24.2 ppt

Air temperature: 26.5 °C (79.7 °F)

No. men dipping: Two

Catch per man hour: 137.0 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	1	1
7	-	-	3	3
8	-	-	8	8
9	15	6	-	21
10	21	16	-	37
11	21	11	-	32
12	9	14	-	23
13	10	7	-	17
14	7	5	-	12
15	11	11	-	22
16	7	13	-	20
17	6	8	-	14
18	1	4	-	5
19	4	2	-	6
20	-	1	-	1
Total	112	98	12	222
	326 not measured			+326
				548

Date: September 8, 1959

Station: BW IV

Time: 2200 - 2300 hours**

Moon phase: Half moon

Tide stage: Ebb

Water temperature:

Surface: 30.0 °C

Bottom: 29.5 °C

Salinity:

Surface: 17.1 ppt

Bottom: 19.8 ppt

Air temperature: 26.9 °C (80.5 °F)

No. men dipping: Two

Catch per man hour: 114.5 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	2	2
6	-	-	2	2
7	-	-	17	17
8	-	-	14	14
9	-	-	6	6
10	-	-	16	16
11	9	14	-	23
12	17	15	-	32
13	19	11	-	30
14	12	12	-	24
15	8	13	-	21
16	4	15	-	19
17	5	6	-	11
18	1	3	-	4
19	1	2	-	3
20	4	-	-	4
21	1	-	-	1
Total	81	91	57	229

** First of two one hour samples.

Average bottom water temperatures for
September based on 4 separate observations
= 29.5 °C.

<u>Date:</u> September 8, 1959	Carapace length in mm	Females	Males	Unsexed	Combined
<u>Station:</u> BW IV					
<u>Time:</u> 2300 - 2400 hours**					
<u>Moon phase:</u> Half moon	6	-	-	5	5
<u>Tide stage:</u> Ebb	7	-	-	14	14
<u>Water temperature:</u>	8	-	-	8	8
Surface: 30.0 °C	9	-	-	5	5
Bottom: 29.5 °C	10	-	-	10	10
<u>Salinity:</u>	11	10	9	-	19
Surface: 17.1 ppt	12	8	13	-	21
Bottom: 19.8 ppt	13	10	15	-	25
<u>Air temperature:</u> 26.9 °C (80.5 °F)	14	3	8	-	11
<u>No. men dipping:</u> Two	15	4	10	-	14
<u>Catch per man hour:</u> 77.0 shrimp	16	2	5	-	7
	17	1	3	-	4
	18	5	2	-	7
	19	1	2	-	3
	20	-	-	-	-
	21	-	-	-	-
	22	1	-	-	1
** Second of two one hour samples. Combined catch per man hour = 96 shrimp per hour.	Total	45	67	42	154

<u>Date:</u> October 2, 1959	Carapace length in mm	Females	Males	Unsexed	Combined
<u>Station:</u> BW IV					
<u>Time:</u> 1930 - 2030 hours**					
<u>Moon phase:</u> New moon	4	-	-	9	9
<u>Tide stage:</u> Ebb (turned at 1900 hours)	5	-	-	57	57
<u>Water temperature:</u>	6	-	-	101	101
Surface: 31.4°C	7	-	-	45	45
Bottom: -	8	-	-	9	9
<u>Salinity:</u>	9	-	-	10	10
Surface: 13.0 ppt	10	1	2	-	3
Bottom: -	11	6	-	-	6
<u>Air temperature:</u> 26.8 °C (80.3 °F)	12	3	3	-	6
<u>No. men dipping:</u> Two	13	2	5	-	7
<u>Catch per man hour:</u> 141 shrimp for first hour	14	2	8	-	10
	15	3	2	-	5
	16	1	2	-	3
	17	2	1	-	3
	18	2	1	-	3
	19	1	1	-	2
	20	1	-	-	1
	21	-	-	-	-
	22	2	-	-	2
** First of two one hour samples.	Total	26	25	231	282

<u>Date:</u>	October 2, 1959	Carapace length in			
<u>Station:</u>	BW IV	mm	Females	Males	Unsexed Combined
<u>Time:</u>	2030 - 2130 hours**				
<u>Moon phase:</u>	New moon	3	-	-	4 4
<u>Tide stage:</u>	Ebb (see above)	4	-	-	39 39
<u>Water temperature:</u>		5	-	-	57 109
Surface: 30.5 °C		6	-	-	110 110
Bottom: -		7	-	-	40 40
		8	-	-	16 16
		9	-	-	6 6
<u>Salinity:</u>		10	6	-	- 6
Surface: 12.9 ppt		11	8	5	- 13
Bottom -		12	1	8	- 9
		13	3	5	- 8
<u>Air temperature:</u>	26.8 °C (80.3 °F)	14	3	6	- 9
<u>No. men dipping:</u>	Two	15	1	5	- 6
<u>Catch per man hour:</u>	195.5 shrimp for second hour	16	1	3	- 4
		17	2	1	- 3
		18	1	-	- 1
** Second of two one hour samples. Combined catch per man hour for the two hour period = 168.25 shrimp.		19	2	-	- 2
		20	1	-	- 1
		21	-	1	- 1
		22	-	-	- -
		23	1	1	- 2
		24	-	-	- -
		25	-	-	- -
Average bottom water temperatures for October based on 57 separate observations = 29.1 °C.		26	2	-	- 2
		Total	32	35	324 391

Date: October 9, 1959

Station: BW IV

Time: 2430 - 0130 hours

Moon phase: Second quarter
(set 2400 hours)

Tide stage: Ebb

Water temperature:

Surface: 28.0 °C

Bottom: 28.0 °C

Salinity:

Surface: 10.4 ppt

Bottom: 17.1 ppt

Air temperature: 26.8 °C (80.3 °F)

No. men dipping: Two

Catch per man hour: 44.0 shrimp

Carapace
length in
mm

	Females	Males	Unsexed	Combined
5	-	-	1	1
6	-	-	4	4
7	-	-	6	6
8	-	-	4	4
9	-	-	5	5
10	-	-	8	8
11	1	3	-	4
12	7	3	-	10
13	7	5	-	12
14	9	6	-	15
15	6	3	-	9
16	6	-	-	6
17	1	2	-	3
Total	38	22	28	88

Date: October 31, 1959**

Station: Joe River at Rocky Channel

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 30.4 °C

Bottom: 29.6 °C

Salinity:

Surface: 10.0. ppt

Bottom: 10.8 ppt

Air temperature: 26.8 °C (80.3 °F)

No. men dipping: Two

Carapace
length in
mm

	Females	Males	Combined
12	-	1	1
13	-	1	1
14	3	9	12
15	18	18	36
16	26	39	65
17	30	18	48
18	15	3	18
19	7	2	9
20	2	-	2
Total	101	91	192

** Wing net catch made by A. J. Mills in fishing for T. J. Costello who was conducting shrimp staining experiments (Costello and Allen, 1960)

<u>Date:</u>	October 31, 1959**	Carapace			
<u>Station:</u>	Clearwater Pass	length in			
<u>Time:</u>	Night collection	mm	Females	Males	Combined
<u>Tide stage:</u>	Ebb and flood				
		9	1	-	1
		10	3	1	4
		11	4	-	4
		12	5	4	9
		13	7	10	17
		14	9	11	20
		15	13	8	21
		16	7	3	10
		17	4	3	7
		18	3	2	5
		19	1	1	2
		20	-	1	1
		Total	57	44	101

** This sample was taken from a catch taken by roller frame trawl during U. S. Fish & Wildlife shrimp staining operation (Costello and Allen, 1961).

