

DoD has not performed an initial regulatory flexibility analysis. DoD invites comments from small businesses and other interested parties. DoD also will consider comments from small entities concerning the affected DFARS subpart in accordance with 5 U.S.C. 610. Such comments should be submitted separately and should cite DFARS Case 2002–D032.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the rule does not impose any information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Part 246

Government procurement.

Michele P. Peterson,
Executive Editor, Defense Acquisition Regulations Council.

Therefore, DoD proposes to amend 48 CFR Part 246 as follows:

1. The authority citation for 48 CFR Part 246 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

PART 246—QUALITY ASSURANCE

2. Section 246.402 is added to read as follows:

246.402 Government contract quality assurance at source.

Do not require Government contract quality assurance at source for contracts or delivery orders valued below \$250,000, unless—

- (1) Mandated by DoD regulation;
- (2) Required by a memorandum of agreement between the acquiring department or agency and the contract administration agency; or
- (3) The contracting officer determines that—
 - (i) Contract technical requirements are significant (*e.g.*, the technical requirements include drawings, test procedures, or performance requirements);
 - (ii) Critical product features/ characteristics or specific acquisition concerns have been identified; and
 - (iii) The contract is being awarded to—
 - (A) A manufacturer or producer; or
 - (B) A non-manufacturer or non-producer and specific Government verifications have been identified as necessary and feasible to perform.

3. Section 246.404 is added to read as follows:

246.404 Government contract quality assurance for acquisitions at or below the simplified acquisition threshold.

Do not require Government contract quality assurance at source for contracts or delivery orders valued at or below the simplified acquisition threshold unless the criteria at 246.402 have been met.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No.020523130–3076–02;I.D. 030303C]

RIN 0648–AP94

Endangered and Threatened Wildlife and Plants; 12–Month Finding on a Petition to List the Northern and Florida Panhandle Loggerhead Sea Turtle (*Caretta caretta*) Subpopulations as Endangered

AGENCY: Fish and Wildlife Service (FWS), Interior, and National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of petition finding.

SUMMARY: We, the FWS and NMFS (collectively “the Services”) announce a 12–month finding on a petition to reclassify the Northern and Florida Panhandle subpopulations of the loggerhead sea turtle (*Caretta caretta*), a species now listed as threatened throughout its range, as distinct population segments (DPSs) with endangered status and to designate critical habitat under the Endangered Species Act of 1973 (ESA), as amended. After review of all available scientific and commercial information, we find that the Northern and Florida Panhandle loggerhead subpopulations do not meet the criteria for classification as DPSs, and therefore the petitioned action is not warranted.

DATES: Effective September 9, 2003.

ADDRESSES: The petition finding, supporting data, and comments are available for public inspection, by appointment, during normal business hours at the Protected Resources

Division, NMFS Southeast Region, 9721 Executive Center Drive North, St. Petersburg, FL 33702. Copies of the 1991 Recovery Plan for the U.S. Atlantic population of the loggerhead turtle are available upon request at the above address, and the plan also is available on the NMFS website at http://www.nmfs.noaa.gov/prot_res/PR3/recovery.html.

FOR FURTHER INFORMATION CONTACT:

David Bernhart, NMFS Southeast Region (ph. 727–570–5312, fax 727–570–5517, e-mail David.Bernhart@noaa.gov), or Barbara Schroeder, NMFS Office of Protected Resources (ph. 301–713–1401, fax 301–713–0376, e-mail barbara.schroeder@noaa.gov).

SUPPLEMENTARY INFORMATION:

Background

Pursuant to section 4(b)(3)(B) of the ESA (16 U.S.C. 1531 *et seq.*), for any petition that presents substantial scientific and commercial information to revise the List of Endangered or Threatened Wildlife and Plants, we are required to make a finding within 12 months of the date of receipt of the petition on whether the petitioned action is (a) not warranted, (b) warranted, or (c) warranted but precluded from immediate proposal by other pending proposals of higher priority. Such 12–month findings are to be published promptly in the **Federal Register**.

On January 14, 2002, we received a petition from the Earthjustice Legal Defense Fund, on behalf of the Turtle Island Restoration Network and the Center for Biological Diversity, requesting that the Northern (northeast Florida through North Carolina) and Florida Panhandle subpopulations of the loggerhead sea turtle, a species currently listed as threatened throughout its worldwide range, be reclassified as DPSs and their status be changed to “endangered”. They also requested that critical habitat for the Northern and Florida Panhandle subpopulations be designated. In addition, the petition requested that the reclassification of these subpopulations to endangered be completed by an emergency rule.

On June 4, 2002 (67 FR 38459), NMFS announced a finding that the petition presented substantial scientific and commercial information indicating that the petitioned reclassification may be warranted. NMFS, therefore, solicited additional information and comments from the public to assist NMFS in its review of whether the Northern and Florida Panhandle loggerhead

subpopulations qualify as distinct population segments and, if so, whether they should be reclassified from threatened to endangered on the basis of the ESA's listing factors. NMFS found that the petition's request for emergency action was not warranted because the species was already afforded protection under the ESA. NMFS also noted that although designation of critical habitat is not subject to the ESA's petition provision, the ESA requires the Services, to the maximum extent prudent and determinable, to make a critical habitat designation concurrent with a listing determination. NMFS, therefore, solicited information and comments that would help identify areas for consideration as critical habitat for the Northern and Florida Panhandle subpopulations, should they be determined to warrant listing as DPSs.

