

APPLICATION FOR AN INDIVIDUAL INCIDENTAL
TAKE PERMIT UNDER THE ENDANGERED
SPECIES ACT OF 1973

July 18, 2002

BY

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INTRODUCTION

The North Carolina Division of Marine Fisheries (NCDMF) requests an Individual Incidental Take Permit (ITP) under Section 10 of the Endangered Species Act of 1973. The ITP should authorize the implementation of management measures to protect threatened and endangered sea turtles, while allowing gillnet fisheries for flounder and other species to be prosecuted in designated areas within Pamlico Sound from September 1 through December 1 during the 2002, 2003, and 2004 fishing seasons. This request is similar to that of August 2001, which resulted in the National Marine Fisheries Service (NMFS) issuing ITP 1348 for the 2001 fall gillnet fisheries in eastern Pamlico Sound (66 FR 51,023, October 5, 2001). Shallow water fisheries along the Outer Banks and Mainland will be managed and monitored by NCDMF. NMFS has indicated that they intend to close adjacent deep-water fishing areas to large mesh gillnets (> 4 1/4-inch stretched mesh) during the same period for the 2002-2004 fishing seasons.

In November 1999, significant increases were noted in sea turtle strandings in the southeastern portion of Pamlico Sound (Sea Turtle Stranding Report Zone 35, Inshore). During November and December, a total of 97 strandings occurred in the area. At-sea monitoring was conducted by NCDMF aboard gillnet vessels in southeastern Pamlico Sound from November 22 through November 24, 1999. Eleven observer trips were conducted, consisting of five trips aboard deep water flounder gillnet vessels and six trips aboard shallow water spotted seatrout (*Cynoscion nebulosus*) gillnet vessels. Two sea turtle takes were observed in the deep-water large mesh (\geq 5-inch stretched mesh) fishery while no takes were observed in shallow water small mesh (<5-inch stretched mesh) fishery. Although data were insufficient to detect differences between shallow and deep water takes, the information

suggested that the deep water, large mesh gillnet fishery for flounder may have been responsible for a significant portion of the strandings. On December 16, 1999, NMFS issued an emergency rule closing southeastern Pamlico Sound to gillnets larger than five-inch stretched mesh to protect endangered and threatened sea turtles, the closure remained in effect through January 9, 2000 (64 FR 70,196, December 16, 1999).

In August 2000, NCDMF applied for an ITP authorizing the implementation of gillnet management measures to protect threatened and endangered sea turtles in the southeastern Pamlico Sound (65 FR 47,715, August 3, 2000). Incidental Take Permit 1259 was issued by the NMFS on October 5, 2000 and was signed by NCDMF on October 24, 2000 (65 FR 65,840, November 2, 2000). The ITP expired December 16, 2000, but estimated levels of sea turtle interactions and strandings had reached thresholds specified in the ITP for closure of the large mesh gillnet fishery at the time of signing (Gearhart 2001). As a result of the thresholds being reached, NCDMF issued Proclamation M-14-2000 closing the southeastern Pamlico Sound Gill Net Restricted Area (PSGNRA) to the use of large mesh gillnets effective October 27, 2000.

From September 15 through December 15, 2000, 104 strandings occurred in Sea Turtle Stranding Report Zone 35, Inshore. Of the 104, 79 strandings occurred within the PSGNRA (28 green turtles, 25 loggerheads and 26 Kemp's ridleys). This total excludes all live, cold-stunned turtles. Twenty strandings occurred in the PSGNRA before the area was closed (September 15 - October 27, 2000). Fifty-nine strandings occurred in the PSGNRA after the October 27, 2000 closure. Twenty-four of these strandings occurred prior to the first major water temperature drop of the fall, which occurred around November 18. A portion of the remaining 35 strandings, which occurred between November 18 and December 15, likely

stranded due to sudden exposure to cold water temperatures.

In August 2001, NCDMF applied for another ITP authorizing the implementation of gillnet management measures to protect threatened and endangered sea turtles in the southeastern Pamlico Sound during the 2001-fishing season (66 FR 42,845, August 15, 2001). Incidental Take Permit Number 1348 was issued by NMFS on September 28, 2001 (66 FR 51,023, October 5, 2001). The 2001 ITP allowed for the management and monitoring of both small and large mesh gillnet fisheries in specific shallow water areas of Pamlico Sound. The 2001 ITP expired December 16, 2001. Concurrently, NMFS closed adjacent deep-water fishing areas to large mesh (>4 1/4-inch stretched mesh) gillnets from September 18 through December 15, 2001 (66 FR 50,350 October 3, 2001). Estimated levels of sea turtle interactions remained below thresholds specified in the ITP for the entire period (Gearhart 2002). Four takes were observed in the large mesh flounder fishery while no takes were observed in any of the small mesh fisheries (Gearhart 2002). In addition, strandings were down by 67.3% from 2000 with only 34 strandings occurring from September 15 through December 15, 2001 (in Sea Turtle Stranding Report Zone 35, Inshore).

It is the intent of NCDMF to implement management measures for gillnet fisheries in six designated shallow water areas of eastern Pamlico Sound and two areas in western Pamlico Sound during the fall of 2002, 2003, and 2004. All shallow water gillnet fisheries along the Outer Banks and Mainland will be managed by NCDMF. The large mesh (\geq 5-inch stretched mesh) flounder gillnet fishery will be monitored by NCDMF with the understanding that NMFS will close adjacent deep water fishing areas to large mesh (> 4 1/4-inch) gillnets. These measures are expected to reduce the number of sea turtle interactions with gillnets from levels observed during the 2001 season.

SPECIES

loggerhead turtle (*Caretta caretta*)

green turtle (*Chelonia mydas*)

leatherback turtle (*Dermochelys coriacea*)

hawksbill turtle (*Eretmochelys imbricata*)

Kemp's ridley turtle (*Lepidochelys kempii*)

The leatherback and hawksbill were listed as endangered throughout their ranges on June 2, 1970 under the Endangered Species Act of 1973 (Public Law 93-205). The Kemp's ridley was listed as endangered on December 2, 1970. The green turtle was listed as threatened on July 28, 1978, except for the breeding populations of Florida and the Pacific coast of Mexico, which were listed as endangered. The loggerhead was listed as threatened wherever it occurs on July 28, 1978.

