

Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973

February 2005

Atlantic Sea Turtle Populations of:

Loggerhead (*Caretta caretta*)

Green (*Chelonia mydas*)

Kemp's ridley (*Lepidochelys kempii*)

Leatherback (*Dermochelys coriacea*)

Hawksbill (*Eretmochelys imbricata*)

Preston Pate

Director

Applicant/Permit Holder

NORTH CAROLINA DIVISION OF MARINE FISHERIES

**PO BOX 769
MOREHEAD CITY
NORTH CAROLINA 28557**

252-726-7021

FAX: 252-726-6062

Preston.Pate@ncmail.net

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 requested ITP will authorize the implementation of management measures to protect threatened and endangered sea turtles, while allowing gillnet fisheries for flounder and other species to operate in designated areas within Pamlico Sound from September 1 through December 1 during the 2005 through the 2010 fishing seasons. This request is similar to that of July 2002, which resulted in the National Marine Fisheries Service (NMFS) issuing ITP #1398 for the 2002 - 2004 fall gillnet fisheries in eastern Pamlico Sound (67 FR 49,009, July 29, 2002). Shallow water fisheries along the Outer Banks and mainland shoreline of Pamlico Sound will be managed and monitored by NCDMF.

In 1999, increased sea turtle strandings were noted in the southeastern portion of Pamlico Sound. Investigation of the fisheries operating in the area at that time, identified large (\geq 5-inch stretched mesh – flounder) and small ($<$ 5-inch stretched mesh - spotted seatrout *Cynoscion nebulosus*) mesh gillnet fisheries as a potential source of fishery interaction with sea turtles.

Observations of gillnet fisheries indicated a shallow water large mesh fishery along the Outer Banks, a deep water large mesh fishery further from shore, and a shallow water small mesh gillnet fishery operating throughout Pamlico Sound. The large mesh fisheries both targeted southern flounder (*P. lethostigma*). The deep water fishery operated in depths ranging from 10 to 20 feet from September – December. The shallow water large mesh fishery generally operates in depths ranging from 3 to 10 feet in areas next to the barrier islands. The small mesh gillnet fisheries are composed of the runaround and set net fisheries and target species in these fisheries

generally include spotted seatrout (*Cynoscion nebulosus*), weakfish (*Cynoscion regalis*), and bluefish (*Pomatomus saltatrix*), (Gearhart 2003).

Initial monitoring of these fisheries in 1999 identified the large mesh gillnet fishery as a source of sea turtle interactions in Pamlico Sound during the months of September through December. With this information, the National Marine Fisheries Service (NMFS) initially issued an emergency rule closing this area to large mesh gillnet fishing operations to protect endangered and threatened sea turtles (Gearhart 2003).

To maintain this economically vital flounder fishery, in 2000 NCDMF applied for and received an Incidental Take Permit (ITP) under Section 10 of the Endangered Species Act (ESA). The ITP contained a comprehensive conservation plan, which was designed to reduce sea turtle interactions by establishing restricted areas and intensive monitoring, while allowing traditional gillnet fisheries to be prosecuted. Observations in 2000 under the ITP identified the deep water region of Pamlico Sound as the primary source for sea turtle interactions. Considering this, NMFS established a permanent rule for the 2001 fishing season closing all potential fishing grounds utilized by the deep water large mesh gillnet fisheries. In 2001, NCDMF again consulted with NMFS and prepared an application for, and received an ITP under Section 10 of the ESA. Restricted areas were established throughout Pamlico Sound, NC where fishermen could continue operations as stipulated in the ITP.

Considering 2001 monitoring data, NCDMF consulting with NMFS, applied for and received ITP (#1398) in 2002, inclusive with a Habitat Conservation Plan (HCP). The HCP required an intensive sea turtle monitoring and characterization program throughout restricted large mesh gillnet fishing areas in Pamlico Sound from September through December. This area is now referred to as the Pamlico Sound Gillnet Restricted Area (PSGNRA). From 2002 - 2004,

the shape, size and location of restricted areas throughout the PSGNRA have remained stable (Figure 1). These areas have been monitored on an annual basis from September 1 through December 15 of each year, and NCDMF has been able to successfully manage the large mesh gillnet fisheries in Pamlico Sound from September – December. Observed levels of sea turtle interactions in gillnet fisheries remained below thresholds as established by the ITP in 2002, 2003, and 2004 (Price 2005, Price 2004; Gearhart 2003).

