

FINAL REPORT

**Marine Endangered Species Monitoring Program
US Army Corps of Engineers
Galveston District**

**Maintenance Dredging
Aransas Pass Entrance Channel**

Dates: 09 April - 07 July 2003



Submitted by:

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ABSTRACT

A twenty-four hour per day marine endangered species monitoring program was conducted onboard the hopper dredge *Atchafalaya* during the Aransas Pass Entrance Channel maintenance dredging project from 09 April through 07 July 2003. Endangered and threatened sea turtles *Caretta caretta* (loggerhead), *Chelonia mydas* (green), *Lepidochelys kempii* (Kemp's ridley), *Dermochelys coriacea* (leatherback) and *Eretmochelys imbricata* (hawksbill) were the species targeted. A total of 10 incidents were recorded in which 5 were counted as takes and 5 were recorded as old sea turtle species parts.

INTRODUCTION

The **REMSA Inc.** Marine Endangered Species Observer Division was subcontracted by B+B Dredging in the Galveston District to monitor the impact of dredging on endangered sea turtle species in the area of the dredge operation. Pursuant to agreements with the National Marine Fisheries Service (NMFS), two certified observers were required onboard during the months of prime sea turtle activity for that area to document any detected incidents involving target species.

SCOPE OF WORK

REMSA provided the necessary trained personnel and equipment to clean and monitor inflow screens onboard the hopper dredge *Atchafalaya* for the necessary reports. Monitoring was performed 24 hours each day from 09 April 03 to project completion on 07 July 2003. Observers inspected and cleaned all inflow and overflow screens, and inspected both dragheads each time they were brought on deck for cleaning and maintenance. Any death or injury involving target species, the loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), Kemp's ridley turtle (*Lepidochelys kempii*), leatherback turtle (*Dermochelys coriacea*), and hawksbill turtle (*Eretmochelys imbricata*) were to be identified, logged, measured, and photographed. Disposal of any animals recovered was the responsibility of the observer and dredge personnel. A load sheet was completed for each load whether or not turtle parts were found. In the case of an incident or take involving a sea turtle, incident report forms were to be completed and the observers were to contact NMFS and the COE within twenty-four hours of the incident. Daylight bridge watch was conducted during periods when the observer was not occupied with screen cleaning duties. Observers ensured that dredge crew personnel were aware of the need to avoid incidents involving any endangered animal, and that civil and criminal penalties are possible for harming or harassing endangered species.

METHODS

Dredging by the hopper dredge *Atchafalaya* began when the observers arrived onboard on 09 April 2003 to 07 July 2003 in Aransas Pass Entrance Channel (Loads 001-746). Two certified observers were present onboard the dredge during all dredging operations working 12 hour shifts.

The Dredge *Atchafalaya* functioned with 100% inflow screening with sea turtle draghead deflectors being used. The screening baskets were fitted with 4" x 4" screening material to insure that parts of targeted species would not be allowed to flow through into the

hopper. All dragheads and screening baskets were checked after each load of the observers 12-hour shift. The appropriate forms were filled out, noting any incidents regarding targeted species as well as the marine life present in the inflow and overflow boxes.

A bridge lookout was maintained during those daylight hours that the observer was not on deck checking screens. Watch was kept for turtles in the dredging area and dump site.

RESULTS

There were 10 reported incidents during the monitoring project at Aransas Pass Entrance Channel, TX due to dredging activity. Incident 1 (load #58 on 13 April 2003), incident 2 (load #241, on 04 May 03), incident 4 (load #289 on 12 May 2003), incident 9 (load #387, on 23 May 03), and incident 10 (load #392, on 24 May 2003) were recovered in the dredge draghead in Aransas Pass Entrance Channel and reported to be fresh turtle takes. Incident 1 was identified as a Kemp's ridley (*Lepidochelys kempii*) and 2, 4, 9, and 10 were identified as loggerheads (*Caretta caretta*). Incident 2 was not recovered on deck and no pictures were taken. The observers attempt to retrieve the loggerhead (*Caretta caretta*) from the draghead and during the process fell out and went overboard. It was correctly identified as a whole turtle and noted as a fresh kill.

Incident 3 (load #285, on 12 May 03), incident 5 (load #328, on 18 May 03), incident 6 (load #352 on 20 May 03), and incident 8 (load #364 on 21 May 03) were identified as old bone fragments. The fragments observed were weathered and discolored. The species of incident 7 (load #352 on 20 May 03) was unknown. The plastron, flipper, and neck were intact by old deteriorated connective tissue with no distinguishable characteristics. Proper incident reports were completed and faxed to NMFS (Appendix 1).

The mean sea temperature during this period averaged twenty-four 24 ° Celsius with a fluctuation of +/- 4°C. Many pods of bottlenose dolphin (*Tursiops truncatus*) were spotted throughout the bridge watches and were noted in the daily reports. Due to the nature of the material being dredged, there was no recorded biological by-catch in the discharge boxes.

Incident #1

Take 1

Aransas Pass Entrance Channel

13 April 2003, Load #58

Lepidochelys kempii

Over Exposed

Incident #2
Take 2
Aransas Entrance Channel
04 May 2003, Load #241
Caretta caretta

See Incident Report (Appendix 1)

Incident #3
Aransas Pass Entrance Channel
12 May 2003, Load #285
Unknown



Incident #4
Take 3
Aransas Pass Entrance Channel
12 May 2003, Load #289
Caretta caretta



Incident #5
Aransas Pass Entrance Channel
18 May 2003, Load #328
Unknown

Over Exposed

Incident #6
20 May 2003, Load #352
Caretta caretta



Incident #7
Aransas Pass Entrance Channel
20 May 2003, Load #352
Unknown



Incident #8
Aransas Pass Entrance Channel
21 May 2003, Load #364
Unknown

Over Exposed

Incident #9
Aransas Pass Entrance Channel
23 May 2003, Load #387
Caretta caretta



Incident #10

Take 5

Aransas Pass Entrance Channel

24 May 2003, Load #392

Caretta caretta

Over Exposed

SUMMARY

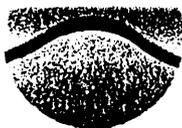
On 09 April 2003, the hopper dredge *Atchafalaya* began dredging in Aransas Pass Entrance Channel, Texas. Dredging was conducted for a total of ninety days with a total of 746 loads. On 13 April 2003 (load #58), the observer on the dredge *Atchafalaya* reported a take. The specimen found was a whole Kemp's ridley (*Lepidochelys kempii*) with a cracked carapace down its vertebral scutes with a missing left flipper. Incident 2 (04 May 03, load #241), incident 4 (12 May 03, load #289), incident 9 (23 May 03, load #387), and incident 10 (24 May 03 load #392), four loggerhead turtles (*Caretta caretta*) were recorded as fresh dredge takes. Incident 3 (load #285, on 12 May 03), incident 5 (load #328, on 18 May 03), incident 6 (load #352 on 20 May 03), and incident 8 (load #364 on 21 May 03), were identified as old decayed bone fragments with incident 7 (load #352 on 20 May 03) being deteriorated and discolored connective tissue holding the plastron, front flippers and neck together of the turtle. Information was recorded and copies were made for B+B dredging, NMFS, and ACOE.