Summary of Comments Received

NMFS received a total of 23 responses to its initial finding. These included responses from one Federal agency (the U.S. Army Corps of Engineers), two state agencies, four fishermen or fishing industry groups, four academics, five regional environmental groups, one representative of a consulting firm, and six non-affiliated citizens. Virtually all of the respondents provided additional information in the form of new data or a critique or analysis of existing data on the genetic identification of loggerhead subpopulations, the status of southeastern U.S. loggerheads, or the threats facing loggerheads in specific locations.

Of the 23 respondents, 19 expressed an opinion on the petitioned reclassification, the majority (11) of which supported reclassification. Most private citizens and environmental groups based their support for the petitioned action on their views regarding the need for enhanced protection of loggerheads in the water or on the nesting beaches, given their concerns about the vulnerability of these small subpopulations. Some researchers based their support on the genetic evidence for distinct subpopulations and the apparent demographic differences between certain subpopulations.

One respondent who opposed the petition challenged the equivocal nature of the existing scientific information regarding both genetic distinctness and population trends. All of the industry respondents opposed the petition, based on their view that there is a lack of sufficient data to support taking the requested action. The Federal agency, one state agency, and one environmental respondent did not

support reclassification, based on their view that there is a lack of sufficient data to support a DPS and listing change at this time. These respondents recommended that the loggerhead recovery team review the status of the subpopulations and possibly designate them as recovery units.

We have considered all of the comments and information that were submitted and included them in the administrative record for this decision. Some of the information submitted, especially new data and analyses, is explicitly cited in the discussion below.

Current Listing Status

We listed the loggerhead sea turtle as threatened under the ESA on July 28, 1978 (43 FR 32808), throughout its worldwide range. The species has a broad distribution, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters of the Atlantic, Pacific, and Indian Oceans. Adult females come ashore on beaches to lay eggs in nests they dig in the sand. Nesting generally occurs in temperate zones and subtropics, principally at the western rims of the Atlantic and Indian Oceans.

The U.S. jurisdiction over the species principally involves loggerheads in the Atlantic and Pacific populations. Although the Atlantic and Pacific populations are not formally recognized as different subspecies, the best available information indicates that the populations are separated across these large oceanic expanses. Given the need for management from the perspective of different ocean basins, separate recovery plans were prepared for the U.S. populations in the Atlantic and the Pacific. We published final recovery plans for the U.S. loggerhead sea turtle in the Atlantic in 1991 (NMFS and USFWS, 1991) and in the Pacific in 1998 (NMFS and USFWS, 1998). We also treat sea turtle populations in the Atlantic Ocean separately from those in the Pacific Ocean for the purposes of section 7 consultations under the ESA. Because of the separate conservation and management efforts already occurring for the Atlantic population of loggerheads, and because the petition focused on reclassifying two loggerhead subpopulations in the southeastern U.S., the background information for this 12-month finding is focused on loggerheads in the western North Atlantic.

Western North Atlantic Loggerhead Nesting Assemblages

The range of the loggerhead sea turtle in the western North Atlantic extends from Newfoundland to as far south as Argentina and Brazil. Within the

southeastern U.S., loggerheads nest from the coast of southern Virginia to the coast of Texas with the vast majority of nesting occurring from North Carolina through Florida. Elsewhere in the western North Atlantic, nesting has been reported along the Gulf coast of Mexico, in Cuba, Puerto Rico, Jamaica, Honduras, Nicaragua, Colombia, and Venezuela (Sternberg, 1981, as reported by the Turtle Expert Working Group (TEWG), 1998).

The 1991 recovery plan addresses loggerhead sea turtle conservation actions implemented under U.S. jurisdiction in the southeastern U.S., with an emphasis on the major nesting beaches in North and South Carolina, Georgia, and Florida. The plan established recovery objectives for nesting in each of these States. At the time the recovery plan was written, the known nesting in these States, taken collectively, was estimated to account for 35 to 40 percent of the known nesting of the species worldwide (NMFS and USFWS, 1991).

Since the adoption of the recovery plan for southeastern U.S. loggerheads in 1991, new information has become available on their population structure, status, and trends. Based on a review of available genetic studies of loggerheads in relation to mitochondrial DNA (mtDNA), which is inherited only from the mother, the Turtle Expert Working Group (TEWG, 1998; TEWG, 2000) and the NMFS Southeast Fisheries Science Center (NMFS SEFSC, 2001) identified five different nesting assemblages, also referred to as nesting subpopulations, in the western North Atlantic. Studies have confirmed the hypothesis that adult female loggerheads generally show natal homing (i.e., returning to the area of their natal beach to lay their eggs), and this behavior provides the key mechanism that has established and maintained the mtDNA differences among the nesting assemblages. The five nesting assemblages are the Northern subpopulation, occurring from North Carolina to northeast Florida; the South Florida subpopulation, occurring from 29° N. latitude on the east coast to Sarasota on the west coast; the Florida Panhandle subpopulation; the Yucatan subpopulation from the eastern Yucatan Peninsula, Mexico; and the Dry Tortugas subpopulation from the Dry Tortugas (located west of the Florida Keys), Florida. The Northern and Florida Panhandle subpopulations are the subject of the petition to be reclassified as endangered.

