

FINAL REPORT

ENDANGERED SPECIES OBSERVER PROGRAM

Brazos Island Harbor Entrance Channel
Brownsville, Texas
Maintenance Dredging - Dredge OUACHITA

02/18/95 - 02/26/95

Submitted To:

National Marine Fisheries Service, Southeast Region
U.S. Army Corps of Engineers, Galveston District
Gulf Coast Trailing Company, New Orleans

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SCOPE OF WORK

Pursuant to a contract with the U.S. Army Corps of Engineers, Galveston District, maintenance dredging was conducted in the Brazos Island Harbor entrance channel (Brownsville, TX), from 01/24/95 - 02/26/95, using the hopper dredge OUACHITA, operated by Gulf Coast Trailing Company. On 02/18/95, two endangered species observers, approved by the National Marine Fisheries Service (NMFS), were placed aboard the dredge to provide twenty-four hour monitoring of impacts to endangered and protected species, particularly sea turtles. The dredge was screened at all points of inflow (where dredged material is discharged into the hopper) and overflow (where light silt and seawater flow back overboard) in order to detect the presence of sea turtles and/or their parts. Turtle excluder devices (TEDs) were attached to the dragheads on 02/20/95, after the first turtle take. Observers worked around the clock cleaning and inspecting the screening and during daylight hours they monitored the water's surface for the presence of turtles and marine mammals .

METHODOLOGY

All points of inflow were screened before the observers boarded the dredge on 02/18. This was accomplished on the OUACHITA by a dam-like device of steel mesh which was welded in place across the aft end of each of the three "landers", (the flared ends of the discharge pipes). The openings of the mesh were approximately 10cm

x 10cm (4" x 4") and the height of these sampling "dams" was approximately 45cm (18"). Observers gained access to the areas behind the lander screens via a ladder and found this to be a very workable and efficient way to screen and check inflow. The primary point of overflow on the OUACHITA is a large funnel-shaped device ("skimmer") which is raised and lowered to control water depth in the hopper. Steel grating with openings of 10cm x 10cm (4" x 4") was set into the mouth of the skimmer to screen and collect samples from the overflow. The secondary points of overflow on the OUACHITA are port and starboard overboard discharge pipes which periodically shunt seawater overboard when the dredge is not pumping material into the hopper. These pipes were fitted with heavy, steel mesh baskets with openings of 10cm x 10cm (4" x 4"), which screened and sampled these points of overflow.

Observers inspected and cleaned all inflow and overflow screening at the end of every load. Dragheads and TEDs were also inspected immediately after each load and dredge personnel were informed if the excluders were in need of repair. Data sheets were completed at the end of every load, detailing all biological samples and debris found in the screening and dragheads. Also recorded were the start, end and dump times for each load, the specific location of the dredging area, the type of material being dredged, weather, tide and water temperature data, the condition of the screening and the TEDs and any other pertinent information.

A bridge watch for sea turtles and marine mammals was maintained during all daylight hours (except when the observer was off the bridge cleaning and inspecting the screens, etc.). All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook. Daily reports and weekly summaries were filed with the Corps of Engineers.

RESULTS

During the 9 days that observers were onboard the dredge OUACHITA at the Brazos Island Harbor entrance channel, three "takes" of sea turtles were recorded. Two of these takes were of juvenile green turtles (*Chelonia mydas*) and one was a juvenile Kemp's ridley (*Lepodechlys kempii*).

02/19/95 Load #134 0007hrs-0444hrs H₂O Surf. Temp 19.0°C
Approximately half (posterior) of a small green turtle was found in the overflow screening on the skimmer of the dredge immediately after this load. The sampled portion of the turtle was 19cm in length, indicating that the total straight length of the carapace would have been no more than 50cm, a sub-adult. The sample was fresh (bloody, no odor) and deemed a dredge take.

