Activity: C. Daily Beach Surveys: Kerehikapo

Data Sheet: "Kerehikapo - Nest Predation Survey"

When to conduct the activity:

In the morning before 12:00 noon, <u>after</u> completing the "Daily Turtle Track Counts."

Where to conduct the activity:

On the main turtle nesting beach at Kerehikapo Island on sectors 1 to 24.

How to conduct the activity:

After walking the length of the beach (below the erosion bank) to conduct the "Daily Turtle Track Count", move <u>inside</u> the <u>forest</u> <u>above</u> the <u>erosion</u> <u>bank</u> and walk the entire length of the beach until you return to sector 1. Look for signs of Nest Predation, and record the data described below.

Instructions on how to enter data on data sheet:

Data from more than one day can be recorded on each sheet.

Information to Label the Data Sheet:

Year-Month: Record the year and the month when data are collected. (In the example, the beach surveys were conducted in July 2002.)

Page: Number each page in order, starting with "1" at the <u>beginning</u> of each month.

<u>Entered</u>: The circle "O" will be checked <u>after</u> the data have been entered into the computer.

General Information to Describe the Survey:

For each survey fill out the following information on the first line.

<u>Date</u>: Record the <u>date</u> of the <u>morning</u> that the survey is conducted. (In the example, surveys were conducted on '16 July', '18 July', '19 July', and '20 July 2002'.)

<u>Time</u>: Record the <u>time of day</u> when the survey is conducted. Be sure to indicate either "am" or "pm" (ideally, the survey will be conducted in the "am".) (In the examples, this was '10:00 am', '11:15 am', '9:15 am', and '10:00 am'.)

Recorder(s): Record the name(s) of the person(s) conducting the survey. (In the example, the survey was conducted by 'Chris' and 'Dicky'.)

Which Sectors Surveyed Today?: Record all of the beach sectors that were surveyed. In most cases this will be the entire beach. If part of the beach is not surveyed because it is too rocky for turtle nesting, you will have made a note of this on the "Kerehikapo Daily Turtle Track Counts" data sheets. (In the examples, the entire beach, Sectors 1-24, was surveyed, but the beach on sectors 23 to 24 was too eroded for nesting to occur.)

<u>Information to Describe Nest Predation</u>: Fill out one line for <u>each case</u> of nest predation observed.

Nest ID (Number or Description): Record the "Nest Number" or "a description" of whatever nest suffered nest predation.

(In the examples, the following nests suffered nest predation: '72' and '83'.)

Sector: Record the beach sector where each case of nest predation was encountered. (For example, on 16 July 2002, nest predation was recorded in Sector '5' and on 19 July 2002, nest predation was recorded in Sector '2'.)

<u>Turtle Species</u>: Record which species of turtle made the predated nest. You can <u>shorten</u> the name as follows:

- "H": hawksbill turtle (*Eretmochelys imbricata*); or
- "G": green turtle (Chelonia mydas).

(In the examples, only the nests of <u>hawksbills</u> were predated.)

Number of Eggs Broken: Count and record the number of broken eggs found on the surface. After counting them, dig a hole at the rear of the beach and bury the remains of the broken eggs so that they do not confuse future surveys. (In the example, on 16 July there were 31 broken eggs found on the surface of nest 72, and on 18 July there were 40 broken eggs found on the surface of nest 83.)

<u>Predator Animal</u>: Record which animal is likely to have predated the nest. (In the examples, <u>birds</u> and <u>lizards</u> dug up the nests.)

If **NO** Nest **Predation** was recorded:

If no nest predation was recorded, you will <u>use</u> only <u>one line</u> on the data sheet. Put a dash <u>line through</u> each of the following boxes:

Nest ID (Number or Description):
Sector:
Turtle Species:
Number of Eggs Broken:
Predator Animal:
(In the examples, no nest predation was recorded on 18 July and 20 July.)