<u>Date:</u>	November 3 and 6, 1959**	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	1940 - 2140 and 2300 - 0100 hours	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	New and first quarter (set 2255 hours)				
<u>Tide stage:</u>	Ebb (sluggish)	5	-	-	1 1
<u>Water temperature:</u>		6	-	-	3 3
		7	-	-	3 3
		8	-	-	1 1
		9	-	-	3 3
		10	4	5	- 9
		11	6	5	- 11
		12	3	2	- 5
		13	2	3	- 5
		14	1	2	- 3
		15	3	4	- 7
		16	1	1	- 2
		17	1	1	- 2
		18	1	1	- 2
		19	-	-	- -
		20	1	-	- 1
<u>Salinity:</u>		Total	23	24	11 58
<u>Air temperature:</u>	23.4 °C (74.2 °F)				
	(20 - 24°C at dipping)				
<u>No. men dipping:</u>	Two				

Catch per man hour: Nov. 3 = 5.5
Nov. 6 = 8.8 hour

** Catch for two separate nights was combined in order to obtain a decent frequency distribution.

Date: November 5, 1959

Station: Joe Kemp Channel

Time: 2115- 2315 hours

Moon phase: First quarter

Tide stage: First two hours of ebb

Water temperature:

Surface: 27.5 °C

Bottom: 27.5 °C

Salinity:

Surface: 31.6 ppt

Bottom 31.9 ppt

Air temperature: 23.4 °C (74.2 °F)

No. men dipping: Two

Catch per man hour: 87.0 shrimp

Carapace

length in

mm

Females

Males

Unsexed

Combined

5	-	-	4	4
6	-	-	22	22
7	-	-	33	33
8	-	-	55	55
9	-	-	52	52
10	27	20	-	47
11	19	16	-	35
12	3	14	-	17
13	4	6	-	10
14	6	8	-	14
15	5	10	-	15
16	7	7	-	14
17	5	4	-	9
18	5	3	-	8
19	7	1	-	8
20	2	2	-	4
21	-	-	-	-
22	1	-	-	1

Total 91 91 166 348

Comment: Wind ESE 8-12 mph. Water milky, shrimp white to translucent. Heavy masses of drifting grass, *Diplanthera* and *Thalassia*, moving through Joe Kemp Channel from Snake Bight. Shrimp were riding this drift in large numbers. Moon rose 0534 hours and set 1707 hours.

Date: December 10, 1959

Station: BW IV

Time: 2300- 0100 hours

Moon phase: Second quarter

Tide stage: Ebb

Water temperature:

Surface: 19.3 °C

Bottom: 19.2 °C

Salinity:

Surface: 8.6 ppt

Bottom 9.7 ppt

Air temperature: 19.2 °C (66.5 °F)

No. men dipping: Two

Catch per man hour: 1.5 shrimp

Comment: Only six (6) shrimp were collected during this two hour dipping period.

<u>Date:</u>	December 21, 1959	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2215- 2345 hours	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	Last quarter (set 2255 hours)				
<u>Tide stage:</u>	Ebb				
<u>Water temperature:</u>					
Surface:	21.2 °C				
Bottom:	20.5 °C				
<u>Salinity:</u>					
Surface:	11.0 ppt				
Bottom	11.5 ppt				
<u>Air temperature:</u>	19.2 °C (66.5 °F)				
<u>No. men dipping:</u>	Two				
<u>Catch per man hour:</u>	4 shrimp				

Carapace length in mm	Females	Males	Unsexed	Combined
6	-	-	1	1
7	-	-	1	1
8	-	-	-	-
9	-	-	-	-
10	-	1	-	1
11	-	-	-	-
12	2	-	-	2
13	-	-	-	-
14	1	-	-	1
15	-	3	-	3
16	-	1	-	1
17	1	1	-	2
Total	4	6	2	12

<u>Date:</u>	January 8, 1960	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	0140 - 0340 hours	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	Second quarter (rose 0210 hours)				
<u>Tide stage:</u>	Ebb				
<u>Water temperature:</u>					
Surface:	-				
Bottom:	-				
<u>Salinity:</u>					
Surface:	-				
Bottom	-				
<u>Air temperature:</u>	19.1 °C (66.5 °F)				
<u>No. men dipping:</u>	Two				
<u>Catch per man hour:</u>	41.5 shrimp				

Carapace length in mm	Females	Males	Unsexed	Combined
7	-	-	2	2
8	-	-	3	3
9	-	-	5	5
10	1	1	-	2
11	1	-	-	1
12	2	4	-	6
13	1	4	-	5
14	3	6	-	9
15	1	5	-	6
16	3	15	-	18
17	10	14	-	24
18	9	20	-	29
19	7	20	-	27
20	7	6	-	13
21	4	2	-	6
22	3	2	-	5
23	5	-	-	5
Total	57	99	10	166

Carapace
length in
mm

[illegible]

8	3	-	3
9	1	-	1
10	-	1	1

11	-	1	1
12			

12	-	-	-
13	-	-	-

14	-	-	-
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15 1 3 4

17 - 7 7

18 3 2 5

19 2 4 6

21	-	1	1
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22	1	-	1
Total	14	22	36

Carapace
length in
mm

Females	Males	Combined
60	70	65
80	90	85
100	110	105
120	130	125
140	150	145
160	170	165
180	190	185
200	210	205
220	230	225
240	250	245
260	270	265
280	290	285
300	310	305
320	330	325
340	350	345
360	370	365
380	390	385
400	410	405
420	430	425
440	450	445
460	470	465
480	490	485
500	510	505
520	530	525
540	550	545
560	570	565
580	590	585
600	610	605
620	630	625
640	650	645
660	670	665
680	690	685
700	710	705
720	730	725
740	750	745
760	770	765
780	790	785
800	810	805
820	830	825
840	850	845
860	870	865
880	890	885
900	910	905
920	930	925
940	950	945
960	970	965
980	990	985
1000	1010	1005

9	1	1	2
10	1	1	2
11	1	1	2
12	4	4	8

12	4	4	0
13	3	3	6
14	6	2	0

14	6	3	9
15	10	12	22

15	10	12	22
16	10	31	31

16	10	21	31
17	18	32	50

17	18	32	50
18	30	45	75

18	30	49	79
19	31	43	74

19	31	49	74
20	25	38	63

20	29	99	99
21	.23	13	36

22	17	10	27
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22	27	19	27
23	11	3	14

24	6	1	7
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25 3 - 3

Total	200	231	431
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Date: February 26, 1960

Station: BW IV

Time: 1905 - 2005 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 24.0 °C

Bottom: 24.0 °C

Salinity:

Surface: 15.1 ppt

Bottom: 15.7 ppt

Air temperature: 19.2 °C (66.7 °F)

No. men dipping: Two

Catch per man hour: 181.0 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	1	2
10	-	1	1
11	1	1	2
12	1	3	4
13	2	2	4
14	3	3	6
15	8	10	18
16	9	20	29
17	16	29	45
18	26	38	64
19	26	39	65
20	19	32	51
21	20	11	31
22	13	9	22
23	5	3	8
24	6	1	7
25	3	-	3
Total	159	203	362

Date: February 27, 1960

Station: BW IV

Time: 1945 - 2045 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 21.0 °C

Bottom: 20.9 °C

Salinity:

Surface: 15.5 ppt

Bottom: 15.9 ppt

Air temperature: 19.2 °C (66.7 °F)

