

FINAL REPORT

Marine Endangered Species Monitoring Program

Maintenance Dredging Project

Palm Beach, Florida

Dates: 21 April 2005 – 2 July 2005

Submitted by:

Will Parks

Marine Endangered Species Observer Program

Sr. Project Manager/Biologist

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ABSTRACT

A twenty-four hour per day marine endangered species monitoring program was conducted onboard the hopper dredge *Atchafalaya* from 21 April thru 2 July 2005 during the Palm Beach, Florida dredging project. 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. There were three incidents involving target species. Of the three incidents, only one on 26 April was considered a lethal take by the dredge. The other two incidents were fragments of old bone that were dredged up and were not directly related to dredging operations.

INTRODUCTION

The [REMSA Inc.](#) Marine Endangered Species Observer Division was subcontracted by *B + B Dredging Company* under their contract with the Jacksonville District of the US Army Corps of Engineers (USACE) 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 maintain inflow screens onboard the hopper dredge *Atchafalaya*. Monitoring was performed 24 hours each day for the duration of the project. 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. 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 USACE within twenty-four hours of the incident. A 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

Dredge coverage began when the observers arrived onboard the *Atchafalaya* on 21 April 2005. Two certified observers were present during prime sea turtle activity, each working 12 hour shifts.

The dredge *Atchafalaya* functioned with 100% inflow screening with sea turtle draghead deflectors being used as well. 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 hopper load was completed during the observers 12-hour shift. The appropriate forms were filled out, noting any incidents regarding targeted species as well as noting other 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

On 26 April 2005 at 1855 a section of carapace from a loggerhead turtle was discovered in the port discharge basket after load #021. The specimen was fresh and consisted of 3 costal scutes and 8 marginal scutes from the turtles left side. The entrails/tissue appeared fresh with veins and blood visible. The location of the take was: Latitude 26° 96.27 N , Longitude 80° 02.43 W. The weather was as follows: Air Temp. 25.5°C, Water Temp. 23.3°C, Wind – SE @ 25 knots, Waves – 2-3 ft.

See attached incident report for more information.



Two bone fragments were recovered from the port basket on 29 April and 12 May 2005. These specimens were documented and diagrams were drawn of what was recovered. These specimens were old and weathered and were in no way related to dredging operations, thus they are not considered lethal takes.

SUMMARY

On 21 April 2005, the hopper dredge *Atchafalaya* began dredging in Palm Beach, Florida and continued until 2 July 2005. Dredging was conducted for a total of 73 days with a total of 487 loads. There was one lethal take of a loggerhead turtle on 26 April 2005.

All pertinent information was recorded and copies were made for the USACE , the NMFS, and B+B Dredging.

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

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Sr.Project Manager/Biologist
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INCIDENT REPORTS

ENDANGERED SPECIES OBSERVER PROGRAM
LOAD DATA FORM

USACE DISTRICT: Jacksonville, FL
CONTRACT #: _____ Maintenance _____ / New Work PROJECT start date 21 APRIL 05
PROJECT NAME: M.D. Palm Beach DREDGE NAME: Atchafalaya
DREDGE FIRM: B & B
LOAD #: 021 LOAD start date: 26 Apr. 05 Times (24hrs): Start 1600 End 1855

Condition of screening: Port Good Starboard n/a Overflow Good

Number of dragheads in use: 1 Type of dragheads used: Standard Size of dragheads: 4' x 4'
Draghead deflector? YES NO _____ Condition of deflector: Good

Type of material dredged: Sand, vegetation

Weather conditions: Overcast / Windy conditions SE @ 25-30 kts / whitecaps.