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Year-Month	Page

Kerehikapo -- Nest Predation Survey

		Nest ID		Turtle	Number of		Which Sectors
Time	Recorder(s)	(Number or Description)	Sector			Predator Animal	
		-					
				•	-		
						·	
				·	7		
·							
			· ·				
			,				
	Time	Time Recorder(s)	Time Recorder(s) (Number or Description)	Time Recorder(s) (Number or Description) Sector	Time Recorder(s) (Number or Description) Sector Species	Time Recorder(s) (Number or Description) Sector Species Eggs Broken Interpretation Int	Time Recorder(s) (Number or Description) Sector Species Eggs Broken Predator Animal

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Year-Month 2002 - 07	Page 3

Kerehikapo -- Nest Predation Survey

STATE STATE OF THE							·	Which
Date	Time	Recorder(s)	Nest ID (Number or Description)	Sector	Turtle Species	Number of Eggs Broken	Predator Animal	Sectors Surveyed Today?
16 July	10:00 AM	DICKY DICKY	72	5	Н	31	BIRDS	1-24
17 Inly	No	BEACH	PATROL					Nons
18 THLY	11:15 AM	CHRIS + DICKY						1-24
19 JULY	09:15 AM	CHRIS+	83	2	Н	40	LIZARD	1-24
20 JULY	10:00 AM	CHAIS +						1-24
					-			
				! 				
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Activity: D. Weekly Beach Surveys: Other Islands

<u>Data Sheet: "Weekly Beach Surveys: Sikopo, Big Maleivona, & Small Maleivona"</u>

Why conduct the activity:

To determine how much <u>turtle</u> <u>nesting</u> <u>activity</u> there is on the more distant islands in the AMCA.

When to conduct the activity:

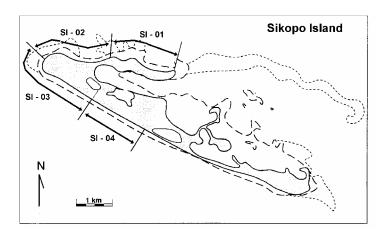
<u>Four times</u> per <u>month</u> at <u>each</u> of the six beach sectors shown below.

Where to conduct the activity:

At each of the following six beach sectors.

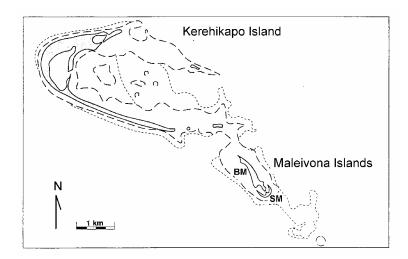
At **Sikopo Island (SI).** See the following map:

- 1. SI 01; 2. SI - 02
- 3. SI 03
- 4. SI 04



At **Big Maleivona (BM)** and **Small Maleivona (SM)**. See the following map:

5. BM
 6. SM



Instructions on how to enter data on data sheet:

Data from more than one day can be recorded on each sheet.

Information to Label the Data Sheet:

Year-Month: Record the year and the month when data are collected. (In the example, the beach surveys were conducted in July 2002.)

<u>Page</u>: Number each page in order, starting with "1" at the <u>beginning</u> of each month.

<u>Entered</u>: The circle "O" will be checked <u>after</u> the data have been entered into the <u>computer</u>.

General Data Collected During each Survey:

For each sector surveyed fill out the following information.

<u>Date</u>: Record the <u>date</u> that the survey is conducted. (In the example, surveys were conducted on '8 July', '10 July', '11 July', and '13 July 2002'.)

<u>Time</u>: Record the <u>time of day</u> when the when the survey is conducted. Be sure to indicate either "am" or "pm". (In the examples, surveys were conducted at '1:00 pm', '2:00 pm', '9:00 am', '1:30 pm', '2:30 pm', and '3:30 pm'.)

Recorder(s): Record the name(s) of the person(s) conducting the survey.

Island: Record at which island the survey was conducted, as follows:

• "**S**" : Sikopo;

• "BM": Big Maleivona

"SM": Small Maleivona

<u>Sector</u>: Record the beach sector that were surveyed. This will be one of the following six sectors (described on the previous page): 1. SI-01; 2. SI-02; 3. SI-03; 4. SI-04; 5. BM; and 6. SM.

<u>Data Collected for Each Species</u>:

The remainder of the data needs to be collected for <u>each</u> of the <u>two</u> species – - Hawksbills and Green Turtles. " $\underline{\mathbf{H}}$ " refers to Hawksbills; and " $\underline{\mathbf{G}}$ " refers to Green Turtles.