The geographic distribution of the loggerhead includes the subtropical (and occasionally tropical) waters and continental shelves and estuaries along the margins of the Atlantic, Pacific, and Indian oceans. It is rare or absent far from mainland shores. In the Western Hemisphere, it ranges as far north as Newfoundland and as far south as Argentina. The green turtle has a circumglobal distribution in tropical and subtropical waters. In U.S. Atlantic waters, it occurs around the Virgin Islands and Puerto Rico and from Texas to Massachusetts. The leatherback occupies the open seas, although it is occasionally seen in coastal waters. It prefers warmer waters and frequently appears in New England waters north to Newfoundland during the summer months. The hawksbill is typically a tropical species found throughout the Caribbean. They are commonly observed in the Florida Keys, Bahamas,

and southwestern Gulf of Mexico. Stragglers have been reported as far north as Massachusetts and as far south as northern Argentina. It is infrequently found in shallow coastal systems. Most Kemp's ridley occur in the Gulf of Mexico, but they also occur along the Atlantic coast as far north as Long Island and Vineyard South, Massachusetts.

Public sightings of sea turtles in the Atlantic Ocean off North Carolina during 1989 - 1992 occurred throughout the year (Epperly et al., 1995). Two techniques employed to obtain public sighting data were: utilization of the Marine Recreational Fishery Statistics Survey (MRFSS) and voluntary reporting by the public. In addition to reports of free-swimming animals, public sighting reports included incidental capture by shrimp trawls, fish trawls, pound nets, gillnets, channel nets, and hook and line gear. Most were sighted in May and June (1133 turtles), with much fewer in other months: July and August (406), September and October (358), March and April (246), November and December (169), and January and February (76). Most sightings were from Cape Lookout north along the Outer Banks. Below Cape Lookout, sea turtles were relatively common off Onslow County. During the four-year period of 1989-1992, recreational fishermen sighted turtles in nearshore ocean waters on 6.5% of their trips, as compared to 2.6% for trips that covered both inshore and offshore waters.

Sea turtle strandings in North Carolina have increased since 1995, the first year that the number of strandings in the state exceeded 300 individuals. Prior to 1995, annual stranding totals averaged less than 200. Strandings reached their highest level in 2000 with 838 reported statewide.

Females of all five species of sea turtles lay clutches of eggs in nests on coastal beaches. The adults aggregate off the nesting beaches during the spring to mate and females may lay up to seven clutches during a single nesting season. After an incubation period of two

months, the hatchlings dig their way to the surface and scramble to the ocean. They swim offshore and spend their early life in the offshore waters. After a few years, most species enter the coastal waters or move into bays, river mouths, and estuaries where they spend their juvenile life. There appears to be an inshore movement as waters warm in the spring and an offshore movement as waters cool in the late fall and early winter (Epperly et al., 1995).

FISHING GEAR AND AREA

Monitoring conducted by NCDMF during the 2000 fishing season indicates that the Pamlico Sound flounder gillnet fishery consists of two major components: a shallow water fishery, which occurs along the Outer Banks; and a deep water fishery that operates further from shore along a slope adjoining the main basin of Pamlico Sound (Figure 1).

The shallow water fishery operates from April through December in areas next to the barrier islands in Pamlico Sound. Fishing depths are typically less than three feet. Vessels are usually open skiffs ranging from 15 to 25 feet in length. Each fisherman sets 500 to 2000 yards of large mesh (5.5- to 7.0- inch) gillnet, which are soaked overnight and retrieved by hand. Monitoring during the 2000 fishing season consisted of 4.3% coverage of this fishery with 37 trips observed. Four sea turtle interactions were observed and all were green turtles, three were released alive (Gearhart 2001).

The deep water fishery operates from September through December with fishermen setting nets along a slope just outside of the shallow water fishing areas (Figure 1). Fishing depths range from 10 to 20 feet. Vessels are typical ocean sink gillnet boats ranging from 25 to 45 feet in length. Each vessel sets 2,000 to 5,000 yards of large mesh (5.5- to 6.5- inch) gillnet, which are soaked up to three days and retrieved with the aid of net reels. Monitoring during the 2000 fishing season consisted of 13.1 % coverage of this