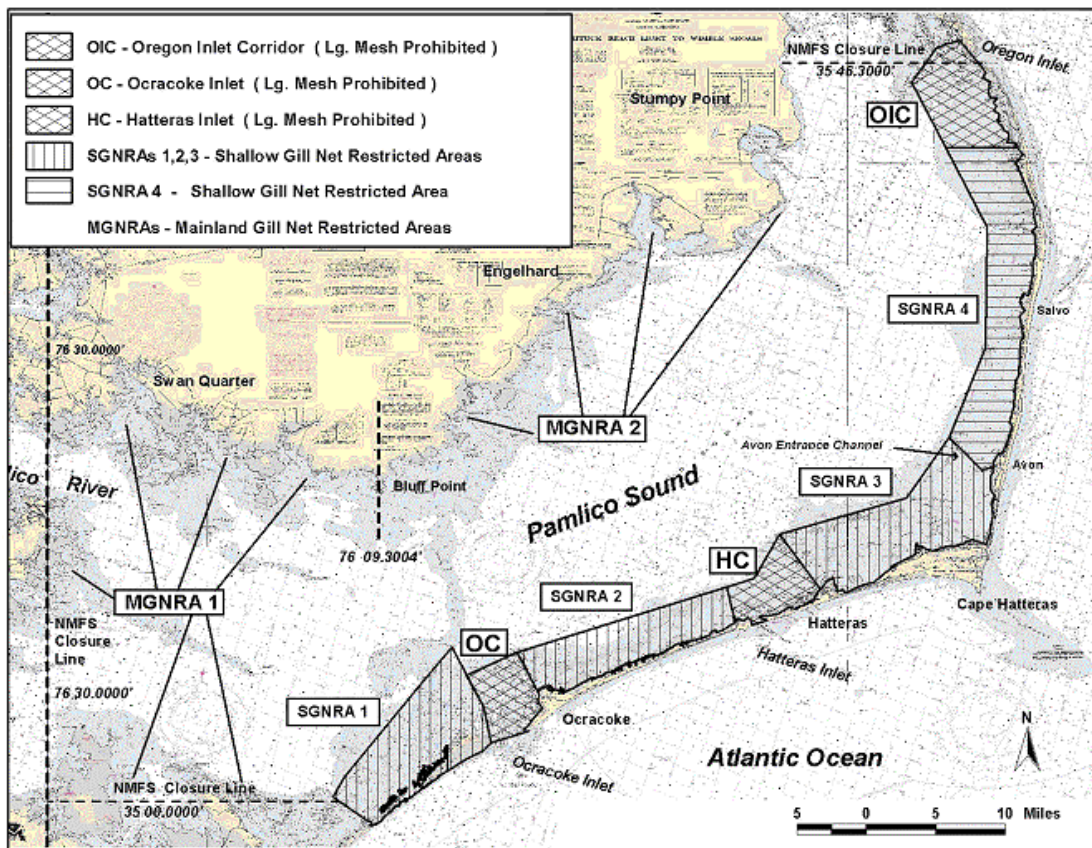


Figure 1. The Pamlico Sound Gillnet Restricted Area (PSGNRA) from 2002 through 2004 depicting restricted areas, and prohibited corridors for large mesh gillnet operations.

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 seasons of 2005 through 2010. All shallow water gillnet fisheries along the

Outer Banks and mainland shore of Pamlico Sound 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 ($> 4 \frac{1}{4}$ -inch) gillnets. Simultaneously, NCDMF will issue a proclamation effective September 1 – December 1 of each year that will establish a state closure of the deep water fishing areas to large mesh gillnets to allow for increased state enforcement capabilities. Finally, NCDMF proposes that alternative management measures, as described in the Adaptive Management Responses section of this document, be implemented in consultation with NFMS, throughout the 2005 – 2010 fishing seasons, and contingent with current trend analyses that may reflect a need for alternative management measures. Collectively, these measures are expected to reduce the number of sea turtle interactions with gillnets.