<u>Predated Nests</u>: As you walk along the shoreline, count how many nests of <u>each species</u> in the beach sector show signs of having been predated (i.e., by birds or lizards). (For example, in the first survey conducted, '1' Hawksbill nest and '0' Green turtle nests showed signs of predation.)

Species: Refers to the species of turtle, names shortened as follows:

- "H": hawksbill turtle (*Eretmochelys imbricata*);
- "G": green turtle (*Chelonia mydas*).

Record Evidence of Earlier Nesting by Counting Each of the Following for <u>Each Species</u> of Turtle:

Pits Only if the Nesting Pit is still visible, no tracks can be seen;

<u>Pits & Tracks</u> if <u>both</u> the <u>Pit</u> and the <u>Track</u> are can be seen. Assign each nesting emergence to one of the following categories:

- "Successfully Laid (SL)": if the turtle <u>laid</u> eggs;
- "Attempted Crawl (AC)": if the turtle dug a nest, but did not lay eggs.

<u>Crawl (C)</u> if the turtle did <u>not dig</u> before returning to the sea (i.e., there is a <u>track</u> but <u>no</u> pits).

Some Suggestions for Collection of Data in the Field:

Field Data Collection Sheet

Because these data are a bit <u>complicated</u>, as they are being collected in the field, they need to be recorded into a <u>separate field data book</u>, or onto a <u>plastic slate</u>, and later transferred to the permanent data sheet.

As the recorder walks down the beach, he can "tick" each type of nesting emergence or predated nest that he sees. These "ticks" will then be <u>summed</u> at the end of the survey, and the <u>totals</u> transferred to the permanent data sheet.

Use of a waterproof "Rite in the Rain" notebook as a <u>field data book</u> is better than a plastic slate because the <u>original field data</u> can be <u>kept</u> forever in the notebook. Unfortunately, the plastic slate needs to be erased after each use.

(Note: See the example of the raw data in the <u>field data collection sheet</u> for 10 July 2002 on the following page (page 27). As an example, the same data have also been <u>transferred</u> to the sample <u>permanent data sheet</u> shown on page 23.)

Use of Flagging Tape to Mark Old Pits & Tracks

To accurately estimate nesting activity, it is important to <u>count each</u> nesting emergence <u>only once</u>.

For this reason, in the field, <u>each</u> track or pit should be <u>marked</u> with <u>plastic</u> <u>flagging</u> tape when it is recorded. These marked tracks and pits would <u>not</u> be <u>recorded</u> again on later surveys.

When the track or pit is <u>no longer visible</u>, the plastic flagging tape can be <u>removed</u>, and re-used.

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	Year-Month	Page
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Weekly Beach Surveys: Sikopo, Big Maleivona, & Small Maleivona

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							Pits	Pits & -	Tracks	Crawls
Date	Time	Recorder(s)	Island	Sector	Predated Nests	Species	1 1	Successfully Laid (SL)	Attempted Crawls (AC)	(C)
****		· · · · · · · · · · · · · · · · · · ·				Н				
						G				
						Н				
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						G				

Key to codes for Islands & Sectors:

Sikopo (S): SI-01, SI-02, SI-03, SI-04

Big Maleivona (BM)
Small Maleivona (SM)

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Year-Month 20	70-60	Page	3

Weekly Beach Surveys:

Sikopo, Big Maleivona, & Small Maleivona

OMONIS													
							Pits	Pits &	Tracks	Crawls			
Date	Time	Recorder(s)	Leland	Sector	Predated Nests	Species		Successfully Laid (SL)	Attempted Crawls (AC)	(C)			
8	1:00	IP +	S	SI-	ſ	Н	13	5	2	1			
July	PM	VICTOR	J	01	0	G	1	1	1	0			
	2:00		S	SI-	2	Н	8	3	1	0			
V	PM	V	3	02	Ó	G	0	0	0	0			
10 July	9:00	IP+	S	SI-	4	Н	22	8	6	3			
July	AM	MELVIN		3	o	3	/ 3	03	1	G	6		1
11	1:30	PETER+	S	SI-	5	Н	34	15	2	1			
JULY	PM	DANNY	3	04	0	G	1	1	0	0			
13	2:30	VICTOR	ВМ	211	1	Н	5	3	2	1			
JULY	PM	+ DAWNY		ВМ	0	G	0	0	0	0			
	3:30		SM	SM	0	Н	2	1	0	1			
1	PM	-√	214	314	0	G	0	1 .	0	0			
						Н							
						6			1				
						Н							
·						G							

