

DATA ABSTRACTS FROM
SURVIVAL, GROWTH AND MOVEMENTS OF CAPTIVE-
REARED HAWAIIAN GREEN TURTLES RETURNED TO THE WILD

MANUSCRIPT IN PREPARATION

BY

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APRIL 1978

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Summary

Total no. turtles released
Oahu
French Frigate Shoals

54
26

Total no. turtles recovered
Oahu
French Frigate Shoals

14
5 19.2%

Total no. releases
Oahu

67

Total no. recoveries
Oahu

23 34.2%

Long term recovery
French Frigate Shoals

tag 144 May 1975 - Dec. 1976 (19 months)

Long term and distance recoveries
Oahu

tag 400 May-April 1975 (11 months) 60 miles

tag 474 Nov 75 - Sept 1976 (10 months) 205 miles

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Source: 121 newly emerged hatchlings were collected at Tern Island, French Frigate Shoals (23°47'N, 166°13'W) during August and September 1972 and transported to facilities of the University of Hawaii on Oahu.

Mean carapace length, mm	51.7
range	48.1-54.0
Mean carapace width, mm	41.2
range	38.1-43.9
Mean weight, g	31.2
range	25-36

Captive conditions: The turtles were raised in various aquaria (75-5400 liters) until June 1973, at which time they were transferred to wire cages (1.5m x 1.5 m x 0.7m) suspended in Kaneohe Bay. In December 1974, 32 of the remaining turtles were transferred to a tidal pond measuring approximately 90m by 20m by 3m deep. Diets during these periods consisted of combinations of by-product feed ingredients (i.e. fish meal, soybean meal) in pellet form, as well as the flesh of fish and squid.

Identification: Each turtle was double tagged with either size 1005 or size 681 Monel alloy tags produced by the National Band and Tag Company, Newport, Kentucky.

Releases and recoveries: Locations of the following releases and recoveries are shown in Figures 1 and 2. An asterisk by the tag number indicates that the turtle was subsequently released at French Frigate Shoals on 16 May 1975.

April 1974 - 5 released at site A; mean LxW - 12-5/8" x 10-3/8"; no recoveries

May 1974 - 3 released at site A; mean LxW - 13-1/8" x 10-1/2"; mean weight - 11 lbs; 1 recovered as follows:

Tag No.	Date	Observations
400	April 1975	recovered off the north shore of Lanai; did not flee with other turtles when approached; killed and eaten

21 July 1974 - 21 released at site A; mean LxW - 13-5/8" x 11"; mean weight - 11.8 lbs; 8 recovered as follows:

Tag No.	Date	Observations
88	1 August 1974	recovered at site A
"	21 August	released at site B (1)
370	1 August 1974	recovered at site A
"	21 August	released at site B (2)
367	1 August 1974	recovered at site A
"	13 October	released at site A (3)
"	15 October	recovered at site A
"	12 November	released at site C
"	27 November	recovered and released at site A
347	3 August 1974	recovered dead from Kaneohe Bay; spear hole
357*	1 August 1974	recovered at site A (4)
365*	1 August 1974	recovered at site A (5)
	21 August	released at site B
	31 August	recovered near Molii Pond, Kaneohe Bay
352*	1 August 1974	recovered at site A (6)
	21 August	released at site B
	23 August	recovered at site A
337*	1 August	recovered at site A (7)

13 October 1974 - 2 released at site A; 1 recovery as follows:

Tag No.	Date	Observations
395*	15 October 1974	recovered from crab net in Kaneohe Bay; reported entangled while eating bait

14 October 1974 - 3 released at site D; mean weight - 17.1 lbs;
3 recovered as follows:

Tag No.	Date	Observations
388	16 October 1974	recovered close to shore and on the beach at Kahuku, Oahu; released shortly thereafter
356	1 December 1974	recovered inside porpoise enclosure and on the beach at Naval research facility in Kaneohe Bay.
"	6 December	released at site C
"	31 December	recovered at site C
"	2 January 1975	released at site A
369	16 October 1974	recovered close to shore and on the beach at Hauula, Oahu
"	18 November	released at site C
"	10 December	recovered at site A and released at site C
"	18 December	recovered and released at site A