Tidal stage (CIRCLE ONE): Slack _____ Rising _____ High _____ Falling _____ Low _____ Unknown _____

Beaufort Sea States (Winds/Wave Height) (CIRCLE ONE)
0 = <1 knot/ 0 ft 1 = 1-3 knot/ 0.25 ft 2 = 4-6 knot/ 0.5 ft 3 = 7-10 knot/ 2 ft 4 = 11-16 knot/ 4 ft 5 = 17-21 knot/ 6 ft 6 = 22-27 knot/ 10 ft 7 = 28-33 knot/ 14 ft 8 = 34-40 knot/ 18 ft 9 = 41-47 knot/ 23 ft 10 = 48-55 knot/ 29 ft 11 = 56-63 knot/ 37 ft 12 = >63 knot/ 45 ft

Waves: 2-3 ft. Wind (speed & direction): SE @ 25 knots

AIR TEMP: 79 °C °F (°F = 9/5 (°C) + 32; °C = 5/9 (°F - 32))
WATER TEMP: Surface 74 °C °F Column (mid-depth) _____ °C / °F Bottom _____ °C / °F

SCREEN TYPE	Inflow screening:	None	25%	50%	75%	100%
<input checked="" type="checkbox"/>	Overflow screening:	None	25%	50%	75%	100%
<input type="checkbox"/>	Other screening:	None	25%	50%	75%	100%

PORT SCREEN CONTENTS: loggerhead Carapace, Sturgeon, vegetation

STARBOARD SCREEN CONTENTS: n/a

Estimate number entrained on this load for the following:
Sturgeon (any species) _____
Shark (any species) _____
Horseshoe crab _____
Blue crab _____

TURTLE OR TURTLE PARTS PRESENT THIS LOAD: YES NO _____

SPECIES OF TURTLE TAKE: Unknown Loggerhead Green Kemp's ridley Hawksbill Leatherback

Comments: Loggerhead Carapace in loader / some flesh, Bones.
Flesh pieces - 13 ea

Number observers used/24hrs: 2 % Monitoring/24 hrs: None 25% 50% 75% 100%

Observer's name: Brad Davis / Erik Rolla Observer firm: REMSA, Inc.
Observer signature: [Signature]

ENDANGERED SPECIES OBSERVER PROGRAM
SEA TURTLE INCIDENTAL TAKE DATA FORM

USACE DISTRICT: Jacksonville, FL
PROJECT NAME: Maintenance Dredging Palm Beach DREDGE NAME: Atchafalaya

DATE: 26 April 05 Time turtle take recovered (24hr): 1810 Turtle take # for project: 1

LOAD #: 021 Times (24hrs): Start 1600 End 1855 Load start date 26 April 05

SPECIES OF TURTLE TAKE: Unknown Loggerhead Green Kemp's ridley Hawksbill Leatherback

Channel location of take: Latitude 26° 46.27 N Longitude 080° 02.43 W

Other location / Channel description (e.g. buoy markers, landmarks):
Lake Worth Inlet Buoy #7 → 9 → #4

Location take recovered on dredge: port side lander

Number of dragheads in use at time of incident: 1 Draghead deflector? YES NO
Condition of deflector: Good Condition of screening: good

Beaufort Sea State: 0 1 2 3 4 5 6 7 8 9 10 11 12

AIR TEMP: 78 °C/F (°F = 9/5 (°C) + 32; °C = 5/9 (°F - 32))
WATER TEMP: Surface 74 °C/F Column (mid-depth) / °C/F Bottom / °C/F

Condition of specimen: Appears fresh (absolutely no odor detected)
Carapace - 3 costal scutes - left side - with 8 marginal scutes
Entrals / Tissue appears fresh with veins and blood visible
0 = Alive; 1 = Fresh dead; 2 = Moderately decomposed; 3 = Severely decomposed; 4 = skeleton/old bone; 5 = undetermined

Sex: M F UN How determined? _____ Age class: Juv ___ Sub-Adult ___ Adult ___ UN

Measurements: Circle units
Plastron Length: 7/9 cm/in Head Width: none cm/in
Carapace Straight Length: 7/8 cm/in Plastron Width: none cm/in
Carapace Curved Length: 56.7 cm/in Carapace Straight Width: 7/9 cm/in
Carapace Curved Width: 31.3 cm/in

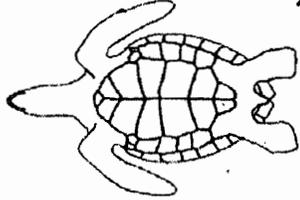
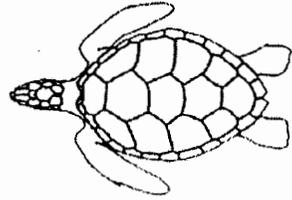
Genetic samples taken: YES ___ NO ___ Photos taken: YES NO ___
Turtle tagged?: YES ___ NO Tag type: _____ Tag #: _____ Tag date: _____
Final disposition of specimen: placed in black plastic bag and stored in freezer aboard.