Status Summary

Due to the difficulty of conducting comprehensive population surveys

away from the nesting beaches, we use nesting beach survey data as an index to the status and trends of loggerheads. In the information that follows, we describe the general location and the amount and trends of known nesting for each of the five identified nesting assemblages in the western North Atlantic, including the Northern and the Florida Panhandle nesting subpopulations that are petitioned to be identified as DPSs and reclassified as endangered. Detection of nesting trends requires consistent data collection methods over long periods of time. In 1989, a statewide sea turtle Index Nesting Beach Survey (INBS) program was developed and implemented in Florida, and similar standardized daily survey programs have been implemented in Georgia, South Carolina, and North Carolina. Although data for the Dry Tortugas in Florida are from beaches that are not part of the INBS program, these beaches have moderately good monitoring consistency. There are few nesting surveys for loggerheads in Mexico; however, some nesting survey data for the Yucatan Peninsula are available. Survey results show that the five nesting subpopulations differ in their overall size and trends, as described below.

South Florida Subpopulation

The South Florida nesting subpopulation is the largest known loggerhead nesting assemblage in the Atlantic, with annual nesting totals (i.e., number of nests) ranging from 48,531 to 83,442 annually over the past decade. In terms of trends, data from all beaches within the subpopulation where nesting activity has been recorded indicate substantial increases when data are compared over the last 25 years. However, an analysis limited to nesting data from the INBS program from 1989 to 2002, a period encompassing index surveys that are more consistent and more accurate than surveys in previous years, has shown no detectable trend (Blair Witherington, Florida Fish and Wildlife Conservation Commission (FFWCC), pers. comm., 2002).

Northern Subpopulation

The Northern nesting subpopulation is much smaller than the adjacent South Florida subpopulation, with the reported total number of nests ranging from 4,370 to 7,887 annually between 1989 and 1998, representing an average of approximately 1,524 nesting females per year and characterized as stable or declining (TEWG, 2000). Although longer-term trends are not available for the Northern subpopulation, researchers have documented substantial declines

in nesting on some beaches within this nesting assemblage since the early 1970s. Data from standardized nesting beach surveys that were analyzed for a 30-year period showed that nesting decreased 1.2 percent. However, these results are based on information from only 3 beaches, representing 6 percent of the total nesting of the Northern subpopulation, that met the criteria for standardized surveys during this time period. An analysis covering a 21-year period, when 8 beaches representing 31 percent of the total nesting of the Northern subpopulation met the criteria for standardized surveys, showed no detectable trend. A longer time series may be necessary, however, to detect annual changes in nesting activity (Mark Dodd, Georgia Department of Natural Resources, pers. comm., 2003).

As stated earlier, taken as a whole, the Northern nesting subpopulation is characterized by the TEWG as stable or declining (TEWG, 2000). Within this subpopulation, South Carolina usually accounts for half or more of the annual nesting of the Northern subpopulation, averaging 3,471 nests annually from 1989 to 1998. Nesting in South Carolina has been declining at an average of 3.1 percent per year from 1980 to 2002, according to estimates of statewide nesting as determined through aerial surveys (South Carolina Department of Natural Resources, unpub. data). Northeast Florida is the next largest, with an annual average of 1,055 nests, followed by Georgia with an average of 991 nests, and North Carolina with an average of 730 nests (TEWG, 2000).

Florida Panhandle Subpopulation

The Florida Panhandle subpopulation appears to be the third largest in size, with annual nesting totals ranging from 113 to 1,285 nests between 1989 and 2002 (FFWCC, unpub. data). Evaluation of long-term nesting trends for the Florida Panhandle subpopulation is difficult because of changed and expanded beach survey coverage. Although there are six years of INBS data for the Florida Panhandle subpopulation, the time series is too short to detect a trend (Blair Witherington, FFWCC, pers. comm., 2003).

Yucatan Peninsula Subpopulation

The Yucatan nesting subpopulation appears to be one of the two smallest of the five identified subpopulations in the western North Atlantic. This nesting assemblage had 1,052 nests reported in 1998 and the nesting trend is believed to be stable or increasing, but with little nesting survey data available for trend analyses (TEWG, 2000).

Dry Tortugas Subpopulation

The Dry Tortugas nesting subpopulation appears to be the smallest of the five identified nesting assemblages, with an average of 213 nests reported per year (range of 184 to 270 from 1995 to 2001; FFWCC, unpub. data). Trend data for the Dry Tortugas subpopulation are from beaches that are not part of the INBS program but have moderately good monitoring consistency. There are 7 years of data for this subpopulation, but the time series is too short to detect a trend (Blair Witherington, FFWCC, pers. comm., 2003).

Distinct Population Segment Review

Pursuant to the ESA, we must consider for listing any species, subspecies, or DPS of vertebrates if there is sufficient information to indicate that such action may be warranted. The Services published the Policy Regarding the Recognition of Distinct Vertebrate Population Segments under the ESA (the DPS policy) on February 7, 1996 (61 FR 4722), to clarify the application of the provision in the ESA to list, delist, or reclassify DPSs of any vertebrate species of fish or wildlife.