Many pods of bottlenose dolphin (*Tursiops truncatus*) were spotted throughout the bridge watches and were noted in the daily reports.

If there are any questions regarding this report please feel free to contact me at the number below.

Tara Fitzpatrick
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Biologist/ Project Manager
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Appendix 1
Sea Turtle Incident Reports



INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 4/13/03 Time (24 hr) 0646

Species of Turtle Taken Kemp's ridley

Dredging Site (channel, port, etc.) Arkansas Pass Entrance Channel, TX

Location of Take: Latitude 27.48.86 Longitude 97.01.15

Vessel Name and Company B + B Dredging - Atchafalaya

Load # 58 Times: Start 0420 End 0620 Dump 0646

Sampling Method (overflow, inflow, etc.) outflow port basket

Samples Recovered From port basket

Condition of Screening Good

Draghead Deflector? Yes No

Condition of Deflector: Good

Weather Conditions: 20°C, 2K winds, clear

Water Temperature: Surface 18°C Column _____ °C or °F (Circle one)

Condition of specimen(s) sampled Carapace broken, left front flipper torn off. Entire carcass recovered

Measurements (metric if possible): _____

Give estimate of entire carapace dimensions, as well as fragments samples:

Head With 10 cm

Plastron Length 35 cm

Width 18.5 cm

Carapace *S.L. Length 43 cm

S.L. Width 38 cm

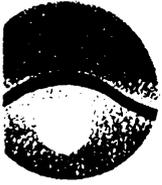
Carapace **O.C. Length 49 cm

O.C. Width 45 cm

Turtle Tagged? Yes No Tag# _____ Date 1 1

Comments: Tissue pink, no odor, no tag scars or living tags.

Observer's Name Jennifer M. Scott

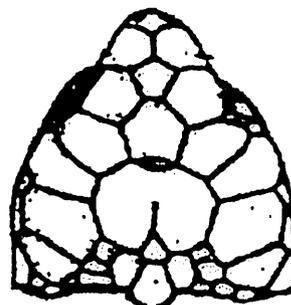
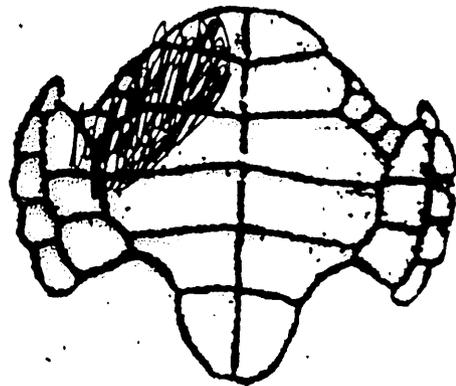
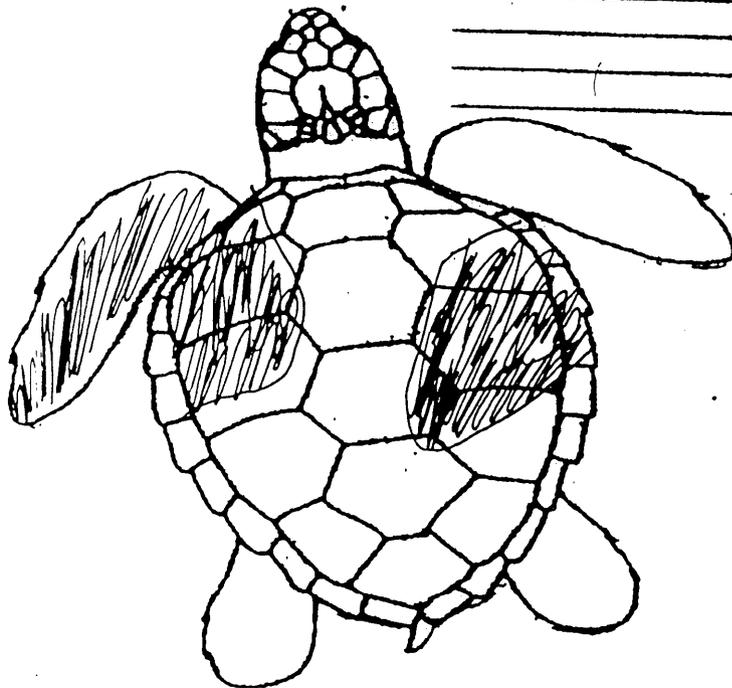


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Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

Comments Left flipper missing;
Carapace cracked





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INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 04 MAY 03 Time (24 hr) 0747

Species of Turtle Taken Caretta caretta Loggerhead

Dredging Site (channel, port, etc.) Aransas Pass, TX

Location of Take: Latitude 27° 49.174N Longitude 097° 01.190W

Vessel Name and Company B+B Dredge Company, Atchafalaya

Load # 241 Times: Start 0609 End 0747 Dump 0756

Sampling Method (overflow, inflow, etc.) Hopper Dredge; inflow

Samples Recovered From Draghead (turtle) Lander intestines

Condition of Screening good.

Draghead Deflector? Yes No

Condition of Deflector: good

Weather Conditions: Cloudy good (visibility) clear windy SSE @ 20 to 30 knots

Water Temperature: Surface 26°C Column _____ °C or °F (Circle one)

Condition of specimen(s) sampled good condition; no head injuries; no

flipper injuries. Caught in right side of draghead. Carapace

cracked down middle; found some intestines in lander + piece in

draghead.