Comments: Tissue Samples Taken. stored in Ziplock bags and put into freezer

Load data form attached: YES NO ___ Dredge load log attached: YES NO

Observer's name Erik Rella / Brad Davis

Use diagrams below to illustrate specimen/part recovered: (see attached diagram)



Loggerhead (*Caretta caretta*)

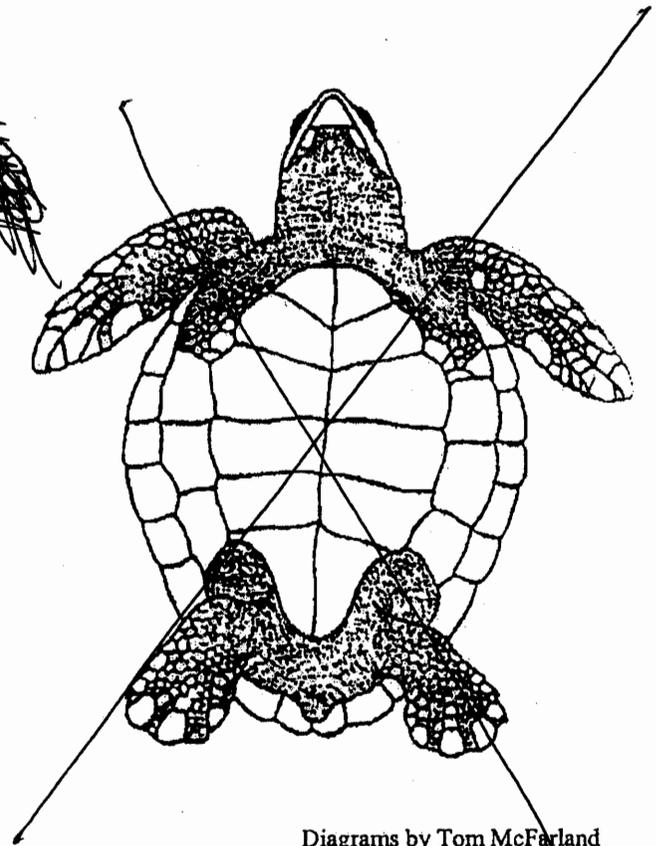
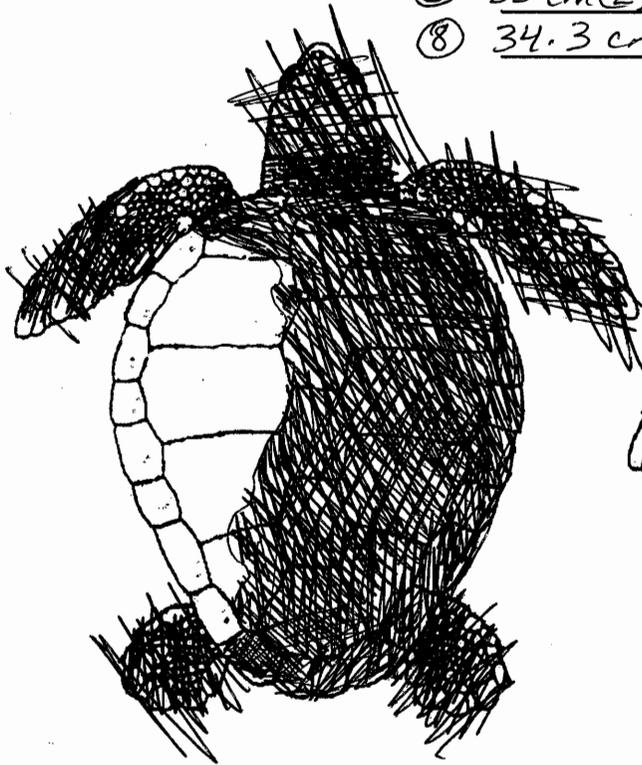
Shade areas of turtle that are missing; sketch cracks and lacerations