The DPS policy describes a process for evaluating vertebrate populations as potential DPSs for ESA listing decisions. The first step involves determining whether the population is discrete in relation to the remainder of the taxon. Under our DPS policy, a population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors (quantitative measures of genetic or morphological discontinuity may provide evidence of this separation); or (2) it is delimited by international governmental boundaries within which significant differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the ESA.

If a population is determined to be discrete under one or both of the above conditions, its biological and ecological significance to the taxon will then be considered in light of Congressional guidance (Senate Report 151, 96th Congress 1st Session) that the authority to list DPS's be used "...sparingly and only when the biological evidence indicates that such action is warranted" while encouraging the conservation of genetic diversity. The policy recognizes that the biological and ecological

circumstances in every case will differ, and the particular scientific evidence available will determine whether a population is considered significant. Our DPS policy states that the consideration of significance may include, but is not limited to, the following: (1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; (2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; (3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or (4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

If a population is determined to be both discrete and significant, it can be considered a DPS and its status as an endangered or threatened species then is evaluated, based on the ESA's definitions of those terms and on a review of the factors enumerated in ESA section 4(a). Only then, if the population's status warrants it, would a listing or reclassification be appropriate through the usual rulemaking procedures specified in the ESA.

Discreteness

As explained above, if a population meets either of two specified conditions, it may be considered discrete under our DPS policy. One of the conditions is specific to a population delimited by international governmental boundaries across which there are differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms. Because there was no clear way to delimit the Northern or the Florida Panhandle subpopulations by international boundaries, the Services have decided not to rely on this criterion to establish the discreteness of either of these two subpopulations.

The other condition under which a population can be determined to be discrete is if it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation. With regard to this condition, we examined several lines of evidence to evaluate whether the Northern and Florida Panhandle nesting subpopulations of loggerhead sea turtles are discrete based on the DPS policy criteria. These lines of evidence include

information related to genetics (including maternally inherited mtDNA and biparentally inherited nuclear (nDNA)), physiological and ecological factors, foraging behavior as related to the distribution of loggerheads at areas other than nesting beaches, and morphometrics (measurement of the structure and form of organisms).

Genetic information comes from studies of the maternally inherited mtDNA genome, as well as from nDNA genetic markers (microsatellites) that are biparentally inherited. The results of the mtDNA and nDNA studies differ, as described below.

Non-coding regions of the mtDNA genome serve as maternally-inherited neutral markers that can be used to help evaluate population substructure. The TEWG (2000) concluded that studies of mtDNA support a stock structure of at least five different nesting assemblages of loggerhead sea turtles in the western North Atlantic (as described above), including the Northern and the Florida Panhandle nesting subpopulations that are the subject of the petitioned action. The tendency of females to return to their natal beaches to lay eggs restricts maternal gene flow. Results of mtDNA studies of sea turtles support the hypothesis of natal homing (Encalada *et al.*, 1996; Encalada *et al.*, 1998; Bass, 1999; Dutton *et al.*, 1999). Based on mtDNA analyses, Encalada *et al.* (1998) reported there is evidence of strong mtDNA (maternally inherited) differences between the identified nesting subpopulations, which they considered to be demographically independent.

A subsequent study by Francisco *et al.*, (2000) expanded the sites from which samples were taken for mtDNA analysis, and found the situation to be somewhat more complex. For instance, they reported a tentative conclusion that there is an additional, separate nesting assemblage associated with beaches in Volusia County, Florida which is within the area described as comprising the Northern subpopulation. They also reported that there were no statistically significant differences in the mtDNA analysis for some widely separated populations, including Amelia Island (in the Northern nesting assemblage) and Eglin Air Force Base (in the Florida Panhandle nesting assemblage).

Fine-scale mtDNA analysis from Florida rookeries indicates that separations of nesting assemblages generally begin to appear (from the standpoint of being detected through mtDNA analysis) between nesting beaches separated by more than 100 kilometers (km) (62 miles) of coastline that do not host nesting (Francisco *et al.*,

2000). Consistent with the results obtained from mtDNA analyses, data collected from females tagged on nesting beaches indicate high nesting site fidelity, with nest site relocations of distances greater than 100 km (62 miles) occurring only rarely (CMTTP, unpub. data; LeBuff, 1974, 1990; Ehrhart, 1979; Richardson, 1982; Bjorndal *et al.*, 1983). The typical distance between nest sites used by individual nesting females is 3 miles (5 km) or less (Schroeder *et al.*, in press).