Measurements (metric if possible): _____

Give estimate of entire carapace dimensions, as well as fragments samples:

Head With _____

Plastron Length _____ Width _____

Carapace *S.L. Length _____ S.L. Width _____

Carapace **O.C. Length _____ O.C. Width _____

Turtle Tagged? Yes No Tag# _____ Date 04 1 MAY 03

Comments: In attempt to retrieve juvenile loggerhead from draghead

had crew lift draghead w/cable. turtle fall out and fall

overboard. All four flippers were intact. Could not see any

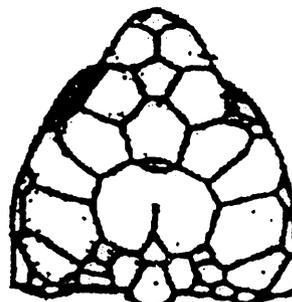
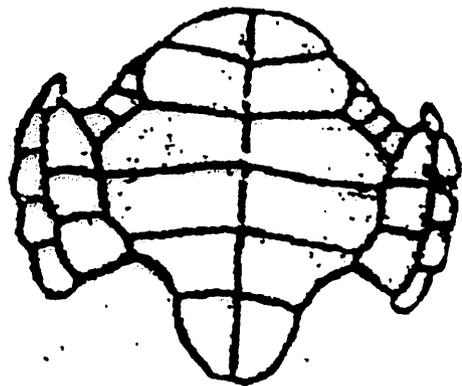
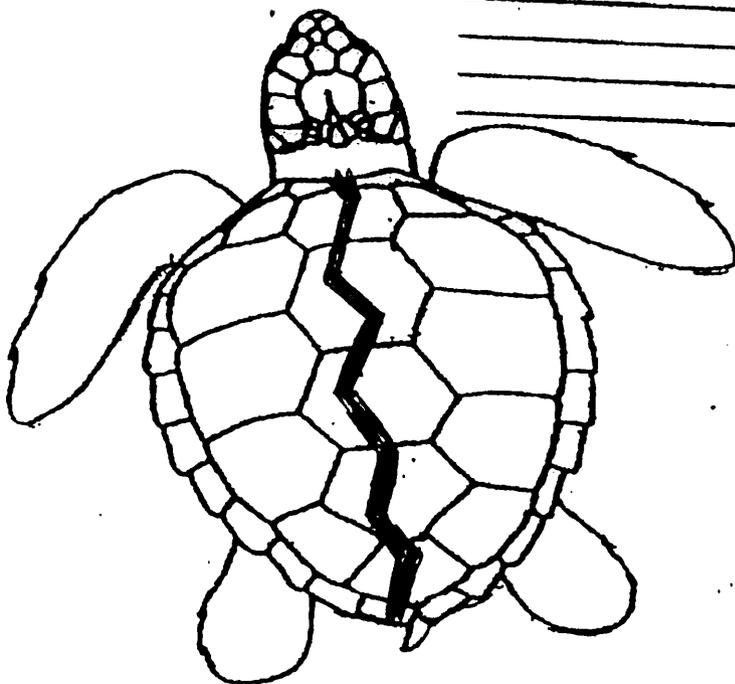
tags; turtle's head was intact; no cuts on head.

Observer's Name Francis Smith



Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

Comments Juvenile loggerhead was
intact. No visible cuts on head.
Flippers were also intact; no
tags were seen. Carapace
was folded up down the
center.





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INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 12 MAY 03

Time (24 hr) 1225-1356

LOAD #285

Species of Turtle Taken unknown

Dredging Site (channel, port, etc.) Aransas Pass

Location of Take: Latitude 27° 48.797 Longitude 97° 00.177

Vessel Name and Company Atchafalaya 2

Load # 285 Times: Start 1225 End 1356 Dump _____

Sampling Method (overflow, inflow, etc.) _____

Samples Recovered From basket portside

Condition of Screening Good

Draghead Deflector? Yes No

Condition of Deflector: Good

Weather Conditions: 15-20 knots SE cloudy 90°F

Water Temperature: Surface 81°F Column _____ °C or °F (Circle one)

Condition of specimen(s) sampled bone not scutes

just indentation to show where scutes lay.

Measurements (metric if possible): _____

5 pictures taken

Give estimate of entire carapace dimensions, as well as fragments samples:

Head With _____

Plastron Length _____ Width _____

Carapace *S.L. Length _____ S.L. Width _____

Carapace **O.C. Length _____ O.C. Width _____

Turtle Tagged? Yes No Tag# _____ Date / /

Comments: 3 1/2" x 5"

Observer's Name Bonnie Brown



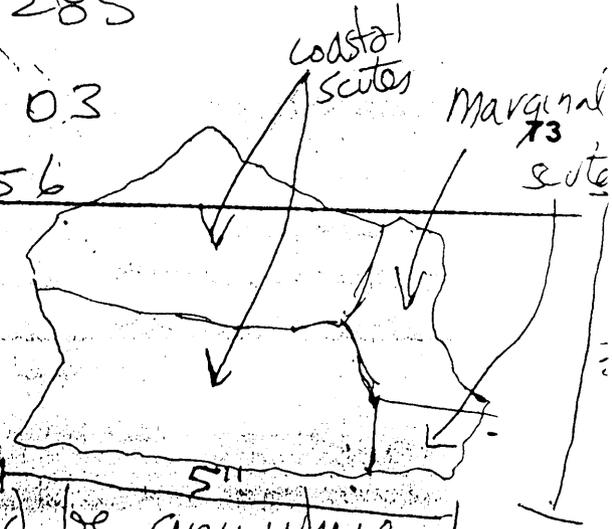
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LOAN # 285