Key to codes for Islands & Sectors:

Sikopo (S): SI-01, SI-02, SI-03, SI-04

Big Maleivona (BM)
Small Maleivona (SM)

	Raw Field Data to	Record	Notebook or on	Plastic		
DATE: 2002 / 1/145: AM RECORDERS: TP + TSLAND S SECTOR: ST-03	Prs own: WT III (22) SL Pirst. WT III (8)		PACONTEO. IIII (4) GREENS	PITS ONLY: WHI 6	AC PITS 4, 1 () TRACKS CRAWLS: ()	Ρκεαργόδο, (Ο (Vessis

Activity: E. Determining Egg Clutch Survival

Data Sheet: "Hatched Nests: Egg Clutch Survival"

Why conduct the activity:

To <u>determine survival</u> of <u>eggs</u> in <u>natural</u> nests for which the <u>number</u> of eggs was counted at the time eggs were laid.

When to conduct the activity:

Approximately <u>70 days after</u> the eggs were laid.

Where to conduct the activity:

On any beaches where eggs were <u>counted</u> at the time they were laid. Clutch survival data is most valuable when determined for natural nests.

How to conduct the activity:

Approximately 70 days after the eggs were laid, carefully <u>dig up</u> the nest and <u>remove</u> all the remaining <u>contents</u> of the nest. <u>Separate</u> the nest contents into the categories described on the following pages.

Instructions on how to enter data on data sheet:

Data from five (5) different nests can be recorded on each data sheet.

<u>Information to Label the Data Sheet:</u>

Year-Month: Record the year and the month when data are collected. (In the example, the egg clutches were dug up in July 2002.)

<u>Page</u>: Number each page in order, starting with "1" at the <u>beginning</u> of each <u>month</u>.

<u>Entered</u>: The circle "O" will be checked <u>after</u> the data have been entered into the <u>computer</u>.

$\underline{\textbf{Background}} \ \underline{\textbf{Information}} \ \underline{\textbf{on}} \ \underline{\textbf{the}} \ \underline{\textbf{Location}} \ \underline{\textbf{of}} \ \underline{\textbf{Each}} \ \underline{\textbf{Egg}} \ \underline{\textbf{Clutch}} :$

For each egg clutch, fill out the following information.

<u>Island Group or Province</u>: For all data gathered within the AMCA, record "AMCA" in the space. (In the example, "AMCA" indicates that the data were gathered in the Arnavon Islands.)

<u>Island or Beach</u>: In the AMCA record one of the following:

- "K": Kerehikapo Island;
- "SI": Sikopo Island;
- "BM": Big Maleivona Island;
- "SM": Small Maleivona Island.

Beach Sector: Record the beach sector where the egg clutch is situated. This will be one of the following:

- At Kerehikapo Island: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, etc. ... 24;
- At Sikopo Island: SI-01; SI-02; SI-03; or SI-04;
- At Big Maleivona Island: BM;
- At Small Maleivona Island: SM.

<u>Background</u> <u>Information on the <u>History</u> of <u>Each Egg Clutch</u>: The following information can be obtained from the "<u>Nesting Turtle Tagging</u>" data sheet filled in at the time the eggs were laid and counted:</u>

<u>Nest Number</u>: Record the "<u>Nest Number</u>" <u>assigned</u> to the egg clutch at the time it was <u>laid</u> and the eggs were <u>counted</u>. The nest should have been labeled with a sign stating the "Nest Number." This should also be the same as the Nest Number recorded on the following data sheets:

- Nesting Turtle Tagging
- Kerehikapo Daily Turtle Track Counts
- Kerehikapo Nest Predation Survey

<u>Tag Number(s)</u>: Record the Tag Number(s) of the turtle that laid the egg clutch.

<u>Turtle Species</u>: Record which species of turtle laid the egg clutch. You can <u>shorten</u> the name as follows:

- "H": hawksbill turtle (*Eretmochelys imbricata*); or
- "G": green turtle (Chelonia mydas).

<u>Date Laid</u>: Record the date the the egg clutch was <u>laid</u>.