Overall, the mtDNA information is consistent with natal homing, with nesting colonies separated by a few hundred kilometers appearing to represent isolated reproductive aggregates. The Northern subpopulation may be an exception to this pattern, however. Encalada *et al.* (1998) found that loggerheads from various beaches within the range of the Northern subpopulation from Amelia Island, in northeastern Florida, to North Carolina are indistinguishable based on mtDNA. However, they suggested the possibility of differentiation within the Northern nesting assemblage that has not yet been detected, concluding that the lack of mtDNA differentiation may be due to relatively recent colonization that has not allowed sufficient time to accumulate the genetic variation needed to detect any fine-scale population substructure. The subsequent analysis of samples from a larger number of areas and the resulting indication that the vicinity of Volusia County may have a separate nesting assemblage (Francisco *et al.*, 2000) suggests that the subpopulation may be further differentiated or that Volusia County may represent an area of overlap, including nesting females from both the Northern and South Florida subpopulations. With regard to the Florida Panhandle, Encalada *et al.* (1998) found insufficient genetic diversity to further differentiate the stock structure within the subpopulation. Thus, although partitioning within these nesting assemblages may exist, as appears to be indicated by the results of Francisco *et al.* (2000), we are unable to clearly discern it based on available information. Fine-structure analysis will benefit from additional data collection and analyses, and may well reveal that the identified subpopulations can be further divided.

In addition to studies based on maternally inherited mtDNA, other studies have used nuclear (nDNA) genetic markers (microsatellites) to examine fine-scale population structure. Since these nDNA markers are biparentally inherited, information on

the role of males in population structure is provided that is not available from mtDNA. The results of recent nDNA analysis (Francisco-Pearce, 2001) show no substantial subdivisions across the loggerhead nesting colonies in the southeastern United States. These findings, which contrast with the mtDNA evidence showing general segregation of female lineages among the loggerhead subpopulations, suggest that male loggerheads from each subpopulation are able to breed with females from other southeastern United States subpopulations. This male-mediated gene flow would be sufficient to prevent the rise of detectable nDNA genetic differences among the subpopulations. These results should be interpreted cautiously, due to the preliminary nature of nDNA analysis for loggerheads; nDNA genetic differences between subpopulations may exist but will require larger sample sizes and additional multiple markers to detect.

We considered information on the degree of similarity in nesting variability within and between nesting assemblages as a possible indication of ecological or physiological factors that might indicate discreteness while acknowledging that the variability could be the result of other factors that are independent of discreteness. Loggerhead nesting typically shows high variability from year to year. The TEWG (2000) reported correlations of nesting variability within and between the Northern, South Florida, and Florida Panhandle nesting assemblages. Annual variation in nesting activity is significantly correlated across nesting beaches within the Northern subpopulation. Within the South Florida subpopulation, the correlation between the southeast and southwest portions of the subpopulation also were statistically significant. The correlation between the Northern and the South Florida subpopulations was lower than those within each of them, but still was statistically significant. The Florida Panhandle subpopulation results showed a high, significant correlation with nest numbers reported annually for the South Florida subpopulation as a whole, and for the portion in southwest Florida, but not with the southeastern Florida area or with the Northern nesting assemblage.

The correlations indicate support for the concept of a considerable degree of cohesiveness within the identified nesting subpopulations in terms of annual variability in nesting. However, the results also indicate some degree of similarity across the subpopulations. Compared to beaches within a subpopulation, the correlations between

the different nesting subpopulations are lower, but there is some degree of similarity and in some cases the correlations between subpopulations are statistically significant in terms of the annual variability in nesting. The mechanism(s) that drive annual variability within and between nesting assemblages is not well understood.

Because the sex of loggerhead hatchlings is environmentally determined by nest incubation temperatures, we considered information about the sex ratios of progeny from different nesting assemblages to evaluate whether they indicate marked separation of the assemblages as a consequence of environmental factors. Pivotal (i.e., the incubation temperature that produces equal numbers of males and females) and transitional ranges of temperatures determine whether a nest will produce males, females, or both (Mrosovsky and Pieau, 1991). For example, Mrosovsky and Provancha (1989) suggest that the majority of nests laid at a major rookery near Cape Canaveral, Florida, an area near where the segregation between the South Florida and Northern subpopulations occur, incubate at such warm temperatures that virtually no males are produced. In contrast, males are predominately although not exclusively - produced in rookeries of the Northern subpopulation, presumably because of a nesting season characterized by cooler incubation temperatures.

NMFS SEFSC (2001) evaluated a combination of genetic data and observed juvenile sex ratios from several southeast U.S. locations. They estimated that the South Florida nesting subpopulation produces 20 percent male hatchlings, the Yucatan subpopulation produces 31 percent males, and the Northern subpopulation produces 65 percent males. They did not assess the sex ratios of hatchlings from the Dry Tortugas or Florida Panhandle nesting assemblages. The Florida Cooperative Fish and Wildlife Research Unit, in response to NMFS' request for additional information, submitted data on loggerhead nesting in northwest Florida and reported that based on nest incubation temperatures, sex ratios of hatchlings from the Florida Panhandle subpopulation are mixed, with an apparently larger proportion of males than the 20 percent proportion found in nests from the South Florida subpopulation.

Since male-mediated gene flow appears to be keeping the subpopulations genetically similar on a nDNA level, the relatively higher percentage of males produced in the

smaller Northern and Florida Panhandle subpopulations is of management interest, as it may play an important role in providing males to mate with females from the other, female-dominated subpopulations, thereby helping to ensure reproductive success for loggerheads in the entire western North Atlantic. Although the South Florida nesting assemblage apparently produces only about 20 percent males, the total number of males produced is likely greater than that produced by the Northern and Florida Panhandle assemblages, due to the larger size of the South Florida assemblage. However, males produced from the Northern and Florida Panhandle nesting assemblages contribute to the overall number of males available for breeding and contribute to maintaining or increasing outbreeding.