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 - 2004 occurred throughout the year (Epperly et al., 1995; Braun-McNeill *unpublished data*). 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, crab pots, long line, and hook and line gear. There were two peaks in sightings occurring in the spring and fall: May/June (41%), and

October/November (27%). There were significantly less frequent sightings in other months: December through March (6%), April (5%), July (9%), August (6%), and September (6%). Most sightings were from Cape Lookout to the north along the Outer Banks. South of Cape Lookout, sea turtles were relatively common off Onslow County.

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. From 2000 to present, annual sea turtle strandings throughout North Carolina have been significantly reduced from the peaks observed in 1999 and 2000 (NCWRC Sea Turtle Stranding Network).

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 indicated two major components of the Pamlico Sound flounder gillnet fishery: a shallow water fishery, which occurred along the Outer Banks; and a deep water fishery that operated further from shore along

a slope adjoining the main basin of Pamlico Sound (Gearhart 2001). The deep water fishery historically operated in depths ranging from 10 to 20 feet with vessels that were typical ocean sink gillnet boats ranging from 25 to 45 feet in length. Each vessel set 2,000 to 5,000 yards of large mesh (5.5- to 6.5- inch) gillnet, which soaked up to three days and was retrieved with the aid of net reels. Monitoring during the 2000 fishing season consisted of 13.1 % coverage of this 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).

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 typically sets 500 to 2000 yards of large mesh (5.5- to 7.0- inch) gillnet, which is 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).

Due to the increased observation of deep water protected species interactions, and the associated potential mortality, the deep water portion of Pamlico Sound was permanently closed to large mesh gillnets in 2001. Small and large mesh gillnet fisheries were monitored during the 2001 fishing season 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 is a sight fishery that 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 is retrieved by hand. Sets are composed of many short lengths of gillnet with most constructed of 0.5 mm twine or smaller. Target species include striped mullet, spotted seatrout, weakfish, and bluefish. 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. 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 to require attendance of small mesh gillnets. These regulations remained in effect for the remainder of the season. The other two observed green turtles 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 small mesh 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. There were no sea turtle interactions observed in the small mesh gillnet fisheries.

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. 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 is 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. However, the mainland gillnet fishery has operated within 200 yards of the shoreline and has been observed under Section 10 ITP (#1398) since 2002.

NCDMF has managed the PSGNRA, which includes the shallow water gillnet fishery operations along the Outer Banks and mainland shore of Pamlico Sound, from September through December in 2002, 2003, and 2004 (Price 2005, 2004; Gearhart 2003). NCDMF has monitored and characterized more than 460,000 yards of large mesh gillnet effort (yards * soak day) representing an overall, three-year coverage of 7.3 % (Table 1). Coverage has been relatively evenly distributed by year and restricted fishing areas. From 2002 – 2004, there have been 25 observed turtle interactions throughout the PSGNRA; in 2002 (n = 12), 2003 (n = 4), and 2004 (n = 9). The green turtle was the most common species observed (n = 17), followed by the loggerhead sea turtle (n = 5), and the Kemp's ridley sea turtle (n = 3). The majority (72%) of these interactions were with live individuals that were subsequently sampled, tagged and

released at or near inlets in good condition. From 2002 – 2004 the combined sea turtle observations extrapolate to an estimated total of 273 interactions. By species, there were an estimated 143 interactions with live green turtles, 37 estimated green turtle mortalities; 65 estimated live loggerhead interactions; 13 estimated live Kemps ridley interactions, and 15 estimated Kemps ridley mortalities. Green turtles were observed each year, while the loggerhead sea turtles were only observed in 2002, and the Kemps ridley only observed in 2002 and 2004. NCDMF has been able to adaptively manage the fall gillnet fisheries in Pamlico Sound to maintain a reduced level of gear interactions with sea turtles from 2002 – 2004. This has been accomplished through intense monitoring, small area closures, properly shaping restricted areas, maintaining fishermen compliance, and enforcement of the fall gillnet fishery restrictions.

Table 1. Reported and observed large mesh gillnet trips and effort (yards * soak days) by PSGRNA restricted area for the 2002, 2003, and 2004 PSGNRA monitoring under Section 10 ITP # 1398.