No. men dipping: Two

Catch per man hour: 34.5 shrimp

Carapace
length in
mm

Females

Males

Combined

10	1	-	1
11	-	-	-
12	3	1	4
13	1	1	2
14	3	-	3
15	2	2	4
16	1	1	2
17	2	3	5
18	4	7	11
19	5	4	9
20	6	7	13
21	3	2	5
22	3	1	4
23	6	-	6
Total	40	29	69

Date: March 26, 1960

Station: BW IV

Time: 1840 - 1940 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 25.0 °C

Bottom: 25.0 °C

Salinity:

Surface: 19.6 ppt

Bottom: 19.9 ppt

Air temperature: 19.5 °C (67.1 °F)

No. men dipping: Two

Catch per man hour: 280.5 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	-	1
10	4	1	5
11	1	2	3
12	9	1	10
13	5	7	12
14	6	10	16
15	14	12	26
16	15	23	38
17	24	36	60
18	23	24	47
19	25	14	39
20	10	2	12
21	2	-	2

Total	139	132	271
		290 not measured	+290
			561

Date: March 27, 1960

Station: BW IV

Time: 2155 - 2355 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 25.2 °C

Bottom: 25.2 °C

Salinity:

Surface: 20.2 ppt

Bottom: 20.2 ppt

Air temperature: 19.5 °C (67.1 °F)

No. men dipping: Two

Catch per man hour: 109.5 shrimp

Carapace
length in
mm

Sexes combined

10	2
11	-
12	2
13	5
14	13
15	20
16	49
17	73
18	119
19	76
20	53
21	14
22	8
23	3
24	1

Total	438
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Date: April 22, 1960

Station: BW IV

Time: 1930 - 2130 hours

Moon phase: Last quarter
(set 1530 hours)

Tide stage: Ebb

Water temperature:

Surface: 25.2 °C

Bottom: 25.5 °C

Salinity:

Surface: 24.2 ppt

Bottom: 27.2 ppt

Air temperature: 23.1 °C (73.6 °F)

No. men dipping: Two

Catch per man hour: 249.25 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	-	1
10	1	-	1
11	5	1	6
12	-	1	1
13	2	1	3
14	4	3	7
15	11	12	23
16	16	20	36
17	33	26	59
18	20	19	39
19	10	1	11
20	9	1	10
21	-	-	-
22	1	-	1
Total	113	85	198
		799 not measured	+799
			997

Comment: Tide changed to ebb at 1730 hours. No moon during dipping period.

Date: May 20, 1960

Station: BW IV

Time: 2000 - 2200 hours

Moon phase: Last quarter, sky clear
(set 1420 hours)

Tide stage: Ebb (turned at 1800 hours)

Water temperature:

Surface: 31.0 °C

Bottom: 31.0 °C

Salinity:

Surface: 25.2 ppt

Bottom: 34.9 ppt

Air temperature: 23.9 °C (75.0 °F)

No. men dipping: Two

Catch per man hour: 215.25 shrimp

Carapace
length in
mm

Females

Males

Combined

9	1	-	1
10	3	1	4
11	-	-	-
12	-	1	1
13	-	3	3
14	7	6	13
15	21	24	45
16	22	17	39
17	36	39	75
18	25	30	55
19	14	13	27
20	9	6	15
21	7	-	7
22	1	-	1
23	-	-	-
24	-	-	-
25	-	-	-
31	1	-	1
Total	147	140	287
		574 not measured	+574
			861

Date: May 23, 1960

Station: Little Shark River

Time: 2100 - 2200 hours

Moon phase: Last quarter
(set 1710 hours)

Tide stage: Ebb

Water temperature:

Surface: -

Bottom: -

Salinity:

Surface: -

Bottom: -

Air temperature: 23.9 °C (75.0 °F)

No. men dipping: Two

Catch per man hour: 14.75 shrimp

Comment: Note interesting difference in size when compared with catch taken at BW IV the preceding night.

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	5	5
7	-	-	15	15
8	-	-	21	21
9	-	-	9	9
10	1	-	-	1
11	2	1	-	3
12	1	1	-	2
13	-	-	-	-
14	1	-	-	1
15	-	-	-	-
16	1	-	-	1
17	-	-	-	-
18	1	-	-	1
Total	7	2	50	59

Date: June 22, 1960

Station: BW IV

Time: 2000 - 2100 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 32.2 °C

Bottom: 32.0 °C

Salinity:

Surface: 20.7 ppt

Bottom: 25.6 ppt

Air temperature: 27.9 °C (82.3 °F)

No. men dipping: Two

Catch per man hour: 300.0 shrimp

Comment: 57.3% females
42.7% males

Carapace
length in
mm

Females Males Unsexed Combined

4	-	-	1	1
5	-	-	1	1
6	-	-	6	6
7	-	-	23	23
8	-	-	21	21
9	-	-	42	42
10	53	29	-	82
11	50	28	-	78
12	62	39	-	101
13	44	47	-	91
14	30	27	-	57
15	24	25	-	49
16	15	13	-	28
17	8	6	-	14
18	3	1	-	4
19	-	1	-	1
20	1	-	-	1
Total	290	216	94	600

Date: July 25, 1960

Station: BW IV

Time: 2015 - 2215 hours**

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 32.0 °C

Bottom: 32.0 °C

Salinity:

Surface: 21.5 ppt

Bottom: 25.1 ppt

Air temperature: 27.8 °C (82.3 °F)

No. men dipping: Two

Catch per man hour: 140.25 shrimp

** The 61 shrimp were taken in the first hour of the two hour period. All the rest were taken in the second hour.

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	1	1
8	-	-	4	4
9	-	-	1	1
10	11	7	-	18
11	12	6	-	18
12	28	22	-	50
13	13	20	-	33
14	15	17	-	32
15	9	14	-	23
16	5	4	-	9
17	5	1	-	6
18	5	2	-	7
19	1	1	-	2
20	5	-	-	5
21	3	-	-	3
22	1	-	-	1
23	1	-	-	1

Total	114	94	6	214
	286 not measured and			+286
	61 not measured**			+61
				561

Date: July 26, 1960

Station: BW IV

Time: 2115 - 2230 hours

Moon phase: First quarter
(set 2040 hours)

Tide stage: Ebb

Water temperature:

Surface: 30.0 °C

Bottom: 31.0 °C

Salinity:

Surface: 17.8 ppt

Bottom: 25.5 ppt

Air temperature: 27.8 °C (82.3 °F)

No. men dipping: Two

Catch per man hour: 180.6 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	1	1
7	-	-	-	-
8	-	-	8	8
9	-	-	13	13
10	21	19	-	40
11	25	31	-	56
12	34	22	-	56
13	19	23	-	42
14	18	13	-	31
15	8	3	-	11
16	8	7	-	15
17	3	1	-	4
18	4	-	-	4
19	-	1	-	1

Total	140	120	22	282
	in the second hour + 180 in			180
	the first hour. Total			462