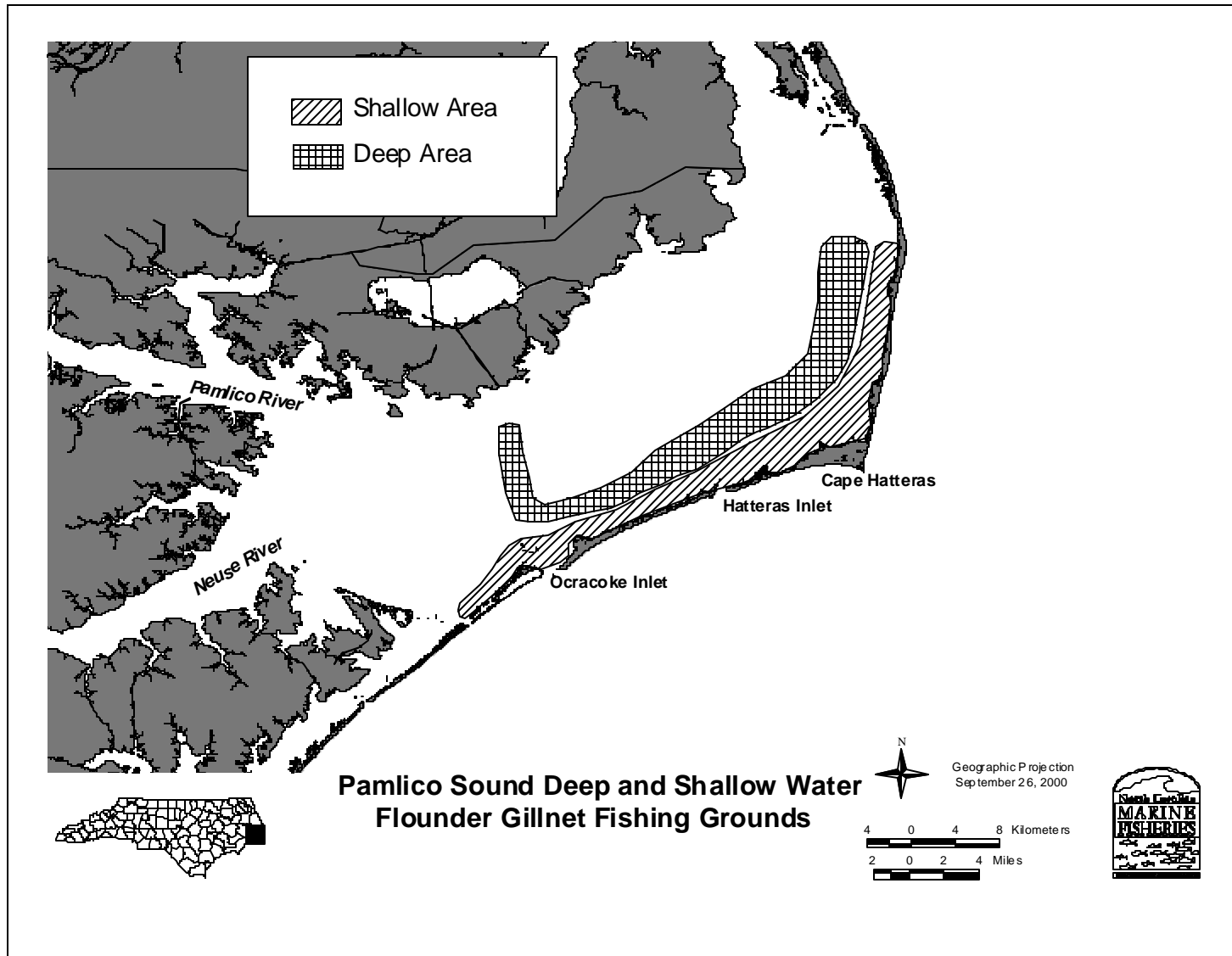


Figure 1. North Carolina flounder gillnet fishing grounds in Southeastern Pamlico Sound.

fishery with 35 trips observed. Fourteen sea turtle interactions were observed including four Kemp's ridley, two green, and eight loggerheads. Eight of these turtles were released alive (Gearhart 2001).

During the 2001 fishing season, both small and large mesh gillnet fisheries were monitored in the shallow water areas of Pamlico Sound adjacent to the Outer Banks. Two small mesh (< 5-inch stretched mesh) fisheries were identified each with different modes of operation; the "runaround" and "set" gillnet fisheries. The "runaround" gillnet fishery typically targets striped mullet (*Mugil cephalus*) and operates year round with most of the effort occurring during the fall from September through November. Vessels are usually open skiffs ranging from 15 to 25 feet in length with one or two-man crews. Fishermen set out in search of schools of striped mullet. Once a school is sighted, one end of the gillnet is deployed with a buoy and a small weight (< 3 lb.). The weight creates drag, which enables the rest of the net to be fed out as the fisherman encircles the school of fish. The net is set in a closed circle and fishes the entire water column. Nets are typically 100 - 1000 yd. in length with a stretched mesh of 3 1/2- to 4 1/2-inches. The primary retrieval technique is the open retrieve method where the net is immediately hauled back into the boat starting with the terminal end. A second retrieval technique involves setting only part of the net in a circle and then 'corkscrewing' the remainder of the net around inside the circle. This method compresses the fish into smaller areas that forces them to hit the net. Soak times for this fishery are typically less than four hours and nets are attended during the entire operation (Steve et al. 2001).

The shallow water small mesh "set" gillnet fishery operates along the Outer Banks with most of the effort occurring from October through early December. Nets are anchored overnight similar to the large mesh fishery for flounder that occurs in the same area. Vessels

are usually open skiffs ranging from 15 to 25 feet in length with one or two-man crews. Each fishing operation sets 500 to 2000 yards of small mesh (3 1/2- to 4 1/2-inch stretched mesh) gillnet, which are retrieved by hand. Sets are composed of many short lengths of gillnet with most constructed of 0.5 mm twine or smaller. Tie-downs are not used in this fishery, but net depths range from 6 to 11 feet with sets occurring in depths less than 3 feet. This combination of water depth and net depth provides the same bag effect as the tie-down in the deep water large mesh fishery. Target species include striped mullet, spotted seatrout, weakfish (*Cynoscion regalis*), and bluefish (*Pomatomus saltatrix*). Gillnet sets are usually made along a sandbar or “reef” that separates the shallow and deep-water areas along the outer banks (Steve et al. 2001). In recent years, NCDMF has enacted rules designating small mesh (< 5-inch stretched mesh) attendance areas along the Outer Banks from March 1 through October 31 to minimize red drum bycatch and subsequent discard mortality (Rule 15A NCAC 3J .0103 (h) in NCMFC 2001). This rule requires small mesh gillnet fishermen to remain within 100 yards of their net at all times. Because of this requirement many fishermen set outside of the attendance area just beyond the reef or wait until November 1 to employ this method of fishing when they are no longer required to attend their nets.

During the 2001 fishing season, NCDMF observers completed 131 large mesh observer trips in the shallow water areas adjacent to the Outer Banks, which represented 9% coverage of the fishery (Gearhart 2002). Four green sea turtles and one hawksbill were observed in the large mesh gillnet fishery (Gearhart 2002). Two green turtles were observed during the first week of monitoring, one during the second week and one during the fifth week. One lethal green turtle take was observed while all others were released alive. Green turtles captured during the first two weeks of the season were small with curved carapace lengths

ranging from 300 mm to 360 mm while the one captured during the fifth week was slightly larger at 466 mm. The hawksbill turtle was observed during the first week of the season and had a curved carapace length of 330 mm. The hawksbill was in good condition and was tagged and released alive. One of the two greens and the hawksbill observed during the first week of the season were taken in the area just south of Oregon Inlet. During the second week of the season the third green turtle was observed in the same area. This prompted NCDMF to close the area to large mesh gillnets and required attendance of small mesh gillnets. These regulations remained in effect for the remainder of the season. The other two green turtles observed were taken in the area just behind Cape Hatteras. No interactions were observed in the small mesh “set” net fishery or the small mesh “runaround” gillnet fishery. The set net fishery was observed intensively with NCDMF staff present on 47 trips achieving 20% coverage, while only 12 runaround gillnet trips were observed accomplishing 8.4% coverage.