December 1974 - 2 released at site A; 2 released at site C; mean weight - 17.1 lbs; no recoveries

January 1975 - 1 released at site A; no recoveries

February/March 1975 - 1 escaped at site C; weight - 12.4 lbs; recovery as follows:

Tag No.	Date	Observations
390*	8 March 1975	recovered off Aina Moi, Kaneohe Bay and released shortly thereafter
	9 March	recovered at site A

April 1975 - 3 released at site A; no recoveries

June 1975 - 3 released at site C; no recoveries

September 1975 - 1 released at site C; no recoveries

November 1975 - 4 escaped at site C; 1 recovered as follows:

Tag No.	Date	Observations
474	25 September 1976	recovered off Kau coast, Island of Hawaii while resting under ledge at depth of 60'; released shortly thereafter LxW at release - 16-3/4 x 12-7/8 LxW at recovery - 16-3/4 x 13-1/8

May 1976 - 1 released at site A; no recoveries

July 1976 - 1 released at site C; no recoveries

August 1977 - 1 released at site A; LxW - 21-5/8" x 19-3/4"; weight - 52 lbs; no recoveries

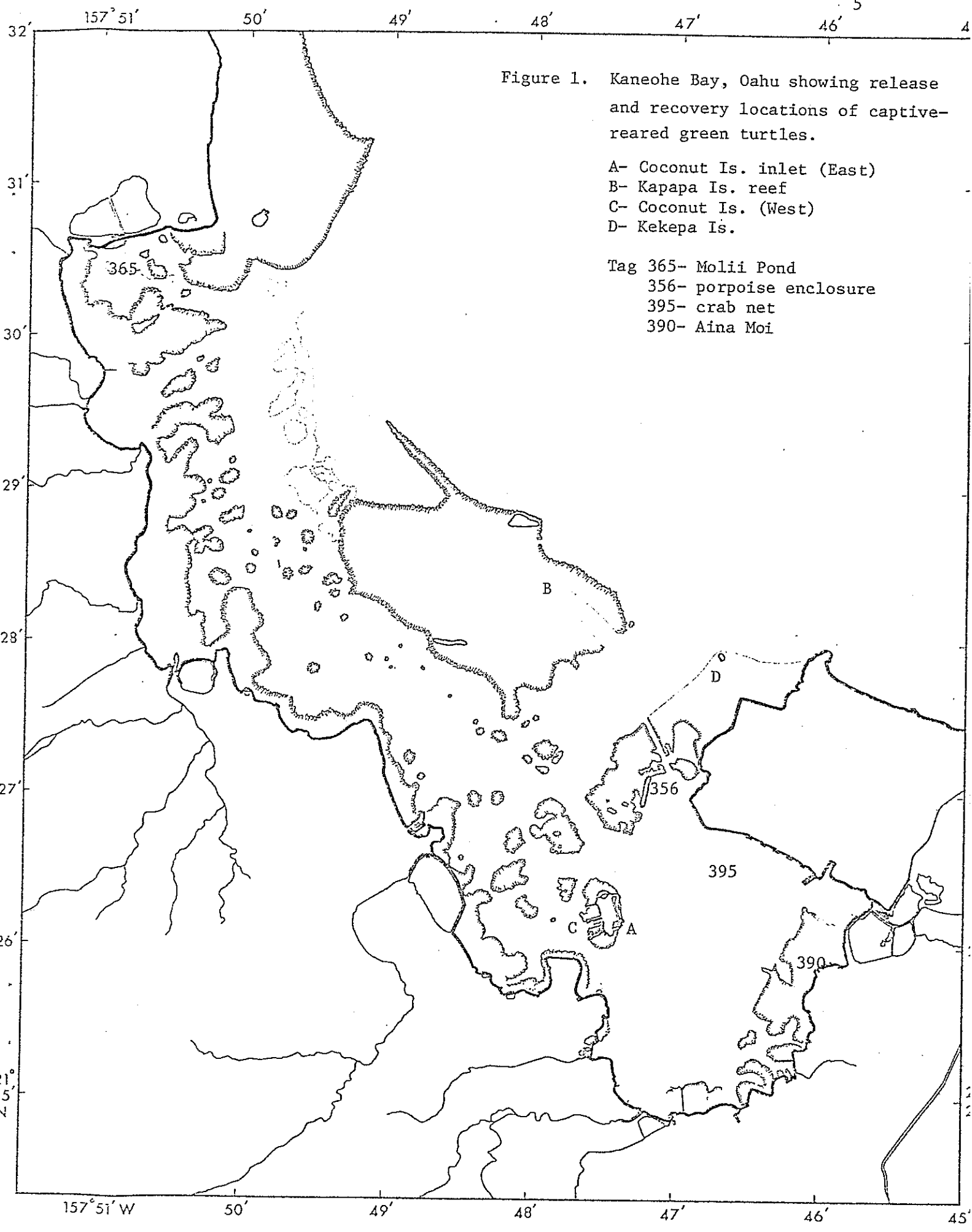


Figure 1. Kaneohe Bay, Oahu showing release and recovery locations of captive-reared green turtles.

- A- Coconut Is. inlet (East)
- B- Kapapa Is. reef
- C- Coconut Is. (West)
- D- Kekepa Is.