<u>Date Dug-up</u>: Record the date you are <u>digging up</u> the egg clutch to check hatching success – i.e., "today's" date. The egg clutch should be dug up approximately 70 days after it was laid.

Recorder(s): Record the name(s) of the person(s) who are examining the nest.

Nest Depth (when dug up): Once you have excavated the contents of the nest you should measure the distance from the sand surface to the bottom of the nest in cm. To do this, place a straight stick across the mouth of the open nest. (The stick will mark the level of the "beach surface.") Next, extend a measuring tape in a straight line from the bottom of the empty nest to the stick. (You do not need to measure to the "top" of the nest.)

Total Clutch Size (at laying): Record the number of eggs <u>counted</u> at the time the clutch was laid. See the "**Nesting Turtle Tagging**" data sheet filled in at the time the eggs were laid and counted.

Information to Describe **Egg Clutch Survival**:

<u>Dig up</u> the contents of the nest. Sort through the nest contents and separate them into the following categories (described in the following sections):

- Hatchlings (live & dead);
- Pipping Eggs (live & dead);
- Empty Egg Shells;
- Unhatched (Intact) Eggs;
- Predated Eggs (with holes in the shell.

Each category of nest content has been assigned a letter ("A", "B", "C"... "J") to make it clear how to use it in calculations for "Missing Eggs", "% Hatching Success", and "% Emergence Success".

- A. <u>Total Clutch Clutch</u> (at laying). See above section.
- **B.** <u>Hatchlings -- live</u>: Record how many <u>live hatchlings</u> you find in the nest or in the sand column above the nest. (*If there are "none", then record "0"*.)
- C. <u>Hatchlings -- dead</u>: Record how many <u>dead hatchlings</u> you find in the nest or in the sand column above the nest. (If there are "none", then record "0".)
- D. <u>Number of Shells</u>: Put all the <u>empty egg shells</u> you find (i.e. those from eggs that successfully produced baby turtles) together in a pile. (Do <u>not</u> include shells with egg yolk or other rotting material that would indicate a dead egg.)

In nests with very good hatching success, it can be difficult to count the empty shells. To avoid making mistakes when counting the shells, do the following:

- Gently <u>shake</u> the <u>sand</u> off the egg shells (being careful not to break the shells into pieces);
- It is easy to count shells that are still in one piece. But sometimes the shells break into two or more pieces. When the shells are <u>broken</u> you will need to <u>estimate</u> how many pieces equal one egg. To do this, feel the <u>weight</u> of the shells in your hand;
- <u>Separate</u> the shells into <u>piles</u> of <u>ten</u> (10). This makes it easier to keep track of the number of empty shells.
- **E. <u>Pipping -- live</u>**: A "pipping" egg is one with an embryo in the <u>process</u> of <u>hatching out</u> of the egg. (You might think of it as a "peeping" hatchling, because it is "peeping out" of the egg.) If the embryo is still <u>alive</u>, record it in this category.
- **F. Pipping -- dead**: If the "pipping" embryo is dead, record it in this category.

- <u>Unhatched Eggs</u>: Unhatched (or intact) eggs are those that have not hatched and do <u>not</u> have <u>holes</u> in the egg <u>shells</u>. Open each egg carefully in order to determine if there are any <u>signs</u> of <u>development</u>. Divide the unhatched eggs into the following three categories:
 - **G. Unhatched -- with signs.** There are <u>signs</u> of <u>development</u> in the unhatched eggs, such as visible <u>embryos</u> or <u>blood spots</u>. (These eggs were <u>fertile</u>, but the embryos <u>died</u>.)
 - H. Unhatched -- NO signs. There are no signs of development.
 (These eggs either had embryos that died at a very early stage, or else were not fertile.)
 - *I. Too Rotten.* The contents of the egg are <u>too rotten</u> to <u>tell</u> whether there are <u>signs</u> of development. (See also the following category.)
- I. <u>Too Rotten</u>: Eggs in this category can either be "<u>Unhatched</u>" (described above) or "<u>broken</u>." In either case, the egg is so <u>rotten</u> that it can not provide much information.
- J. <u>Predated Eggs</u>: Unhatched eggs that were <u>damaged</u> by predators. <u>Small cuts</u> or <u>tiny holes</u> will be visible in the egg shell. Some of the animals that do this type of damage include: crabs, ants, beetle larvae, etc.
- * <u>Missing Eggs</u>: This category refers to the number of eggs that have disappeared from the nest since the night that the eggs were laid. Usually, eggs go "missing" when they are taken by predators. The main predators include the following:
 - Ghost crabs -- take the eggs out of the nest via their burrows; or
 - <u>Bird</u> or <u>Lizard</u> predation.