02/22/95 Load #144 0122hrs-0644hrs H₂O Surf. Temp 18.5°C
Because the skimmer screen was clogging with sea grasses and trash, the observers were cleaning the skimmer periodically during the loading cycle. It was at 0520hrs, during load #144 that the observer on duty found a live green turtle in the skimmer screening. The turtle's carapace measured 27cm in length (straight) and had sustained a crack which was bleeding. The plastron had sustained cracks as well (see Attachment 2 for details). Abrasions were noted on the head and on marginal scutes. The turtle was sent to the Gladys Porter Zoo in Brownsville, TX for examination and rehabilitation if possible.

02/26/95 Load #156 0640hrs-1205hrs H₂O Surf. Temp 19.5°C
A freshly killed sub-adult Kemp's ridley turtle was found in the forward lander (inflow screening) at the end of the load. The sample consisted of all but anterior right quarter of the turtle. Most of the viscera had been sucked free of the body cavity. The estimated straight length of the carapace, had it been intact, was 38cm.

All incidents were photographed and diagrams were made of the specimen sampled. These diagrams have been included as Attachments 1, 2, and 3. Dead specimens were frozen in the ship's freezer until all concerned parties had been notified. Later, they were weighted with scrap-iron and buried with tons of dredged material at the disposal site, thus ensuring that the same samples would not wash ashore or be taken by the dredge a second time.

The material being dredged was primarily silt and clay. Discarded monofilament fishing line was sampled on nearly every load, along with a plethora of other jettisoned debris. The most common biological samples included skates and blue crabs.

Bottlenose dolphins (*Tursiops truncatus*) were the only marine mammal species sighted from the dredge. Small pods of 5-10 animals were occasionally seen near the channel. No turtles were sighted from the bridge.

DISCUSSION

The dredge OUACHITA is configured in such a way that it lends itself to very efficient screening. However, the dam-like screening across 2 of the 3 landers was often submerged during the dredging process and therefore inflow screening was only 30%-40% efficient. The skimmer screening was checked often during the dredging process, as items will wash in and out of the skimmer during loading, especially if the sea state is other than calm. Two of the three turtles were recovered from the skimmer. Also, all of the overflow is shunted through the baskets on the overboard discharge pipes when the dredge is maneuvering in the channel between cuts, and since none of the turtles taken were sampled in these baskets, it can be assumed that the turtles were taken while the OUACHITA was actually dredging.

It is difficult to ascertain if the turtles sampled represent all of the turtles taken during this period. Certainly, small pieces of turtle associated with the known takes escaped being screened. However, by frequently monitoring of the screening during the dredging process, in addition to making the rounds at the end of each load, the observers probably documented almost all of the turtles, if not every turtle, taken while they were onboard.

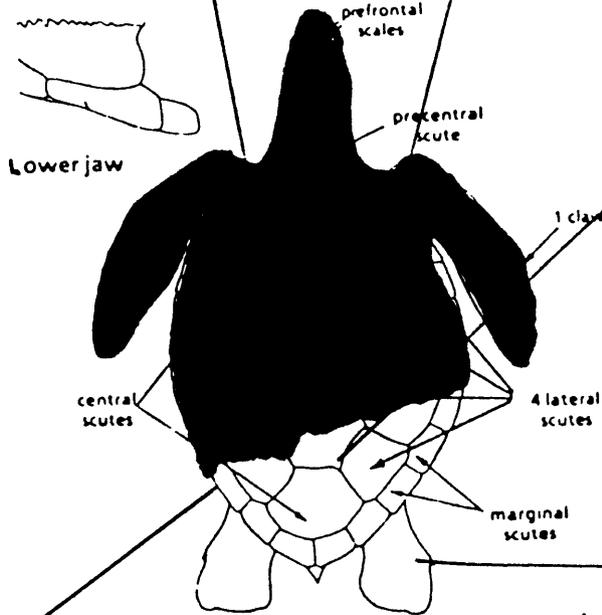
As always, the crew of the OUACHITA and the shore-based personnel of Gulf Coast Trailing Company provided generous assistance whenever it was requested by the observers. Their help maintaining screening, TEDs and transporting the live turtle was invaluable and their cooperation is greatly appreciated.