In addition to the Outer Banks fisheries, a mainland based flounder gillnet fishery occurs in the shallow water bays and along the shoreline of Hyde and Pamlico Counties (Figure 2). This fishery is similar to the Outer Banks fishery with the crews operating from April through December. Fishing depths are typically less than three feet and vessels are usually open skiffs ranging from 15 to 25 feet in length. Each fisherman sets 500 to 2000 yards of large mesh (5.5- to 7.0- inch) gillnet, which are soaked overnight and retrieved by hand. This fishery did not operate during the 2001 fishing season due to the 2001 closure of Pamlico Sound by NMFS. The 2001 NMFS closure was directed at deep-water gillnet fishing grounds in eastern Pamlico Sound but inadvertently closed the mainland areas utilized by this fleet. Effort in these areas from September through November 2000

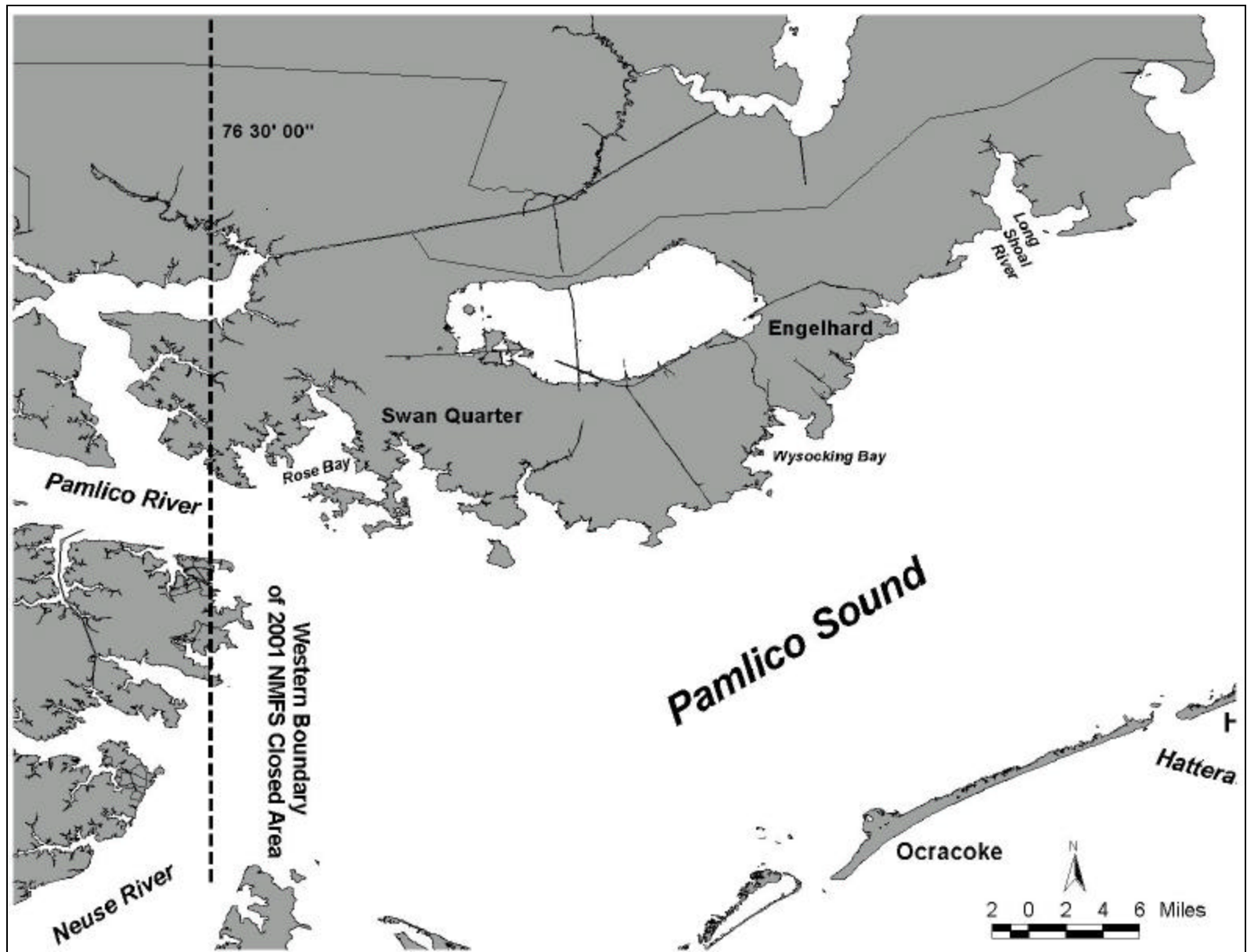


Figure 2. Mainland Hyde and Pamlico County flounder gillnet fishing grounds in western Pamlico Sound, North Carolina.

consisted of 26 vessels conducting 114 trips and landing 12,595 lbs of total catch. No observer trips have been conducted within this fishery and therefore there have been no documented sea turtle takes. However, NCDMF has been conducting an independent gillnet survey (Federal project F-70) in this area since May 2001 and completed ~1800 unattended 30 yard gillnet sets composed of 3, 3.5, 4, 4.5, 5, 5.5, 6, and 6.5-inch stretched mesh with no sea turtle interactions to date.

PROPOSED ACTIVITY

The small and large mesh shallow water fisheries along the Outer Banks and Mainland will be managed by NCDMF, with the understanding that NMFS will close adjacent deep water fishing areas to large mesh (> 4 1/4-inch stretched mesh) gillnets. Monitoring during the 2000 and 2001 fishing seasons indicates that sea turtle interactions primarily occur during the first few weeks of the season, near inlets, in unattended large mesh gillnets (Gearhart 2002). Therefore, management measures will be implemented on September 1, which is two weeks earlier than previous years and will end two weeks earlier than previous years on December 1. Only the large mesh (\geq 5-inch stretched mesh) fishery will be monitored with observers and an additional Inlet Corridor (no large mesh allowed) will be added to the 2002-2004 restricted areas.

The primary purpose of the ITP for 2002-2004 will be the protection of sea turtles through the implementation of management measures directed at the use of all gillnets used in shallow water areas of Pamlico Sound along the Outer Banks and Mainland. Trawl fisheries for shrimp and blue crabs and pound net fisheries for flounder occur in other parts of Pamlico Sound during the fall but these fisheries are not suspected of contributing to sea turtle

strandings that occurred during the fall of 1999 or 2000.

