

APPENDIX A

Individual Nest Data, 1990

Year: 1990

Island: TERN, FFS

Nest #	Nest Date/Time	Location EW NS	Turtle Tag #s	Paint #	# False PITS	Hatch date / Time	# in incubation Days	Stake Position	Comments
(1)	05-10-90	688 45	?		0	7/13 21:00	65	4ft inland	same turtle?
(2)	05-24-90	740 50	6809L 6870R		5	8/04	72	4ft inland	For Sure
(3)	05-25-90	116 20	?		3	8/01	68	4ft inland	same turtle
(4)	05-26-90	391 34	?		1	8/20	86	4ft inland	shell
(5)	05-28-90	Shell Beach 834 40	W527L34 W528R34 W529R W526L		0	8/07	71	4ft inland	For Sure
(6)	05-29-90	722 56	?		2	8/09	72	4ft inland	Prob
(7)	05-30-90	499 37	?		2	8/16	77	4ft inland	Prob
(8)	05-31-90	429 37	W522		2	8/16	77	4ft inland	FOR SURE
(9)	06-02-90	822 40	?		0	8/16	77	4ft inland	probably not a turtle
(10)	06-03-90	682 65	?		2	8/16	77	4ft inland	prob
(11)	06-04-90	050 10	W574R		2	8/16	77	4ft inland	look along whole
(12)	06-05-90	432 40	W574R		?	8/25	80	4' INLAND	FOR SURE
(13)	06-06-90	350 34	W577L W578R		2	9/06	91	"	confirmed nest
(14)	06-07-90	820 56	W577L W578R		2	8/11	65	"	PROBABLY
(15)	06-08-90	640 61	W577L W578R		AT LEAST 5	08-08-90	62	"	CONFIRMED NEST
(16)	06-07-90	518 44	W577L W578R		5	8/26	79	"	PROBABLY
(17)	06-07-90	495 36	W577L W578R		5	8/15	67	"	PROBABLY
(18)	06-08-90	58 36	W577L W578R		5	8/15	67	"	PROBABLY
(19)	06-09-90	170 52	W577L W578R		5	8/15	67	"	PROBABLY
(20)	06-10-90	294 40	W583L W582R		5	8/27	78	"	SEALS + body contents everywhere
(21)	06-10-90	432 40	W583L W582R		5	8/27	78	"	FOR SURE

GREEN SEA TURTLE

NEST FORM

Year: 1990

Island: TERN

Nest #	Nest/Time DATE	Location EW NS	Turtle Tag #s	Paint #	# False PITS	Hatch date / Time	# Incubation Days	Stake Position	Comments
(21)	6-11-90	185 50	8107L		> 3	8/16		4' INLAND	FOR SURE
(22)	6-15-90	743 52		C-86		8/17	63	"	FOR SURE 0830 AM
23	6-16-90	297 40							Probably
(24)	6-17-90	450 32				8/23	67	"	PROB
(25)	6-18-90	600 56				8/25	68	"	NO stake
(26)	6-19-90	435 46				9/04	77	"	PROB
(27)	6-18-90	between small herabs in bakkef				8/17	62	"	I'M SORRY I MISSED THIS - I THINK IT'S A NEST LAID W/IN THE LAST 3 HOURS
28	6-20-90	002 52	8-C	[Nest destroyed by incubator]				3' EAST	FOR SURE
(28)	6-21-90	666 60	6271R			8/25	65	4' MAUKA	STAKED TOWARD OCEAN PRETTY DANG SURE FOR SURE
(29)	6-22-90	737 55		C-78		8/28	67	4' MAUKA	STAKE PLACE AS 1A
30	6-22-90	170 52							FOR SURE (See 5-26-90 NESTING for similarity)
(31)	6-23-90	Crab beach	W56734 W56834	9-C	1	9/03	72	"	PROB
(32)	6-23-90	82 40				8/29	67	"	MOST DEF
(33)	6-24-90	402 38				9/14	82	"	PROB
(34)	6-25-90	860 28				8/29	65	"	PROB
(35)	6-27-90	450 40				NO Hatch		"	PROB
(36)	6-28-90	Crab beach				9/09	72	"	PROB
(37)	6-30-90	734 56				9/09	71	"	PROB
(38)	7-2-90	168 56				9/13	72		PROB
(39)	7-3-90	806 56				9/13	72		750% SURE
(40)	7-3-90	750 58				9/19	76		PROB
41	7-3-90	240 60							
(41)	7-4-90	715 59	W588R W589L	13-C		9/04	62		confirmed
(42)	7-4-90	786 49	W590L W591R			9/02	60		CONFIRMED