- Tag 365- Moli Pond
- 356- porpoise enclosure
- 395- crab net
- 390- Aina Moi

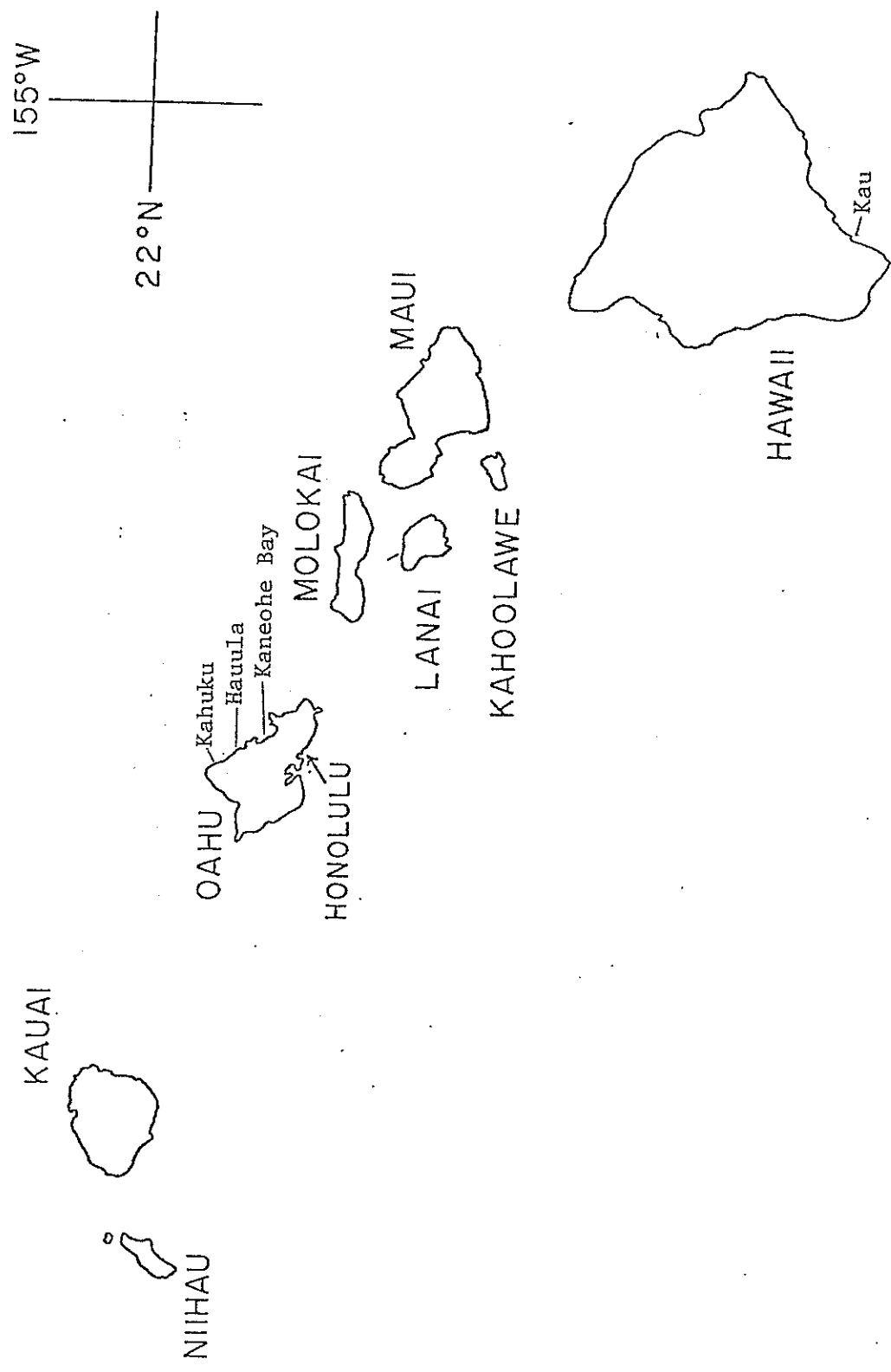
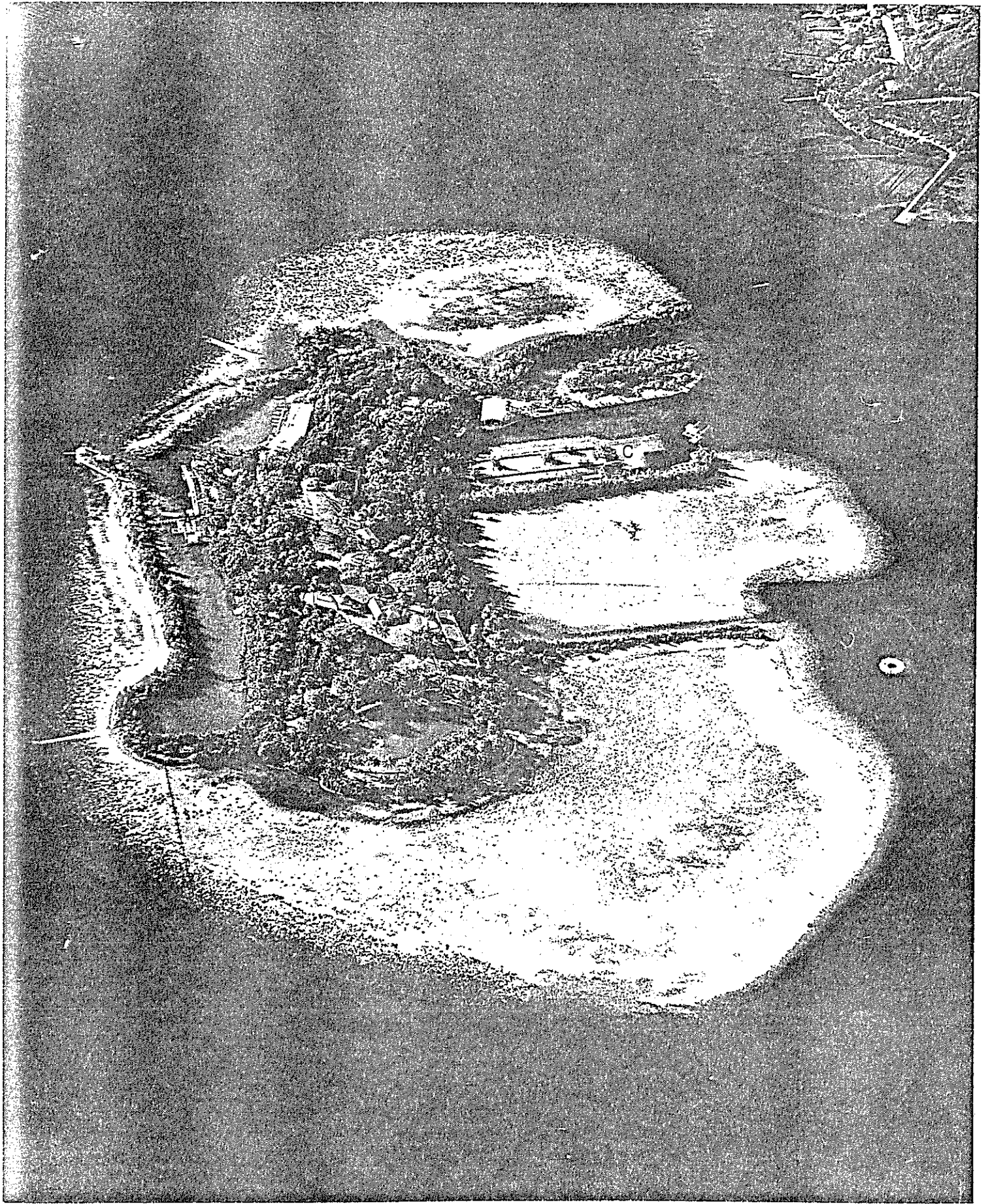


