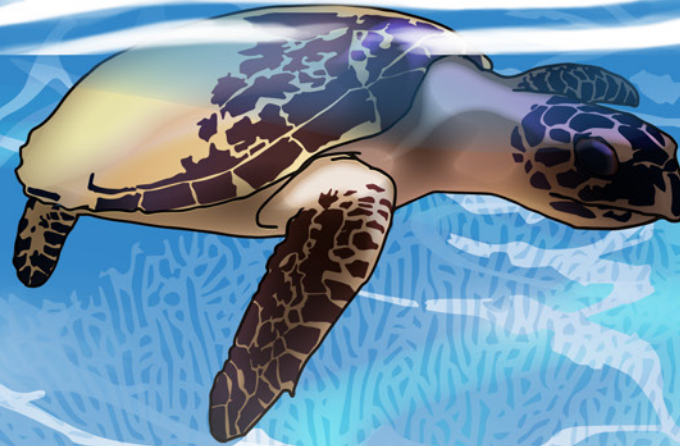


BEACH-TRACK MONITORING FOR TURTLE-NESTING



MARINE-COMMS

CONSERVANCY MANAGEMENT MONITORING SYSTEM





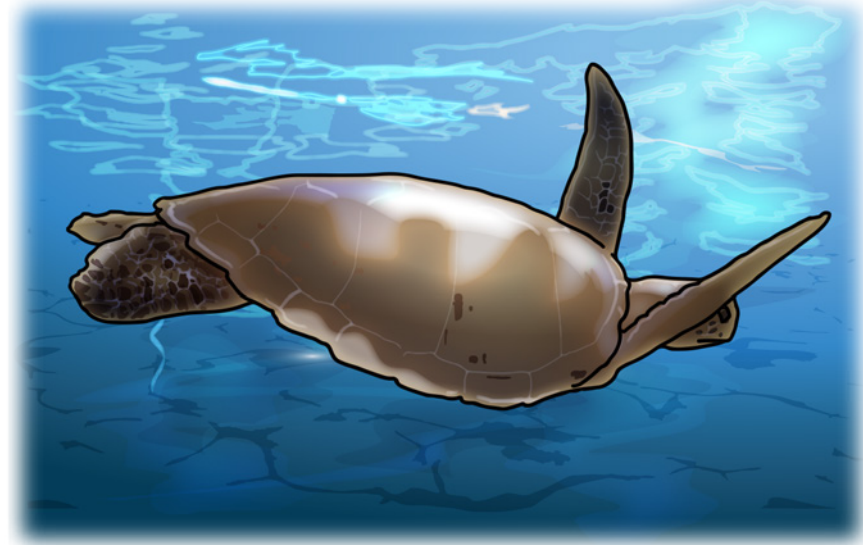
Aim

The aim of Turtle-nest monitoring in Marine-CoMMS is to provide simple indicators of abundance and trends of nesting Turtles visiting beaches. The method uses counts of tracks and nests along specific nesting beaches as a measure of nesting female Turtle abundance. Regular and consistent data collection and a measure of the level of effort involved in looking for tracks and nests (nesting-beach patrol effort) is essential in order to interpret trends over time.

It is important to note that these indicators (tracks and nests) are not an absolute measure of the Turtle population abundance or number of individuals in a population. This simple method is considered appropriate for the capacity and context of Community Conservancies in northern coastal Kenya.

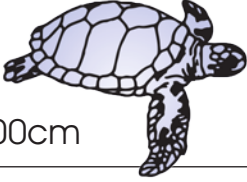


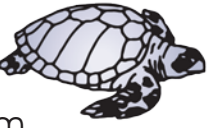
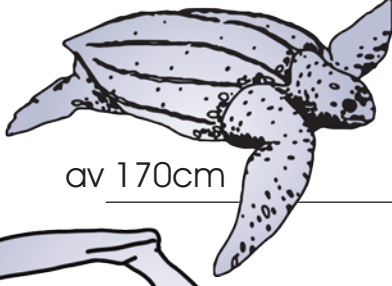
Estimates of live and dead hatchlings will also be collected when encountered with a view to understanding levels of predation at different nesting beaches and adapting management to improve survivorship of hatchlings.

Data is analysed in the Marine-CoMMS database to provide information on distribution and trends in abundance of nesting species. Conservancies will work closely with KWS and WWF to provide information on nests and enhanced protection of nests and turtles.



NESTING TURTLE SPECIES

The most common species nesting on beaches in northern coastal Kenya are Green Turtles (*Kasa wa kawaida*), with occasional or very rare nesting by Hawksbill (*Ng'amba*) and Olive Ridley Turtles (*Kigange*). Leatherback (*Chasa*) and Loggerhead Turtles (*Iladhi*) are not known to nest in this part of Kenya. Most nesting occurs between March to September with a peak in April to June during the rainy southeast monsoon season. Average incubation duration is approximately 55 days.