ATTACHMENT #1

Dredge ouachita
 Brazo Santiago Pass
 Sampled fresh dead
 02-19-95
 Chelonia mydas
 Load 134

anterior half missing

notes, length 19 cm, width 35 cm
 cavity mostly empty
 small amounts muscle carapace all cracked
 left, reddish in color, small amount of blood
 ventral skin white in
 color, flipper good color,
 no bloating or foul odor



Flipper
 17 cm x 7.5 c
 1 claw 1 cm

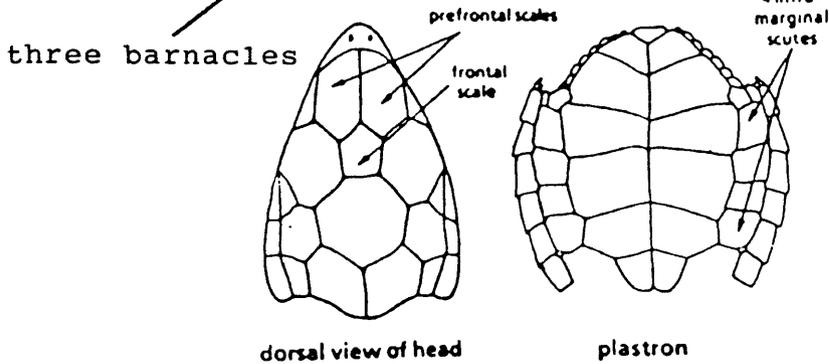


Fig. 27

ATTACHMENT #2

cracked 5th central scute,
bleeding

minor abrasions
lateral scute

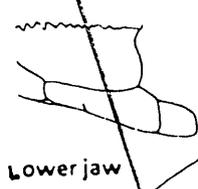
Dredge Ouachita
Braço Santiago Pass
Sampled live
Chelonia mydas
02-23-95
Load 144 0520

light bleeding
from margin of
marginal scute

minor abrasions

ventral side large
blood clot

8th marginal scute
from posterior scute
cracked



Lower jaw

note
ventral
skin
notably
pink in
color

central
scutes

prefrontal
scales

precentral
scute

1 claw

4 lateral
scutes

marginal
scutes

pectoral and
abdominal scutes
cracked

dotted lines
scrapes

6&7 marginal scute from
from posterior scute has
minor abrasions and the
6th scute minor bleeding

