required and those services for which carriers exercise the option to file tariffs. This schedule must include all effective and proposed rates and regulations pertaining to the services offered to and from the community or communities served, and must be the same as that on file with the Commission. This posting requirement must be satisfied by the following methods:

* * * * *

[FR Doc. 97–29117 Filed 11–3–97; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 96–250; RM–8952]

Radio Broadcasting Services; Parris Island and Hampton, SC

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, at the request of Simmons Broadcasting Company, substitutes Channel 276C3 for Channel 221A at Parris Island, South Carolina, and modifies Station WGZO(FM)'s license accordingly. To accommodate the upgrade, we also substitute Channel 221A for Channel 276A at Hampton, South Carolina, and modify Station WBHC–FM's license accordingly. *See* 61 FR 66248, December 17, 1996. Channel 276C3 can be allotted to Parris Island in compliance with the Commission's minimum distance separation requirements without the imposition of a site restriction at petitioner's requested site. The coordinates for Channel 276C3 at Parris Island are North Latitude 32–27–00 and West Longitude 80–47–30. Additionally, Channel 221A can be allotted to Hampton in compliance with the Commission's minimum distance separation requirements at Station WBHC–FM's presently licensed site. The coordinates for Channel 221A at Hampton are North Latitude 32–50–39 and West Longitude 81–07–28. With this action, this proceeding is terminated.

EFFECTIVE DATE: December 8, 1997.

FOR FURTHER INFORMATION CONTACT: Sharon P. McDonald, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Report and Order, MM Docket No. 96–250, adopted October 15, 1997, and released October 24, 1997. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, Inc., (202) 857–3800, 1231 20th Street, NW., Washington, DC 20036.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under South Carolina, is amended by removing Channel 221A and adding Channel 276C3 at Parris Island; and by removing Channel 276A and adding Channel 221A at Hampton.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 97–29116 Filed 11–3–97; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AD05

Endangered and Threatened Wildlife and Plants; Final Rule to List the Northern Population of the Bog Turtle as Threatened and the Southern Population as Threatened Due to Similarity of Appearance

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines threatened status pursuant to the Endangered Species Act of 1973, as amended (Act) for the northern population of the bog turtle (*Clemmys muhlenbergii*), which ranges from New York and Massachusetts south to Maryland. The Service also determines the southern population of the bog turtle, which occurs in the Appalachian Mountains from southern Virginia to northern Georgia, to be threatened due to similarity of appearance to the northern population, with a special rule.

The bog turtle is threatened by a variety of factors including habitat degradation and fragmentation from agriculture and development, habitat succession due to invasive exotic and native plants, and illegal trade and collecting. This rule implements Federal protection and recovery provisions afforded by the Act.

DATES: Effective November 4, 1997.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Pennsylvania Field Office, U.S. Fish and Wildlife Service, 315 South Allen Street, Suite 322, State College, Pennsylvania 16801.

FOR FURTHER INFORMATION CONTACT: Carole Copeyon, Endangered Species Biologist, at the above address (telephone 814/234–4090; facsimile 814/234–0748).

SUPPLEMENTARY INFORMATION:

Background

The bog turtle was first described and named as Muhlenberg's tortoise (*Testudo muhlenbergii*) by Johann David Schoepff in 1801 based on specimens received in 1778 from Reverend Heinreich Muhlenberg of Lancaster County, Pennsylvania. In 1835, L.J. Fitzinger transferred the species to the genus *Clemmys*, where it remains today (Barton and Price 1955). In 1917, Dunn considered bog turtles within the southern range to be distinct, and classified the southern population as *Clemmys nuchalis* (Amato, Behler, Tryon, and Herman 1993). This taxon was subsequently synonymized with *Clemmys muhlenbergii*; however, researchers still question the taxonomic status of the northern and southern populations (Amato *et al.* 1993, Klemens *in press*). Initial data from recent preliminary genetic studies, based on examination of variability at the 16S ribosomal gene, suggest that there may not be significant genetic differences between the northern and southern populations. However, due to the conservative nature of this gene in other species, any definitive conclusions concerning genetic differences between the northern and southern populations is premature (Amato *et al.* 1993).