Relative scale	Species	Key features	Tracks
 av 100cm	Green Turtle <i>Kasa wa kawaida</i>	Large Green shell	<i>Parallel marks</i> <i>Heavy/deep marks in sand</i> <i>Wide track</i> <i>Nest far from high tide mark</i>
 av 75cm	Hawksbill <i>Ng'amba</i>	Beak like a parrot Small Brown shell	<i>Alternate tracks</i> <i>Light marks in sand</i> <i>Narrow track</i> <i>Nest close to high tide mark</i>
 av 70cm	Olive Ridley <i>Kigange</i>	Small Round shell Olive green shell	<i>Alternate tracks</i> <i>Light marks in sand</i> <i>Narrow track</i> <i>Nest close to high tide mark</i>
 av 90cm	Loggerhead <i>Iladhi</i>	Large head Elongated shell	
 av 170cm	Leatherback <i>Chasa</i>	Large Soft black covering No hard shell Elongated shell	

parallel



alternate



METHOD

- ◆ Early morning beach patrols on turtle nesting beaches
- ◆ Walk entire length of beach
- ◆ Walk along the most recent high tide mark so can see all FRESH tracks from the night before
- ◆ At least 3 days per week for each nesting beach during nesting season (can be consecutive nights or random nights)
- ◆ Less frequent patrols outside nesting season but should still be done occasionally (e.g. once per week)
- ◆ For remote beaches which are not easily accessible – do surveys on 3-4 consecutive nights in mid of peak nesting season

TURTLE TRACKS & NEST DATASHEET

Name: Ahmed Mohamed
 Patrol ID: K25
 Date: 20 April 2015
 Start time: 06:15
 End time: 08:25
 Block: Kiwayu
 Location: Ndothi
 Nesting beach: Kiwayu beach

TRACKS seen?

species
 Green / Kasa wa kawao
 Hawksbill / Ng amba
 Olive Ridley / Kigange
 other / unknown

HATCHLINGS seen

species

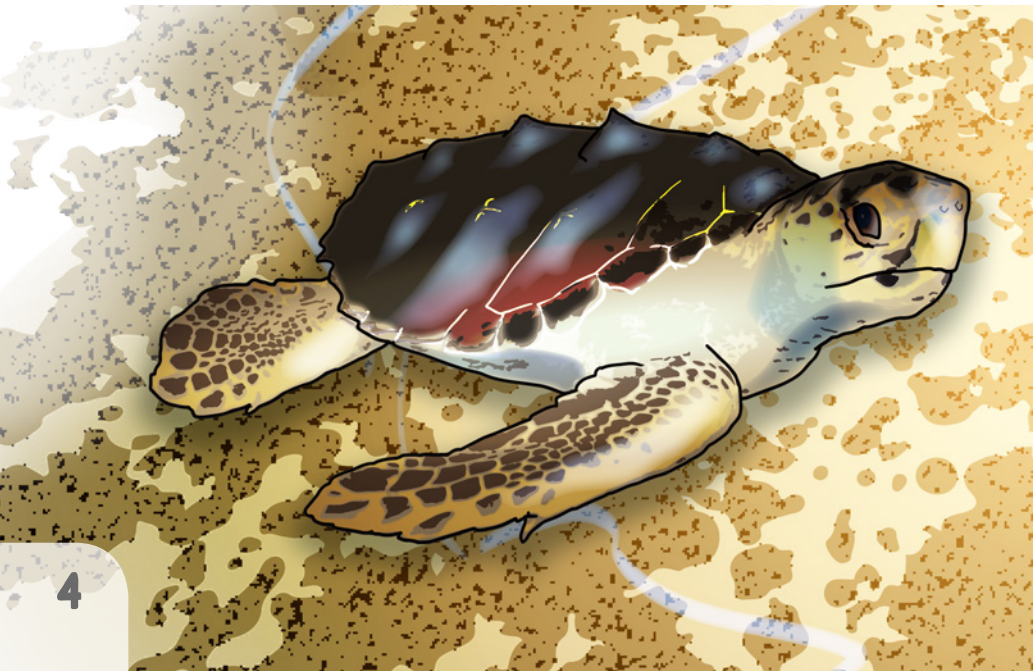
ADDITIONAL INFORMATION:

COMPLETING YOUR DATASHEET

1


Complete a data sheet every time you do a beach-patrol whether in nesting season or not – indicate 'No' on the datasheet for turtle tracks/nests/hatchlings if none seen (this will enable you to analyze patrol effort i.e. number of patrol days for each nesting beach)