<u>Date:</u>	August 20, 1960	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2015 - 2215 hours**	mm	Females	Males	Unsexed Combined
<u>Moon phase:</u>	New moon	4	-	-	2 2
<u>Tide stage:</u>	Ebb	5	-	-	2 2
	(turned on ebb at 1700 hours)	6	-	-	4 4
<u>Water temperature:</u>		7	-	-	13 13
Surface:	31.7 °C	8	-	-	16 16
Bottom:	31.5 °C	9	13	7	- 20
<u>Salinity:</u>		10	31	23	- 54
Surface:	17.3 ppt	11	29	31	- 60
Bottom:	18.4 ppt	12	38	46	- 84
<u>Air temperature:</u>	27.6 °C (81.7 °F)	13	49	62	- 111
<u>No. men dipping:</u>	Two	14	40	53	- 93
<u>Catch per man hour:</u>	220.25 shrimp	15	32	25	- 57
**The above frequency based on the first		16	13	14	- 27
hour's catch only. 300 shrimp taken the		17	15	8	- 23
second hour added to total but not measured.		18	2	3	- 5
<u>Comment:</u>	No moon during dipping period. Sky	19	2	-	- 2
clear.		20	1	1	- 2
<u>Sex ratio:</u>	Females = 49.5%	21	1	1	- 2
	Males = 50.5%	22	1	1	- 2
		23	1	-	- 1
		24	-	-	- -
		25	-	-	- -
		26	1	-	- 1
		Total	269	275	37 581
		Second hour catch of+			+ 300
					881

<u>Date:</u>	August 21, 1960	Carapace length in mm			
<u>Station:</u>	BW IV		Females	Males	Unsexed Combined
<u>Time:</u>	2120 - 2320 hours**				
<u>Moon phase:</u>	New moon	4	-	-	1 1
		5	-	-	3 3
<u>Tide stage:</u>	Ebb	6	1	1	4 6
	(turned on ebb at 1800 hours)	7	12	3	8 23
		8	9	1	3 13
<u>Water temperature:</u>		9	17	7	- 24
Surface:	-	10	24	13	- 37
Bottom:	-	11	18	12	- 30
		12	17	21	- 38
<u>Salinity:</u>		13	18	20	- 38
Surface:	-	14	15	11	- 26
Bottom	-	15	15	10	- 25
		16	12	7	- 19
<u>Air temperature:</u>	27.6 °C (81.7 °F)	17	5	10	- 15
		18	4	-	4
<u>No. men dipping:</u>	Two	19	1	3	- 4
		20	3	-	- 3
<u>Catch per man hour:</u>	166.7 shrimp	21	3	-	- 3
		22	-		- -
** The above frequency based on the first		23	-		- -
hour's catch of 313 shrimp. The second		24	-		- -
hour's catch of 354 shrimp added to the total		25	-		- -
count but not included in the size frequency		26	1	-	- 1
		Total	175	119	19 313
<u>Comment:</u>	No moon during dipping period. Sky	second hour's catch of			+ 354
	clear.				667
<u>Sex ratio:</u>	Females = 59.5%				
	Males = 40.5%				

Date: September 16, 1960

Station: BW IV

Time: 2100 - 2200 hours

Moon phase: Last quarter (set 1520 hours)

Tide stage: Ebb

Water temperature:

Surface: 32.5 °C

Bottom: 32.0 °C

Salinity:

Surface: 25.3 ppt

Bottom 25.3 ppt

Air temperature: 27.8 °C (81.7 °F)

No. men dipping: Two

Catch per man hour: None

Comment: This sampling period followed hurricane Donna by 7 days. At that time the Coot Bay area was suffering a total oxygen depletion.

Date: October 23, 1960

Station: BW IV

Time: 2030 - 2230 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 27.5 °C

Bottom: 27.7 °C

Salinity:

Surface: 13.0 ppt

Bottom 13.9 ppt

Air temperature: 27.2 °C (81.0 °F)

No. men dipping: Two

Catch per man hour: **

** One shrimp caught and five observed during the two hour dipping period. Oxygen values in the Coot Bay area were still low at this time as a result of hurricane Donna.

<u>Date:</u>	November 21, 1960	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	1945 - 2145 hours**				
<u>Moon phase:</u>	First quarter (set 1950 hours)	11	-	1	1
<u>Tide stage:</u>	Ebb	12	-	-	
<u>Water temperature:</u>		13	-	1	1
		14	1	1	2
		15	2	1	3
Surface:	22.5 °C	16	1	3	4
Bottom:	22.5 °C	17	-	-	-
<u>Salinity:</u>		18	1	-	1
		19	1	2	3
Surface:	12.0 ppt	20	1	-	1
Bottom	12.2 ppt	21	-	1	1
<u>Air temperature:</u>	23.8 °C (75.0 °F)	22	-	-	-
<u>No. men dipping:</u>	Two	23	-	-	-
<u>Catch per man hour:</u>	4.5 shrimp	24	-	-	-
<u>Comment:</u>	Males examined, all <i>Penaeus</i> <i>duorarum</i> .	25	-	-	-
		26	-	-	-
		27	-	-	-
		28	-	-	-
		29	1	-	1
<u>Sex ratio:</u>	Females = 44.5% Males = 55.5%	Total	8	10	18

<u>Date:</u>	November 22, 1960	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2045 - 2245 hours				
<u>Moon phase:</u>	First quarter (set 2050 hours)	6	-	2	2
<u>Tide stage:</u>	Ebb	7	-	-	-
<u>Water temperature:</u>		8	-	1	1
Surface:	17.6 °C	9	1	1	2
Bottom:	17.8 °C	10	-	2	2
<u>Salinity:</u>		11	-	-	-
Surface:	16.7 ppt	12	1	-	1
Bottom:	18.2 ppt	13	3	3	6
<u>Air temperature:</u>	23.8 °C (75.0 °F)	11	-	-	-
<u>No. men dipping:</u>	Two	15	2	4	6
<u>Catch per man hour:</u>	9.5 shrimp	16	2	-	2
<u>Comment:</u>	Males examined, all <i>Penaeus</i> <i>duorarum</i> .	17	6	1	7
<u>Sex ratio:</u>	Females = 50% Males = 50%	18	-	1	1
		19	1	3	4
		20	2	-	2
		21	-	-	-
		22	1	-	1
		23	-	-	-
		24	-	-	-
		25	-	1	1
		Total	19	19	38

Date: February 16, 1961

Station: BW IV

Time: 1910 - 2040 hours

Moon phase: New moon

Tide stage:

Water temperature:

Surface: 21.5 °C

Bottom: 21.7 °C

Salinity:

Surface: 17.9 ppt

Bottom 18.5 ppt

Air temperature: 20.4 °C (68.7 °F)

No. men dipping: Two

Catch per man hour:

Comment: 4 observed, 2 netted

Date: March 18, 1961

Station: BW IV

Time: 2045 - 2245 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 24.6 °C

Bottom: 24.9 °C

Salinity:

Surface: 23.9 ppt

Bottom 24.2 ppt

Air temperature: 23.1 °C (73.6 °F)

No. men dipping: Two

Catch per man hour: 50.5 shrimp

Sex ratio: Females = 62.0%
Males = 38.0%

Carapace
length in
mm

Females

Males

Combined

	Females	Males	Combined
8	1	-	1
9	-	1	1
10	-	-	-
11	-	-	-
12	1	-	1
13	1	-	1
14	-	1	1
15	2	1	3
16	2	4	6
17	6	6	12
18	17	20	37
19	20	23	43
20	25	12	37
21	24	7	31
22	14	1	15
23	9	1	10
24	1	-	1
25	2	-	2
Total	125	77	202

Date: April 14, 1961

Station: BW IV

Time: 1930 - 2130 hours

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 23.0 °C

Bottom: 25.5 °C

Salinity:

Surface: 26.7 ppt

Bottom: 28.2 ppt

Air temperature: 23.0 °C (73.4 °F)