Figure 2. Major Hawaiian Islands showing recovery locations for tag numbers 388 (Kahuku), 369 (Hauula), 400 (N. Lanai) and 474 (Kau).



Coconut Island, Kaneohe Bay, Oahu, showing the location of release sites A and C

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Release: 26 turtles were transported back to French Frigate Shoals aboard the U. S. Coast Guard buoy tender Buttonwood and released on 16 May 1975 (Figure 1).

	cm	inches
Mean carapace length	38.8	15 $\frac{1}{4}$
range	35.6 - 44.5	14 - 17 $\frac{1}{2}$
Mean carapace width	31.5	12 $\frac{3}{8}$
range	27.3 - 40.3	10 $\frac{3}{4}$ - 15 $\frac{7}{8}$

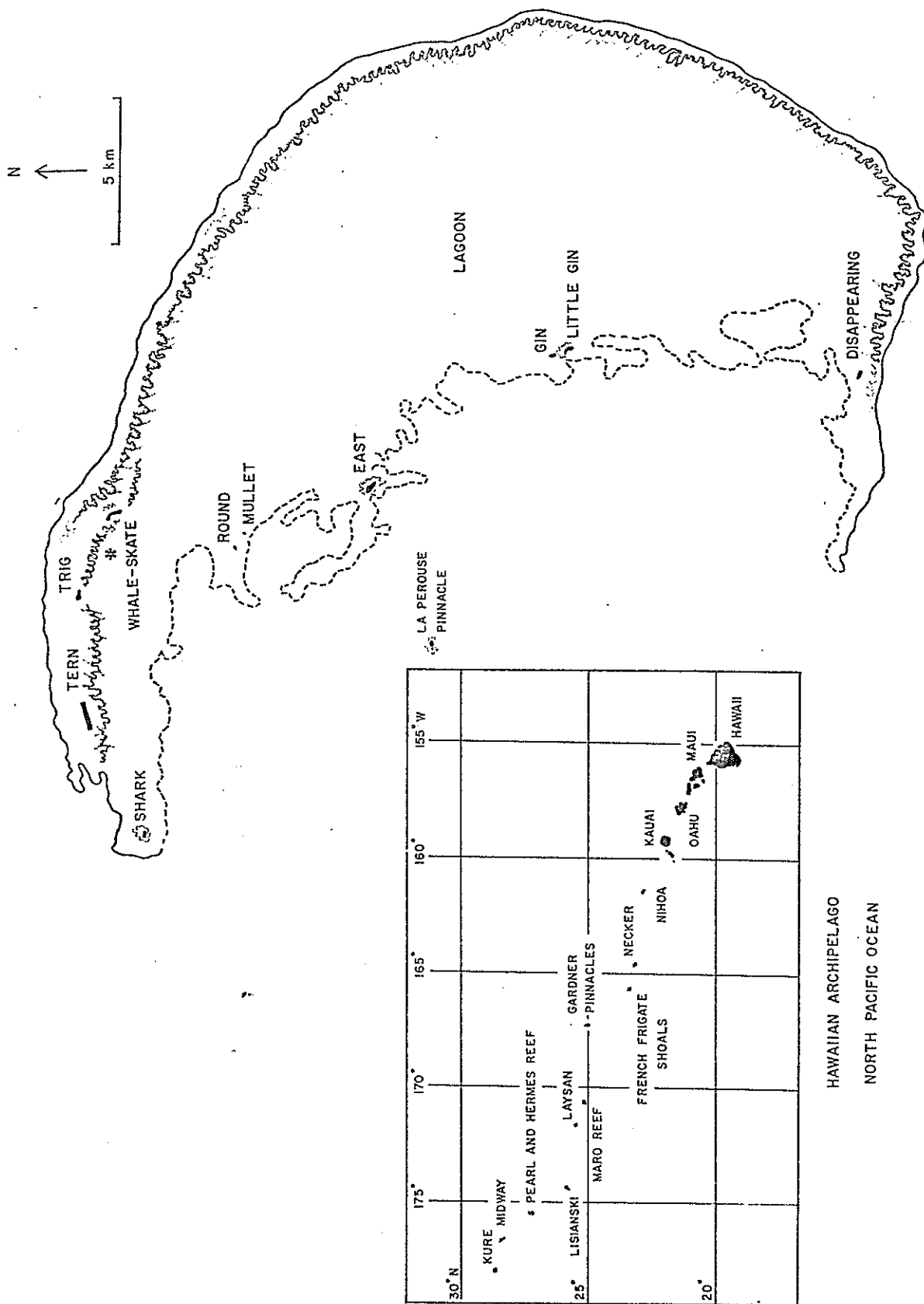
	kg	lbs
Mean weight	8.09	17.8
range	5.53 - 11.65	12.2 - 25.7