- ◆ Name, Patrol ID, Date
- ◆ Start time and end time of survey
- ◆ Block, Location and Nesting Beach




species	TRACKS seen?		total
	Yes	No	
Green / Kasa wa kawaida			3
Hawksbill / Ng'amba			
Olive Ridley / Kigange			
other / unknown			


Nesting species



Kasa wa kawaida / Green (common)



Ng'amba / Hawksbill (occasional)



Kigange / Olive Ridley

TRACKS

2

- ◆ Record number of tracks for each species found along the entire length of the beach (if unable to determine species then record as 'unknown'); add up the total number of tracks for each species found along the entire beach
- ◆ Note that tracks go up and back so **only record tracks going UP the beach** not the return track, include all visible tracks **that have not previously been recorded** (i.e. previous night and more than 1 day old)
- ◆ Mark off each track (e.g. a line in the sand across the track) after recording it, mark above the high tide line

NESTS

- ◆ Follow tracks up to where nests have been dug, differentiate if it is a successful nesting attempt or unsuccessful, **DO NOT DISTURB OR DIG UP THE NEST** (if unsuccessful nesting **DO NOT RECORD AS A NEST**)
- ◆ Record if new (previous night) or old (more than 1 day old, but not previously recorded)
- ◆ Record species if known – or record as 'unknown' if not sure
- ◆ Record GPS location of nest
- ◆ Give the estimated hatching date of the nest (approximately +55 days)
- ◆ Record if nest has been disturbed (evidence includes broken shells around nest, sand dug up, eggs uncovered, with predator/human footprints around the nest site etc.)
- ◆ If possible identify what has disturbed nest – human, animal, washed by tide, another turtle, or unknown cause

NESTS seen? Yes No

New / old	species	GPS location		expected hatching date	Damaged Yes/ No	Type of damage (e.g. tide, animal, human, unknown)	Notes
		37M	UTM				
new	Kasa Kawaida	753786	9778623	15 Jun 2015	No		

NESTS

3

- ◆ Include any other observations that may be relevant
- ◆ Report all new nests to KWS/WWF, advise them if the nest needs to be translocated if it is too close to the high tide line or threatened for another reason (do not do this yourself unless you have the expertise to do this and are requested to by KWS/WWF)

HATCHLINGS

- ◆ If you come across hatchlings on the beach, identify the species or record as 'unknown'
- ◆ Count the number of live hatchlings and dead hatchlings in the immediate area
- ◆ Trace the hatchling tracks back up to the nest and mark the GPS location of the nest (note if the nest was previously recorded or not)
- ◆ It may be necessary to carefully assist hatchlings into the water