12 MAY 03

1225-1356

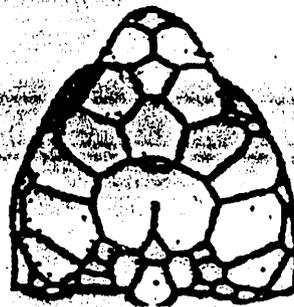
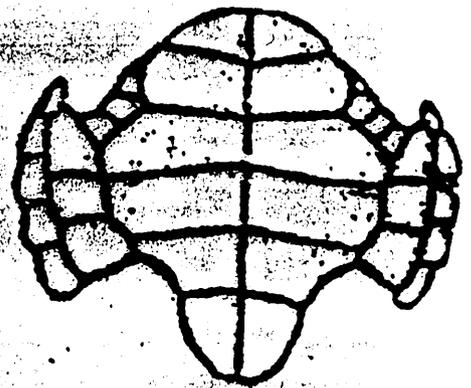
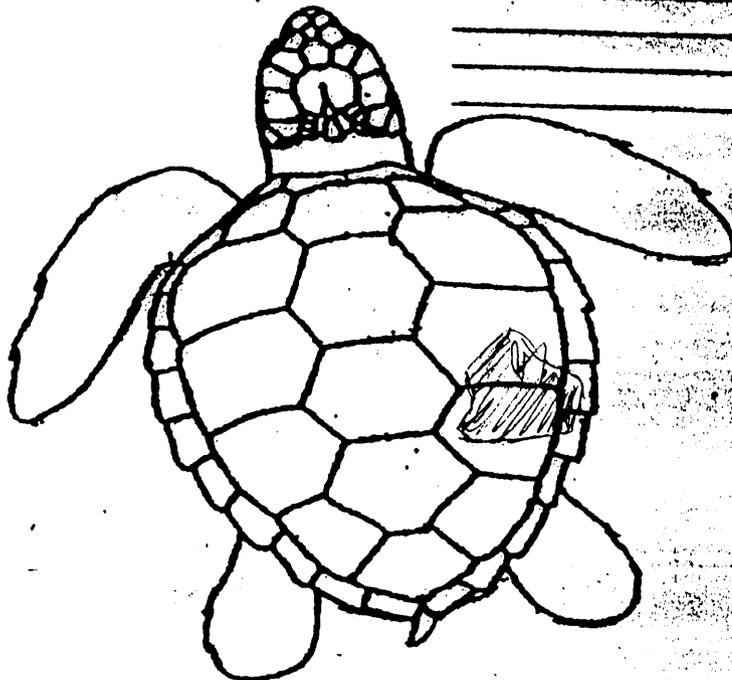


Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

Comments could be anywhere
on the carapace, I can't
determine.

No scute just indentation
of where scute would fall
if there were scutes

 shaded area
= turtle piece



INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

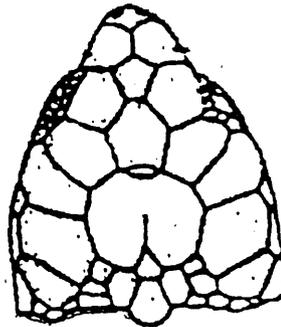
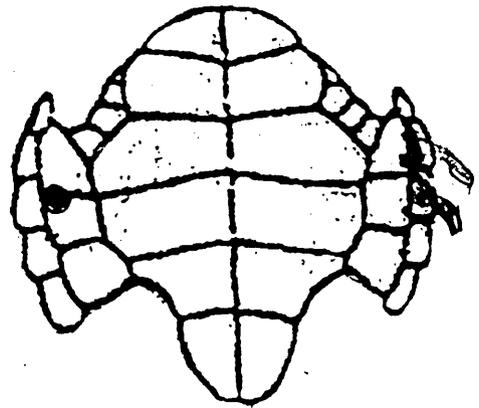
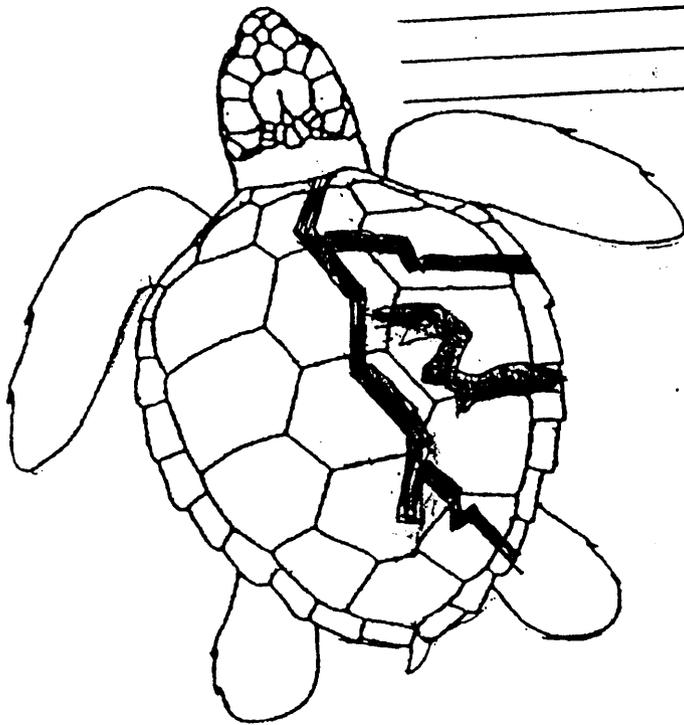
Date 12/1 MAY 03 Time (24 hr) 2302
 Species of Turtle Taken Caretta caretta
 Dredging Site (channel, port, etc.) Aransas PASS, TX
 Location of Take: Latitude 27° 49.115 N Longitude 97° 00.581 W
 Vessel Name and Company A+Chalupa, B+B Dredging
 Type of Dredging Activity hopper dredging
 Load # 289 Times: Start 2125 End 2302 Dump _____
 Sampling Method (overflow, inflow, etc.) inflow, screening
 Samples Recovered From draghead
 Condition of Screening good
 Draghead Deflector? Yes No _____
 Condition of Deflector: good
 Weather Conditions: partly cloudy, hazy, wind ^{10+20 knots} Tide _____
 Water Temperature: Surface 81°F Column _____ °C or (circle one)
 Condition of specimen(s) sampled when turtle was brought up in draghead. Turtle was still alive and breathing. Flippers were intact. No visible tags. Carapace was cracked.
 Measurements (metric if possible): metric
 Give estimate of entire carapace dimensions, as well as fragments samples:
 Head Width 11 cm
 Plastron Length 52.5 cm Width 41
 Carapace *S.L. Length 59.0 cm S.L. Width _____
 Carapace **O.C. Length 62.0 cm O.C. Width _____
 Turtle Tagged? Yes _____ No Tag# _____ Date 1/1
 Comments: Carapace had 3 cracks. in ~~the~~ Plastron left side @ 3rd coastal scute hole ^{is present}. Right side of plastron ~~was~~ piece hanging off. Insides of turtle were sucked out. ~ 10 mins after removing turtle ~~and~~ from draghead it died.
 Observer's Name Erwin Smith

* S.L. = straight line

**O.C. = overall curved

Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

Comments first crack on right
side of carapace was 12 cm in length
Middle crack was 23 cm in length
from middle ~~of~~ carapace to 3rd costal
sawte. 3rd crack was 12 cm
Crack from middle head to middle
of carapace 40 cm long.
4th scute was hanging from side.



INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 18 MAY 2003 Time (24 hr) 1001

Species of Turtle Taken UNKNOWN

Dredging Site (channel, port, etc.) PORT AAANSAS / ARANSAS PASS ENTRANCE CHANNEL (TX)

Location of Take: Latitude 27° 49.504 Longitude 97° 01.092

Vessel Name and Company ATCHAFALAYA B+B DREDGING

Type of Dredging Activity HOPPER DREDGE - CHANNEL

Load # 328 Times: Start 0830 End 1001 Dump 1007

Sampling Method (overflow, inflow, etc.) INFLOW

Samples Recovered From INFLOW LANDER SCREENING

Condition of Screening GOOD

Draghead Deflector? Yes No

Condition of Deflector: GOOD

Weather Conditions: 94°F; SUNNY; WIND SE @ 4KT Tide _____

Water Temperature: Surface 27°C Column _____ °C or °F (circle one)

Condition of specimen(s) sampled _____
OLD & WEATHERED BONE
BLACKENED WITH AGE; WORN/ERODED @ EDGES

Measurements (metric if possible): 10.5 cm LONG

Give estimate of entire carapace dimensions, as well as fragments samples:

Head Width _____

Plastron Length _____ Width _____

Carapace *S.L. Length _____ S.L. Width _____

Carapace **O.C. Length _____ O.C. Width _____

Turtle Tagged? Yes _____ No NA Tag# _____ Date 1/1

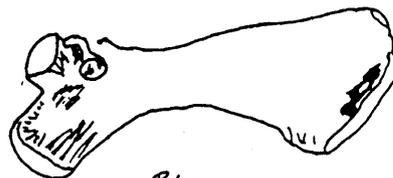
Comments: _____
OLD & WEATHERED BONE
DOES NOT REPRESENT A FRESH TAKE

Observer's Name GARY SUNDIN

* S.L. = straight line

**O.C. = overall curved

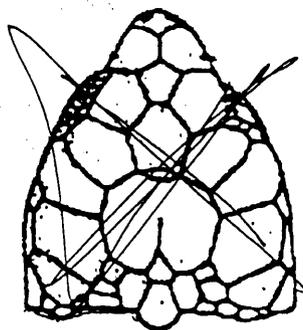
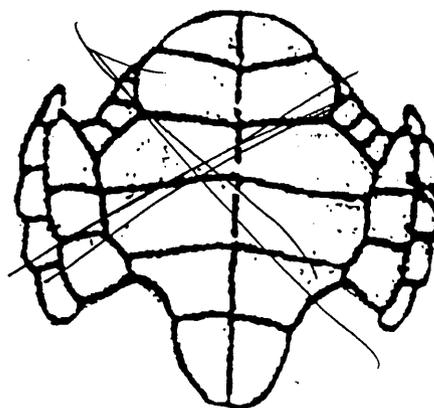
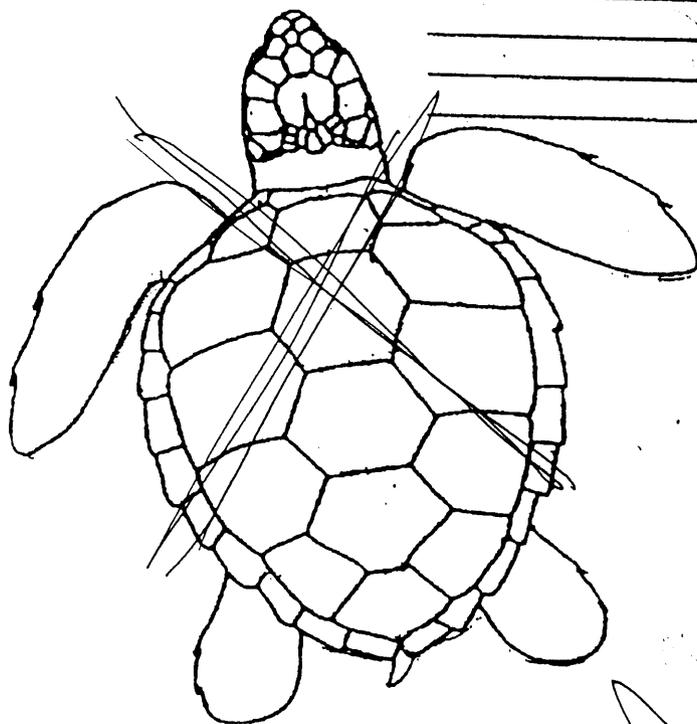
Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.



BLACKENED WITH AGE

Comments

AGED & WEATHERED
HUMERUS
* NOT A FRESH TAKE *



INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 20, MAY, 2003 Time (24 hr) 0859
 Species of Turtle Taken Caretta caretta
 Dredging Site (channel, port, etc.) ARANSAS PASS ENTRANCE CHANNEL
 Location of Take: Latitude 27° 49.366 Longitude 97° 01.197
 Vessel Name and Company ATCHAEALAYA, B+B DREDGING
 Type of Dredging Activity HOPPER DREDGE, CHANNEL
 Load # 352 Times: Start 0729 End 0859 Dump 0907
 Sampling Method (overflow, inflow, etc.) INFLOW SCREENING
 Samples Recovered From DRAG-HEAD AND LANDER SCREEN
 Condition of Screening GOOD
 Draghead Deflector? Yes No
 Condition of Deflector: GOOD
 Weather Conditions: 91°f; SCATTERED CLOUDS Tide FLOOD
 Water Temperature: Surface 27.5° Column _____ or °F (circle one)
 Condition of specimen(s) sampled VERY STRONG ODOR OF DECAY
INTERIOR FLESH GREY W/ PINK TINGE; TISSUE
MUSHY; SKULL CLEAN OF ANY FLESH OR TISSUE
 Measurements (metric if possible): SEE REVERSE
 Give estimate of entire carapace dimensions, as well as fragments samples:
 Head Width *SEE REVERSE
 Plastron Length NA Width NA
 Carapace *S.L. Length NA S.L. Width NA
 Carapace **O.C. Length NA O.C. Width NA
 Turtle Tagged? Yes No Tag# _____ Date 1/1
 Comments: STRONG DECAY ODOR; LACKS FRESH
BLOOD WITHIN TISSUE WHEN SLICED; TISSUE
SLIGHTLY MUSHY WHEN MANIPULATED
*EVIDENCE SUGGESTS TURTLE IS NOT RECENTLY KILLED
 Observer's Name GARY SUNDIN