Year	Area	Reported Trips	Observed Trips	Observed Effort	Reported Effort	Coverage
2002	M1	144	11	17,800	223,900	7.9
	M2	97	5	7,520	112,000	6.7
	S1	137	4	4,320	193,550	2.2
	S2	268	33	38,765	280,000	13.8
	S3	1,221	92	97,570	1,399,270	7.0
2003	M1	48	7	11,300	81,300	13.9
	M2	48	4	5,100	40,800	12.5
	S1	32	2	2,550	32,550	7.8
	S2	270	20	21,355	270,600	7.9
	S3	777	36	32,750	858,600	3.8
	S4	471	29	29,690	546,161	5.4
2004	M1	80	10	14,000	108,500	12.9
	M2	71	6	7,200	66,100	10.9
	S1	148	13	19,615	203,000	9.7
	S2	421	25	27,540	510,975	5.4
	S3	986	94	112,115	1,105,670	10.1
	S4	273	15	12,890	293,900	4.4
Totals		5,492	406	462,080	6,326,876	7.3

Landings and Value

Total finfish landings throughout North Carolina were valued at greater than 33 million dollars in 2003. The flounder (*Paralichthys spp.*) fisheries represent nearly 30% of this value. The inshore component of the flounder fishery targets southern flounder. The most common gear is large mesh gillnets, which account for greater than 55% of all inshore flounder landings on average from 1994-2003 (NCMDF Trip Ticket Program).

The North Carolina Trip Ticket Program requires that seafood dealers report landings by water body and gear. There are no subdivisions for the Pamlico Sound water body, and gillnet landings were not reported by mesh size prior to 2004. Flounder landings by large mesh gillnets in southeastern Pamlico Sound cannot easily be separated from flounder landings by other gillnets set in the area, prior to 2004. However, beginning in 2004, the Trip Ticket Program began collecting landings by large and small mesh gillnets. 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 by taking the average annual price per pound from a voluntary dealer survey and multiplying by the total annual landings. 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 813,180 pounds valued at \$1,496,593 while landings in 1999 were 738,440 pounds valued at \$1,314,553. In 2000, flounder landings were 493,824 pounds valued at \$878,378 and in 2001 landings were 354,787 pounds valued at \$567,867. In 2002, flounder landings were 357,818 pounds valued at \$533,253.

Similarly, 355,003 pounds of flounder were landed in 2003 that were valued at \$601,190.

Preliminary analyses from 2004 indicate approximately 410,000 pounds of flounder valued at nearly \$700,000 were landed in Pamlico Sound.

Proposed Activity

Similar to the 2002 – 2004 ITP (#1398), NCDMF will manage the shallow water small and large mesh gillnet fisheries throughout the mainland shore and Outer Banks of Pamlico Sound. The adjacent deep water fishing grounds will be closed to large mesh gillnets by NFMS, however NCDMF will also establish this closure by proclamation authority granted to the director. The NCDMF closure will result in increased enforcement in the deep water fishing grounds, since the closure will be enforced by both NMFS and the NCDMF.

The purpose of the ITP for 2005 – 2010 will be to protect and conserve sea turtles frequenting North Carolina inshore waters. This will be accomplished by implementing management measures for all gillnet fishing operations in shallow water fishing grounds in Pamlico Sound. Directed management measures will be implemented from September 1 and continue until December 1 of 2005 through 2010.

NCDMF intends to continue proactive management measures directed toward the fall large mesh gillnet fishery in Pamlico Sound. In response to observer data collected from the 2002 – 2004 monitoring program, NCDMF would like to implement three management actions that will differ from the 2002 – 2004 Habitat Conservation Plan from ITP (#1398). Specifically, NCDMF will reduce the 2002 – 2004 goal of observer coverage from 10% to 2% for the first (September 1 – September 15) and last (November 1 – December 1) weeks of