ADDITIONAL INFORMATION

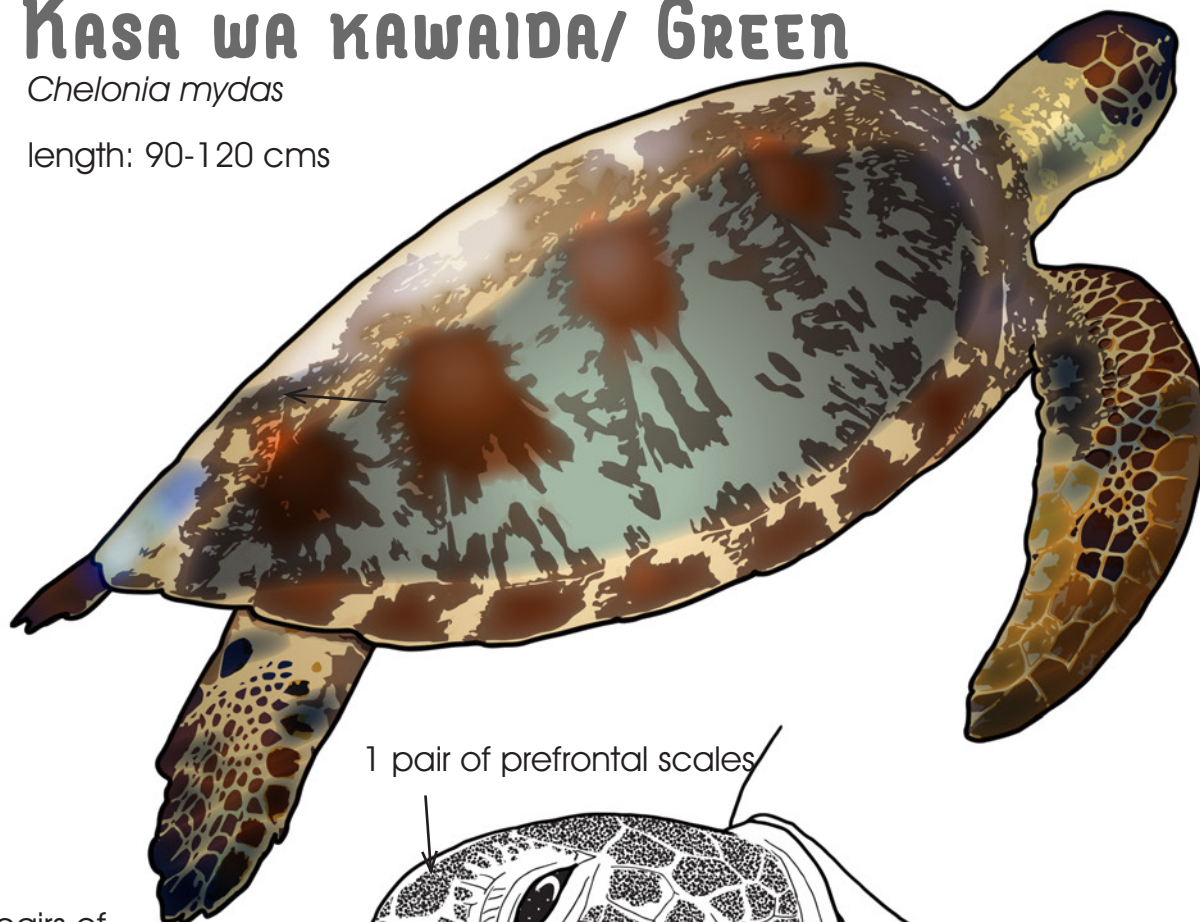
- ◆ Sightings of Adult/Sub-adult turtles are recorded on the WILDLIFE OBSERVATIONS datasheet
- ◆ Dead turtles are recorded on the CARCASS DATASHEET
- ◆ Tagged turtles – record tag number, pass this information on to KWS/WWF



KASA WA KAWAIDA/ GREEN

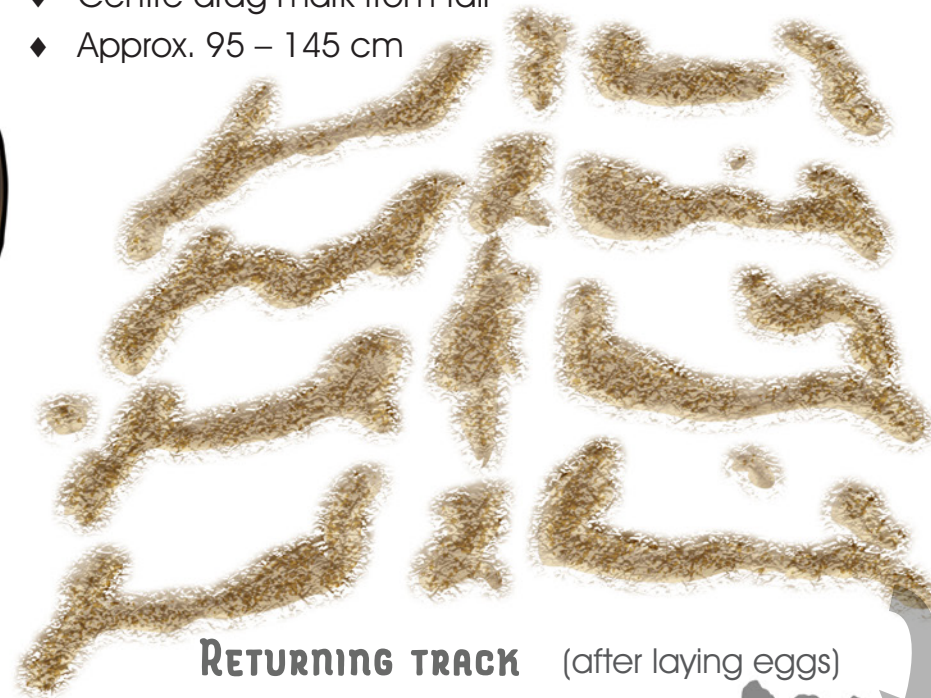
Chelonia mydas

length: 90-120 cms



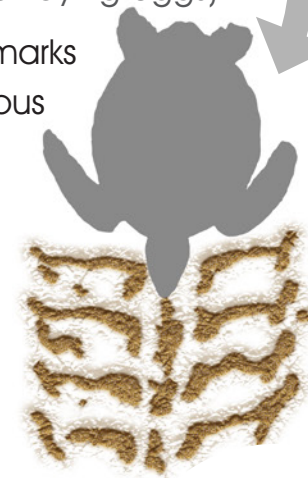
EMERGING TRACK

- ◆ Simultaneous limb movement – parallel tracks
- ◆ Front flippers cut sand deeply
- ◆ Centre drag mark from tail
- ◆ Approx. 95 – 145 cm