In our evaluation of whether the two petitioned nesting subpopulations are markedly separated from other populations of the taxon, we also considered evidence of morphological discontinuity. Morphometrics is a common taxonomic tool used to establish stock distinctions, and a common feature of morphometric variation in widely distributed animals is a latitudinal cline in body size. Reviews of the standard sea turtle size measurements (Tiwari and Bjorndal, 2000; Stoneburner, 1980) found no evidence of this latitudinal cline in carapace length and width for Atlantic loggerheads. Stoneburner (1980) suggested that body depth of nesting female loggerheads decreases with latitude from North Carolina to Florida; however, more recent data and analyses (NMFS SEFSC, unpub. data) show no differences in body depth over the same area. The lack of morphometric variation among the western North Atlantic loggerhead subpopulations is consistent with the reported lack of nDNA genetic differentiation.

We have considered information on the non-nesting distribution of loggerheads to determine if it indicates that there is a marked separation of the petitioned subpopulations from other populations. As described below, this included consideration of information on foraging and stranded sea turtles, carapace epibionts (living organisms attached to the carapace), and migrations of post-nesting females.

Genetic samples (mtDNA) taken from immature loggerheads at representative foraging grounds from the northeast United States to Florida Bay (at the southern tip of the mainland of Florida) have been analyzed to determine the origin of the individuals (see review in TEWG 2000 and NMFS SEFSC 2001).

The South Florida nesting subpopulation was the largest contributor at almost all sampling sites. For example, samples from an estuarine area in North Carolina indicated that about 64 percent of the individuals were from the South Florida subpopulation, 30 percent from the Northern subpopulation, and 5 percent from Mexico (Bass *et al.*, 2000). This information demonstrates mixing of the immatures from the Northern and South Florida nesting assemblages in these foraging areas. The information also indicates that loggerheads from the Northern and South Florida subpopulations are not distributed randomly, *i.e.*, not in proportion to the relative abundance of the subpopulations. Along the Atlantic seaboard and off the west coast of Florida, the Northern nesting subpopulation was represented disproportionately to its level of nesting. Specifically, although the Northern subpopulation accounts for only 8.5 percent of the total U.S. loggerhead nesting in the western North Atlantic, 25 to 59 percent of the loggerheads found foraging from the northeast United States to Georgia come from the Northern subpopulation and approximately 20 percent of those found off both Florida coasts come from the Northern nesting subpopulation (TEWG, 2000).

The study of epibiont colonization on turtle carapaces may provide clues as to where turtles are foraging because a number of long-lived sessile organisms within the epibiont community are likely unaffected by short term migrations. Carapace epibionts have been studied on female loggerhead turtles nesting along a portion of the east coast of the U.S., including parts of the Northern and South Florida nesting assemblages (from Pritchard's Island, South Carolina, south to Hutchinson Island, Florida) (Caine, 1986). The results provide an indirect indication that adult females are more strongly segregated on the foraging grounds than immature loggerheads. Caine found that differences in the epibiont communities began to appear on nesting females in the area between Flagler Beach and Cape Canaveral National Seashore in northeast Florida, indicating some separation in foraging areas used by nesting females from the Northern and South Florida nesting subpopulations. Certain epibionts of the turtles from the South Florida nesting areas were of Caribbean origin, whereas some of the epibionts of turtles from the Northern nesting assemblage were indicative of the Sargasso Sea, in the central North

Atlantic. The amount of overlap in the epibiont communities is relatively low, 4.2 to 7.5 percent, which is an indirect indication that nesting turtles from northern versus southern nesting areas were inhabiting different foraging environments.

Satellite telemetry and tagging data also suggest that adult females from the Northern and South Florida nesting assemblages are not using the same foraging areas. Based on satellite telemetry studies and analyses of flipper tag return data, non-nesting adult females from the South Florida subpopulation are distributed throughout the Bahamas, Greater Antilles, Cuba, Yucatan, eastern and western Gulf of Mexico, and southern Florida (Meylan, 1982; Meylan *et al.*, 1983; Barbara Schroeder, NMFS, pers. comm., 2003), whereas non-nesting adult females from the Northern subpopulation appear to occur almost exclusively along the east coast of the United States (Plotkin and Spotila, 2002; Griffin and Murphy, 2003; Sally Murphy, South Carolina Department of Natural Resources, pers. comm., 2003). Only one Northern subpopulation mature female has been reported to enter the Gulf of Mexico (Bell and Richardson, 1978). Limited tagging data suggest that adult females from the Florida Panhandle subpopulation remain in the Gulf of Mexico (Barbara Schroeder, NMFS, pers. comm., 2003) and overlap in foraging areas exist between adult females from the Florida panhandle and south Florida nesting subpopulations (Meylan, 1982; Barbara Schroeder, NMFS, pers. comm., 2003).