The numbers of "Missing Eggs" is determined by <u>calculating</u> how many eggs remain in the nest and subtracting that number of the "Total Clutch Size".

To calculate missing eggs use the following equation:

Missing Eggs =
$$A - (D + E + F + G + H + I + J)$$

The letters in the equation refer to the letters (in blue) assigned to the various contents of nest contents (above). Those needed for this equation are indicated by the symbol "*" in the first column of the data sheet.

If you determine that there are <u>large numbers</u> of eggs <u>missing</u> from the nest, check the following:

- if <u>Bird Predation</u> has been recorded for the nest (check the "*Nest Predation Surveys*" data sheets);
- if there is evidence of <u>crabs</u> or <u>crab</u> holes in the nest (see following sections).

- <u>Crabs in Nest ?</u>: Record whether or not you found any <u>ghost crabs</u> inside the <u>nest</u> (or in the sand) when you dug it up. (Record either "Yes" or "No".)
- <u>Crab Holes in Nest ?</u>: Record whether or not you found any <u>crab holes</u> inside the nest that might be <u>leading</u> into crab <u>burrows</u>. (Record either "Yes" or "No".)
- **Relocated Nest ?**: Record whether or not the eggs in the nest had been relocated to a new nest after they were laid. (Record either "Yes" or "No".)
- <u>Covered by Palm Leaves ?</u>: Record whether or not the nest had been covered by palm leaves after the eggs were laid (as protection from bird predation). (Record either "Yes" or "No".)
- # <u>% Hatching Success</u>: This category refers to the percentage of eggs that <u>hatched</u> and produced hatchlings.

To calculate "% Hatching Success" use the following equation:

% Hatching Success = $D/A \times 100$

The letters in the equation refer to the letters (in blue) assigned to the various contents of nest contents (above). Those needed for this equation are indicated by the symbol "#" in the first column of the data sheet.

\$ <u>**%** *Emergence Success*</u>: This category refers to the percentage of eggs that produced <u>hatchlings</u> that <u>emerged</u> completely out of the nest.

To calculate "% Emergence Success" use the following equation:

% Emergence Success = $(D - C) / A \times 100$

The letters in the equation refer to the letters (in blue) assigned to the various contents of nest contents (above). Those needed for this equation are indicated by the symbol "\$" in the first column of the data sheet.

Comments: Record any other information of interest.

<u>Bird Predation Recorded Earlier</u>: Check the "Nest Predation Surveys" to determine if there are any records of Bird Predation at an earlier date.

					Entered	O
.						Page
	Island Group or Province					
	Island or Beach					
	Beach Sector			7		
	Nest Number			\$.		
	Tag Number(s)		•.			
	Species					
	Date Laid					
'' 	Date Dug-up					
	Recorder(s)					
	Nest Depth (when dug up)					
\$ # * A	Total Clutch Size (at laying)	* ',				
В	Hatchlings live		· · · · · · · · · · · · · · · · · · ·			
\$ C	Hatchlings dead					
\$#*D	Number of Shells					
* E	Pipping live	······································				
* F	Pipping dead				· · · · · · · · · · · · · · · · · · ·	
* G	Unhatched with signs	· · · · · · · · · · · · · · · · · · ·				
* Н	Unhatched NO signs		······································			
* 1	Too Rotten					
* J	Predated Eggs (with holes)					
	* <u>Missing eggs</u> = A- (D+E+F+G+H+I+J)					
	Crabs in Nest?	· .				
	Crab Holes in Nest?					
	Relocated Nest?					
	Covered by Palm Leaves?					
	# % Hatching Success = D/Ax100					
	\$ % Emergence Success = (D-C)/Ax100					
	Comments					
	Bird Predation Recorded Earlier?					