No. men dipping: Two

Catch per man hour: 115.2 shrimp

Sex ratio: Females = 47.9%
Males = 52.1%

Carapace
length in
mm

Females Males Unsexed Combined

8	-	-	2	2
9	-	-	-	-
10	-	-	-	-
11	-	2	-	2
12	-	1	-	1
13	1	1	-	2
14	4	8	-	12
15	9	14	-	23
16	23	43	-	66
17	34	53	-	87
18	41	68	-	109
19	47	36	-	83
20	30	14	-	44
21	10	4	-	14
22	11	-	-	11
23	1	-	-	1
24	3	-	-	3
25	1	-	-	1
Total	215	244	2	461

Date: May 9, 1961

Station: BW IV

Time: 0130 - 0330 hours

Moon phase: Last quarter
(rose 0150 hours)

Tide stage: Ebb

Water temperature:

Surface: 27.5 °C

Bottom: 27.5 °C

Salinity:

Surface: 36.1 ppt

Bottom: 37.0 ppt

Air temperature: 24.4°C (76.0 °F)

No. men dipping: Two

Catch per man hour: 12.0 shrimp

Sex ratio: Females = 54.6%
Males = 45.4%

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	2	2
8	-	-	-	-
9	1	-	2	3
10	2	-	-	2
11	3	1	-	4
12	4	1	-	5
13	1	6	-	7
14	1	1	-	2
15	3	7	-	10
16	4	3	-	7
17	-	-	-	-
18	1	-	-	1
19	1	-	-	1
20	2	-	-	2
21	1	-	-	2
Total	24	20	4	48

Date: June 12, 1961

Station: BW IV

Time: 2015 - 2115 hours

Moon phase: New moon

Tide stage: Ebbing

Water temperature:

Surface: 30.0 °C

Bottom: 29.5 °C

Salinity:

Surface: 31.9 ppt

Bottom: 32.1ppt

Air temperature: 26.1 °C (79.0 °F)

No. men dipping: Two

Catch per man hour: 125.0 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	1	1
6	-	-	3	3
7	-	-	8	8
8	-	-	13	13
9	-	-	35	35
10	45	22	-	67
11	23	22	-	45
12	24	17	-	41
13	11	8	-	19
14	2	11	-	13
15	1	3	-	4
16	-	1	-	1
Total	106	84	60	250

Date: June 12, 1961

Station: BW IV

Time: 2120 - 2220 hours

Moon phase: 2nd hour of ebb

Tide stage: Ebbing

Air temperature: 26.1 °C (79.0 °F)

No. men dipping: Two

Catch per man hour: 135.0 shrimp

Comment: Combined catch for the above two hour period = 520 shrimp for an overall catch rate of 130 shrimp per man hour dipping.

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	-	-
6	-	-	2	2
7	-	-	11	11
8	-	-	14	14
9	-	-	35	35
10	28	29	-	57
11	26	27	-	53
12	29	25	-	54
13	7	12	-	19
14	10	4	-	14
15	5	3	-	8
16	1	2	-	3
Total	106	102	62	270

Date: June 13, 1961

Station: BW IV

Time: 2050 - 2150 hours

Moon phase: New moon

Tide stage: Ebbing

Water temperature:

Surface: 29.8 °C

Bottom: 29.8 °C

Salinity:

Surface: 31.8 ppt

Bottom: 32.0 ppt

Air temperature: 24.4 °C (76.0 °F)

No. men dipping: Two

Catch per man hour: 80 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

3	-	-	1	1
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	1	1
8	-	-	9	9
9	-	-	23	23
10	17	17	-	34
11	16	11	-	27
12	14	13	-	27
13	7	9	-	16
14	5	6	-	11
15	3	5	-	8
16	1	-	-	1
17	-	-	-	-
18	-	-	-	-
19	2	-	-	2
20	1	-	-	1
Total	66	61	34	161

Date: June 13, 1961

Station: BW IV

Time: 2200 - 2300 hours

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 62 shrimp

Comment: Combined catch for two hour period = 286 shrimp for an overall catch rate of 71.5 shrimp per man hour dipping.

Summary: Combined catch for the eight (8) man hours of dipping in June = 806 shrimp for a catch rate rate of 92.8 shrimp per man hour.

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	1	1
6	-	-	1	1
7	-	-	6	6
8	-	-	15	15
9	-	-	18	18
10	11	8	-	19
11	14	8	-	22
12	12	3	-	15
13	11	4	-	15
14	6	2	-	8
15	3	-	-	3
16	-	-	-	-
17	1	-	-	1
18	-	-	-	-
19	1	-	-	1
Total	59	25	41	125

Date: July 12, 1961

Station: BW IV

Time: 2000 - 2100 hours

Moon phase: New moon

Tide stage: 1st hours of ebb

Salinity:

Surface: 37.9 ppt

Bottom 38.9 ppt

Air temperature: 23.9 °C (75.0 °F)

No. men dipping: Two

Catch per man hour: 59.2 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	4	4
7	-	-	4	4
8	-	-	3	3
9	-	-	4	4
10	2	3	-	5
11	9	12	-	21
12	10	11	-	21
13	17	12	-	29
14	13	6	-	19
15	5	6	-	11
16	1	1	-	2
17	2	-	-	2
Total	51	59	15	125

Date: July 12, 1961

Station: BW IV

Time: 2100 - 2200 hours
(2 of 2 hours)

Tide stage: 2nd hours of ebb

No. men dipping: Two

Catch per man hour: 56 shrimp

Comment: Combined catch for two hour period
= 237 shrimp for an overall catch rate of
59.2 shrimp per man hour.

Carapace
length in
mm

Females Males Unsexed Combined

5	-	-	2	2
6	-	-	-	-
7	-	-	1	1
8	-	-	-	-
9	1	-	-	1
10	6	5	-	11
11	5	3	-	8
12	13	18	-	31
13	9	15	-	24
14	3	9	-	12
15	10	9	-	19
16	2	1	-	3
Total	48	61	3	112

Date: July 13, 1961

Station: BW IV

Time: 2015 - 2115 hours
(1 of 2 hours)

Tide stage: 1st hour of ebb

Water temperature:

Surface: 29.2 °C

Bottom: 29.0 °C

Salinity:

Surface: 38.3 ppt

Bottom: 42.8 ppt

Air temperature: 23.9 °C (75 °F)

No. men dipping: Two

Catch per man hour: 56 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	3	3
7	-	-	3	3
8	-	-	5	5
9	-	-	5	5
10	1	4	-	5
11	6	9	-	15
12	12	9	-	21
13	12	10	-	22
14	8	7	-	15
15	6	5	-	11
16	3	-	-	3
17	1	1	-	2
18	1	1	-	2
Total	50	46	16	112

Date: July 13, 1961

Station: BW IV

Time: 2115 - 2215 hours
(2 of 2 hours)

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 60 shrimp

Comment: Combined catch for two hour period = 232 shrimp for an overall catch rate of 58 shrimp per man hour.

Summary: Combined catch for the eight (8) man hours of dipping in July = 469 shrimp for a catch rate of 58.6 shrimp per man hour.