Island: TERNYear: 1990

Nest #	NEST DATE/Time	Location EW NS	Turtle Tag #s	PAINT #	# False PITS	Hatch date/Time	#Incuba-Tion Days	Stake Position	Comments
(43)	7-5-90	754 60		C-78		9/18	75	4' MAURA	MOST DEF
(44)	7-5-90	660 64				9/04	61	"	"
(M9)	7-5-90	460 32				8/31	57	did not stake	long crawls, than thru pit (?)
(M10)	7-5-90	156 46				9/02	59	"	50-50
(M11)	7-6-90	530 48	187A			9/29	54	did not stake	looks too shallow but...
(46)	7-8-90	162 50	187A	15-C		9/09	62	4' inland	PATTY CAKE
(48)	7-8-90	860 36				9/04	57	"	back filling she was looking at...
(47)	7-9-90	860 36		110-C		9/04	57	"	bug up # 27 !!
(49)	7-11-90	660 68				9/14	61	"	looked like burrow
(48)	7-15-90	148 52				9/14	61	"	lots of crawl
(50)	7-15-90	294 43				9/14	61	"	POSSIBLE
(M13)	7-16-90	802 52				9/24	70	"	most likely
(52)	7-16-90	730 59				9/24	70	"	prob
(M14)	7-17-90	800 61		14-C		9/12	57	did not stake	prob. Karbe
(51)	7-17-90	800 61				9/12	57	"	no hind flipper I don't think she nested
(M15)	7-17-90	244 52	W589L W588R			9/12	57	did not stake	most def
(56)	7-18-90	496 32				9/16	60	4' inland	
(53)	7-18-90	718 60				9/23	67	"	15' OF BACKFILL! N ^W E ^{SE}
(57)	7-18-90	794 58				9/17	60	"	confirmed
(59)	7-19-90	740 58	W581L23 W597R	19-C		9/17	60		confirmed

Year: 1990

Island: TERN

Nest #	Nest DATE / Time	Location EW NS	Turtle Tag #s	PAINT #	# False PITS	Hatch / Time date	# Inhab-Tion Days	Stake Position	Comments
58	7-19-90	011 60						inland	no a little shallows - possibly
(60)	7-19-90	708 60				9/23	66	"	no a little shallows - possibly
61	7-19-90	200 10			at 100				these are either eggs or
(62)	7-20-90	732 58				9/21	63	"	very shallow not deep
MLL	7-20-90	866 16		14-C				Stake	Wanna measure @ 0130 hrs
(63)	7-21-90	862 28		NO-C		9/17	58	4' INLAND	
(64)	7-21-90	786 60				9/25	66	"	light to looks like def nest
65	7-21-90	112 20							very shallow
(M17)	7-21-90	crack beach e of 31				9/16	57	dud not stake	looks shallow...
(66)	7-22-90	450 26		8-C	2	9/16	56	4' INLAND	Probably
(M18)	7-24-90	0 on 8 band		9 C		9/20	58	no stake	Maybe west of nest 31
67	7-26-90	552 55							very shallow
(68)	7-26-90	466 41			3	19/30		4' INLAND	Long backfill sinker Backfill area
(69)	7-28-90	826 40			0	No Hatch		4' INLAND	
(70)	7-28-90	763 55		20 C	1	10/02	66	4' INLAND	
(71)	7-28-90	339 38			0	10/01	65	4' INLAND	Large backfill AREA
72	7-29-90	810 59							very shallow
(73)	7-29-90	517 47		5 C		9/30	63	4' INLAND	
(74)	7-29-90	56 39	W953R W951R			10/10	73	4' INLAND	
(75)	8-01-90	837 40				9/28	58	4' INLAND	
(76)	8-01-90	491 37				10/08		4' INLAND	
(77)	8-02-90	801 57				10/08	67	5' INLAND	marked 1/3 same stake as
(78)	8-03-90	837 41				10/01	59	4' INLAND	
(79)	8-03-90	391 31		14-C		10/01	59	4' INLAND	For sure Nest Eggs
80	8-03-90	460 41							very shallow

GREEN SEA TURTLE

NEST FORM

Island: TERN

Year: _____

Nest #	Nest Date/Time	Location EW NS	Turtle Tag #s	Paint #	# False PITS	Hatch date/Time	# Incubation Days	Stake Position	Comments
(81)	8-04-90	419 34		C-141		10/09	67	4 ft inland	
82	8-05-90	512 35		100?				4 ft inland	
(83)	8-07-90	Shell beach		9-C?		10/07	61	4 ft inland	to west of 26
(84)	8-11-90	340 34		7-C	*	No Hatch		4 ft inland	
(85)	8-13-90	184 44				10/14	62	" "	
86	8-14-90	190 56						" "	
(87)	8-13-90	168 36		7-C		10/09	57	" "	
(88)	8-15-90	749 52				10/20	66	" "	
(89)	8-16-90	834 40			1	10/12	57	" "	
(90)	8-18-90	465 34			4	10/15	58	" "	
91	8-19-90	Shell beach		7-C				no stake	near the nest
(91)	8-19-90	857 27		9-C		10/18	60	4 ft inland	
(92)	8-25-90	410 23				No Hatch		4 ft inland	
(93)	8-29-90	863 41			2	11/07	70	4 ft inland	
(94)	8-29-90	607 58		10-C	3	10/30	62	4 ft inland	
95	8-30-90	100 36						no stake	very sandy shell but turtle
96	8-31-90	70 40						no stake	# 20 - Probably nest
(M21)	9-08-90	574 56				No Hatch		4 ft inland	
M22	9-11-90	560 56						no stake	
(96)	9-13-90	343 33			3	11/22	70	" "	
97	9-16-90	702 30						no stake	
(98)	9-18-90	606 62			1	11/27	70	" "	
(M23)	9-22-90	626 59				9/23	58	No stake	Maybe Nest
(M24)	9-25-90	622 62			0	12/17	83	4 ft inland	Before mat nest?