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	Island Group or Province	Year-Month 2002 – 07 Page				
	Island or Beach	AMCA K	K	K		1
	Beach Sector	10	3		······································	
	Nest Number	31	34	1 <u>5</u> 33		
	14e31 14dilibei	X5502	×5511			
	Tag Number(s)	X5503	×5512	X5509 X5510		
	Species	Н	Н	G		
	Date Laid	10 MAY	12 MAY	12 MAY		
	Date Dug-up	18 JULY	20 TULY	20 TULY		
	Recorder(s)	FRANCIS + MOSES	VICTOR+ NELSON	Moses + Dicky	ĺ	
	Nest Depth (when dug up)	54 cm		60 cm		
\$ # * A	Total Clutch Size (at laying)	131	142	112		
В	Hatchlings live	20	O	2		
С	Hatchlings dead	3	3	1		
# * D	Number of Shells	105	47	98		
* E	Pipping live	6	0	0		
* F	Pipping dead	a	5	1		
* G	Unhatched with signs	3	8	2		
* H	Unhatched NO signs	7	3	10		
*	Too Rotten	6	6	0		
* J	Predated Eggs (with holes)	2	19	0		
	* <u>Missing eggs</u> = A- (D+E+F+G+H+I+J)	0	54	1		
·	Crabs in Nest?	No	YES	No		
	Crab Holes in Nest?	No	YES	No		
	Relocated Nest?	No	No	No		
:	Covered by Palm Leaves?	YES	No	YES		
	# % Hatching Success = D/Ax100	80%	33%	88%		
	\$ % Emergence Success = (D-C)/Ax100	78%	31%	87%		
	Comments		54 Missing 40 Birds 14 Crabs?	/ MISSING		
	Bird Predation Recorded Earlier?	NONE	40 EGGS ON 11 MAY	NONE		

Monthly Activity Schedule

Why:

The format for this Monthly Activity Schedule was devised to help the COs <u>plan</u> and <u>organize</u> the various <u>turtle</u> <u>monitoring</u> <u>activities</u> that need to be conducted within the AMCA each month.

How to use the Monthly Activity Schedule:

The Activity Schedule is good for <u>one month</u>. A new Activity Schedule should be started at the <u>beginning</u> of each month when a new CO Group begins work.

Format:

The Monthly Activity Schedule is divided into three sections:

- General Information on <u>dates</u> and <u>personnel</u>
- <u>Calendar</u> in which to record activities conducted
- List of <u>Tasks</u> to <u>Accomplish</u>

Instructions on how to fill in the Monthly Activity Schedule:

General Information on Dates and Personnel:

Month: Record the month being scheduled. (In the example, the month is July.)

Year: Record the year. (In the example, the year is 2002.)

<u>CO Group</u>: Record whether the activities are being conducted by the " \underline{A} " or the " \underline{B} " CO Group.

<u>COs</u>: List the <u>names</u> of the COs on working. Record the <u>Quarter Master (QM)</u> on the first line.

Using the Calendar to Record Your Activities:

Preparing the Calendar for Use: The calendar is arranged into 7 Rows and 5 Columns. Each row corresponds to a day of the week. The 1st Row is Sunday; the 2nd Row is Monday; the 3rd Row is Tuesday; the 4th Row is Wednesday; the 5th Row is Thursday; the 6th Row is Friday; and the 7th Row is Saturday.

- Determine on which day the 1st of the month falls. (In the example, 1 July 2002 falls on Monday.)
- Number the dates on your calendar, starting with Monday, 1 July and ending on 31 July. (In the example, July has 31 days. So the days are numbered from Monday, 1 July until Wednesday, 31 July.)

Recording your Activities:

Each day <u>record</u> what turtle monitoring <u>activities</u> you <u>conduct</u>. You will use <u>Codes</u> to record each activity. (The Codes are short names for each activity.) These codes are described below. (In the example, all activities conducted between 1 July and 20 July have been recorded.)

Planning your Activities:

By recording each activity that you accomplish on the calendar, it will become clear <u>what</u> you have <u>already accomplished</u>, and also what you <u>need to accomplish</u> before the end of the <u>week</u> and also before the end of the <u>month</u>.

This will guide you to plan your program.