The bog turtle is sparsely distributed over a discontinuous geographic range extending from New England south to northern Georgia. A 250-mile gap within the range separates the species into distinct northern and southern populations (Klemens *in press*, Tryon 1990, Tryon and Herman 1990). The

northern population extends from southern New York and western Massachusetts southward through western Connecticut, New Jersey and eastern Pennsylvania, to northern Delaware and Maryland. Disjunct populations previously occurred in western Pennsylvania and in the Lake George and Finger Lakes regions of New York. The western Pennsylvania and Lake George populations have been extirpated, and only a remnant population exists at one remaining site in the Finger Lakes region. The southern population occurs in the Appalachian Mountains from southwestern Virginia southward through western North Carolina, eastern Tennessee, northwestern South Carolina, and northern Georgia. The southern population also occurs in the upper piedmont physiographic province of North Carolina. The species' disjunct distribution is thought to be the result of Pleistocene and post-Pleistocene climatic changes (Lee and Norden 1996).

The Act defines a species to include any subspecies of fish or wildlife or plants, or any distinct population segment (DPS) of any species of vertebrate fish or wildlife which interbreeds when mature. Based on the disjunct distribution of this species, the northern population of the bog turtle is considered a DPS and, therefore, a separate species under the Act.

The bog turtle is the smallest member of the genus *Clemmys*, with the carapace (upper shell) of adults measuring 7.5 to 11.4 centimeters (3.0 to 4.5 inches) in length (Bury 1979). The domed carapace is weakly keeled and ranges in color from light brown to ebony. The scutes of the shell often have lighter-colored centers resembling a starburst pattern (Herman and George 1986). The plastron (lower shell) is brownish-black with contrasting yellow or cream areas, often along the midline. This species is readily distinguished from other turtles by the large, conspicuous bright orange, yellow, or red blotch found on each side of the head. The species is sexually dimorphic. Males have concave plastrons and long, thick tails, and the vent of the male is located beyond the posterior carapace margin. Females have proportionately higher carapaces, flat plastrons, and relatively short tails, and the vent of the female is located beneath the carapace edge (Bury 1979, Klemens *in press*).

Bog turtles are semi-aquatic and are only active during part of the year (Barton and Price 1955). In the northern part of their range, they are active from April to mid-October (Arndt 1977, Nemuras 1967). Reported periods of inactivity in July and August may be an artifact of collecting bias and the difficulty of locating turtles at that time of year (Lovich, Herman, and Fahey 1992). Bog turtles hibernate from October to April, often just below the upper surface of frozen mud or ice (Chase, Dixon, Gates, Jacobs, and Taylor 1989). Their varied diet consists of beetles, lepidopteran larvae, caddisfly larvae, snails, nematodes, millipedes, fleshy pondweed seeds, sedge seeds, and carrion (Barton and Price 1955, Nemuras 1967). Where population estimates are available, bog turtles have been found at densities ranging from 7 to 213 turtles per hectare (Chase *et al.* 1989). Chase *et al.* (1989) found an average of 44 turtles per site at 9 study sites in Maryland.

Female bog turtles reach sexual maturity between 5 and 8 years of age (Barton and Price 1955, Ernst 1977). Mating occurs in May and June, and females deposit from two to six white eggs in sphagnum moss or sedge tussocks in May, June, or July (Arndt 1977, Herman 1990, Herman and George 1986, Klemens *in press*). Unlike most other semi-aquatic turtles, bog turtles do not leave their wetland habitat and travel to dry, upland areas to lay eggs. ''Instead, they select slightly elevated sites, generally on *Carex stricta* tussocks, for nesting within their marshy habitat. Nesting areas typically have limited canopy closure, support an array of moisture tolerant, low vegetation, and provide ample solar exposure'' (Robert Zappalorti, Herpetological Associates, *in litt.* 1997). The eggs hatch after an incubation period of 42 to 56 days (Arndt 1977, Herman 1990), and the young emerge in August or early September (Arndt 1977, Barton and Price 1955). Infertile eggs are common (Arndt 1977, Herman 1990, Tryon 1990), and not all females produce clutches annually (Tryon 1990). Also, there is no evidence to suggest that multiple clutches are deposited in a single season.

Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures which have soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; and open canopies (Arndt 1977, Barton and Price 1955, Herman and George 1986, Klemens *in press*). In Maryland, Chase *et al.* (1989) reported that bog turtles were found in circular basins with spring-fed pockets of shallow water, a substrate of soft mud and rock, dominant vegetation of low grasses and sedges, and interspersed wet and dry pockets. In these types of habitats, bog turtles often utilize the runways of muskrats and meadow voles (Barton and Price 1955, Nemuras 1967, Taylor *et al.* 1984). Bog turtles have been found at elevations ranging from near sea level in the north to 1500 meters (4500 feet) in the south (Herman and George 1986).

Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed (Collins 1990). These wetlands are a mosaic of micro-habitats which include dry pockets, saturated areas, and areas that are periodically flooded. They depend upon this diverse hydrological mosaic, utilizing shallow water in spring, and returning to deeper water in winter (Chase *et al.* 1989). Unless disrupted by fire, beaver activity, grazing, or periodic wet years, open-canopy wetlands are slowly invaded by woody vegetation. They undergo a transition into closed-canopy, wooded swamplands that are unsuitable for habitation by bog turtles (Klemens *in press*, Tryon 1990). Historically, bog turtles probably moved from one open-canopy wetland patch to another, as succession closed wetland canopies in some areas, and natural processes (e.g., beaver activity or fire) opened canopies in other areas (Klemens 1989).

Several plant species commonly associated with bog turtle habitats include alders (*Alnus* sp.), willows (*Salix* sp.), sedges (*Carex* sp.), sphagnum moss (*Sphagnum* sp.), jewelweed (*Impatiens capensis*), rice cut-grass (*Leersia oryzoides*), tearthumb (*Polygonum sagittatum*), arrow arum (*Peltandra virginica*), red maple (*Acer rubrum*), skunk cabbage (*Symplocarpus foetidus*) and bulrushes (*Juncus* sp. and *Scirpus* sp.) (Arndt 1977; Barton and Price 1955; Herman and George 1986; Taylor, Dawson, Beall, and Schaeffer 1984). Pedestal vegetation, such as tussock sedge (*C. stricta*) and sphagnum moss, are utilized for nesting and basking (Gelvin-Innvaer and Stetzar 1992, Klemens *in press*).

Currently, many wetlands occupied by bog turtles in agricultural areas are subject to livestock grazing. Light to moderate grazing may function to impede succession by preventing or minimizing the encroachment of invasive native and exotic plant species, thereby maintaining an intermediate stage of succession (Smith 1994, Tryon 1990). It has been suggested that in precolonial times the grazing activities of large herbivores, such as bison (*Bison bison*) and elk (*Cervus canadensis*), may have been important in maintaining bog turtle habitat (Lee and Norden 1996). The occurrence of bog turtles in wetlands grazed by livestock is probably an instance where grazing by livestock

has either replaced grazing by native herbivores or replaced one of the other historical factors that would have acted to maintain the wetlands in an early successional stage.

Due to the bog turtle's rarity, small size, predator-evasive behavior (i.e., tendency to burrow rapidly into the mud), and habitat preferences (e.g., dense herbaceous vegetation), it is difficult to obtain reliable bog turtle population demographics. This lack of data has led to a misconception as to the number of healthy populations found throughout the species' range. For example, some documented bog turtle sites support populations consisting primarily of old individuals. These populations are slowly disappearing due to negligible recruitment of juveniles over a sustained period of time (Klemens 1989).

A protocol was developed to assess the capacity of sites to maintain viable populations of bog turtles. Known as the ''Standardized Bog Turtle Site-quality Analysis'' (Michael Klemens, Wildlife Conservation Society, *in litt.* 1993), it groups bog turtle occurrences into sites based on the likelihood of turtles moving between documented occurrence locations and interbreeding. A site is ranked according to four factors—(1) habitat size and degree of fragmentation; (2) the presence of invasive plants and later successional species; (3) immediate threats such as wetland ditching, draining, filling or excavation; and (4) the type and extent of land use in the area. Where adequate data are available, sites are also ranked according to population size and evidence of recruitment.

Using this site-quality analysis in 1993 and 1994, the individuals most familiar with each site (the primary bog turtle researcher(s) in each State) assessed and ranked the suitability of almost every known northern population site. The ranking process resulted in each site receiving a numerical score, and based on these scores, each site was then ranked as good, fair, or poor. By incorporating factors related to habitat quality and threats, these rankings reflect the suitability of the sites to maintain viable bog turtle populations. The classification system was based on researchers' best professional judgments regarding site suitability. The classifications based upon these scores are conservative for several reasons. Threats from illegal collecting were not considered in the rankings. Rankings were often based on interpretation of old maps (more than 10 years old); therefore, recent land use changes such as development were not considered. Also, at some sites the presence of turtles had not been confirmed for over 10 years.