photo* correct

HATCHING SUCCESS FORM

Island: TERN

This = These added together

Combine These Year: 1990

Nest #	Hatch/Time date	pre-hatch PIT	Total Eggs	"Alive" Hatched	Alive		Dead, but developed		Bad Eggs	Comments	
					Escaped Unassisted	Trapped OK	Full	Yolk			
M1	7-13-90 21:00	?	95	92	81	11			3	lots of coral rubble	
3	8-1-90 AFTER 2300	YES	92	58	38	20	1	1	7	Excavated 8/4	
2	8-04-90	YES	98	97	77	20	1	1	3	" 8/9 one egg smushed w/ female urine	
5	8-07-90	?	68	64	64	-				Shallow nest GRAVED 8/12	
17	8-8-90	YES	108	97	78	19	0	0	1	3" DIAMETER PC OF CORAL TRAPPED 8 TURTLES AND 15 EGGS	
6	8-9-90	NO	102	98	88	10	0	0	3	Deep nest!!	
19	8-15-90	YES 8-15-90	105	96	69	27	1	4	4		
8	8-16-90	YES 8-16-90	95	73	70	3	1	4	17	Deep! Shoveler	
16	8-11-90	YES	57	39	38	1	1	1	9	Shallow Nest - Trapped 4 into EXCAV. 8/17 - another egg shell TRAPPED ONES DEEP UNDER LOW CORAL DEBRIS	
26	8-17-90	YES	87	85	73	12	2	4	3	Deep nest - Temperature very deep > 4'	
22	8-17-90	YES	94	40	26	14	19	28	2		
4	8-20-90	-	82	80	59	21			15		
12	8-25-90	YES	108	90	88	2	3		3		
24	8-23-90	YES	108	98	98		5	2	3		
18	8-26-90	YES	69	45	43	2	2	3	14	Shallow Nest	
176	8-25-90	?	81	34	32	2	1	3	37		
URB 3001 XI	8-24-90	?	79	78	59	2	1	1	1	BY 90 ON 11/17 AFTER INITIAL HATCH BECAUSE NEST WAS TRAPPED TO THE CORAL BELOW CORAL DEBRIS	
28	8-25-90	?	92	55	55		1		36		
20	8-27-90	?	85	68	66	2	2	1	13		
29	8-26-90	?	121	114	105	9		3	3		
34	8-29-90	?	63	35	28	7		1	27	small nest	
32	8-29-90	?	46	25	24	1		1	19		
21	?	?	103	30	30		2	20	6		
M11	8-29-90		99	87	84	3	0	2	2	3	shallow nest

Island: TERN

Year: 1990

Nest #	Hatch date/Time	pre-hatch PIT	Total Eggs	"Alive" Hatched	Alive		Dead but part. developed		Bad Eggs Invert Rotten	Comments
					Escaped UNASSISTED	TRAPPED OK Yolk	Full	1/4		
32 XR	9-02-90	?	100	86	70	16	2		12	Trapping under large clunker OF COCAL
44	9-04-90	yes	110	84	37	47	3	9	2	
25	9-04-90	yes	111	80	77	3	4	7	20	ON CRAB BEACH dug up pre-hatch PIT observed
31	9-03-90	yes	72	63	63			2	7	
109	8-31-90	?	90	89	87	2			1	
41	9-05-90	yes	90	87	84	3	1	1	2	
43	9-06-90	yes	90	87	84	3	1		2	
42	9-02-90	?	91	86	61	25	1		4	
36	9-08-90	yes	77	74	74		1	2	1	ON CRAB BEACH dug up when pre-hatch pit appeared
110	9-02-90	?	90	90	82	8				
46	9-08-90	yes	106	76	75	1		1	6	
47	9-04-90	yes	80	50	50		4		32	
48	9-05-90	yes	79	52	29	1	3	2	20	
44	9-03-90	yes	79	52	29		3	2	20	
41	9-04-90	?	77	77	74	3				
14	9-06-90	yes	97	78	110	2	9	5	4	2
37	9-09-90	yes	106	104	104		1		1	
115	9-12-90		79	76	76	0			2	
39	9-13-90		80	82	82	0			0	
33	9-14-90	yes	85	65	61	4	4	10	6	
50	9-14-90		112	80	58	22	19	6	7	8 hatch in shell (dead Full)
59	9-15-90		103	93	73	20	10			on top of old nest
56	9-16-90	?	104	90	84	6	3	1	3	
66	9-16-90	?	49	49	36	13	0	0	0	
117	9-16-90	?	95	73	55	18	2	3	17	