Tasks to Accomplish:

How Often:

At the bottom of the page are three categories of turtle monitoring activities, listed according to <u>how often</u> they need to be conducted:

- Every Day (at Kerehikapo)
- Occasional Rodeo
- Weekly Beach Surveys

Codes:

Each task is assigned a <u>Code</u> so that it is <u>easy</u> to <u>record</u>. These are:

- **KK-DT** Daytime track counts
- **KK-NT** Night-time tagging

Weekly Beach Surveys

- **SI-01** Sikopo Is (Sector 1)
- **SI-02** Sikopo Is (Sector 2)
- **SI-03** Sikopo Is (Sector 3)
- SI-04 Sikopo Is (Sector 4)
- **BM** Big Maleivona
- SM Small Maleivona

Check Boxes for Weekly Beach Surveys:

Notice that in the lower right hand corner of the page there are 24 empty boxes. The boxes are arranged in 4 columns, and 6 rows.

Each row corresponds to a <u>beach sector</u> that needs to be surveyed <u>weekly</u>. Each of the four <u>rows</u> corresponds to a <u>week</u>. Each beach sector needs to be surveyed four times per month, approximately once per week.

As you survey each sector of beach, put an " \mathbf{X} " in the <u>box</u> that corresponds to that beach sector, and the week in which it was surveyed. This will help you keep track of what weekly surveys still need to be done before the end of the month.

(In the example, activities have been recorded in the Monthly Activity Schedule between 1 July and 20 July 2002. By 20 July, all six of the beach sectors each had been surveyed twice --once in the first week and once in the second week. The four Sikopo beach sectors had also been surveyed a third time. But, two other beach sectors (BM and SM) will need to be surveyed within the next few days.)

Monthly Activity Schedule

Month				COs:		·	Q <i>N</i>
Year CO Group	· .						
Sun							
W							
Tu							
w							
Th				·	-		
F							
Sat			V				

Tasks to Accomplish

Every day (at Kerehikapo):	Code	Weekly Beach Surveys (4 times per month):	<u>Code</u>	1	2	<u>3</u>	4
Daytime track counts	KK-DT	Sikopo Is (Sector 1)	SI-01				
Night-time tagging	KK-NT	Sikopo Is (Sector 2)	SI-02				
		Sikopo Is (Sector 3)	SI-03				
Occasional:		Sikopo Is (Sector 4)	SI-04				
Rodeo (at Kerehikapo)	KK-R	Big Maleivona	BM				
		Small Maleivona	SM				

Monthly Activity Schedule

Month	JULY	
Year	2002	
°C C	Å	

COs:	VICTOR	QM
	DANNY	
	Merrial	

		7 KK-DT	14 KK-DT	21	28
Sun					
		KK-NT	KK-NT		
	KK-DT	8 KK-DT	15	22	29
M	SI-01	SI-01	SI-01 SI-02		
	KK-NT	SI-02	SI-03		
	a KK-DT	9 KK-DT	16 KK-DT	23	30
Tu	SI-02		, ,,,		
	SI-03	le b = 1) T	KK-NT		
	3 KK-DT	10 KK-NT	13	24	31
	3 KK-DT		77.		
W		S1-03	KK-R		
	KK-NT	KK-NT	KK-NT		
	4 KK-DT	II KK-DT	18 KK-DT	25	
Th	SI-04	·			
	BM	S1-04	KK-NT		
	5 KK-DT	12 KK-DT	19 KK-DT	26	
F					
	KK-NT	KK-NT	S1-04		
	6	13 KK-DT	20 KK-DT	27	
Sat		SM			
	SM	ВМ	KK-NT		

Tasks to Accomplish

Every day (at Kerehikapo):	Code	Weekly Beach Surveys (4 times per month):	<u>Code</u>	1	<u>2</u>	<u>3</u>	<u>4</u>
Daytime track counts	KK-DT	Sikopo Is (Sector 1)	SI-01	X	X	X	
Night-time tagging	KK-NT	Sikopo Is (Sector 2)	SI-02	X	X	X	
		Sikopo Is (Sector 3)	SI-03	X	X	X	
Occasional:		Sikopo Is (Sector 4)	SI-04	X	X	×	
Rodeo (at Kerehikapo)	KK-R	Big Maleivona	BM	X	X		
		Small Maleivona	SM	X	X	П	П