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	1	1
7	-	-	-	-
8	-	-	1	1
9	-	-	3	3
10	4	4	-	8
11	9	6	-	15
12	9	11	-	20
13	16	14	-	30
14	15	11	-	26
15	4	5	-	9
16	3	2	-	5
17	1	1	-	2
Total	61	54	5	120

Date: August 7 1961

Station: BW IV

Time: 1900 - 2100 hours
(1 sample)

Moon phase: Last quarter

Tide stage: Last 2 hours of ebb

Water temperature:

Surface: 30.0 °C

Bottom: 29.7 °C

Salinity:

Surface: 38.0 ppt

Bottom 38.5 ppt

No. men dipping: Two

Catch per man hour: 54.5 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	3	3
7	-	-	2	2
8	-	-	5	5
9	1	1	3	5
10	15	10	-	25
11	15	16	-	31
12	21	27	-	48
13	12	17	-	29
14	18	8	-	26
15	6	11	-	17
16	5	4	-	9
17	3	6	-	9
18	1	1	-	2
19	1	1	-	2
20	3	-	-	1
21	1	-	-	1
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	1	-	-	1
Total	103	102	13	218

<u>Date:</u>	August 8, 1961	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	1900 - 2000 hours	mm	Females	Males	Unsexed
	(1 of 2 samples)				Combined
<u>Moon phase:</u>	New moon	6	-	-	2
<u>Tide stage:</u>	1st hour of ebb	7	-	-	7
<u>Water temperature:</u>		8	-	-	5
		9	-	-	4
		10	13	17	-
		11	20	24	-
		12	28	37	-
		13	23	22	-
		14	16	7	-
		15	15	4	-
<u>Salinity:</u>		16	4	3	-
		17	7	2	-
		18	2	2	-
		19	1	-	-
		20	2	-	-
<u>Air temperature:</u>	25.6 °C (78 °F)	21	-	-	-
<u>No. men dipping:</u>	Two	22	-	-	-
<u>Catch per man hour:</u>	189 shrimp	23	-	-	-
		24	-	-	-
		25	-	-	-
		26	-	-	-
		27	-	-	1
		Total	132	118	18
					278

<u>Date:</u>	August 8, 1961	Carapace			
<u>Station:</u>	BW IV	length in			
<u>Time:</u>	2000 - 2100 hours	mm	Females	Males	Unsexed
	(2 of 2 samples)				Combined
<u>Tide stage:</u>	2nd hour of ebb	7	-	-	4
<u>No. men dipping:</u>	Two	8	-	-	1
<u>Catch per man hour:</u>	100 shrimp	9	1	1	5
		10	5	5	-
		11	15	17	-
		12	18	23	-
		13	15	21	-
		14	10	12	-
<u>Comment:</u>	Combined catch for the two hour	15	7	12	-
	period on August 8 = 479 shrimp for an	16	4	3	-
	overall catch rate of 119.7 shrimp per man	17	5	1	-
	hour.	18	4	3	-
		19	2	1	-
		20	1	-	-
		21	1	-	-
		Total	92	99	10
					201

Date: August 10, 1961

Station: BW IV

Time: 2000 - 2100 hours
(1 sample)

Moon phase: New moon

Tide stage: 1st 2 hours of ebb

Water temperature:

Surface: 28.5 °C

Bottom: 29.0 °C

Salinity:

Surface: 39.8 ppt

Bottom: 40.2 ppt

Air temperature: 23.3 °C (74 °F)

No. men dipping: Two

Catch per man hour: 91.7 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

4	-	-	1	1
5	-	-	3	3
6	-	-	2	2
7	-	-	2	2
8	-	-	4	4
9	6	3	10	19
10	13	21	-	34
11	20	37	-	67
12	29	48	-	77
13	38	33	-	71
14	19	25	-	44
15	14	11	-	25
16	8	4	-	12
17	1	4	-	5
18	1	2	-	3
19	2	-	-	2
20	2	1	-	3
21	2	-	-	2
22	-	-	-	-
23	-	1	-	1
Total	155	190	22	367

Date: September 12, 1961

Station: BW IV

Time: 2030 - 2130 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: 1st hour of ebb

Water temperature:

Surface: 29.5 °C

Bottom: 29.2 °C

Salinity:

Surface: 34.2 ppt

Bottom: 32.9 ppt

Air temperature: 22.7 °C (73 °F)

No. men dipping: Two

Catch per man hour: 36 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

8	-	-	1	1
9	-	-	2	2
10	3	3	-	6
11	2	7	-	9
12	8	3	-	11
13	3	13	-	16
14	3	7	-	10
15	4	2	-	6
16	3	3	-	6
17	1	1	-	2
18	1	1	-	2
19	-	-	-	-
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
23	1	-	-	1
Total	29	40	3	72

Date: September 12, 1961

Station: BW IV

Time: 2130 - 2230 hours
(2 of 2 samples)

Moon phase: New moon

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 47.5 shrimp

Comment: Combined catch for the two (2) hour period on September 12 = 167 shrimp for a catch per man hour of 41.7 shrimp.

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	1	1
8	-	-	1	1
9	-	-	2	2
10	1	-	-	1
11	3	2	-	5
12	9	11	-	20
13	9	13	-	22
14	9	6	-	15
15	8	7	-	15
16	2	1	-	3
17	4	4	-	8
18	1	-	-	1
19	-	-	-	-
20	-	1	-	1
Total	45	46	4	95

Date: September 13, 1961

Station: BW IV

Time: 2030 - 2130 hours
(1 of 2 samples)

Moon phase: First quarter

Tide stage: 1st hour of ebb

Water temperature:

Surface: 29.4 °C

Bottom: 29.7 °C

Salinity:

Surface: 34.6 ppt

Bottom: 37.5 ppt

Air temperature: 22.2 °C (72 °F)

No. men dipping: Two

Catch per man hour: 35.5 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	2	2
7	-	-	4	4
8	-	-	8	8
9	-	-	3	3
10	4	1	-	5
11	9	2	-	11
12	2	3	-	5
13	4	6	-	10
14	5	4	-	9
15	5	2	-	7
16	1	2	-	3
17	1	1	-	2
18	1	-	-	1
19	1	-	-	1
Total	33	21	17	71

Date: September 13, 1961

Station: BW IV

Time: 2130 - 2230 hours
(2 of 2 samples)

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 28.5 shrimp

Comment: Combined catch for the two (2) hour period on September 13 = 128 shrimp for a catch per man hour of 32 shrimp.

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	2	2
8	-	-	3	3
9	-	-	3	3
10	-	1	-	1
11	1	1	-	2
12	2	6	-	8
13	9	6	-	15
14	8	2	-	10
15	1	4	-	5
16	2	2	-	4
17	-	1	-	1
18	1	-	-	1
19	-	-	-	-
20	-	-	-	-
21	2	-	-	2
Total	23	26	8	37

Date: October 9, 1961

Station: BW IV

Time: 1900 - 2000 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: 1st hour of ebb

Water temperature:

Surface: 27.0 °C

Bottom: -

Salinity:

Surface: 28.5 ppt

Bottom -

Air temperature: 20.6 °C (69 °F)

No. men dipping: Two

Catch per man hour: 65 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	2	2
7	-	-	3	3
8	-	-	6	6
9	-	-	7	7
10	2	1	21	24
11	12	15	-	27
12	17	10	-	27
13	4	9	-	13
14	4	2	-	6
15	3	6	-	9
16	1	1	-	2
17	1	1	-	2
18	-	-	-	-
19	-	1	-	1
20	1	-	-	1
Total	45	46	39	130

Date: October 9, 1961

Station: BW IV

Time: 2000 - 2100 hours
(2 of 2 samples)

Moon phase: New moon

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 25.5 shrimp

Comment: Combined catch for the two (2) hour period on October 9 = 181 shrimp for a catch per man hour of 45.25 shrimp.