Identification: Each turtle was double tagged with Monel alloy size 681 tags produced by the National Band and Tag Company, Newport, Kentucky. In addition, in November 1974 V-shaped notches were cut into the ninth marginal plates on 24 of the turtles. An identifiable antibody was also formed in 21 turtles one week prior to release using a technique developed by Dr. Albert Benedict of the University of Hawaii, Department of Microbiology.

Recoveries:

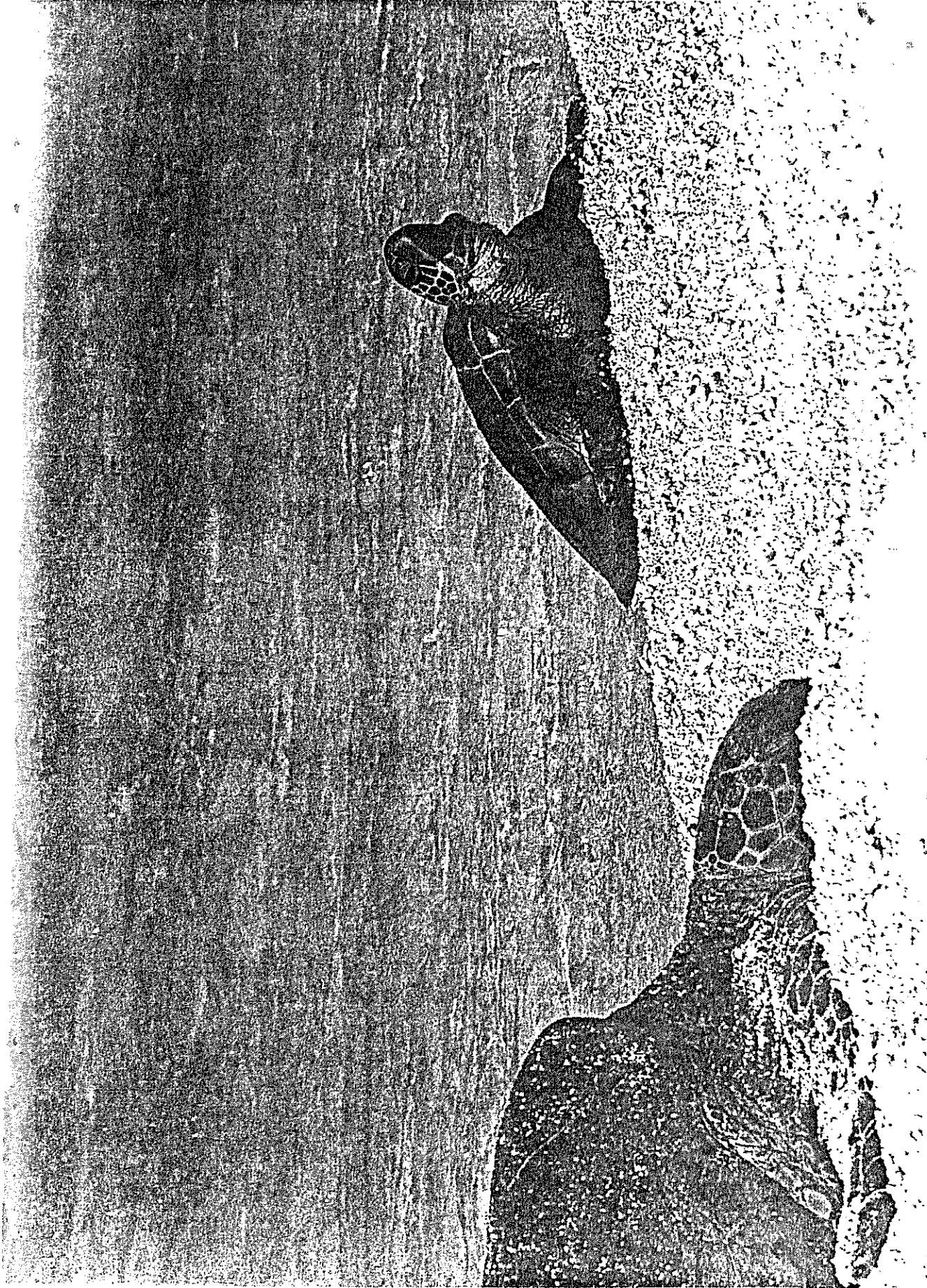
Tag no.	Date	Observations
1410	18 May 1975	basking by a monk seal on the north shore of Trig Island at 1100 h
	20 May	descending south shore of Tern Island at 1000 h
1431	20 May 1975	basking by adult turtles on the north shore of Trig Island at 1300 h
1401	20 May 1975	swimming in shallow water along the west shore of Whale-Skate Island
1442	19 May 1975	residing with tag no. 1414 at the northwest corner of Tern Island in a three-sided iron seawall enclosure
"	June 1975	report from Coast Guard personnel that three turtles reside at Tern Island seawall enclosure; two have been caught with hook and line, but released generally unharmed
"	5 August 1975	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 18" x 14 1/8" curved LxW - 19" x 16"
"	4 December 1975	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 19 3/8" x 15 1/4" curved LxW - 20 1/8" x 17 1/2" 37 lbs

Tag no.	Date	Observations