the flounder fishing seasons. A goal of 10% observer coverage of the fishery will be maintained from September 16 – October 31. This is designed to expend resources more effectively during times when sea turtle interactions occur most frequently (Price 2005, 2004; Gearhart 2003, 2002, 2001). Secondly, NCDMF will eliminate the state PSGNRA permit requirements of fishermen operating in the mainland restricted areas, previously known as MGNRA1 and MGNRA2 (Figure 1). The lack of sea turtle interactions (n = 1) on the mainland side of Pamlico Sound in the last five years merits this request. While the mainland large mesh gillnet fishermen will not be required to obtain a permit, only the shallow water portion (within 200 yds of the shoreline) of the mainland side of Pamlico Sound will be open to large mesh gillnet operations. This will be established through proclamation authority granted to the director of NCDMF. Observers will maintain coverage of the mainland gillnet fishery through stratified random sampling to continue to validate the lack of sea turtle interactions on the mainland. Further, mainland fishermen will be informed of safe and proper sea turtle handling and release protocols, and be required to report via telephone any incidental interactions with sea turtles. NCDMF will continue to ensure mainland fishermen remain in compliance with these regulations through Enforcement spot checks, flyovers, fishhouse checks, and observer reporting. Finally, one of the current requirements of a PSGNRA permit mandates that all fishermen participating in the PSGNRA report on a weekly basis whether or not they are actively fishing for that particular week. From 2002 – 2004, this created a multitude of logistical problems and required numerous NCDMF staff to assist in obtaining late weekly reports, which were typically (greater than 95%) comprised of fishermen who were not actively operating during that week. Thus, the PSGNRA permit for 2005 –2010 will require only active fishermen to report weekly.

NCDMF observers will conduct spot checks at fish houses (i.e., checking trip tickets) and with commercial fishermen to ensure fishermen are reporting accurately. As with previous Habitat Conservation Plans in the PSGNRA, a violation system will be established inclusive with suspension and revocation clauses should permitted fishermen be found out of compliance. All other management measures will remain identical to the established (2002–2004) management regime and are detailed below in the Management Measures section.

Management Measures

NCDMF will implement several management measures for the shallow water gillnet fisheries throughout Pamlico Sound during the fall seasons of 2005 through 2010. These measures will be designed to minimize protected resources interactions in commercial gillnet fisheries. The Pamlico Sound fall gillnet fisheries will be managed as follows:

1. NCDMF will designate seven gillnet restricted areas (GNRAs) in eastern Pamlico Sound. Each region will have individual time/area gillnet restrictions. The seven areas will consist of four Shallow Water Gillnet Restricted Areas (SGNRA1, SGNRA2, SGNRA3, and SGNRA4), an Ocracoke Inlet Corridor (OC) a Hatteras Inlet Corridor (HC), and an Oregon Inlet Corridor (OIC) (Figure 2).
2. NCDMF will designate a gillnet restricted area throughout 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 75° 42' W (Figure 2).

3. From September 1 through October 31 for the 2005 through 2010 fishing seasons, small mesh gillnets (< 5-inch stretched mesh) must be attended (within 100 yards at all times) within all GNRA's (Table 2).
4. From September 1 through December 1 for the 2005 through 2010 fishing seasons, the OC, HC, and OIC areas will be closed to all large mesh gillnet (\geq 5 -inch stretched mesh) fishing operations (Figure 2, Table 2).
5. Individual fishing operations employing large mesh gillnets will be required to obtain an NCDMF issued permit to fish in all of the GNRA's along the Outer Banks between September 1 and December 1 for the 2005 through 2010 fishing seasons.
6. Individual large mesh gillnet fishing operations fishing within the GNRA's will be restricted to a maximum of 2,000 yards per fishing operation.
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 promptly report gillnet interactions with sea turtles to the NCDMF Communication Center in Morehead City, NC.
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 (at or near inlets) 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.

Adaptive Management Responses

NCDMF may implement and enforce additional management actions to reduce sea turtle takes at anytime during the fall fishing seasons. This allows NCDMF to respond promptly by establishing restrictions to protect sea turtles. The level of restrictions will be determined by the actions deemed necessary by NCDMF, in consultation with NMFS. Reducing interactions and takes may consist of, but are not limited to, increased gear restrictions, area closures, attendance requirements, increased observer coverage, or PSGNRA permit modifications. Simultaneously, in consultation with NMFS, NCDMF intends to implement management responses or actions that will direct resources more efficiently. Specifically, these actions may include, but are not limited to: reduced observer coverage by area, decreased stipulations of the NCDMF PSGNRA permit, modification of monitoring goal(s), adjusted gear requirements, and modification of restricted areas.