Comments: Carapace - light barnacle growth ϵ ;
light algae growth, not decayed

10 samples of tissue / entral
were recovered - 2 were packed
with sand (tube-like entral)

LISTED IN ORDER - TOP TO BOTTOM OF PHOTO:

- ① 87.5 cm (L) ② 77.5 cm (L) x 6.5 cm (W)
③ ~~66.8~~ 68.8 cm (L) ④ 42 cm (L) ⑤ 37.6 (L) x 11 (W)
⑥ 33 cm (L) ⑦ 35.5 cm (L)
⑧ 34.3 cm (L) ⑨ 23.28 cm (L)



Diagrams by Tom McFarland

ENDANGERED SPECIES OBSERVER PROGRAM
LOAD DATA FORM

USACE DISTRICT: Jacksonville, FL
CONTRACT #: _____ Maintenance _____ /New Work PROJECT start date 21 April 05
PROJECT NAME: M.D. Palm Beach DREDGE NAME: Atchafalaya
DREDGE FIRM: B+B
LOAD #: 32 LOAD start date: 29 April 05 Times (24hrs): Start 0835 End 1045

Condition of screening: Port Good Starboard N/A Overflow Good

Number of dragheads in use: 1 Type of dragheads used: STRD Size of dragheads: 4x4
Draghead deflector? YES NO _____ Condition of deflector: Good

Type of material dredged: Sand

Weather conditions: Clear skies

Tidal stage (CIRCLE ONE): Slack Rising High Falling Low Unknown

Beaufort Sea States (Winds/Wave Height) (CIRCLE ONE)
0 = <1 knot/0 ft 3 = 7-10 knot/2 ft 6 = 22-27 knot/10 ft 9 = 41-47 knot/23 ft 12 = >63 knot/45 ft
1 = 1-3 knot/0.25 ft 4 = 11-16 knot/4 ft 7 = 28-33 knot/14 ft 10 = 48-55 knot/29 ft
 2 = 4-6 knot/0.5 ft 5 = 17-21 knot/6 ft 8 = 34-40 knot/18 ft 11 = 56-63 knot/37 ft

Waves: 1-4 ft Wind (speed & direction): SE 10 Kts

AIR TEMP: 80 °C/F (°F = 9/5 (°C) + 32; °C = 5/9 (°F - 32))
WATER TEMP: Surface 73 °C/F Column (mid-depth) _____ °C/F Bottom _____ °C/F

SCREEN TYPE	Inflow screening:	None	25%	50%	75%	100%
<input checked="" type="checkbox"/>	Overflow screening:	None	25%	50%	75%	100%
_____	Other screening:	None	25%	50%	75%	100%

PORT SCREEN CONTENTS: marine vegetation, Sargassum, 1 Stargazer
1 OLD Turtle bone 1 K3 crab

STARBOARD SCREEN CONTENTS: N/A

Estimate number entrained on this load for the following:
Sturgeon (any species) _____
Shark (any species) _____
Horseshoe crab _____
Blue crab _____

TURTLE OR TURTLE PARTS PRESENT THIS LOAD: YES NO _____ OLD Bone

SPECIES OF TURTLE TAKE: Unknown Loggerhead Green Kemp's ridley Hawksbill Leatherback

Comments: Dredging inside Inlet See attached.