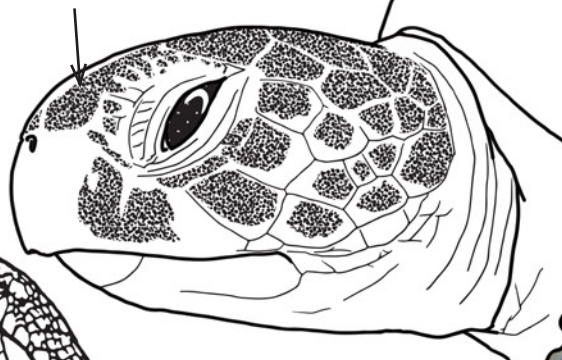


RETURNING TRACK (after laying eggs)

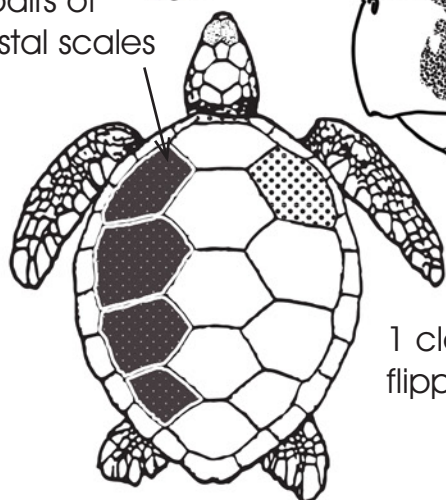
- ◆ Opposite front flipper marks
- ◆ Body drag not as obvious



1 pair of prefrontal scales

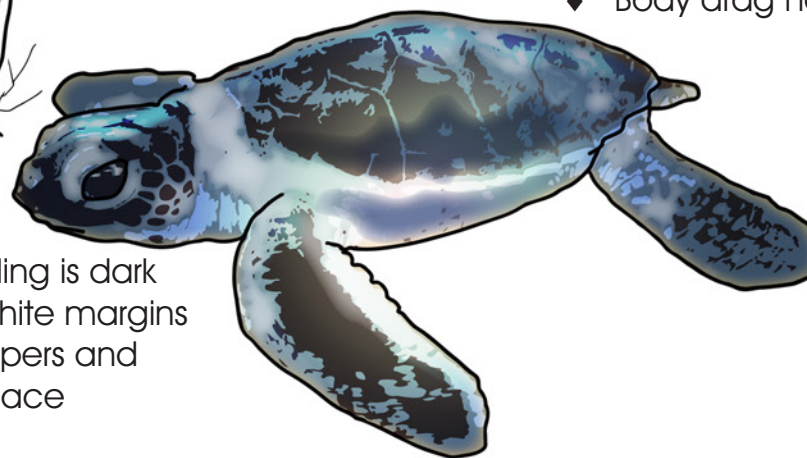


4 pairs of costal scales



1 claw on flippers

hatchling is dark with white margins on flippers and carapace





KIGANGE/ OLIVE RIDLEY

Lepidochelys olivacea

length: 60-70 cms

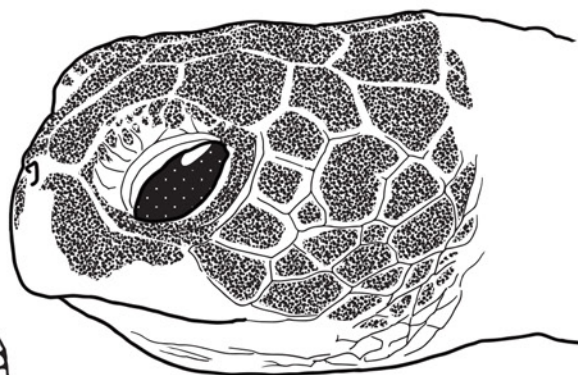
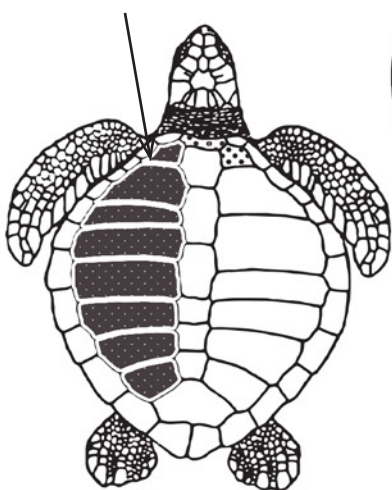
EMERGING TRACK