LANDINGS AND VALUES

The North Carolina Trip Ticket Program requires that commercial fishermen report landings by water body and gear. There are no subdivisions for the Pamlico Sound water body, and gillnet landings are not reported by mesh size. Flounder landings by large mesh gillnets in southeastern Pamlico Sound cannot be separated from flounder landings by other gillnets set in the area. Flounder landings may be identified by gear and by month for the Pamlico Sound. Monthly landings values are not available from the trip ticket data, these values are derived from annual values. Historically, the majority of the flounder landings by float and sink gillnets from Pamlico Sound occurred from September through December. It may be assumed that these landings are predominantly from the large mesh fishery because the minimum size limit for flounder in state estuarine waters is 13 inches. In 1998, flounder landings from the Pamlico Sound fall gillnet fishery totaled 714,879 pounds valued at \$1,321,505 while landings in 1999 were 621,518 pounds valued at \$1,069,967. In 2000, flounder landings were 678,189 pounds valued at \$802,847 and in 2001 landings were 355,493 pounds valued at \$ 568,998.

MANAGEMENT MEASURES

The NCDMF proposes the implementation of several management measures for Pamlico Sound shallow water gillnet fisheries during the fall of 2002, 2003, and 2004 to minimize interactions between threatened and endangered sea turtles and gillnet gear. Shallow water fisheries along the Outer Banks and Mainland will be managed by NCDMF with the understanding that NMFS will close adjacent deep water fishing areas. The following management measures will be implemented for Pamlico Sound gillnet fisheries:

1. NCDMF will designate six gillnet restricted areas (GNRAs) in eastern Pamlico Sound. All restricted areas will be in shallow water fishing areas and each region will have individual time/area gillnet restrictions. The six areas will consist of three Shallow Water Gillnet Restricted Areas (SGNRA1, SGNRA2, and SGNRA3), an Ocracoke Inlet Corridor (OC) a Hatteras Inlet Corridor (HC), and an Oregon Inlet Corridor (OIC) (Figure 3).
2. NCDMF will designate two GNRAs in western Pamlico Sound along mainland Hyde and Pamlico Counties. The restricted area will consist of all mainland areas within 200 yards of shore between 76° 30' W and 76° 50' W (Figure 3).
The two areas will be known as the Mainland Gillnet Restricted Areas (MGNRA1 and MGNRA2)(Figure 3).
3. From September 1 through October 31 for the 2002, 2003, and 2004 fishing seasons, small mesh gillnets (< 5-inch stretched mesh) must be attended (within 100 yards at all times) within all GNRAs (Table 1).
4. From September 1 through December 1 for the 2002, 2003, and 2004 fishing seasons, the OC, HC, and OIC areas will be closed to large mesh gillnets (\geq 5 -inch stretched mesh) (Figure 3 and Table 1).
5. Individual fishing operations fishing within the GNRAs will be restricted to a maximum of 2,000 yards per fishing operation.
6. Individual fishing operations employing large mesh gillnets will be required to obtain an NCDMF issued permit to fish in any of the GNRAs between

September 1 and December 1 For the 2002, 2003, and 2004 fishing seasons.

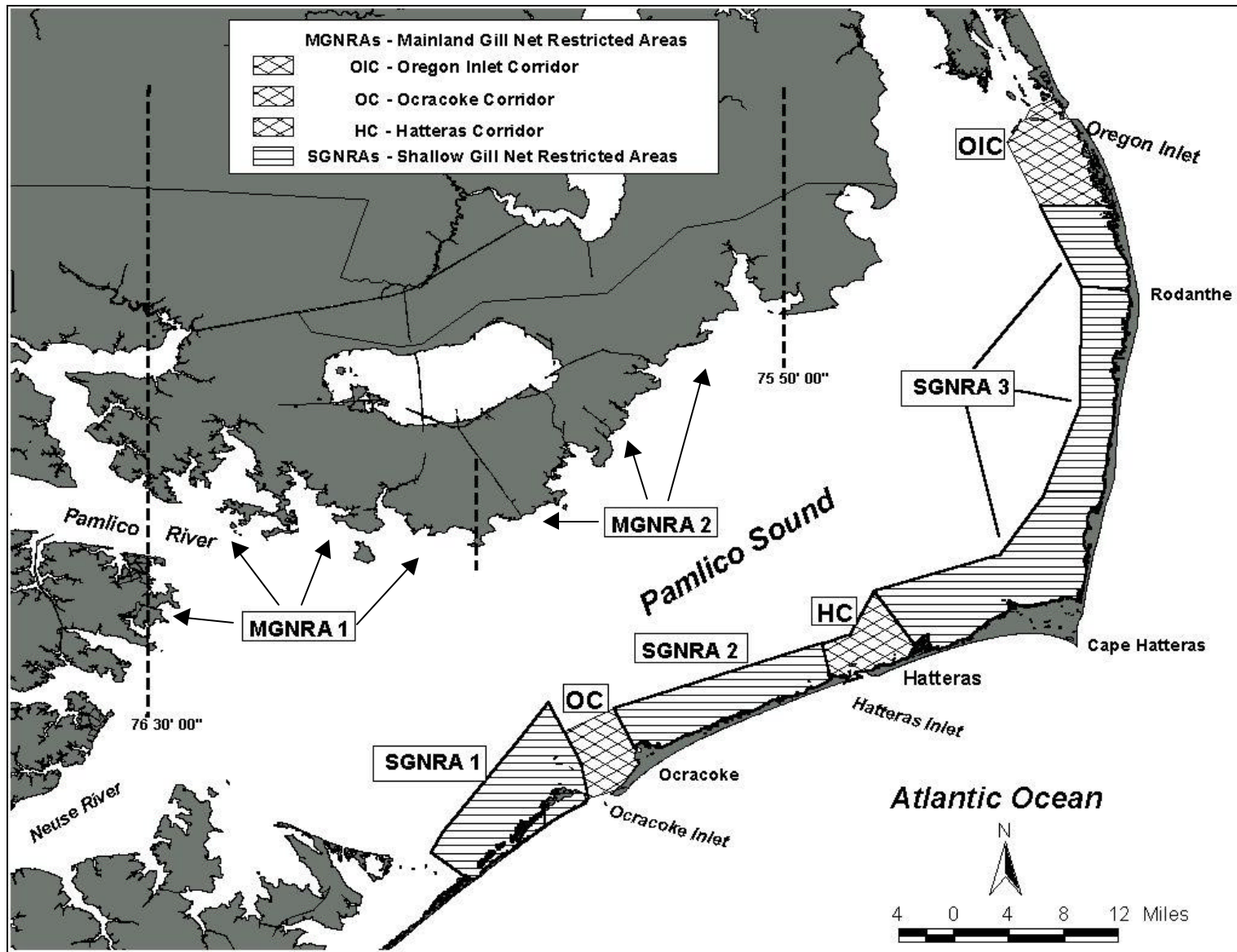


Figure 3. Proposed NCDMF Gillnet Restricted Areas for the 2002-2004 gillnet fisheries. SGNRA = Shallow water Gillnet Restricted Area; MGNRA = Mainland Gillnet Restricted Area; OC = Ocracoke Inlet Corridor; HC = Hatteras Inlet Corridor; OIC = Oregon Inlet Corridor.