Conclusion

The petitioners cited a number of points in support of their assertion that the Northern and Florida Panhandle subpopulations meet the discreteness criteria of our DPS policy. These included mtDNA distinctions, physical and ecological separations based on the behavioral attribute of females returning to their natal beaches to nest, differences in nesting chronology between "northern" and "southern" turtles, and post-nesting movement to foraging areas by turtles in the Northern subpopulation as compared to those in the Southern subpopulation. We have reviewed information presented in the petition and other available information pertaining to the discreteness as defined by DPS policy.

On the question of the discreteness of the petitioned Northern and Florida Panhandle nesting subpopulations, while numerous lines of evidence indicate the identified nesting assemblages are discrete to some degree,

the separation is not highly rigid and the subpopulations are not markedly separated from each other based on the criteria for discreteness in our DPS policy. Although our DPS policy does not require an absolute separation or reproductive isolation for a population to satisfy the discreteness requirement, several factors within the overall loggerhead population structure indicate that the subpopulations are not markedly separated, and thus are not discrete under our DPS policy.

Marked separation on the basis of genetic discontinuity is not definitive for the subpopulations. Natal homing behavior and nest site fidelity of females apparently are the mechanisms that result in being able to distinguish nesting subpopulations on the basis of maternally inherited mtDNA. However, recent genetic studies indicate that mtDNA distinctions between and among subpopulations are complex. Further subdivisions of some of the nesting assemblages, including the Northern subpopulation, may exist (*e.g.*, the data for Volusia County) and some widely separated populations, including Amelia Island (in the Northern nesting assemblage) and Eglin Air Force Base (in the Florida Panhandle nesting assemblage) have no statistically significant differences in the mtDNA analysis. In addition, the recently available nDNA information suggests that males likely interbreed with females across subpopulations, and thus the subpopulations are not separable on this basis. From the standpoint of our DPS policy criteria, the evidence of marked separation based on genetic discontinuity at the nDNA level is inconclusive for the petitioned subpopulations.

There is a high correlation of the annual variation in nesting activity across beaches within subpopulations. However, there also are statistically significant correlations in nesting activity between the Northern and South Florida subpopulations, and between the Florida Panhandle and South Florida subpopulations. Therefore, the comparison of annual variation in nesting activity does not indicate marked separation of the subpopulations.

The Northern and South Florida subpopulations differ considerably in the percentage of male hatchlings produced, as a result of environmental differences in nest incubation temperatures. The percentage of males produced from the Florida Panhandle population is not known, but is estimated to be higher than that of the South Florida subpopulation. Because of its much larger size, however, the

South Florida subpopulation likely produces a larger number of male hatchlings than the smaller Northern and Florida Panhandle subpopulations. Male hatchlings from the Northern and Florida Panhandle subpopulations contribute to having sufficient males to mate with females from other subpopulations, including the female-dominated South Florida subpopulation, and thus help contribute to reproductive success of loggerheads in the western North Atlantic, as well as increasing outbreeding. Although this is an important management consideration in terms of survival and recovery goals, and it will be addressed in the update to the 1991 recovery plan, it does not indicate that the subpopulations are markedly separated in terms of the criteria for discreteness under our DPS policy.

Quantitative measures of morphological characteristics do not show differences between the subpopulations. Specifically, measurements of carapace length and width, and body depth, did not show distinctions among Atlantic loggerheads.

Genetic analyses indicate that immature loggerheads from the South Florida, Northern, and Florida Panhandle subpopulations are mixed in foraging areas. Although it is of management concern in terms of survival and recovery goals for the species that the Northern subpopulation is represented off the Atlantic coast in a higher proportion than its relative abundance would suggest, this does not meet the definition of marked separation in the DPS Policy. The study of epibionts on nesting females from the Northern and South Florida nesting assemblages provides an indirect indication that the adult females from these two subpopulations are using different foraging areas, and satellite telemetry and tagging data more clearly indicate they are using different foraging areas. The satellite telemetry and tagging data show that adult females from the Florida Panhandle and South Florida subpopulations overlap in foraging areas. Overall, the information on foraging distribution indicates overlap of immatures from different subpopulations, apparent use of different areas by adult females from the Northern and South Florida subpopulations, and apparent overlap by adult females from the Florida Panhandle and South Florida subpopulations. This information does not meet the definition for marked separation in the DPS Policy.

Differences in nesting chronology between the subpopulations (i.e., earlier

onset of the nesting season in south Florida) were mentioned by the petitioners as a possible behavioral measure of discreteness. These differences likely result from a combination of ecological and biological factors including climate, oceanographic conditions, and reproductive endocrinology. The effects of these factors on reproductive timing are not fully understood. Differences in nesting chronology could, in theory, provide a mechanism leading to reproductive separation between sea turtle populations. However, the nesting chronology differences are not extreme (i.e., nesting seasons of the petitioned sub-populations largely overlap), and other lines of evidence (mDNA data) show that they have not led to a marked separation as a consequence of behavioral factors, as required by the discreteness criteria of the DPS policy.

To be discrete under our DPS policy, a population segment of a vertebrate species must be markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. The available information does not support a conclusion that the loggerhead sea turtle subpopulations are discrete according to our DPS policy.

Significance

Our DPS policy is clear that significance is analyzed only when a population segment has been identified as discrete. Therefore, we did not evaluate the subpopulations for significance under the DPS policy.