Occurrence refers to a documented specific bog turtle location (a single wetland or a road-crossing sighting), one or more of which are included in a site. Due to widespread wetland habitat fragmentation throughout the turtle's range, most sites are comprised of only one small extant occurrence, often isolated from other such occurrences.

Of 191 known extant bog turtle sites within the northern population in 1996, 33 were classified as good, 67 as fair, 76 as poor, and 15 as unknown status. The State-by-State summaries given below present information primarily about the status and distribution of extant northern bog turtle populations/sites within each State.

In Connecticut, bog turtles are found in the northwestern corner of the State in Fairfield and Litchfield Counties. All five remaining populations are found on private lands; four of these populations are classified as fair and one as poor (Julie Victoria, Connecticut Division of Wildlife, *in litt.* 1994).

In Delaware, bog turtles were historically reported from 11 localities in the piedmont and coastal plain of New Castle County (Arndt 1977). Currently, only four sites are known to support bog turtles, and all of these are classified as fair. Two of these sites occur on State lands and two on private property (Lisa Gelvin-Innvaer, Jay Greenwood and Bill Zawaki, Delaware Division of Fish and Wildlife, *in litt.* 1994).

All three known bog turtle populations in Massachusetts occur on private property in southern Berkshire County. Two of these sites receive some degree of protection through landowner conservation agreements. One population is considered good, one fair, and one poor.

Maryland's 65 remaining extant bog turtle sites occur in the piedmont region of Baltimore, Carroll, Cecil and Harford Counties, with approximately 97 percent of the habitat privately owned and the other 3 percent in State ownership (Scott Smith, Maryland Department of Natural Resources, *in litt.* 1994). Seventeen of these sites are classified as good, 23 as fair, and 25 as poor. In 1995 and 1996, five additional bog turtle sightings were documented from Harford, Baltimore, and Carroll Counties. However, most of these occurrences are components of previously identified and ranked sites (Smith, *in litt.* 1996).

In New Jersey, there are 53 known extant bog turtle sites in Burlington, Hunterdon, Monmouth, Morris, Ocean, Somerset, Sussex, Union, and Warren counties (James Sciascia, New Jersey Department of Fish, Game and Wildlife, and Robert Zappalorti, Herpetological Associates, Inc., *in litt.* 1994; Sciascia, *in litt.* 1997). Eight of these sites are classified as good, 21 as fair, 18 as poor, and 6 are of unknown status. Approximately 90 percent of the turtle habitat in New Jersey is privately owned, while the State and Federal governments own 5 percent each (Sciascia and Zappalorti, in *litt.* 1994).

The New Jersey Endangered and Nongame Species Program recently conducted extensive surveys to locate and document bog turtle habitat. From 1993 to 1995, the habitat suitability of 473 wetlands in Hunterdon, Somerset, Sussex, and Warren counties was assessed. Only 77 sites (16 percent) contained potentially suitable bog turtle habitat, and bog turtles were found at only 8 of these wetlands (Sciascia 1996). In 1996, additional surveys conducted in Sussex County documented 16 new bog turtle occurrences, primarily in calcareous fen habitats. These fens are restricted to a 40-square-mile area in central Sussex and northern Warren counties. The discovery of bog turtles in calcareous fen habitats is important to the species' conservation within this area of New Jersey and neighboring Pennsylvania. Fens are primarily shrub and herb communities formed in low-lying areas where groundwater percolates over limestone bedrock. This alkaline seepage water most likely retards the growth of canopy-closing trees such as red maple. The persistence of this type of shrub/herb community could account for the presence of bog turtles (James Sciascia, New Jersey Department of Fish, Game and Wildlife, *in litt.* 1996).

The bog turtle's range in New York is concentrated primarily in the extreme southeastern corner of the State. Disjunct populations historically occurred in the Lake George area in eastern New York, in the Finger Lakes region in western New York, and in south central New York. The Lake George and south central populations have been extirpated, and only one extant Seneca County site remains in the Finger Lakes region (Alvin Breisch and Michael Kallaji, New York Department of Environmental Conservation, and Paul Novak, New York Natural Heritage Program, *in litt.* 1994; Novak, *in litt.* 1997). Potentially, 22 sites remain in southeastern New York; however, only 17 are considered extant. Of the 18 total remaining extant sites in New York (Seneca, Columbia, Dutchess, Putnam, and Orange counties), 5 are considered good, 6 fair

and 7 poor. Nearly all bog turtle habitat (99 percent) occurs on private lands; the remaining 1 percent is found on State lands (Breisch *et al.*, *in litt.* 1994).