Table 1. Proposed NCDMF 2002-2004 sea turtle conservation measures for Pamlico Sound. Shaded blocks indicate time/area closures for large mesh gillnets (≥ 5 -inch stretched mesh). SGNRAs = Shallow Water Gillnet Restricted Area; MGNRAs = Mainland Gillnet Restricted Area; OC = Ocracoke Inlet Corridor; HC = Hatteras Inlet Corridor; OIC = Oregon Inlet Corridor.

2002-2004 Pamlico Sound Sea Turtle Conservation Measures				
	SGNRAs & MGNRAs	OC	HC	OIC
September 1 thru October 31	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Attendance Required 2,000 Yard Limit Large Mesh Gillnets (≥ 5 -inch) GNRA Permit Required	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Attendance Required Closed Large Mesh Gillnets (≥ 5 -inch)	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Attendance Required Closed Large Mesh Gillnets (≥ 5 -inch)	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Attendance Required Closed Large Mesh Gillnets (≥ 5 -inch)
November 1 thru December 1	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) 2,000 Yard Limit Large Mesh Gillnets (≥ 5 -inch) GNRA Permit Required	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Closed Large Mesh Gillnets (≥ 5 -inch)	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Closed Large Mesh Gillnets (≥ 5 -inch)	2,000 Yard Limit Small Mesh Gillnets (< 5 -inch) Closed Large Mesh Gillnets (≥ 5 -inch)
Shaded areas indicate time/area closures to large mesh gillnets (≥ 5 - inch stretched mesh)				

7. Provisions of the GNRA permit establish mandatory observer coverage and weekly reporting requirements as specified under the MONITORING section of this application.
8. Fishermen will be required to report gillnet interactions with sea turtles in GNRAs to the NCDMF Communication Center in Morehead City, NC as soon as possible after discovery of an interaction.
9. Fishermen will be required to bring all incidentally captured Kemp's ridley carcasses ashore for collection of biological data by NCWRC or NMFS staff. Fishermen will also be authorized to bring in the carcasses of other species if requested to do so by NCDMF.
10. Fishermen will be authorized to bring ashore live, debilitated turtles for examination and/or treatment by NCWRC or NMFS staff.
11. Fishermen will be required to release resuscitated sea turtles outside the GNRAs or transfer resuscitated sea turtles to the NCDMF Marine Patrol or NMFS for observation and release outside the GNRAs.

These and other management measures will be implemented under the authority granted to the Fisheries Director by North Carolina Fisheries Rules for Coastal Waters to issue proclamations for management of specific fisheries or Fisheries Rule 15A NCAC 3I.0107 (b), which pertains to protection of endangered or threatened species.

MANAGEMENT RESPONSES

Additional management measures may be implemented in all GNRAs or only in those in which takes occur. The level of restrictions will be determined by the actions deemed necessary by NCDMF, in consultation with the NMFS, to reduce takes and may consist of area

closures, gear restrictions, maximum soak times, gear attendance requirements, gillnet permit modifications, increased observer coverage, or combinations of these management measures.

AUTHORIZED INCIDENTAL TAKES

Pamlico Sound gillnet fisheries will be closed selectively if either estimated gear interactions or mortalities in the GNRAs exceed the levels in Table 2 from September 1 and December 1 for the 2002, 2003, and 2004 fishing seasons.

Table 2. Annual estimated lethal and live takes, which will require gillnet closures during the 2002, 2003, and 2004 fishing season.

Species	Estimated Lethal Takes	Estimated Live Takes
Kemp's Ridley	24	164
Green	24	164
Loggerhead	24	164
Species Aggregate	72	492

These levels were provided by NMFS for the 2001 fishing season and were based on take levels set by NMFS during the 2000 fishing season for large mesh gillnet fisheries in both shallow and deep water (Table 3). The 2000 take levels were intended to represent a 50% reduction in the overall gillnet mortality of turtles in Pamlico Sound when compared to the estimated mortality during the 1999 season. The 2000 take levels assumed a 33% mortality rate for gillnets, which primarily considered deep water large mesh gillnets.

Table 3. Estimated lethal and live takes, which required gillnet closures during the 2000 fishing season.

Species	Estimated Lethal Takes	Estimated Live Takes
Kemp's Ridley	96	192
Green	36	72
Loggerhead	56	112
Species Aggregate	175	350

For 2001, NMFS assumed that the overall level of take will remain about the same. The deep water large mesh gillnet fishery was eliminated by NMFS, but the shallow water small mesh fishery was added. It was assumed that the shallow water small mesh gillnet fishery had approximately the same amount of fishing effort (yards of gillnet x soak days) as the deep water large mesh gillnet fishery, then the same number of interactions were expected for 2001. During the 2000 season, the deep water large mesh gillnet fishery was the most lethal for sea turtles. Based on differences in average soak times between fisheries, NMFS assumed that the shallow water large mesh gillnet fishery was half as lethal as the deep water large mesh gillnet fishery. Additionally, NMFS assumed that the shallow water small mesh gillnet fishery was half as lethal as the shallow water large mesh gillnet fishery. These assumptions translated to a new mortality rate of 12.5%. When this rate was applied to the total number of authorized turtles takes in the 2000 ITP, which was 493 live takes for all species combined then the number of authorized lethal takes for 2001 was 71. Lacking consistent information on the species composition of sea turtles in Pamlico Sound, NMFS was unable to further break these numbers down into separate take levels for each species so an even three way split was applied among loggerhead, green, and Kemp's ridley sea turtles.

For the 2002, 2003, and 2004 fishing seasons, the small mesh gillnet fisheries will be removed from the ITP and the Mainland, shallow water, large mesh gillnet fishery will be added. This fishery has not been monitored in the past and has no history of sea turtle takes.