Carapace
length in
mm

Females Males Unsexed Combined

7	-	-	1	1
8	-	-	-	-
9	-	-	5	5
10	-	-	9	9
11	2	1	-	3
12	3	4	-	7
13	4	2	-	6
14	1	4	-	5
15	2	4	-	6
16	3	2	-	5
17	-	1	-	1
18	-	-	-	-
20	-	-	-	-
19	2	1	-	3
Total	17	19	15	51

Date: October 10, 1961

Station: BW IV

Time: 1900 - 2000 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 26.5 °C

Bottom: 26.5 °C

Salinity:

Surface: 30.0 ppt

Bottom: 30.4 ppt

Air temperature: 20.6 °C (69 °F)

No. men dipping: Two

Catch per man hour: 67 shrimp

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	5	5
7	-	-	4	4
8	-	-	8	8
9	-	-	11	11
10	-	-	26	26
11	18	11	-	29
12	13	7	-	20
13	4	7	-	11
14	2	2	-	4
15	4	2	-	6
16	4	1	-	5
17	1	2	-	3
18	-	-	-	-
19	-	1	-	1
20	-	-	-	-
21	1	-	-	1
Total	47	33	54	134

Date: October 10, 1961

Station: BW IV

Time: 2000 - 2100 hours
(2 of 2 samples)

Tide stage: Ebb

No. men dipping: Two

Catch per man hour: 33 shrimp

Comment: Combined catch for the two (2) hour period on October 10 = 200 shrimp for a catch per man hour of 50 shrimp.

Carapace length in mm	Females	Males	Unsexed	Combined
7	-	-	1	1
8	-	-	1	1
9	-	-	2	2
10	-	-	4	4
11	9	4	-	13
12	7	8	-	15
13	3	4	-	7
14	2	2	-	4
15	3	1	-	4
16	-	1	-	1
17	2	6	-	8
18	2	2	-	4
19	-	1	-	1
25	-	1	-	1
Total	28	30	8	66

Date: November 8, 1961

Station: BW IV

Time: 1915 - 2015 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 26.0 °C

Bottom: 25.6 °C

Salinity:

Surface: 28.8 ppt

Bottom: 28.9 ppt

Air temperature: 21.1 °C (70 °F)

No. men dipping: Two

Catch per man hour: 45.1 shrimp

Carapace length in mm	Females	Males	Unsexed	Combined
5	-	-	1	1
6	-	-	2	2
7	-	-	2	2
8	-	-	2	2
9	-	-	7	7
10	-	-	8	8
11	8	7	-	15
12	4	7	-	11
13	7	9	-	16
14	3	4	-	7
15	4	3	-	7
16	4	1	-	5
17	3	3	-	6
18	2	-	-	2
21	1	-	-	1
Total	36	34	22	92

Date: November 8, 1961

Station: BW IV

Time: 2015 - 2115 hours
(2 of 2 samples)

Tide stage: Ebb

No. men dipping: Two

Catch per man hour: 39.0 shrimp

Comment: Combined catch for the two (2) hour period on November 8 = 170 shrimp for a catch per man hour of 42.5 shrimp.

Carapace
length in
mm

Females Males Unsexed Combined

6	-	-	4	4
7	-	-	2	2
8	-	-	1	1
9	-	-	3	3
10	-	-	7	7
11	6	3	-	9
12	5	7	-	12
13	5	1	-	6
14	5	4	-	9
15	6	5	-	11
16	3	3	-	6
17	4	1	-	5
18	-	1	-	1
19	1	-	-	1
23	1	-	-	1
Total	36	25	17	78

Date: November 9, 1961

Station: BW IV

Time: 1915 - 2015 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 24.8 °C

Bottom: 24.5 °C

Salinity:

Surface: 28.9 ppt

Bottom: 28.9 ppt

Carapace
length in
mm

Females Males Unsexed Combined

9	-	-	1	1
10	-	-	-	-
11	-	1	-	1
12	-	-	-	-
13	-	1	-	1
14	-	1	-	1
15	-	-	-	-
16	2	-	-	2
17	1	-	-	1
18	1	-	-	1
19	1	-	-	1
Total	5	3	1	9

Air temperature: 17.2 °C (63 °F)

No. men dipping: Two

Catch per man hour: 4.5 shrimp

Date: November 9, 1961

Station: BW IV

Time: 2015 - 2115 hours
(2 of 2 samples)

Moon phase: New moon

Tide stage: Ebb

No. men dipping: Two

Catch per man hour: 16 shrimp

Comment: Combined catch for the two (2) hour period on November 9 = 41 shrimp for a catch per man hour of 10.2 shrimp.

Carapace length in mm	Females	Males	Unsexed	Combined
9	-	-	1	1
10	2	-	-	2
11	3	4	-	7
12	1	1	-	2
13	2	-	-	2
14	1	5	-	6
15	2	4	-	6
16	1	1	-	2
17	-	1	-	1
18	-	-	-	-
19	1	-	-	1
22	-	1	-	1
27	1	-	-	1
Total	14	17	1	32

Date: December 6, 1961

Station: BW IV

Time: 2100 - 2200 hours
(1 sample)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 21.4 °C

Bottom: 21.5 °C

Salinity:

Surface: 29.3 ppt

Bottom: 29.3 ppt

Carapace length in mm	Females	Males	Unsexed	Combined
10	-	-	1	1
11	-	1	-	1
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	2	-	2
16	2	2	-	4
17	-	1	-	1
18	1	-	-	1
19	-	-	-	-
Total	3	6	1	10

Air temperature: 16.1 °C (62 °F)

No. men dipping: Two

Catch per man hour: 5.0 shrimp

Date: December 7, 1961

Station: BW IV

Time: 1830 - 2030 hours
(1 sample)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 21.4 °C

Bottom: 21.5 °C

Salinity:

Surface: 29.3 ppt

Bottom: 30.2 ppt

Air temperature: 16.7 °C (62 °F)

No. men dipping: Two

Catch per man hour: 7.8 shrimp

Carapace
length in
mm

	Females	Males	Unsexed	Combined
8	-	-	3	3
9	-	-	3	3
10	-	-	-	-
11	-	1	-	1
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	2	-	2
16	2	2	-	4
17	-	1	-	1
18	1	-	-	1
19	-	-	-	-
Total	3	6	1	10

Date: December 7, 1961

Station: BW IV

Time: 1830 - 2030 hours
(1 sample)

Moon phase: New moon

Tide stage: Ebb

Water temperature:

Surface: 21.4 °C

Bottom: 21.5 °C

Salinity:

Surface: 29.3 ppt

Bottom: 30.2 ppt

Air temperature: 16.7 °C (62 °F)

No. men dipping: Two

Catch per man hour: 7.8 shrimp

Carapace
length in
mm

	Females	Males	Unsexed	Combined
8	-	-	3	3
9	-	-	3	3
10	-	-	-	-
11	-	1	-	1
12	-	3	-	3
13	-	1	-	1
14	-	-	-	-
15	3	3	-	6
16	2	2	-	4
17	2	3	-	5
18	2	1	-	3
19	1	-	-	1
20	1	-	-	1
Total	11	14	6	31

<u>Date:</u>	January 4 and 5, 1962	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	1930 - 2130 hours (both nights)				
<u>Moon phase:</u>	New moon	11	1	1	2
<u>Tide stage:</u>	Ebbing	12	-	1	1
<u>Water temperature:</u>		13	3	-	3
Surface:	17.8 °C	14	1	-	1
Bottom:	18.9 °C	15	-	-	-
<u>Salinity:</u>		16	-	-	-
Surface:	33.0 ppt	17	2	-	2
Bottom	33.3 ppt	18	1	1	2
<u>Air temperature:</u>	17.2 °C (Jan 5 = 63 °F)	19	-	-	-
	7.2 °C (Jan 4 = 45 °F)	20	2	1	3
		21	1	1	2
		22	1	-	1
<u>No. men dipping:</u>	Two	23	-	-	-
		24	-	1	1
<u>Catch per man hour:</u>	2.2 shrimp	Total	12	6	18

Note: Two nights' samples combined due to small sample size.