- ◆ Alternate tracks
- ◆ Light marks in sand
- ◆ approx track width: 70-80cm
- ◆ Nest close to high tide mark
- ◆ tail drag light or not visible

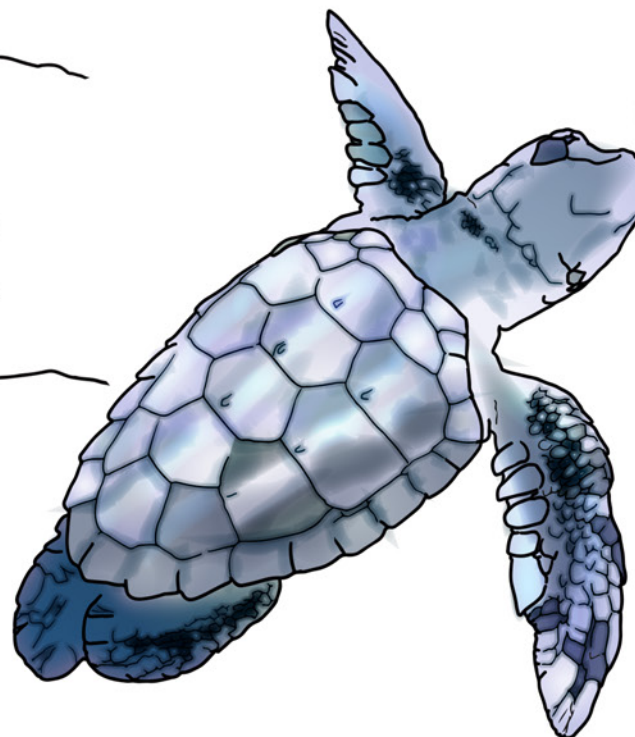


carapace wide and almost circular

6 pairs or more of costal scales



hatchling has 5-9 costal scales and is dark all over



action of flippers



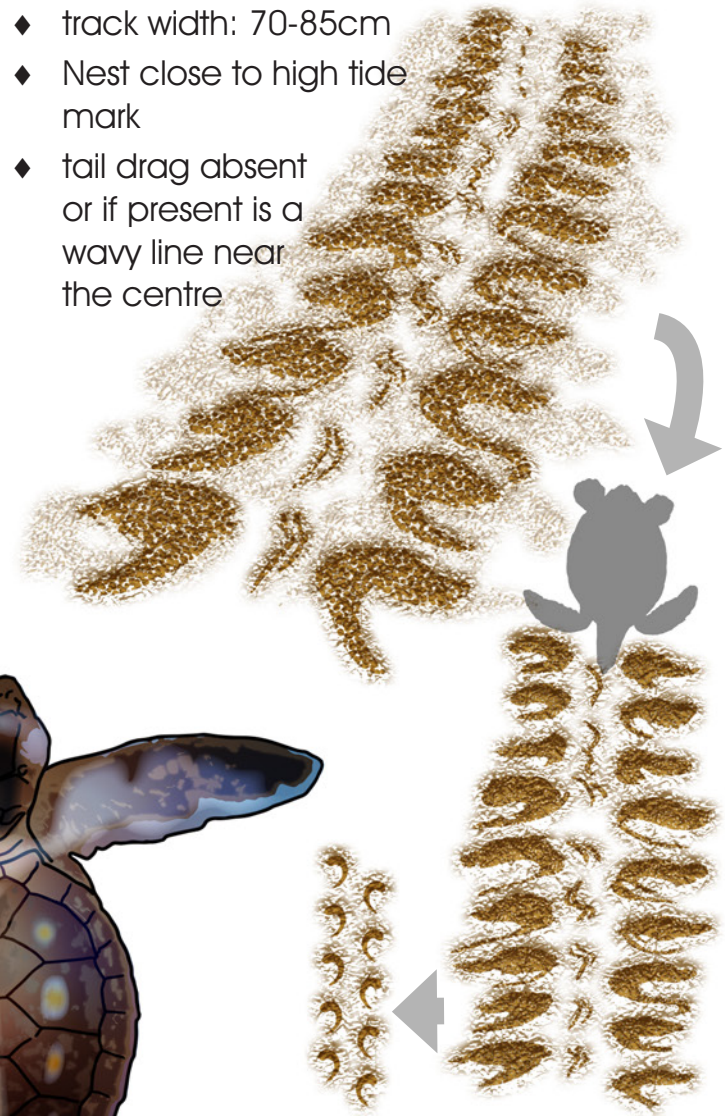
Ng'AMBA/ HAWKSBILL

Eretmochelys imbricate

length: 70-90 cms

EMERGING TRACK

- ◆ Alternate tracks
- ◆ Light marks in sand
- ◆ track width: 70-85cm
- ◆ Nest close to high tide mark
- ◆ tail drag absent or if present is a way line near the centre



