14 March 1978
H.O. Hillestad

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National Marine Fisheries Service

Critical Winter Habitat
Contract No. 03-78-D08-0062

Progress Report

Surveys of major shipping channels and related sounds have been completed for the Savannah ship channel, Calibogue Sound, Beaufort ship channel, Charleston ship channel, and Georgetown ship channel. A portion of the Brunswick ship channel has also been completed. No marine turtles were encountered in any of these areas. Locations still to be surveyed include the remainder of the Brunswick ship channel, St. Andrew Sound, and St. Mary's ship channel.

Most drags were 20-30 minutes in duration, approximately 1-2 miles in length, depending on time and tidal currents, and located from the jetties seaward to the sea buoy. The number of drags completed for each location are as follows: Brunswick channel (incomplete) - 2 drags, Savannah channel - 5 drags, Beaufort channel - 11 drags, Georgetown channel - 6 drags, Charleston channel - 9 drags. Additional drags are planned for Brunswick channel, St. Andrew Sound, and St. Mary's channel. Water temperatures have been between 8 and 13 degrees centigrade, with lowest temperatures inshore and to the north. Drag depths ranged between 20 and 50 feet. Maximum maintained depths in channels surveyed are less than 32 feet; holes deeper than 32 feet are naturally formed and particularly difficult to drag because of their accumulation of rock and trash.

The survey work just completed required a full time effort of captain and crew from Wednesday morning (14 February) until Thursday evening (8 March), a total of 25 continuous days during which time the captain and crew did not leave the boat. Inclement weather is always a factor during winter work, but no one could have predicted the continuous series of fog, ice storms, and gale winds which plagued the survey period. Heavy seas or zero visibility prohibited work on 12 of 25 days in the field. Seven days were used for dragging. Six days were used for travel, three of which were too windy for dragging. The vessel was inactive on nine days when weather and/or scheduling prohibited any movement. Considering the unexpected bad weather, Captain McGowan was commendably persistent in remaining with the boat until this phase of the work could be completed.

Unlike Canaveral, most ship channels and surrounding areas are difficult areas to drag. Buoy anchors, coral rock, sunken ships and other manmade hangs, trash, and soft mud are more the rule than the exception. Nets cannot be dragged in large areas of these shipping channels, and shrimpers and crabbers restrict their activities accordingly. One crab net(#300) was destroyed, towing cables were broken twice, and on one occasion when the net buried in soft mud, the outrigger boom was slightly bent. At least a half day was spent on local shrimp docks prior to each survey in order to determine areas that could be dragged without loss of equipment. On three survey days, local shrimpers volunteered their time to be onboard and assist in avoiding hidden snags. At all stops, shrimpers contacted for advice were

most helpful in assisting with the survey. It is our opinion that the efficiency of the sampling operation during the survey days was several times greater than expected because of the assistance from local shrimpers.

Shrimpers, crabbers, menhaden fishermen, and snapper fishermen were queried at each stop. There is no doubt in our minds that their answers were forthright and honest. All of these individuals admit to incidentally capturing turtles during warm water months (April to November) but not during cold water months (December to March). No one has ever caught a turtle within 10 miles of the shore during January, February, and March. We showed the Canaveral turtle photographs to all of these individuals. No one had ever seen "black" turtles in local waters, although a number of Charleston shrimpers were familiar with such turtles from Canaveral, captured in previous years during the winter months. Fishermen with off-shore experience were unanimous that sea turtles can be observed "in numbers" along the western edge of the Gulf Stream from Hatteras to Canaveral during the winter months. These Gulf turtles can be observed on the surface and they actively dive when approached by a boat.

It is our preliminary opinion that we will not find any evidence for hibernating turtles on the South Carolina and Georgia coasts. There are no channels in this area artificially maintained as deep as the Canaveral channel, and water temperature near the bottom would be expected to fall regularly below 10°C.

Since Charleston shrimpers have apparently been aware of black stained turtles in the Canaveral channel for a number of years but in no other locality, it would appear that Canaveral hibernating turtles are possibly unique and not indicative of more northerly waters.

Ships Log

February

12 Monday	Drive to Brunswick
13 Tuesday	Meeting at Marine Ext.
14 Wednesday	Gear Field Trials - Brunswick Channel
15 Thursday	Jekyll to Thunderbolt
16 Friday	Thunderbolt to Lazarette Creek -Savannah Channel
17 Saturday	Gale Force winds
18 Sunday	Storm, Winds, Heavy Seas
19 Monday	Ice Storm
20 Tuesday	Lazarette Creek to Beaufort - Winds, Heavy Seas
21 Wednesday	Beaufort Channel - Terminated survey because of fog.
22 Thursday	Fog and Rain
23 Friday	Beaufort to Port Royal - Fog and Rain
24 Saturday	Thunderstorms, Rain, Fog
25 Sunday	Clear, Small Craft Warnings; Port Royal to Charleston
26 Monday	Gale Winds, Heavy Seas; Charleston to McClellanville
27 Tuesday	McClellanville to Georgetown; Georgetown Channel
28 Wednesday	Georgetown to Charleston

March

1 Thursday	Charleston Channel
2 Friday	Charleston to Port Royal
3 Saturday	Attempt Beaufort Channel and Turn Back; Heavy Seas
4 Sunday	Heavy Seas
5 Monday	Fog
6 Tuesday	Rain, Beaufort Channel
7 Wednesday	Calibogue Channel; Return Jekyll Island
8 Thursday	Drive to Athens

(~~~) indicates a survey day

Contact With Commercial Shrimpers

Shrimpers were questioned throughout the survey concerning the presence of marine turtles in coastal waters during cold water months of December, January, February, and March. Discussions were led by Captain McGowan and usually took place at an informal gathering on-board the Miss Vivian at various commercial docks along the route, including Georgetown (SC), McClellanville (SC), Shem Creek (Mount Pleasant, SC), Ladies Island (Beaufort, SC), Port Royal (SC), Lazaretto Creek (Savannah, GA), Thunderbolt (GA), Brunswick (GA), Jekyll Island (GA), and St. Mary's (GA).