1442	18 January 1976	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 19 3/4" x 15 1/2" curved LxW - 20 3/4" x 18" 37 lbs
"	18 April 1976 8 months growth data resulted in 0.281" SL per month	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 20 1/4" x 16 curved LxW - 21 3/8" x 18 1/2"
S. 1414	19 May 1975	residing with tag no. 1442 at the northwest corner of Tern Island in a three-sided iron seawall enclosure
"	June 1975	report from Coast Guard personnel that three turtles reside at Tern Island seawall enclosure; two have been caught with hook and line, but released generally unharmed
"	5 August 1975	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 16" x 14" curved LxW - 17" x 15 7/8"
"	18 January 1976	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 17" x 14 1/2" curved LxW - 18" x 16 3/4"
"	17 April 1976	captured at Tern Island seawall enclosure with a scoop net: straight LxW - 17 1/4" x 14 7/8" curved LxW - 18 1/2" x 17 1/4"
"	13 December 1976 (19 months after release) 16 months growth data resulted in 0.109" SL per month	found dead on Tern Island beach; cause of death not determined straight LxW - 17 3/4" x 15 3/8" curved LxW - 19 1/2" x 18"



FRENCH FRIGATE SHOALS

Figure 1. Asterisk indicates the area near Whale-Skate and Trig Islands where the 26 captive-reared green turtles were returned to the wild on 16 May 1975.



Turtle 1431 basking by adult turtles on the north shore of Trig Island, French Frigate Shoals (20 May 1975)