Year: 1990

Island: TERN

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Nest #	Hatch/Time date	pre-hatch PIT	Total Eggs	"Alive" Hatched	Alive		Dead but Part. developed		Bad Eggs W/RT Rotten	Comments
					Escaped UNASSISTED	Trapped OK	Full	1/4		
M18	9/20/90	Yes	81	67	67				14	Dug up when pre-hatched pit seen - because of seaweed
59	9/17/90	Yes	106	103	91	12		1	2	
63	9/17/90	Yes	113	112	109	3			1	
43	9/18/90	Yes	121	119	118	1		1	6	
40	9/17/90	Yes	119	110	106	2	1		6	Did not dig up on 9/21 because of seals.
62	9/21/90	?	100	98	84	14			2	Nest located North of Nest 40 - No straggle past Nest 62
60	9/23/90	Yes	109	101	93	8			2	
M23	9/23/90		70	57	57	0	3		10	
53	9/23/90	Yes	114	75	65	10	2	6	4	
52	9/24/90	Yes	106	100	100	0	1		5	Dug up on 9/26 b/c seals present on 9/24
64	9/25/90	Yes	90	65	65	0	3	3	14	
75	9/28/90	Yes	102	78	77	1			24	
78	10/01/90	?	112	105	97	8	2	2	3	Excavated on 10/4/90
X7	09/30/90	Yes	89	80	55	25	9		0	
79	10/01/90	Yes	98	94	89	5	2	2		Cave 10
71	10/01/90	Yes	105	64	55	9	15	17	7	Cave 10 - DEEP
73	09/30/90	Yes	131	109	105	4	0	0	0	Excav on 10/15 channels over 3ft!
70	10/02/90	Yes	72	39	39	0	2	1	30	Excav on 10/7; Nest on small beach
83	10/07/90	Yes	100	68	68	0	1	1	30	
X8	10/16/90	Yes	104	80	82	7	1	4	10	
77	10/06/90	Yes	76	69	67	2	1	2	3	
61	10/09/90	?	69	70	60	10	1	1	10	Tapped under coral chunks
87	10/09/90	?	107	93	66	27	4	3	7	Excavated 10/15
74	10/10/90	?	74	63	63	0	4	3	4	
89	10/12/90	?	138	129	128	1			9	