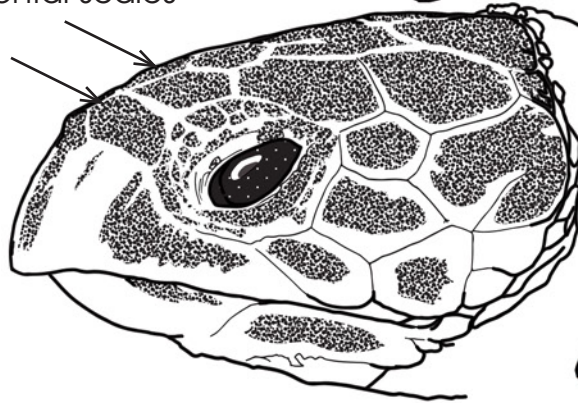
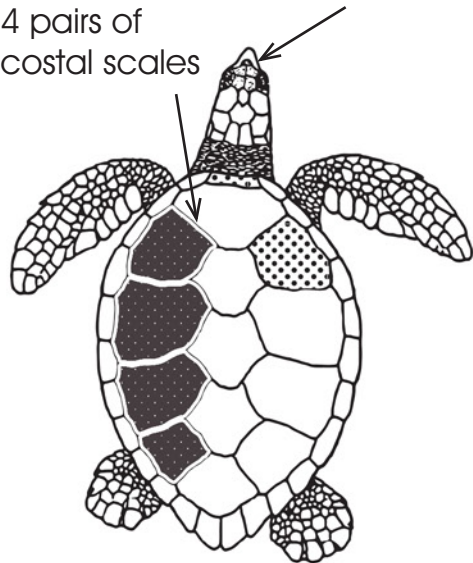
action of flippers