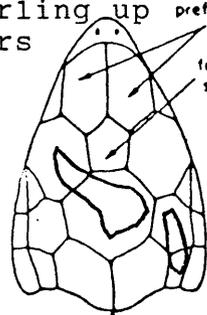
note was curling up
rear flippers

prefrontal scales

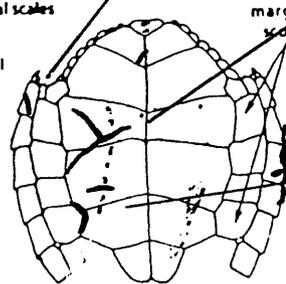
frontal
scale

4 infra-
marginal
scutes

light bleeding
from inframarginal
scute margin



dorsal view of head



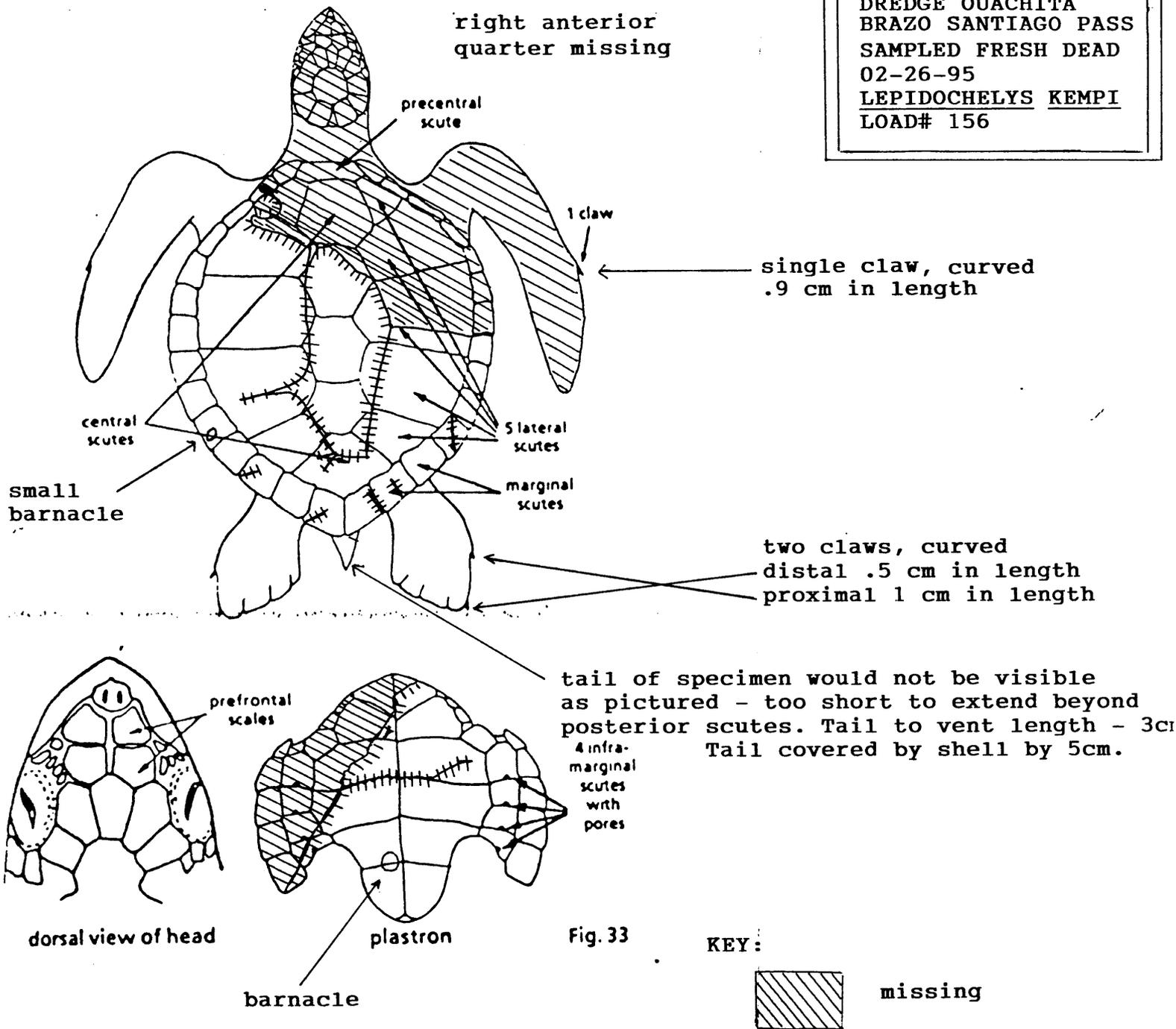
plastron

Fig. 27

minor abrasions

ATTACHMENT #3

DREDGE OUACHITA BRAZO SANTIAGO PASS SAMPLED FRESH DEAD 02-26-95 <u>LEPIDOCHELYS KEMPI</u> LOAD# 156
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tail of specimen would not be visible as pictured - too short to extend beyond posterior scutes. Tail to vent length - 3cm. Tail covered by shell by 5cm.

Fig. 33

Body cavity: The body cavity was empty, except for the lining, which remained intact. Fresh blood was present and the lining was purple, light purple, red, and bluish in color. No foul odor was present.