cens

369x28

426x29

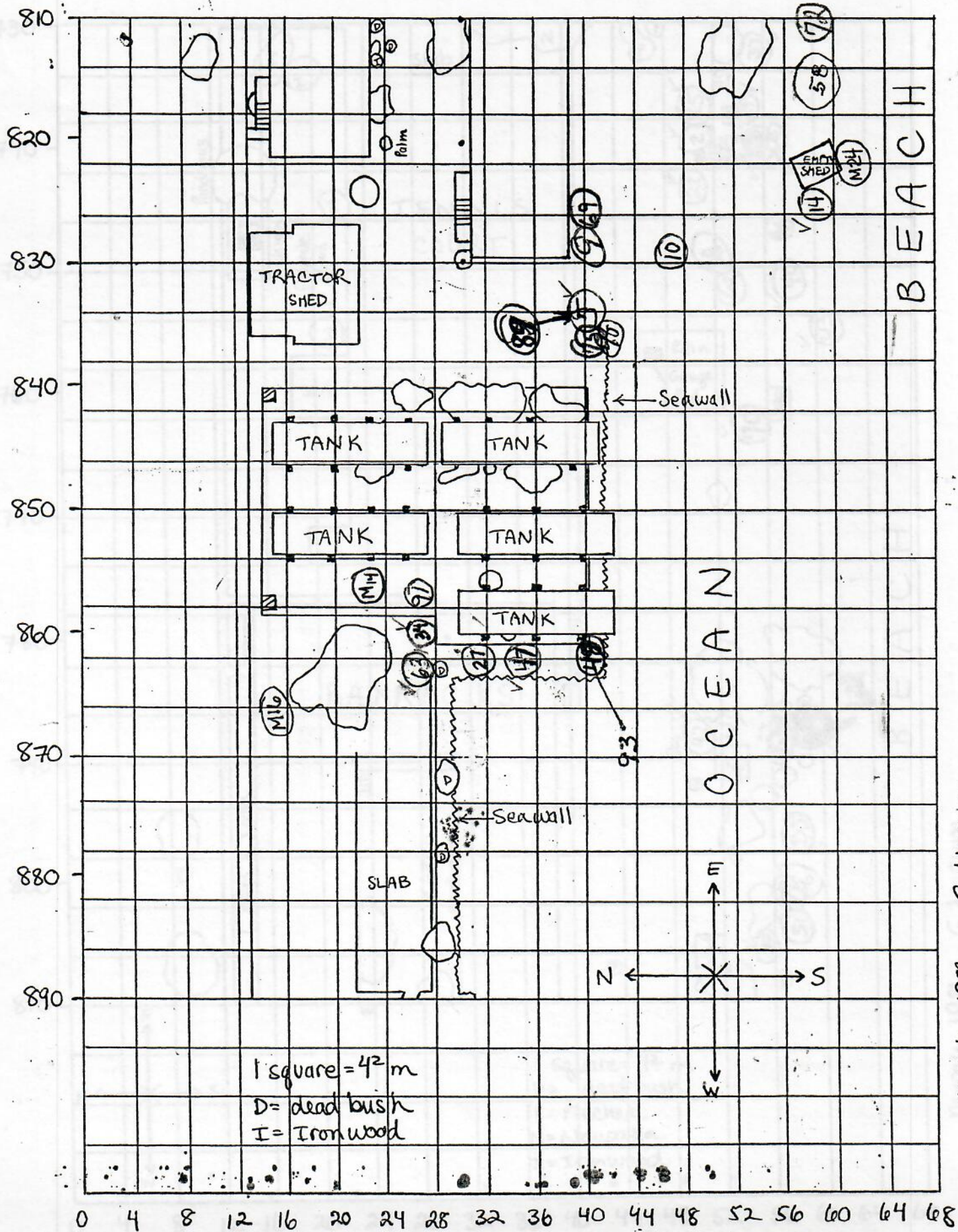
HATCHING SUCCESS FORM

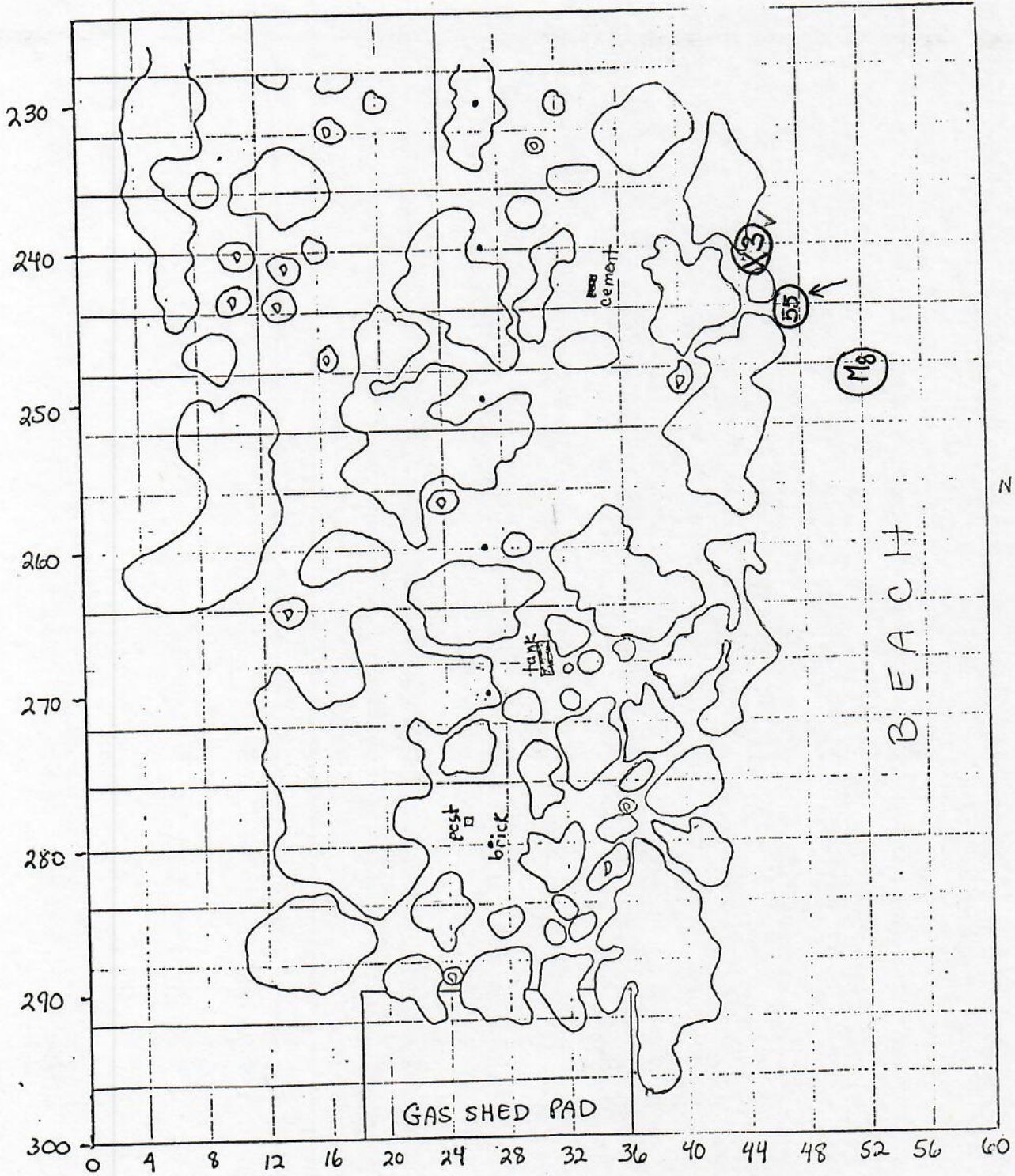
Year: 1990

Island: TERN

Nest #	Hatch date/Time	Pre-hatch pit	Total Eggs	"Alive" Hatched	Alive		Dead, but part. developed			Bad Eggs	Comments
					Escaped unassisted	Trapped OK	Full	3/4	1/2		
85	10-14-90	?	75	72	0	0		1		2	Excavated on 10/19
90	10-15-90	Yes	96	86	19	0	4	1		5	Hatch missed dug up 10/20/90
76	Missed	?	93	71	2	0	2	7	2	11	
91	10-18-90	?	83	26	2	0	1	2		54	
86	10-20-90	Yes	45	42	2	0	2	1		0	
94	10-30-90	?	63	61	0	0				2	dug up 11-8-90
38	?	?	111	74	0	0		11		26	No Hatch - No development
35	No Hatch	—	33							14	
93	11-07-90	Yes	80	49	1	0	2	9	6	1	
68	Missed	—	90	88			1			55	No development at all
69	No Hatch	—	55							55	Very shallow air
84	No Hatch	—	98							98	very deep - wet nest No development at all
92	No Hatch	—	109							109	No development at all
96	11-22-90	—	75	40						35	No development at all
M21	No Hatch	—	66							66	No Hatch
98	11-27-90	—	78	69	1	0	1	4	1	3	
M24	12-17-90/19:30 hrs	Yes	83	78	1	0	3	2		1	