Therefore, take levels for Pamlico Sound are expected to remain within the 2001 allowable take levels for the 2002-2004 fishing seasons.

It is the intent of NCDMF to use the provisions of the ITP to manage gillnet fisheries in Pamlico Sound to reduce the threat of this gear to Kemp's ridley, green and loggerhead sea turtles. Although hawksbill and leatherback sea turtles are rare in North Carolina internal waters, it is requested that the ITP also authorize the take of two hawksbill and two leatherback sea turtles. In the event that two captures of either of these species occurs in any of the GNRA's, NCDMF will close the fishery responsible in the GNRA where the take occurs. The inclusion of these two species in the ITP will allow the application of the management measures implemented for protection of green, Kemp's ridley and loggerhead sea turtles to also apply to hawksbill and leatherback sea turtles.

CONSERVATION PLAN

The NCDMF proposes to use proclamation authority to implement management measures for Pamlico Sound gillnet fisheries during the fall of 2002, 2003, and 2004 to minimize sea turtles interactions with gillnets and prevent estimated mortalities from exceeding levels specified in the AUTHORIZED INCIDENTAL TAKES section of this application. If estimated interactions or mortalities exceed these thresholds, the NCDMF will selectively close fisheries to reduce interactions between sea turtles and commercial fishing gear. Existing proclamation authority allows the Fisheries Director to specify area, season, mesh size, means/methods, number and length for gillnets. North Carolina General Statutes specify that proclamations that are issued for management of fisheries must be issued with a minimum of 48 hours advanced public notice.

The NCDMF will issue a proclamation specifying management measures for the fall

gillnet fisheries in Pamlico Sound GNRA's during September 2002, 2003, and 2004. The proclamation will designate the GNRA's and will close the OC, HC, and OIC areas to large mesh (≥ 5 -inch stretched mesh) gillnets from September 1 through December 1, 2002, 2003, and 2004. Small mesh (< 5 - inch stretched mesh) gillnets will be allowed in the OC, HC, and OIC but will be limited to a maximum of 2,000 yards per fishing operation. The proclamation will also restrict the use of all gillnets in all GNRA's, to a maximum of 2,000 yards per fishing operation from September 1 through December 1, 2002, 2003, and 2004. The proclamation will also require attendance of all small mesh gillnets in all GNRA's from September 1 through October 31, 2002, 2003, and 2004. In addition, the proclamation will require fishermen to obtain a permit from NCDMF for participation in the Pamlico Sound large mesh gillnet fisheries between September 1 and December 1, 2002, 2003, and 2004. Fishermen will also be required to report all sea turtle/gillnet interactions to the NCDMF Communications Center by marine radio or telephone or to a NCDMF Marine Patrol officer as soon as possible after discovery of an interaction. Gillnet permits will be used to identify fishermen authorized to fish gillnets in the area and as a means of monitoring fishing activity in each area. A permit must be obtained before beginning a large mesh gillnet operation in GNRA's between September 1 and December 1, 2002, 2003, and 2004. The permit will specify conditions for participation in gillnet fisheries such as the requirement to report gear interactions with sea turtles and the requirement to allow observers onboard. Additional management measures may include time, area and gear restrictions or the closure of fisheries if estimated sea turtle gear interactions or mortalities exceed thresholds specified in the AUTHORIZED INCIDENTAL TAKES section of this application. The permit and proclamation(s) will inform fishermen of the requirements for participation in fall gillnet fisheries in the GNRA's and will serve as the primary means of

ensuring compliance with the provisions of the ITP.

FUNDING

The NCDMF will institute and fund all of the provisions and actions required by the Incidental Take Permit, except observer coverage. Funds are not available within NCDMF to allow for an observer program designed to produce 10 percent coverage of Pamlico Sound shallow water large mesh gillnet fisheries along the Outer Banks during the fall of 2002, 2003, and 2004. The NCDMF requests that NMFS assist with the cost of observers for monitoring the large mesh gillnet fisheries in these areas. NCDMF will utilize existing staff to achieve at least 10 percent coverage of the MGNRA areas. Should outside funds be unavailable NCDMF will be unable to conduct a meaningful observer program in the Outer Banks fishery.

STEPS PROPOSED TO MONITOR AND MINIMIZE IMPACTS

The impacts of gillnet fisheries in the GNRA areas will be monitored through permits, gear interaction reporting requirements, onboard observers and surveillance by NCDMF Marine Patrol. Gear impacts will be minimized through the implementation and enforcement of management measures specified under proposed activity.

Sea turtles are recognized as either threatened or endangered under North Carolina State law and implementing regulations. The State of North Carolina has entered into cooperative agreements with the U.S. Fish and Wildlife Service and NMFS concerning regulatory jurisdiction over endangered or threatened species, to include sea turtles. Marine Patrol officers of the Division of Marine Fisheries have jurisdiction to enforce State laws and rules related to endangered and threatened species in coastal waters. The Fisheries Director has authority to close or restrict by proclamation any coastal waters with respect to taking or attempting to take any or all kinds of marine resources when the method (equipment) used is

a serious threat to an endangered or threatened species pursuant to 16 USC 1533(c). Additionally, the Fisheries Director has proclamation authority to restrict various types of fishing activity.

MONITORING

Gear interactions will be monitored through reports from fishery observers, fishermen, and NCDMF Marine Patrol. When authorized by the NCDMF, fishermen will be required to bring sea turtles carcasses to shore for necropsies by trained NCWRC or NMFS personnel.

SEA TURTLE BYCATCH MONITORING PROGRAM

Fishermen that use large mesh gillnets in the GNRAs during the times specified in each region will be required to obtain a state GNRA permit. A provision of the permit will establish mandatory observer coverage and weekly reporting requirements. The following information will be provided each week by each fishermen for each permitted gillnet fishing trip within the GNRAs.

- Pounds of flounder landed
- Yards of gillnet set
- Soak time for each trip (days)
- Restricted Area fished
- Number of sea turtles caught
- The condition of any sea turtles caught.

Reports must be submitted to NCDMF by 6 pm on Sunday during each week of the fishing season. Failure to comply with these reporting requirements or providing false

information may result in permit revocation. In addition, fishermen will be required to report all sea turtle interactions to NCDMF within 24 hours.