NCDMF, in consultation with NMFS, intends to utilize adaptive measures to accurately collect data through a monitoring program that is designed to have the flexibility to anticipate, respond, and adjust to current needs. This responsive, long-term, proactive

approach will facilitate the protection and conservation of sea turtles throughout North Carolina.

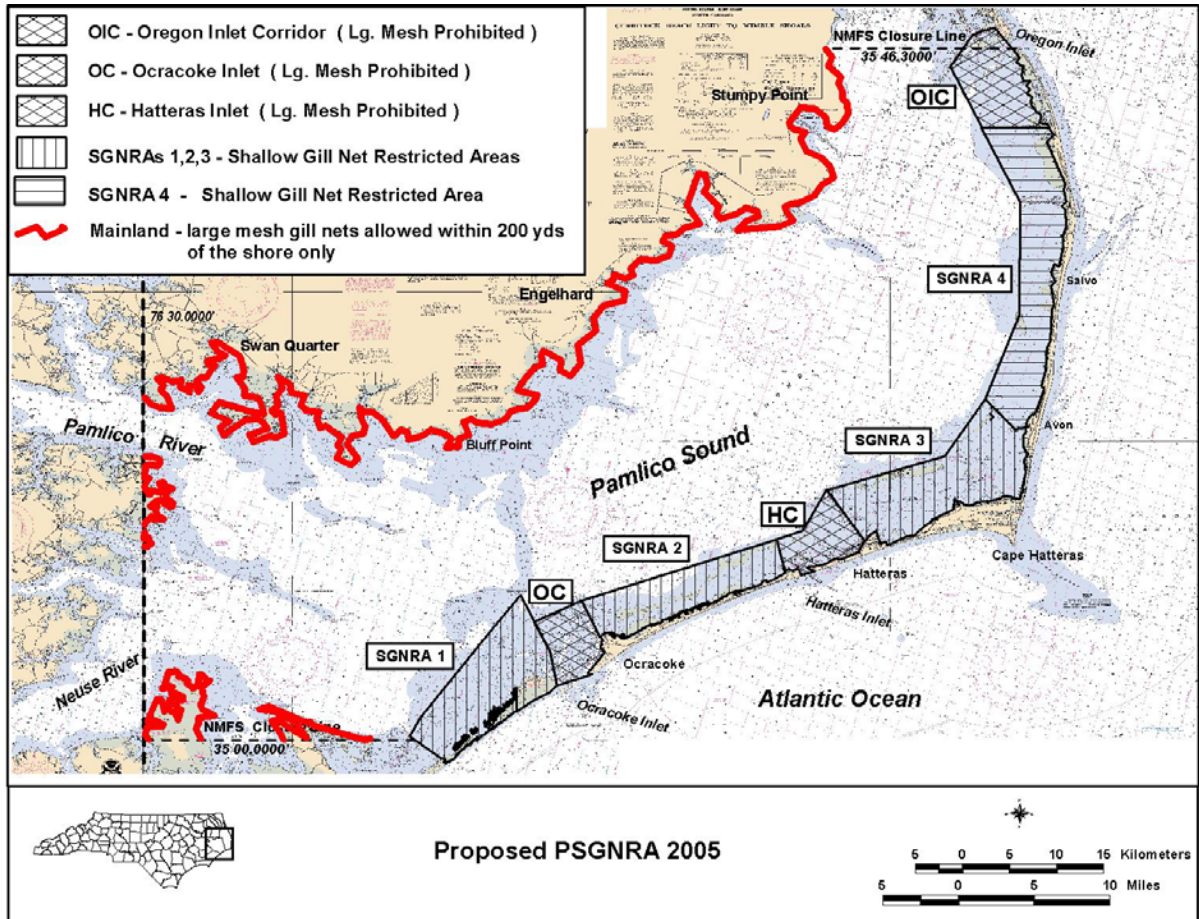


Figure 2. Proposed NCDMF Gillnet Restricted Areas for the 2005-2009 fall gillnet fisheries. SGNRA = Shallow water Gillnet Restricted Area; OC = Ocracoke Inlet Corridor; HC = Hatteras Inlet Corridor; OIC = Oregon Inlet Corridor. Mainland fishing operations will be authorized within 200 yards of the shoreline only.