Number observers used/24hrs: 1 % Monitoring/24 hrs: None 25% 50% 75% 100%

Observer's name: Erik Rolla Observer firm: REMSA, Inc
Observer signature: [Signature]

USACE District: Jacksonville, FL

Maintenance Dredging Lake Worth Inlet, Palm Beach, FL

29 April 05

Dredge Atehafalaya (Firm B+B)

Load # 032

REMSA, Inc

Marine Endangered Species Observer

1 old turtle bone

Species Unknown

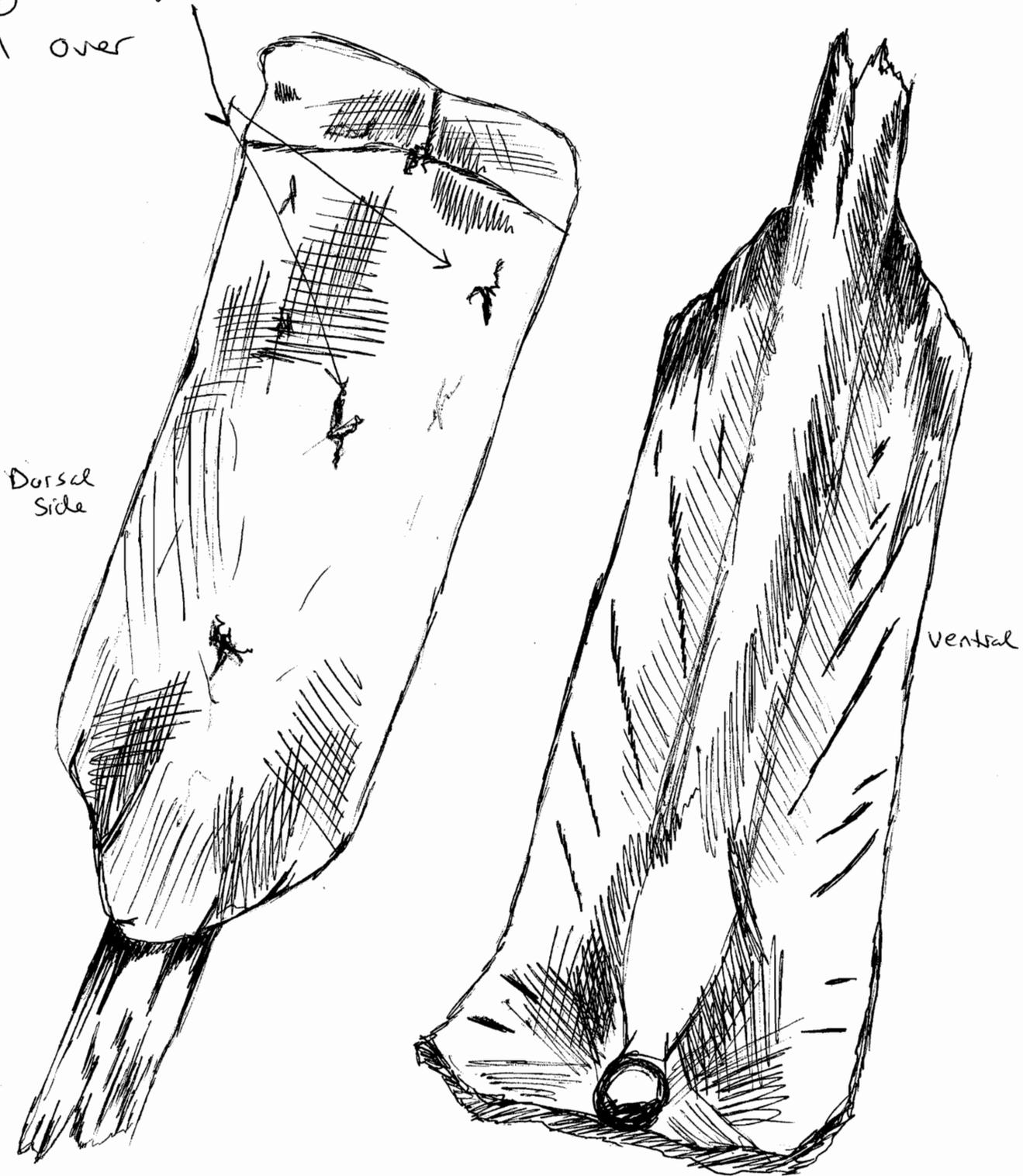
~~1~~ Bright orange paint appears to be imbedded into bone.
(dorsal surface)