* S.L. = straight line

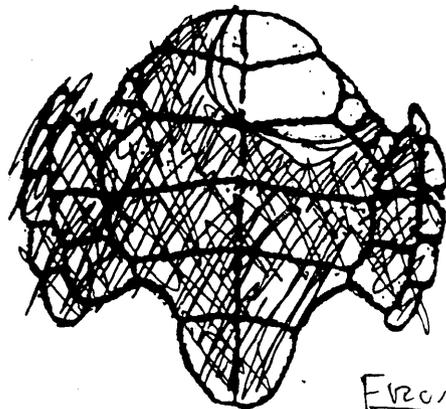
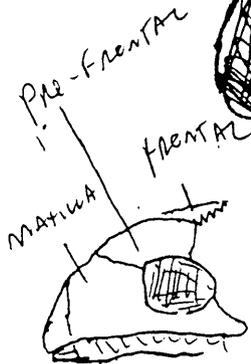
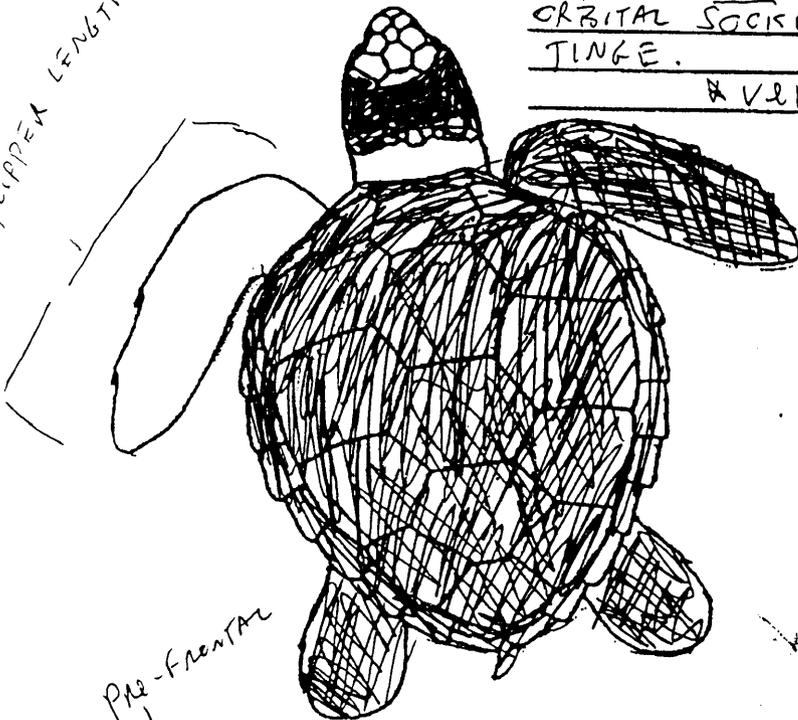
**O.C. = overall curved

Blacken/shade parts which are missing.
 Sketch any visible cracks and lacerations.

Comments ONE FRONT FLIPPER
(PROBABLY LEFT) WITH ATTACHED
SKIN, MUSCLE, CONNECTIVE TISSUE.
BECKEN PLASTION BONES &
VERTEBRA FROM NECK, UPPER
PORTION OF SKULL INCLUDING
PREFRONTAL & FRONTAL BONES
BUT NOT POSTORBITAL. FRONTAL
BONE DOES NOT FORM PART OF
ORBITAL SOCKET. TISSUE GRAY W/ ORANGISH
TINTE.

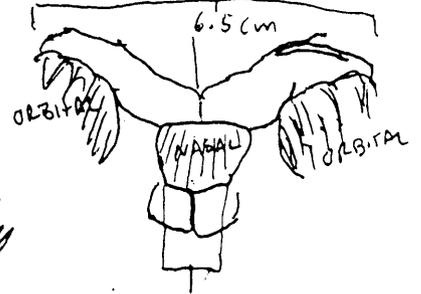
A VERY STRONG ODOR OF DECAY *

FLIPPER LENGTH 39CM

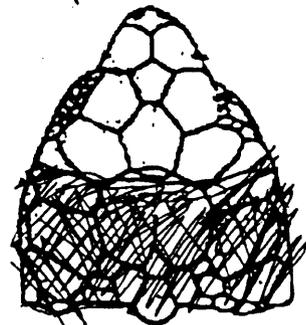


FRONT VIEW

WIDTH ACROSS PRE-FRONTAL BONE - ORBITAL TO ORBITAL



NASAL opening width 3cm



* OLD BONE *

INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 21, MAY 2003 Time (24 hr) 0756
 Species of Turtle Taken UNKNOWN
 Dredging Site (channel, port, etc.) ARANSAS PASS ENTRANCE CHANNEL
 Location of Take: Latitude 27° 49.440 Longitude 97° 01.354
 Vessel Name and Company ATCHAFALAYA B+B DREDGING
 Type of Dredging Activity HOPPER DREDGE CHANNEL
 Load # 364 Times: Start 0619 End 0756 Dump 0802
 Sampling Method (overflow, inflow, etc.) INFLOW
 Samples Recovered From INFLOW LANDER SCREEN
 Condition of Screening GOOD
 Draghead Deflector? Yes No
 Condition of Deflector: GOOD
 Weather Conditions: 75°F WIND NE 20kts Tide FLOED
 Water Temperature: Surface 27.5°C Column _____ or °F (circle one)
 Condition of specimen(s) sampled _____
VERY OLD PLASTRON BONE SEGMENT
BLACK, WEATHERED, FOULED W/ BARNACLES; SCORED
 Measurements (metric if possible): - 23 cm LONG
 Give estimate of entire carapace dimensions, as well as fragments samples:
 Head Width _____
 Plastron Length _____ Width _____
 Carapace *S.L. Length _____ S.L. Width _____
 Carapace **O.C. Length _____ O.C. Width _____
 Turtle Tagged? Yes No Tag# _____ Date 5/21
 Comments: * NOT A FRESH TAKE *
OLD SEGMENT OF PLASTRON
BLACK W/ AGE, EDGES ROUNDED & WORN
SCORED BY BORING ORGANISMS
FOULED W/ BARNACLES
 Observer's Name RAY SWOIN