Table 2. Sea turtle conservation measures for the fall (September 1 – December 1) gillnet fisheries in Pamlico Sound, NC from 2005 – 2010. SGNRAs = Shallow Water Gillnet Restricted Areas (SGNRA1, SGNRA2, SGNRA3, and SGNRA4); Mainland Shoreline = within 200 yards of the western shoreline of Pamlico Sound throughout Hyde and Pamlico Counties, NC (refer to Figure 1); OC = Ocracoke Inlet Corridor; HC = Hatteras Inlet Corridor; OIC = Oregon Inlet Corridor.

2005 - 2009 Pamlico Sound Fall Gillnet Fishery Sea Turtle Conservation Measures					
	SGNRAs	Mainland Shoreline	OC	HC	OIC
September 1 through October 31	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit - Mandatory Attendance	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit - Mandatory Attendance	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit - Mandatory Attendance	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit - Mandatory Attendance	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit - Mandatory Attendance
	Large Mesh Gillnet (≥ 5 inch stretch) - 2,000 Yard Limit - GNRA Permit Required	Large Mesh Gillnet (≥ 5 inch stretch) - 2,000 Yard Limit - Within 200 yds of Shore Only	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED
November 1 through December 1	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit	Small Mesh Gillnet (< 5 inch stretch) - 2,000 Yard Limit
	Large Mesh Gillnet (≥ 5 inch stretch) - 2,000 Yard Limit - GNRA Permit Required	Large Mesh Gillnet (≥ 5 inch stretch) - 2,000 Yard Limit - Within 200 yds of Shore Only	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED	Large Mesh Gillnet (≥ 5 inch stretch) CLOSED

Authorized Incidental Takes

NCDMF will close Pamlico Sound gillnet fisheries immediately if either estimated lethal or live interactions with sea turtles in the Shallow Water Gillnet Restricted Areas reach the thresholds in Table 3 from September 1 through December 1 for the 2005 through 2010 fishing seasons. The authorized take levels were provided by NMFS under Section 10 #1398 for the 2002 – 2004 fishing seasons. These thresholds were not reached in this three-year period, and the take levels are not anticipated to increase for the 2005 –2010 fishing seasons.

Table 3. Annual estimated live and lethal take thresholds that will require immediate closure of the fall gillnet fisheries in Pamlico Sound for the 2005, 2006, 2007, 2008, 2009, and 2010 fishing seasons.

Species	Estimated Lethal Takes	Estimated Live Takes
Kemp's Ridley	25	80
Green	50	160
Loggerhead	25	80
Species Aggregate	100	320

As in the previous habitat conservation plan for Pamlico Sound, 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, 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 2005 through 2010 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 2005 through 2010. The proclamation will designate the GNRA's and will close the OC, HC, and OIC areas to large mesh (≥ 5 -inch stretched mesh) gillnet operations from September 1 through December 1, 2005 through 2010. The proclamation will establish restrictions on the mainland side of Pamlico Sound including: authorizing large mesh gillnet activities within 200 yards of the shoreline only, mandatory observer coverage, and a 2,000 yard gillnet limit per operation. 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 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, through 2010. The proclamation will require attendance of all small mesh gillnets in all GNRA's from September 1 through October 31, 2005 through 2010.

In addition, the proclamation will require fishermen to obtain a PSGNRA permit from NCDMF for participation in the Outer Banks Pamlico Sound large mesh gillnet fisheries between September 1 and December 1, 2005 through 2010. A PSGNRA permit must be obtained prior to any large mesh gillnet operation from September 1 through December 1 of each year. Fishermen will 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 promptly 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. 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

NCDMF is committed to funding all components of the ITP. However, NCDMF funds are allocated on a yearly basis and cannot be anticipated in out-years. Thus, each year NCDMF must evaluate funding levels and how they relate to carrying forth the activities identified in the ITP. Of particular concern, the at-sea observer program is costly. If funding is insufficient to maintain this program, NCDMF will need to seek additional funding sources for the at-sea

monitoring component or re-evaluate the entire monitoring program to determine if other methods for observing sea turtle interactions are available. Because additional funding needs are anticipated, NCDMF requests that NMFS assist with the observer monitoring cost of this program. Funding from NMFS will facilitate a long term, comprehensive management program designed to protect endangered or threatened sea turtles.