SECTION



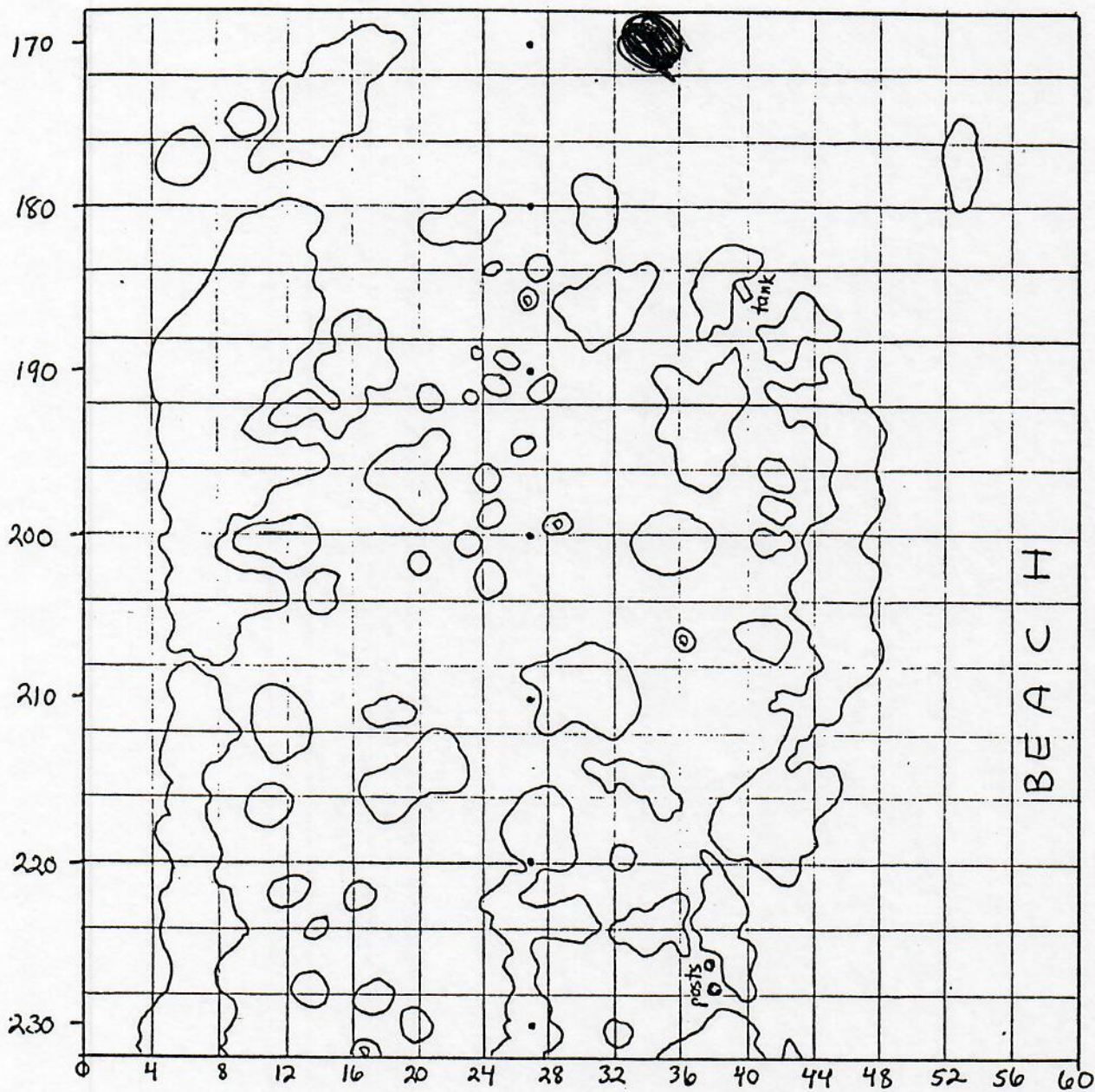


SECTOR A
60 meters long

1 square = $4 \frac{1}{2}$ meters
D = dead bush

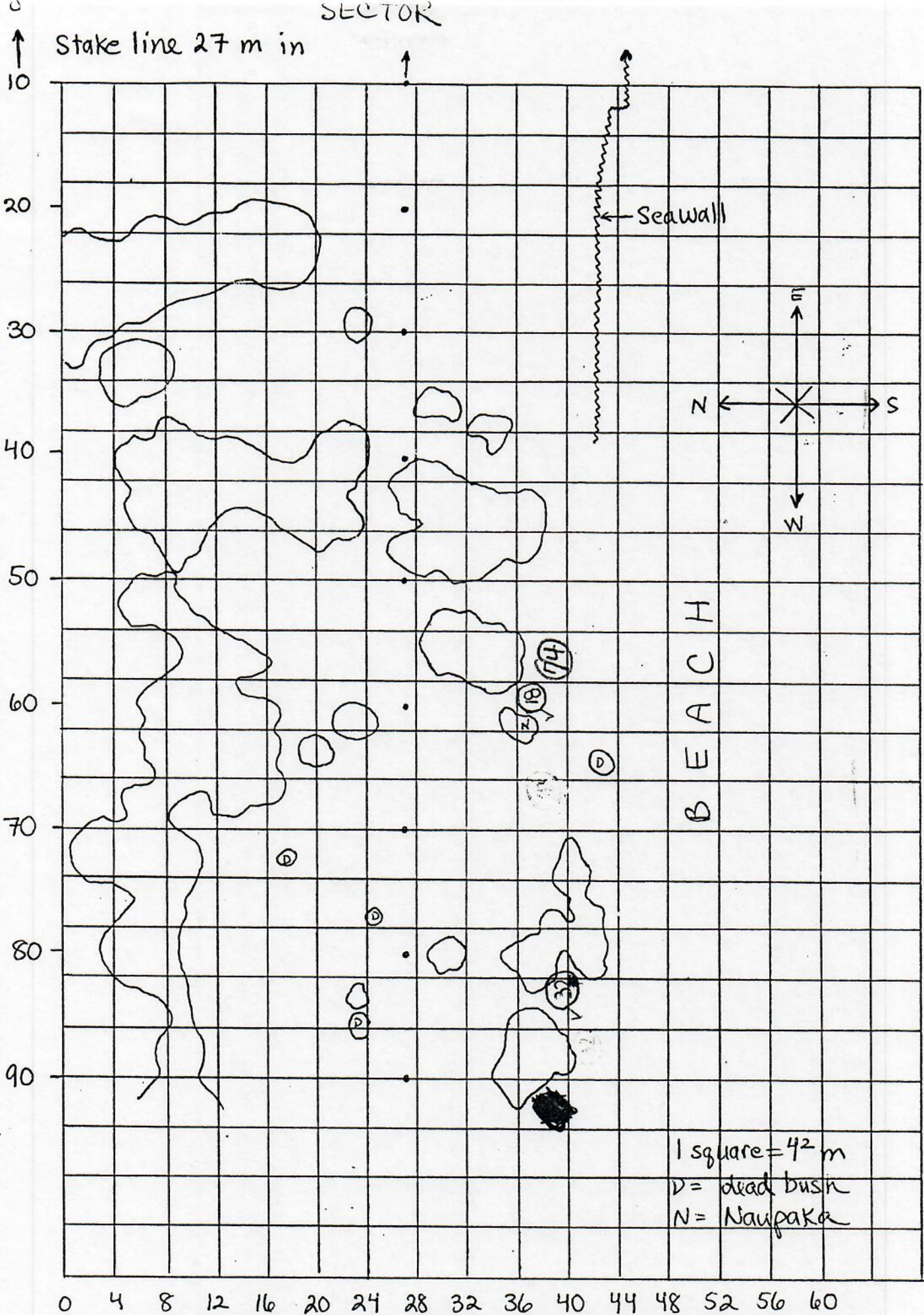
1990

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SECTOR B
60 meters long

1 square = 2² meters
D = dead bush



APPENDIX C

Tern Island Nesting Female Identifications

Table 1C - 1990

Table 2C - 1989/86

Table 1C. Female green turtle identified on Tern Island, French Frigate Shoals during the 1990 nesting season. Tag numbers followed by a R or L denote tags in the primary tag site on the right or left front flipper. A R or L followed by a parenthesis denotes a tag placed in a secondary tag site; the numbers inside the parenthesis relate to the location of the tag).

Temporary ID	Tag 1	Tag 2	Tag 3	Tag 4
15-C	6271R	W593L		
8-C	6870R	6869L		
110-C	8106R	8107L		
6-C	9740R	9742L		
17-C	W572R(34)	9745L		
7-C	10370R(23)	10364L(23)	W570R	W571L
18-C	W562R	W569L		
3-C	W563R	W564L		
1-C	W565R	W566L		
9-C	W568R(34)	W567L(34)		
H	W573R			
4-C	W574R(23)	W576L		
K	W578R	W577L		
2-C		W580L		
M	W582R	W583L		
10-C	W584R	W585L		
11-C	W586R	W587L		
13-C	W588R	W589L		
14-C	W591R	W590L		
21-C	W595R	W596L		
19-C	W597R	W581L(23)		
16-C	W599R(12)	W598L		
20-C	W952R	W951L		
23-C	W953R	W954L		
221-C	W957R	W956L(34)		
C-7	East Island			
C-60	East Island			
C-78	East Island			

Table 2C. Green turtles identified on Tern Island, French Frigate Shoals during the 1986-89 nesting seasons. Tag numbers followed by a R or L denote tags in the primary tag site on the right or left flipper. A R or L followed by a parenthesis denotes a tag placed in a secondary tag site; the numbers inside the parenthesis relate to the location of the tag.