* S.L. = straight line

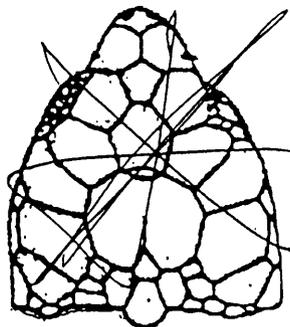
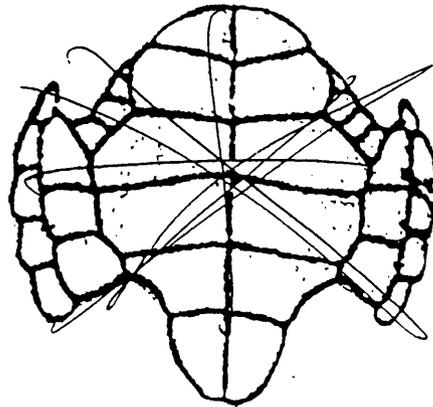
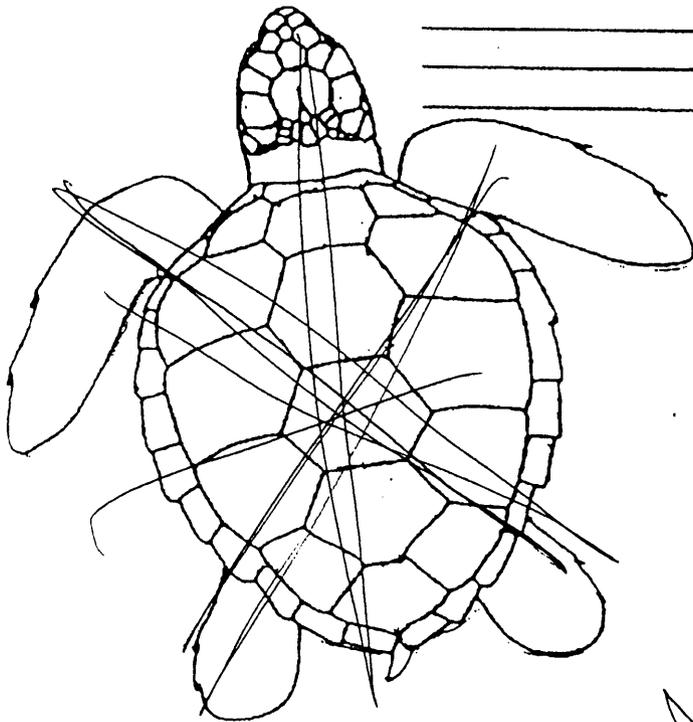
**O.C. = overall curved



Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

Comments _____

VERY OLD BONE
BLACK W/ AGE
BORED & FOULED
* NOT A FRESH TAKE *



INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 05, 23, 03 Time (24 hr) 0420
 Species of Turtle Taken Caretta caretta
 Dredging Site (channel, port, etc.) channel Aransas Pass
 Location of Take: Latitude 27°49.706 Longitude 97°00.806
 Vessel Name and Company Atchafalaya - B+B Dredging Co.
 Type of Dredging Activity hopper
 Load # 387 Times: Start 0250 End 0420 Dump _____
 Sampling Method (overflow, inflow, etc.) inflow
 Samples Recovered From drag arm
 Condition of Screening good
 Draghead Deflector? Yes No _____
 Condition of Deflector: good
 Weather Conditions: clear, seas calm, 89°F Tide flood
 Water Temperature: Surface 27.5°C Column _____ °C or °F (circle one)
 Condition of specimen(s) sampled fresh kill - see below & reversed side

Measurements (metric if possible): centimeters

Give estimate of entire carapace dimensions, as well as fragments samples:

Head Width 13.5

Plastron Length 47.5

Width 31.5

Carapace *S.L. Length 63

S.L. Width — cracked

Carapace **O.C. Length 64.5

O.C. Width 64.5

Turtle Tagged? Yes _____ No Tag# _____ Date 1/1

Comments: found in drag arm, still had reflexes when taken out. Deep gash on left side that went through the plastron and carapace. Fresh blood coming out of wound.

Observer's Name GARY Sundin & Robin Wolfe

* S.L. = straight line

**O.C. = overall curved

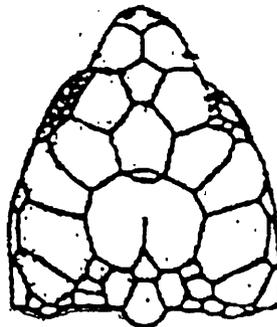
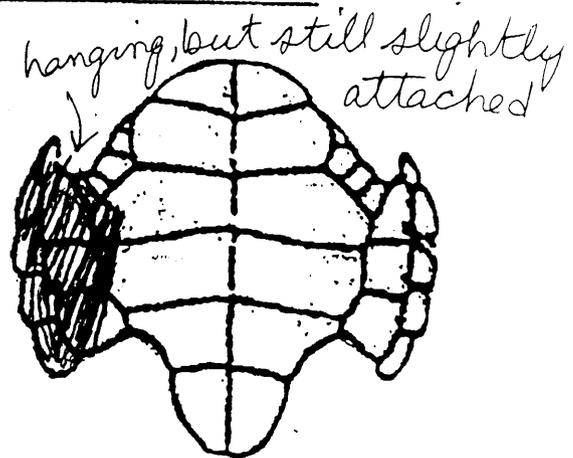
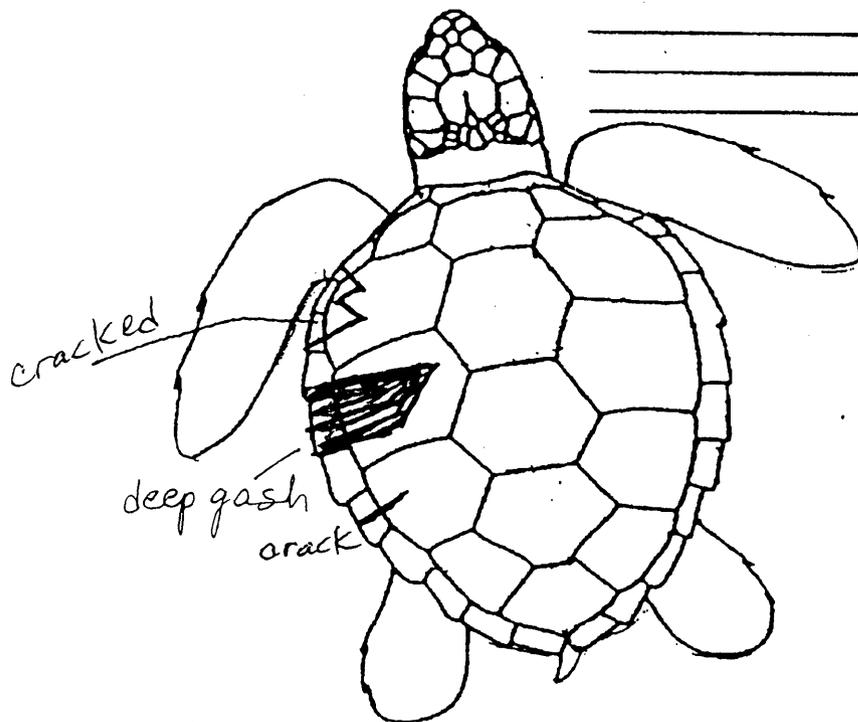
tail length
13