photos taken ✓

See attached for bone description + drawings

01 D Turtle Bone / rib bone
Species UNK.

Bright orange print on surface imbedded into bone
all over



REMSEA, Inc Observer Erik Rolla

ENDANGERED SPECIES OBSERVER PROGRAM
LOAD DATA FORM

USACE DISTRICT: JACKSONVILLE, FL
CONTRACT #: Maintenance /New Work _____ PROJECT start date 21 APRIL 05
PROJECT NAME: MANH. DR. PALM BEACH DREDGE NAME: ATCHAFALAYA
DREDGE FIRM: B+B
LOAD #: 83 LOAD start date: 12 MAY 05 Times (24hrs): Start 1222 End 15:19

Condition of screening : Port GOOD Starboard N/A Overflow GOOD

Number of dragheads in use: 1 Type of dragheads used: STANDARD Size of dragheads: 4x4
Draghead deflector? YES X NO _____ Condition of deflector: GOOD

Type of material dredged: SAND

Weather conditions: OVERCAST, CLOUDY

Tidal stage (CIRCLE ONE): Slack Rising High Falling Low Unknown

Beaufort Sea States (Winds/Wave Height) (CIRCLE ONE)
0 = <1 knot/ 0 ft 3 = 7-10 knot/ 2 ft 6 = 22-27 knot/10 ft 9 = 41-47 knot/23 ft 12 = >63 knot/45 ft
1 = 1- 3 knot/ 0.25 ft 4 = 11-16 knot/ 4 ft 7 = 28-33 knot/14 ft 10 = 48-55 knot/29 ft
2 = 4- 6 knot/ 0.5 ft 5 = 17-21 knot/ 6 ft 8 = 34-40 knot/18 ft 11 = 56-63 knot/37 ft
Waves: 2-3 ft Wind (speed & direction): 14-16 KN ENE

AIR TEMP: 79 °C/F °F = 9/5 (°C) + 32; °C = 5/9 (°F - 32))
WATER TEMP: Surface 73 °C/F Column (mid-depth) _____ °C/F Bottom _____ °C/F

SCREEN TYPE	<u>X</u>	Inflow screening:	None	25%	50%	75%	<u>100%</u>
	<u>X</u>	Overflow screening:	None	25%	50%	75%	<u>100%</u>
		Other screening:	None	25%	50%	75%	100%

PORT SCREEN CONTENTS: MARINE VEGETATION, SHELLS, METAL & PLASTIC TRASH
1 PART OF OLD TURTLE BONE

STARBOARD SCREEN CONTENTS: N/A

Estimate number entrained on this load for the following:
Sturgeon (any species) _____
Shark (any species) _____
Horseshoe crab _____
Blue crab _____

TURTLE OR TURTLE PARTS PRESENT THIS LOAD: YES X NO _____
COLD BONE

SPECIES OF TURTLE TAKE: Unknown Loggerhead Green Kemp's ridley Hawksbill Leatherback

Comments: DREDGING EAST OF JETTYS - SEE ATTACHED FOR DESCRIPTION OF (PART) OF 1 OLD BONE

Number observers used/24hrs: 2 % Monitoring/24 hrs: None 25% 50% 75% 100%

Observer's name: EDWARD CLEMENT JUSTIN McANULTON Observer firm REMSA, INC
Observer signature [Signature]

USACE DISTRICT: JACKSONVILLE, FL

P2/3

MAINTAINCE DREDGING: LAKE WORTH INLET
PALM BEACH, FL

12 MAY 2005

DREDGE ATCHAFALAYA : COMPANY B+B

LOAD # 83

REMSA, INC.