1986 Confirmed Nesters

3268R
9896?

1987 Confirmed Nesters

3354L & 3358R	6866R & 6865L
9740R & 9742L	9741R & 9745L
	9747R & 9746L
9750R & 9749L	8106R & 8107L
8216R	

1988 Confirmed Nesters

3120R & 3119L	3268R & 10361L
6041R & 9355L	6374R & 6373L
6867R & 6868L	6870R & 6869L
6872R & 6871L	9771R & 9770L
10261R & 10259L & 10260R(3-4)	10266R(3-4) & 10259L
10267R & 10264L & 10263R(1-2)	10268R & 10354L
10269R & 6875L(3-4)	10273R & 10272L
10303R & 10302L	10350R
10351R & 10274L	10353R & 10352L
10355R & 10356L	10360R & 10359L(3-4)
	10369R & 10368L
10370R & 10364L	10398R & 10397L

1988 Turtles observed digging on Tern Island but without a confirmed nest

6179R	6355R & 6354L
10231R & 10230L	10270R & 10271L
10330R & 10335L	10349R
10358R & 10357L	10374R
10415R(3-4) & 10416L	10530R & 10529L(3-4)

Table 2C. (continued)

1989 An effort was not made to verify nesting of turtles ashore on Tern Island; the following list is of females ashore digging.

3358R & 3354L	W207R & W206L
3396R & 3397L & W408R(2-3)	W208L
5365R & W18L	W212R & W211L
6220R & 6230R(3-4)	W214R(3-4) & W213L(3-4)
6667R & 6651L	W216R & W215L
8209R	W218R & W217L
8234R & W21L	W219R
9656R(3-4) & 9655L(2-3)	W221R & W220L
9660R & 9691L	W224R & W409L & W418R(3-4)
9732R	*W401R & W225L
9750R & 9749L	W403R & W402L
W12R & W412L & W413R	W405R & W404L
W210R & W14L	W407R & W406L
W20R & W19L	W411R & W410L
W23R & W22L	W414R & W415L
W24R & W25L	W417R & W416L
*W46R & W44L	W420R & W419L
*W121R & W120L	W421R & W422L
*W287R & W135L	W439R & W438L
*W315R & W137L	
*W198R & W197L	
W202R & W201L	
W205R & W204L & 6036L(5) & 6035R(5)	

*These turtles were also identified on East Island during the 1989 nesting season.