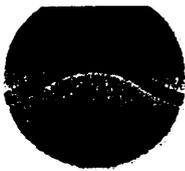
#1

Blacken/shade parts which are missing.

Sketch any visible cracks and lacerations.

Comments Turtle still had reflexes
when first brought out of
drag arm. Large gash on
left side through plastron
and carapace. Fresh
blood coming out of wound.
Intestines protruding
from wound & some found
in lander.





REMSA

RESEARCH, ENVIRONMENTAL
& MANAGEMENT SUPPORT

INCIDENT REPORT OF SEA TURTLE TAKE BY DREDGING ACTIVITY

Date 24 MAY 03

Time (24 hr) 0039 - 0230

Species of Turtle Taken Caretta caretta

Dredging Site (channel, port, etc.) Avansas pass

Location of Take: Latitude 27° 49.740 Longitude 97° 00.740

Vessel Name and Company Atchafalaya, B & B Dredging

Load # 392 Times: Start 0039 End Dump

Sampling Method (overflow, inflow, etc.) inflow

Samples Recovered From draghead

Condition of Screening good

Draghead Deflector? Yes No

Condition of Deflector: good

Weather Conditions: clear low BO's 10-15 knots S/SE

Water Temperature: Surface 28°C Column °C or °F (Circle one)

Condition of specimen(s) sampled skin still intact. No smell.

skin scuffed off at mid skull. Eyes sunken in.

pieces of carapace found as well.

Measurements (metric if possible):

Give estimate of entire carapace dimensions, as well as fragments samples:

Head With 14 cm

Plastron Length

Width

Carapace *S.L. Length

S.L. Width

Carapace **O.C. Length

O.C. Width

Turtle Tagged? Yes No Tag# Date / /

Comments: one was Pinned also reported to be

found by deckhand. But misplaced.

Observer's Name Bonnie Brown



REMSA

RESEARCH, ENVIRONMENTAL
& MANAGEMENT SUPPORT

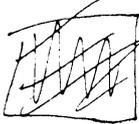
Blacken/shade parts which are missing.
Sketch any visible cracks and lacerations.

available

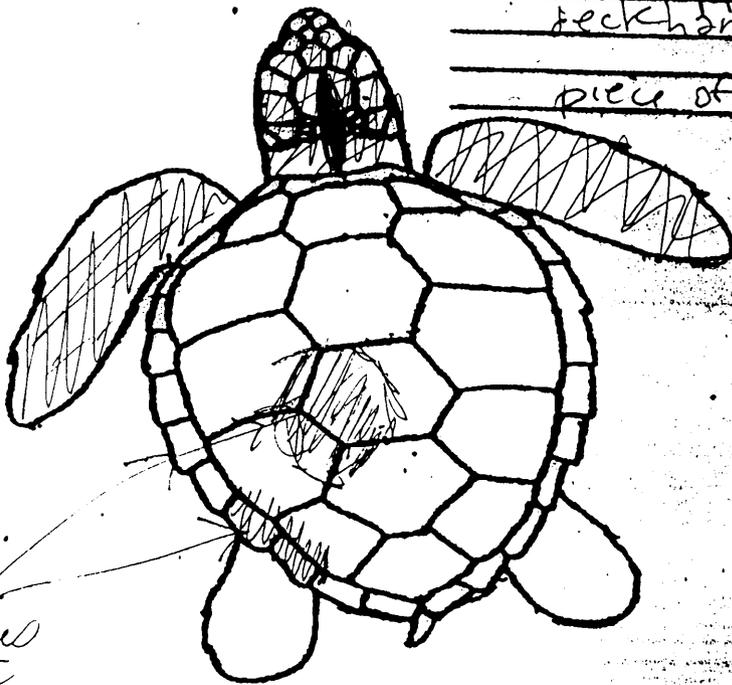
Comments

yellow skin, skin intact,
skuffed off in mid skull.
eyes sunken in. no smell
muscle still tight on bone.
piece of carapace, skull
still intact, orange brown.
- cut into flesh at neck, pink, no bleeding.
back flaps also witnessed by
deckhand, but misplaced.
piece of plastron

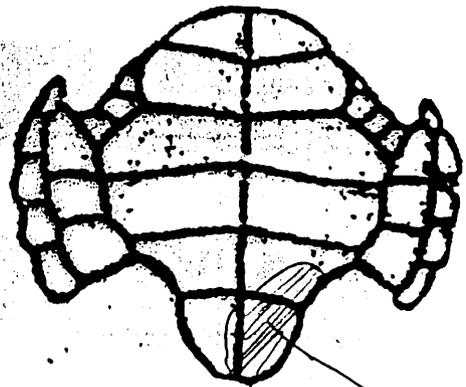
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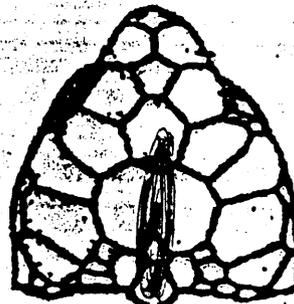
parts available



piece of carapace:
location unknown
only hypothetical.



piece of plastron:
location unknown



skin scuffed off