MARINE ENDANGERED SPECIES OBSERVER

EDWARD CLEMENT

1 OLD TURTLE BONE (PART)

SPECIES UNKNOWN

PHOTO TAKEN ✓

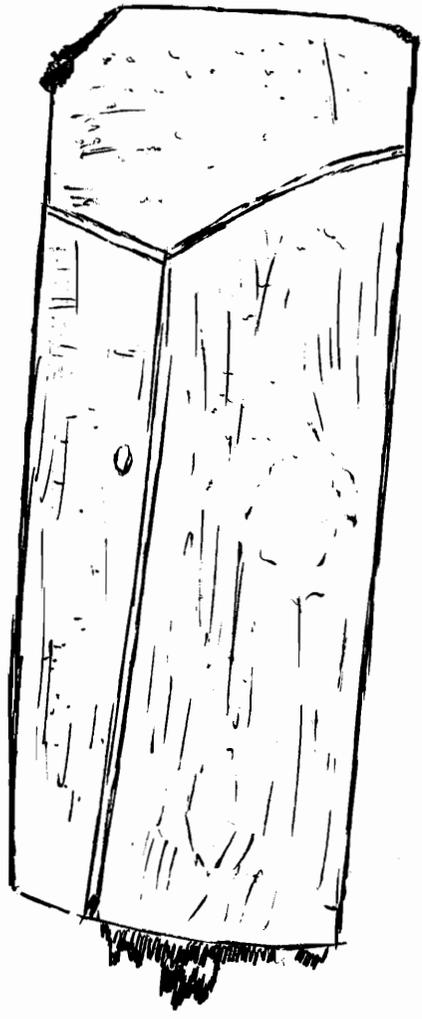
SEE ATTACHED SHEET FOR BONE DESCRIPTION
≠ DRAWING

THIS BONE WAS TAKEN ON "N" SIDE OF
CHANNEL, "E" OF JETTYS

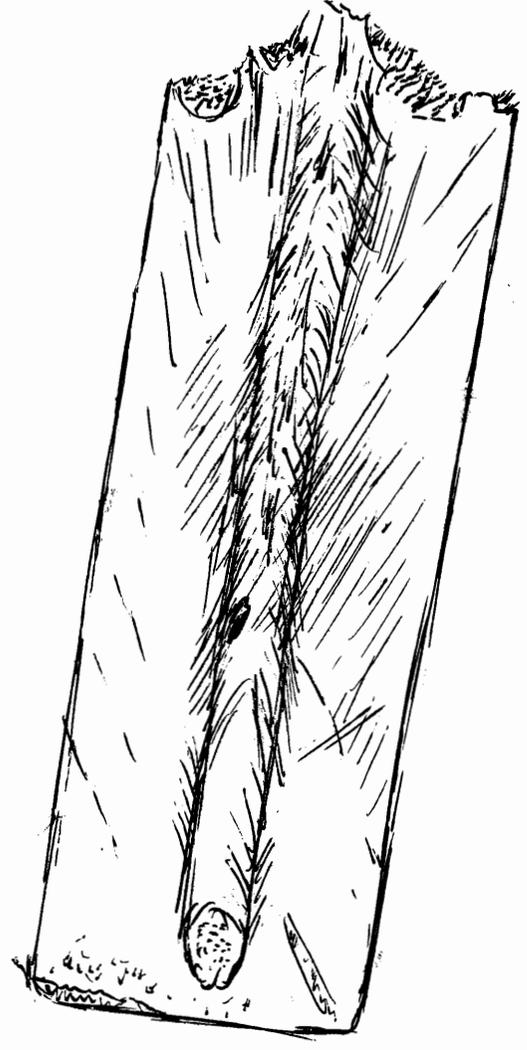
Edward Clement

US ACE DISTRICT: JACKSONVILLE, FL
MAINTAINANCE DREDGING: LAKE WORTH INLET
PALM BEACH, FL
12 MAY 2005

DREDGE: ATCHAFALAYA
LOAD # 83
("E" OF JETTYS, 'N'
SIDE OF CHANNEL)



DORSAL SIDE



VENTRAL

OLD TURTLE BONE
SPECIES: UNK

REMSA INC.
OBSERVER: EDWARD CLEMENT
SCALE: ± FULL SIZE

Edward Clement