Steps Proposed To Monitor and Minimize Impacts

The impacts of gillnet fisheries in the GNRAs will be monitored through permits, gear interaction reporting requirements, onboard observers, individual fishermen reports, and surveillance by NCDMF Marine Patrol. Gear impacts will be minimized through the implementation and enforcement of management measures specified under the Proposed Activity section of this document.

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 GNRA 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. Fishing weeks will be standardized beginning Saturday and ending Friday from September 1 through December 1 of the 2005 through 2010 fishing seasons. Active permitted fishermen will supply the following information for each trip each week:

- 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 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 (SGNRA1, SGNRA2, SGNRA3, and SGNRA4) and port. Outer Banks ports will include Rodanthe, Avon, Buxton, Hatteras, Ocracoke, and Cedar Island. Outer Banks observer coverage will be proportionally allocated based on the 2004 trip distribution among ports for the 2005 fishing season, and subsequent years will utilize the previous years distribution frequencies.

Mainland gillnet fishers will not be required to obtain a GNRA permit. However, among the following ports: Stumpy Point, Engelhard, Gull Rock, Swan Quarter, Rose Bay, Germantown, and Hobuken, commercial fishermen will be required to allow observers aboard their vessels. Observers will follow a random sampling table that will assign at least one trip along the mainland shore per week. A list of potential mainland gillnet fishermen will be obtained through existing NCDMF databases. The mainland coverage will continue from 2005 – 2010 to ensure the trend of no sea turtle interactions continues. Should observed or reported interactions begin to occur on the mainland shore of Pamlico Sound, NCDMF may, at any time from September 1 through December 1 of 2005 – 2010, implement further restrictions such as: permitted entries, weekly reporting, stratify zones, area closures, and increased observer coverage to protect sea turtles.

A minimum of 2 percent coverage will be achieved for the Outer Banks large mesh (\geq 5-inch stretched mesh) gillnet fishery from September 1 through September 15, and from November 1 through December 1, through 2010. From September 15 through October 31, a minimum of 10 percent coverage will be achieved for the Outer Banks large mesh (\geq 5-inch stretched mesh) gillnet fishery. Based on 2004 monitoring, this level of coverage will require

approximately 120 Outer Banks observer trips. Observers will maintain coverage of the small mesh (< 5 inch stretched mesh) throughout Pamlico Sound when attainable. Finally, observers will maintain coverage throughout the mainland side of Pamlico Sound from September 1 through December 1 of each year.

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 these analyses as needed. Estimates will be calculated weekly and reports will be provided to the NMFS SERO, Protected Species Branch. In addition, a detailed final report will also be provided annually.

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 2004 fishing season was approximately \$15,000. This equates to 8 man-hours per week plus one NCDMF spot check flyover per week. However, this does not include monetary expenditures for enforcement costs associated with violations that may occur throughout the PSGNRA from September 1 through December 1 of each year. Increased funding will be necessary for NCDMF Marine Patrol monitoring and enforcement of management measures in the GNRA during the 2005 through 2010 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 weekly 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 final 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 will protect sea turtles by minimizing interactions with gillnets in Pamlico Sound during the 2005 through 2010 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 GNRA to all gillnet fisheries during the 2005 through 2010 fishing seasons. While this action would provide protection for sea turtles, it would not allow for collection of long-term comprehensive 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 at approximately \$700,000 wholesale (and estimated \$ 3 million retail) in 2004, would have a severe economic impact on participating fishermen and the local economy.

Outreach

It is the intent of NCDMF to continue educational outreach to the commercial fishing industry throughout the Pamlico Sound. NCDMF has increased efforts to better inform the industry about the Section 10 permit (ESA 1973) process, and the need to protect and conserve endangered and threatened species. This has been accomplished by mail, via telephone, and meetings at local fish houses to discuss these issues with the fishermen directly. NCDMF is in the process of creating summary documents and scheduling meetings with the fishermen throughout Pamlico Sound to discuss past, current and future management of the PSGNRA.

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, 2005 through December 1, 2010. 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 2005.

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