thick overlapping carapace scales

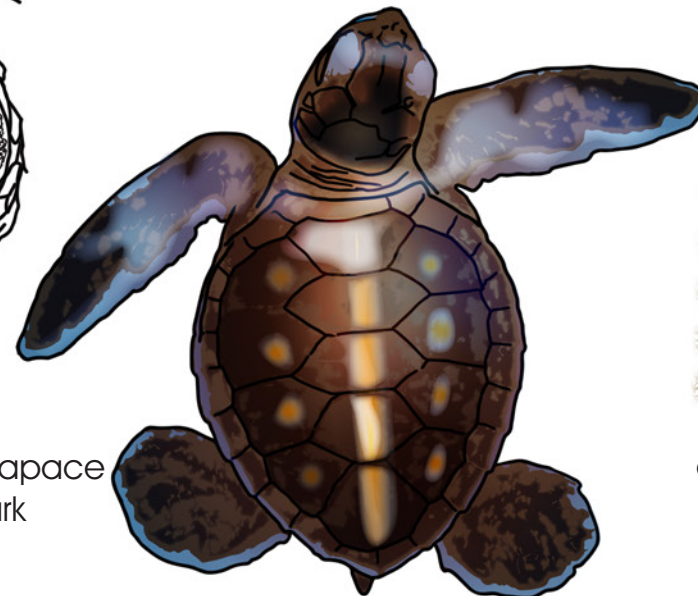
2 claws on flippers

2 pairs of prefrontal scales

4 pairs of costal scales



hatchling has overlapping carapace scales and is dark (brown) all over

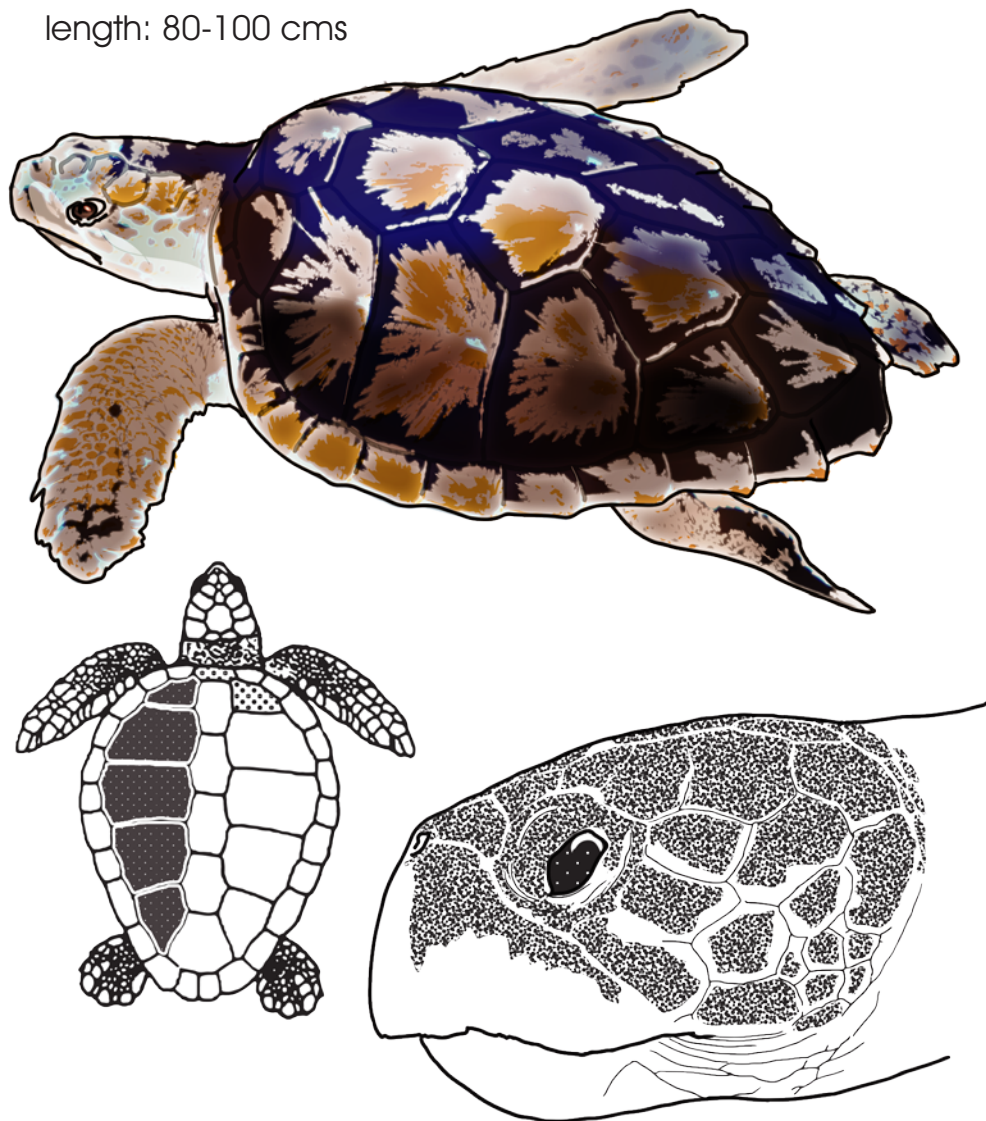




ILADHI/ LOGGERHEAD

Caretta caretta

length: 80-100 cms

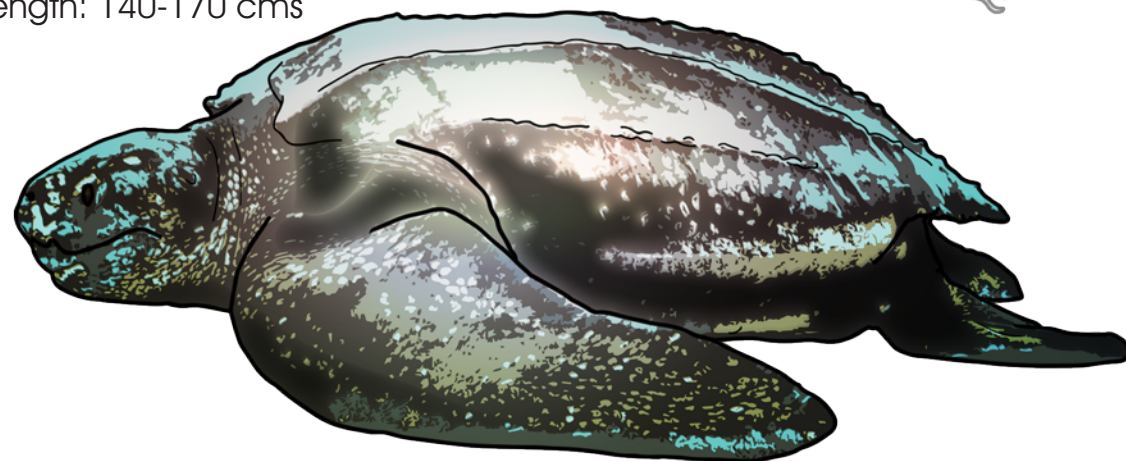


5 pairs of costal scales, large head, 2 claws on each flipper

CHASA/ LEATHERBACK

Dermochelys coriacea

length: 140-170 cms



Leatherback has no scales, seven ridges mostly black with white spotting