Status

Again, our DPS policy is clear that the separate evaluation of listing status is conducted only if a population segment is determined to be both discrete and significant. Therefore, because we concluded that the subpopulations are not DPSs, we did not evaluate the subpopulations for separate reclassification.

Finding

We have reviewed the petition, the literature cited in the petition, other available literature and information, and consulted with biologists and researchers familiar with the loggerhead sea turtle. On the basis of the best available scientific and commercial information, we find that the Northern and Florida Panhandle subpopulations of the loggerhead sea turtle are not discrete, and therefore are not distinct population segments and do not qualify for reclassification as DPSs. Therefore, we find that the petitioned action is not warranted.

Effect of Finding on Management and Conservation of Atlantic Loggerheads

The petitioned action was the reclassification of certain subpopulations of the loggerhead sea turtle as DPSs with endangered status. In ESA section 7 consultations, NMFS has characterized the southeastern U.S. subpopulations as critical components of the overall loggerhead species and found that significant adverse effects on the survival and recovery of the individual subpopulations would adversely affect the overall survival and recovery of the entire listed species (see e.g., NMFS, 2001). The subpopulations are interdependent for the species' survival and recovery.

Under the 1991 recovery plan, delisting of the southeastern U.S. population of the loggerhead may be considered if, over a period of 25 years, the following three conditions are met: (1) The adult female population in Florida is increasing, and nesting in Georgia, South Carolina, and North Carolina returns to pre-listing levels identified in the plan; (2) certain amounts of available nesting beaches are in public ownership; and (3) all the identified recovery tasks necessary to prevent extinction or irreversible decline have been successfully implemented (NMFS and USFWS, 1991). Since the adoption of the 1991 recovery plan, new information has become available on loggerhead population structure, status, and trends, and we recently convened a recovery team to revise and update the Atlantic loggerhead recovery plan and have solicited information from the public to use as part of this effort (68 FR 13662). We anticipate formal public review of the draft plan will occur in 2004.

As a result of their threatened status and through protective regulations implemented by us, the states (e.g., 1995 Florida gillnet ban), and several municipalities (e.g., 2000 Lighting Ordinance for Town of Ocean Isle Beach, North Carolina), loggerhead sea turtles receive significant legal protections. Taking sea turtles (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to do so) is prohibited, with certain exceptions specified at 50 CFR 223.206. In addition to these prohibitions, loggerhead sea turtles are the beneficiaries of research and conservation programs implemented under the recovery plans and other conservation measures that result from ESA section 7 consultations on projects that are funded, permitted, or carried out by Federal agencies. Incidental mortality of loggerheads from fisheries

(e.g., shrimp trawling and pelagic longlining) and from coastal construction (e.g., beach nourishment and hopper dredging) has been greatly reduced as a result of these protective measures.

While implementing various management measures to protect the species, as listed, we have been mindful of the different dynamics of the subpopulations. Biological opinions, issued under section 7 of the ESA, have specifically considered the effects of actions on the Northern and South Florida subpopulations. For example, NMFS SEFSC (2001) modeled the differential effects of pelagic longline fishing in the Atlantic on the Northern and South Florida subpopulations of loggerheads, and NMFS' biological opinion on the Atlantic Highly Migratory Species fisheries (NMFS, 2001) concluded that the impact of ongoing mortality of loggerheads, particularly Northern loggerheads, in the pelagic longline fishery, together with the environmental baseline and cumulative effects acting on the species, would be expected to appreciably reduce the survival and recovery of the species. Consequently, NMFS implemented a reasonable and prudent alternative to reduce the impacts of the pelagic longline fishery. The biological opinion and particularly the treatment of the subpopulations' interdependence for the species' survival and recovery were challenged and upheld in court (*Bluewater Fishermen's Assoc. vs. NMFS*, U.S. District Court for the District of Massachusetts, September 30, 2002).

As stated previously, we have convened a recovery team to update and revise the Atlantic recovery plan for loggerheads. The recovery team is conducting a full, independent review of the species' biological and habitat requirements and re-evaluating appropriate recovery goals and recovery actions to meet those goals. We will request that the recovery team consider establishing "recovery units" within the recovery plan, specifically looking at the previously identified subpopulations. In this determination, we found that the western North Atlantic loggerhead subpopulations are not discrete and thus not distinct population segments. The subpopulations are interrelated for recovery purposes, and they are important individually in many ways. These interrelated subpopulations are consistent with the recovery units set forth in some recovery plans. In recovery plans that use this concept, the Services generally describe recovery units as geographic or otherwise identifiable subunits of the listed entity

that individually are necessary to conserve genetic robustness, demographic robustness, important life stages, or some other feature necessary for long-term sustainability of the overall listed entity. Designation of subpopulations as recovery units in the recovery plan would make the importance and interdependence of the subpopulations clearer and would give us greater guidance on recovery actions that will benefit individual subpopulations and most effectively conserve loggerheads as a species.

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Authority

The authority for this action is the Endangered Species Act (16 U.S.C. 1531 *et seq.*).

Dated: September 9, 2003.

William T. Hogarth,

Assistant Administrator for Fisheries,
National Marine Fisheries Service.

Dated: August 21, 2003.

Steve Williams,

Director, Fish and Wildlife Service.

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