<u>Date:</u>	January 25, 1962	Carapace length in mm	Females	Males	Combined
<u>Station:</u>	BW IV				
<u>Time:</u>	2215 - 2315 hours (1 sample)				
<u>Moon phase:</u>	Third quarter	11	1	-	1
<u>Tide stage:</u>	1st 2 hours of ebb	12	-	-	-
<u>Water temperature:</u>		13	-	1	1
Surface:	21.5 °C	14	-	-	-
Bottom:	22.8 °C	15	-	-	-
<u>Salinity:</u>		16	1	1	2
Surface:	34.2 ppt	17	-	-	-
Bottom	34.7 ppt	18	1	2	3
<u>Air temperature:</u>	19.4 °C (67 °F)	19	-	4	4
		20	-	5	5
<u>No. men dipping:</u>	Two	21	3	7	10
<u>Catch per man hour:</u>	29.0 shrimp	22	4	2	6
		23	2	6	8
		24	2	2	4
<u>Note:</u>	Moon rose at 2245 hours.	25	3	1	4
		26	2	-	2
		27	4	1	5
		28	4	-	4
		Total	26	32	58

Date: January 31, 1962

Station: BW IV

Time: 0145 - 0245 hours
(1 of 2 samples)

Moon phase: Last quarter

Tide stage: Ebbing

Water temperature:

Surface: 16.7 °C

Bottom: -

Salinity:

Surface: 32.2 ppt

Bottom -

Air temperature: 11.1 °C (52 °F)

No. men dipping: Two

Catch per man hour: 24.5 shrimp

Carapace
length in
mm

Females

Males

Combined

14	-	1	1
15	-	1	1
16	-	1	1
17	-	-	-
18	-	2	2
19	-	3	3
20	1	3	4
21	1	3	4
22	2	4	6
23	2	4	6
24	-	2	2
25	3	3	6
26	3	4	7
27	3	1	4
28	-	-	-
29	2	-	2
Total	17	32	49

Date: January 31, 1962

Station: BW IV

Time: 0245 - 0345 hours
(2 of 2 samples)

No. men dipping: Two

Catch per man hour: 22.5 shrimp

Comment: Moon rose at 0333 hours, shrimp
less frequent and more spooky after
moonrise.

Carapace length in mm	Females	Males	Unsexed	Combined
9	-	-	1	1
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	1	-	1
14	-	1	-	1
15	-	-	-	-
16	-	2	-	2
17	-	-	-	-
18	2	1	-	3
19	-	1	-	1
20	2	1	-	3
21	1	3	-	4
22	1	1	-	2
23	2	-	-	2
24	3	3	-	6
25	1	4	-	5
26	4	3	-	7
27	3	-	-	3
28	2	-	-	2
29	2	-	-	2
Total	23	22	1	46

Date: February 21, 1962

Station: BW IV

Time: 2145 - 2245 hours
(1 of 2 samples)

Moon phase: Full moon

Tide stage: 1st hour of ebb

Water temperature:

Surface: 23.8 °C

Bottom: 25.8 °C

Salinity:

Surface: 34.9 ppt

Bottom: 35.1 ppt

Air temperature: 22.2 °C (72 °F)

No. men dipping: Two

Catch per man hour: 125.5 shrimp

Carapace
length in
mm

Females

Males

Combined

9	2	-	2
10	1	2	3
11	3	-	3
12	1	2	3
13	2	1	3
14	1	2	3
15	2	6	8
16	-	5	5
17	4	5	9
18	6	14	20
19	9	12	21
20	9	29	38
21	14	15	29
22	17	15	32
23	6	8	14
24	13	10	23
25	12	3	15
26	5	-	5
27	4	1	5
28	3	-	3
29	3	1	4
30	1	-	1
31	2	-	2
Total	120	131	251

Date: February 21, 1962

Station: BW IV

Time: 2245 - 2345 hours
(2 of 2 samples)

Tide stage: Ebbing

Catch per man hour: 121.0 shrimp

Carapace length in mm	Females Males Unsexed Combined			
8	-	-	2	2
9	-	-	2	2
10	1	-	-	1
11	-	1	-	1
12	1	1	-	2
13	-	1	-	1
14	-	2	-	2
15	-	-	-	-
16	1	1	-	2
17	7	4	-	11
18	7	9	-	16
19	11	13	-	24
20	11	24	-	35
21	13	18	-	31
22	16	14	-	30
23	20	10	-	30
24	9	3	-	12
25	13	3	-	16
26	5	1	-	6
27	9	-	-	9
28	3	1	-	4
29	3	-	-	3
30	1	-	-	1
31	-	-	-	-
32	1	-	-	1
Total	132	106	4	242

Date: March 5, 1962

Station: BW IV

Time: 1925 - 2025 hours
(1 of 2 samples)

Moon phase: New moon

Tide stage: 1st hour of ebb

Water temperature:

Surface: 23.8 °C

Bottom: -

Salinity:

Surface: 35.5 ppt

Bottom: -

Air temperature: 15.6 °C (60 °F)

No. men dipping: Two

Catch per man hour: 192.0 shrimp

Carapace

length in

mm

Females

Males

Unsexed

Combined

6	-	-	3	3
7	-	-	1	1
8	-	-	5	5
9	-	-	7	7
10	6	8	-	14
11	9	7	-	16
12	9	16	-	25
13	10	16	-	26
14	11	15	-	26
15	16	21	-	37
16	10	15	-	25
17	16	17	-	33
18	13	21	-	34
19	14	21	-	35
20	16	16	-	32
21	14	11	-	25
22	13	7	-	20
23	6	1	-	7
24	3	-	-	3
25	5	-	-	5
26	2	-	-	2
27	-	-	-	-
28	2	-	-	2
Total	176	192	16	384

Date: March 5, 1962

Station: BW IV

Time: 2025 - 2125 hours
(2 of 2 samples)

Tide stage: 2nd hour of ebb

No. men dipping: Two

Catch per man hour: 150.0 shrimp

Carapace length in mm	Females Males Unsexed Combined			
7	-	-	1	1
8	-	-	2	2
9	-	-	6	6
10	3	2	-	5
11	5	1	-	6
12	6	6	-	12
13	14	6	-	20
14	15	13	-	31
15	13	15	-	26
16	16	13	-	31
17	8	18	-	21
18	13	13	-	31
19	12	11	-	25
20	16	7	-	27
21	10	5	-	17
22	3	3	-	8
23	13	1	-	16
24	5	-	-	6
25	6	-	-	6
26	3	-	-	3
27	-	-	-	-
28	-	-	-	-
29	1	-	-	1
Total	162	130	9	301

Date: March 6, 1962

Station: BW IV

Time: 2000 - 2100 hours

Moon phase: New moon

Tide stage: 1st hour of ebb

Water temperature:

Surface: 17.0 °C

Bottom: -

Salinity:

Surface: 35.8 ppt

Bottom: -

Air temperature: 5.6 °C (42 °F)

No. men dipping: Two

Catch per man hour: 0.0 shrimp

Comment: Severe cold wave moving across South Florida.