The GNRA permit will also establish mandatory observer coverage. Permit holders will be required to allow NCDMF or NMFS fishery observers aboard their vessels to monitor catches. Failure to comply with this permit provision will result in permit revocation. A list of all permit holders will be utilized to randomly assign observers to vessels by area (Outer Banks or Mainland) and port. Outer Banks ports will include Rodanthe, Avon, Buxton, Hatteras, Ocracoke, and Cedar Island. Mainland ports will include Stumpy Point, Engelhard, Gull Rock, Swan Quarter, Rose Bay, Germantown, and Hobuken. Outer Banks observer coverage will be proportionally allocated based on the 2001 trip distribution among ports. Mainland observer coverage will be proportionally allocated based on the 2000 trip distribution of the Mainland flounder gillnet fishery among ports. A minimum of 10 percent coverage will be achieved for the large mesh (\geq 5-inch stretched mesh) gillnet fishery from September 1 through December 1, 2002, 2003, and 2004. Based on the 2001 monitoring, this level of coverage will require approximately 140 Outer Banks observer trips and 20 Mainland trips.

Each observer will be trained to identify, measure, and resuscitate sea turtles. Date, time, location (latitude and longitude, when possible) of each turtle taken, condition (e.g., no apparent harm, injury including a description of the nature of the injury, or mortality), species, sex (if determinable), straight carapace length, and disposition will be recorded. All incidentally captured Kemp's ridley carcasses and carcasses of other species will be brought to shore when feasible. All live debilitated sea turtles will be brought to shore for examination and treatment. Carcasses not brought in for post-mortem examination will be marked either with external flipper tags or spray painted prior to disposal overboard.

All data on gear parameters, finfish catch and bycatch will be collected. Data will be coded on NCDMF data sheets for gillnet fishery observers and key entered by NCDMF staff. NCDMF staff will debrief each observer within 24 hours of each trip to collect information on catch, set locations, gear, and sea turtle interactions.

The total bycatch of sea turtles will be estimated using the stratified ratio method. The bycatch rate will be estimated from the number of sea turtles caught per unit of fishing effort where fishing effort is yards of gillnet x soak days. Total fishing effort will be taken from weekly fishermen reports. NCDMF staff will consult with NMFS NEFSC staff on this analysis as needed. Estimates will be calculated weekly and monthly reports will be provided to the NMFS SERO, Protected Species Branch. In addition, a detailed final report will also be provided.

COMPLIANCE

NCDMF Marine Patrol officers will be responsible for enforcing permit and gear restrictions and monitoring fishing activities in the GNRAS. Enforcement costs for southeastern Pamlico Sound fisheries during the period 1998-1999 averaged \$5,000/year.

This level of enforcement was sufficient to verify compliance with fisheries regulations and management measures in place during that time period. Enforcement costs associated with the 2000 and 2001 ITPs greatly exceeded those of the fall fishery for previous years.

Increased funding will be necessary for NCDMF Marine Patrol monitoring and enforcement of management measures in the GNRAs during the 2002, 2003, and 2004 fishing seasons.

If NCDMF funding for enforcement activities is not increased for this period, it will be necessary to divert effort from other areas or programs to provide for enforcement of GNRA management measures.

REPORTING

The NCDMF will provide the NMFS SERO, Protected Species Branch, and NMFS Headquarters, Endangered Species Division with monthly reports summarizing sea turtle takes (non-lethal and lethal) recorded in the observer program. These reports will include the total number of turtles taken, locations, and species. The NCDMF will also provide a summary of all takes over the sampling period. Data will be recorded on NCDMF standard observer data forms.

The NCDMF will provide NMFS with a report of actions implemented pursuant to the ITP within 120 days of the end of the Pamlico Sound fall gillnet fishery. The report will describe management measures taken to protect sea turtles and will include information from observer trips, gear interaction reports from fishermen, and NCDMF Marine Patrol reports of violations in the fall gillnet fisheries. The NCDMF report will also include an evaluation of the program's effectiveness in protecting threatened and endangered sea turtles and management recommendations for Pamlico Sound fall gillnet fisheries.

ANTICIPATED IMPACT

The proposed activity has the potential to protect sea turtles by minimizing interactions with gillnets in Pamlico Sound during the 2002, 2003, and 2004 fishing seasons. If gear interactions occur during fishing activities, observer data will help identify parameters of the responsible gear and distinguish time/area interaction patterns. The NCDMF believes that the proposed management measures will be effective in reducing sea turtle interactions with fishing gear. Reports from onboard observers, the NC Stranding Network, and the NCDMF Marine Patrol should allow sea turtle/gillnet interactions to be closely monitored and provide for the timely implementation of additional management measures or closures should

thresholds for gear interaction or extrapolated mortality levels be exceeded.

ANTICIPATED IMPACT ON HABITAT

The NCDMF believes that this proposed activity will have no impact on the habitat of sea turtles; therefore, no restoration of the affected habitat is proposed.

ALTERNATIVES CONSIDERED

An alternative action considered, but rejected, by NCDMF was to not apply for an ITP and to close the GNRAs to all gillnet fisheries during the 2002, 2003, and 2004 fishing seasons. While this action would provide protection for sea turtles, it would not allow for collection of data that might assist in the identification of sources responsible for strandings of sea turtles in Pamlico Sound during the fall. The closure of the fall gillnet fishery for flounder, which was valued in excess of one million dollars in both 1998 and 1999, would have a severe economic impact on participating fishermen and the local economy.

APPLICATION

The North Carolina Division of Marine Fisheries, PO Box 769, Morehead City, NC 28557, (Phone 252-726-7021) makes application for an Individual Incidental Take Permit under Section 10 of the Endangered Species Act authorizing implementation of management measures for protection of threatened and endangered sea turtles while allowing fall gillnet fisheries to be prosecuted in Pamlico Sound. It is requested that the ITP be valid from September 1, 2001 through December 1, 2004. An ITP may be requested by the NCDMF for the 2005 - 2008 fishing seasons if it is determined that management measures are necessary and if the management measures implemented under the ITP during the 2002, 2003, and 2004 fishing seasons were effective in minimizing sea turtle mortalities in Pamlico Sound fall

gillnet fisheries. The ITP will authorize the NCDMF to implement management measures in Pamlico Sound fall gillnet fisheries to protect sea turtles. It is estimated that approximately 125 vessels will participate in Pamlico Sound gillnet fisheries managed under the ITP in 2001.

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