Discussions With Shrimpers

Discussions covered a wide range of subjects, including winter turtles, incidental capture, net mortality, critical habitat (restricted fishing areas), and the role of NMFS in the marine turtle/shrimper conflict. There appeared to be a concensus among fishermen. Their answers appeared forthright and honest. They expressed concern that marine turtle regulations would be economically damaging to their profession. They did understand the purpose of this winter habitat survey and were exceptionally helpful with their advice and assistance. Some topics and conclusions are summarized below. For purposes of discussion, warm water months were taken to be April through November and cold water months from December through March.

Hibernacula: No shrimpers had ever heard or seen evidence of marine turtles buried in nearshore mud during cold water months in Georgia or the Carolinas. With the exception of Charleston shrimpers (Shem Creek docks at Mt. Pleasant, SC), none had ever seen a "black turtle" stained in a manner shown to them in color photographs, from Canaveral channel. Several of the Charleston shrimpers were familiar with "black turtles", which they had caught at Canaveral in previous years. Shrimpers from the Shem Creek docks evidently have a tradition of dragging in the Canaveral channel in the offseason. The exact year that "black turtles" first were seen at Canaveral was not determined. Mr. Glen Ulrich, SC Wildlife and Marine Resources Department, is currently pursuing this information.

Winter Turtles in Nearshore Waters: None of the shrimpers contacted during the survey had ever caught a marine turtle in nearshore waters of South Carolina and Georgia during cold water months, while all of them readily admitted to capturing turtles from April to November. Some had heard of other shrimpers having caught an occasional winter turtle, but this was very rare, and they could give no specifics. A number of shrimpers drag for blue crabs during cold water months in nearshore and sound waters; these individuals stated that they had never caught a winter turtle.

Winter Turtles in Offshore Waters: A number of shrimpers fish for snapper and scallops during the winter months in water 20 to 100 miles offshore. These fishermen capture turtles in their nets and also observe turtles on the surface near the Gulf Stream margin of influence. These turtles appear to be floating passively at the surface, but they actively dive when approached by a boat. This information corroborates observations by divers with the Georgia Office of Coastal Resources who observe lethargic to comatose marine turtles during winter months in offshore waters. These animals are seen off the Georgia coast under rocky shelves and live reefs at 100-120 feet of water. Evidence such as this supports the theory that loggerhead turtles summer in coastal estuaries and winter on hard bottom, live reefs in offshore waters; movements across the continental shelf may be temperature regulated.

Cape Lookout Survey

There has been an unconfirmed report for several years that marine turtles have been observed hibernating at Cape Lookout Bight. This small, semienclosed body of water is bounded by Cape Lookout to the south and east and by Shackleford Bank to the north. The turtles were purportedly observed by research biologists from the University of North Carolina Marine Sciences Laboratory at Beaufort, NC. There are a number of deep water holes within the Bight that would appear suitable for hibernacula.

A trip to Cape Lookout on 15 November 1978 produced no confirmation of the wintering turtle report. Discussion was held with Superintendent Mac Riddle and staff of the Cape Lookout National Seashore and with local shrimpers and crabbers from Beaufort. None of these individuals were cognizant of wintering turtles in the immediate area, and none had ever seen stained turtles like the Canaveral turtles. Those who trawl for blue crabs during the winter reported no captures of marine turtle from December through March. Shrimpers appeared very guarded during the conversations, perhaps because of the presence of NPS personnel at the discussion; confidence in their remarks should be taken accordingly.

An aerial survey by helicopter of Cape Lookout, Shackleford Banks, the Beaufort Harbor shipping channel, and Cape Lookout Bight produced no sighting of live marine turtles. The survey was flown on 16 November on a clear, warm day with perfect visibility. Local water temperatures on that day were 16° C; resident turtles should have been visible on the surface during the flight. Park personnel have continued these flights into the winter; no sightings were reported.

The presence of winter turtles in Cape Lookout Bight has again been noted by a recent employee of the UNC Marine Science Laboratory. The individual who supposedly made the

actual observations was Mr. Val Klump, a chemical oceanographer at the Marine Science Lab. In a follow-up phone conversation, Mr. Klump reported sighting a single marine turtle on the bottom of Cape Lookout Bight in November (no date given); the turtle actively swam away from the diver.

The combined evidence would indicate that there are no wintering turtles within Cape Lookout Bight, yet rumors of their existence persist. It is possible that the presence of wintering turtles in the Bight is being concealed for various unknown reasons. Investigation of wintering turtles at Cape Lookout Bight should continue.

Conclusions

There appears little evidence to support the need for marine turtle winter critical habitat in estuarine areas of Georgia and South Carolina. Offshore live bottom reefs may be important wintering habitats for marine turtles. Offshore drilling and mining permits should consider live reef from the 10 to 40 fathom line as potential critical habitat for marine turtles. Marine turtles have been captured in 180 feet of water (Dave Harrington - pers. comm). A program of onboard observers with snapper boats might be productive. Diving studies of marine turtles on live reefs, as planned by Georgia Office of Coastal Resources on reefs in 120 feet of water, should be encouraged.