In Pennsylvania, bog turtles are still found in 13 of the 17 counties from which the species was previously reported (Adams, Berks, Bucks, Chester, Cumberland, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, and York). Of the 34 remaining sites evaluated, 2 sites are considered good, 8 fair, and 24 poor. Approximately 85 percent of the bog turtle habitat is found on private lands, with the remainder occurring on State and Federal lands (10 percent and 5 percent, respectively) (Barton, *in litt.* 1994). In addition, between 1994 and 1996, nine new sightings were reported from Berks, Chester, and Northampton counties. These sites have yet to be evaluated; however, some appear to be small and marginal in quality.

The extent of the captive bog turtle population is poorly documented at this time, with the exception of bog turtles held by zoological institutions. According to data from the International Species Information System (ISIS), 102 bog turtles are currently held by 16 zoos in the United States; 64 percent of these turtles are captive born and 24 percent wild born (Judy Hendrickson, ISIS, *in litt.* 1997). Only a few people within the range of the northern and southern populations have valid State permits to possess bog turtles or conduct studies of wild turtles. Although the full extent of the illegally-held bog turtle population is unknown, based on evidence of collection and trade (see the ''Summary of Factors'' section), it is likely to greatly exceed that of the legally-held population.

Based on documented losses of bog turtles and their habitat, the northern population has declined by at least 50 percent, with most of the decline occurring over the last 20 years. Habitat destruction and illegal collecting for the pet trade are the primary threats to the species. Widespread alteration of bog turtle habitat has resulted from the draining, ditching, dredging, filling, and flooding of wetlands for residential, urban, and commercial development; road construction; agricultural activities; and pond and reservoir construction. The proximity of many remaining bog turtle populations to rapidly developing areas also poses a significant threat to the species.

Previous Federal Action

The bog turtle was first recognized as a Category 2 candidate species by the Service in the December 30, 1982, **Federal Register** notice of review (47 FR 58454). It was later retained as a Category 2 species in subsequent notices of review (60 FR 37958, September 18, 1995; 54 FR 554, January 6, 1989; and 56 FR 58804, November 21, 1991). Reclassification of the bog turtle to Category 1 was reflected in the November 15, 1994, animal notice of review (59 FR 58982). On February 28, 1996 (61 FR 7457), the Service published a notice of review that no longer included species formerly referred to as Category 2 candidate species. The notice revised the definition of the term ''candidate'' as taxa for which the Service has on file sufficient information on biological vulnerability and threats to list them as endangered or threatened species. The northern population of the bog turtle was included as a candidate in this February 28 notice of review. On January 29, 1997, the Service published a proposed rule in the **Federal Register** (62 FR 4229) to list the northern population of the bog turtle as threatened and the southern population as threatened due to similarity of appearance.

The processing of this final rule conforms with the Service's listing priority guidance published in the **Federal Register** on December 5, 1996 (61 FR 64475). The guidance clarifies the order in which the Service will process rulemakings following two related events: (1) the lifting, on April 26, 1996, of the moratorium on final listings imposed on April 10, 1995 (Public Law 104–6), and (2) the restoration of significant funding for listing through enactment of the omnibus budget reconciliation law on April 26, 1996, following severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996. The guidance calls for giving highest priority to handling emergency situations (Tier 1) and second highest priority to resolving the listing status of outstanding proposed listings (Tier 2). A lower priority is assigned to resolving the conservation status of candidate species and processing administrative findings on petitions to add species to the lists or reclassify species from threatened to endangered (Tier 3). The lowest priority is given to processing critical habitat determinations, delistings, and other reclassifications (Tier 4). Processing of this final rule is a Tier 2 action since it resolves the conservation status of a proposed species.

In 1975, the bog turtle was added to Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in order to monitor trade in the species. In 1991, the New York Zoological Society submitted a proposal to the Service requesting the transfer of the bog turtle from Appendix II to Appendix I of CITES (Anon. 1991). In response to a notice (56 FR 33895; July 24, 1991) calling for changes to the CITES Appendices, a total of 13 comments were received concerning the bog turtle proposal. All commenters recommended transferring the bog turtle from Appendix II to Appendix I due to the increased number of bog turtles being advertised for sale, the increased price being paid for individuals and pairs, and illegal trade not being reported under CITES. In the March 4, 1992, **Federal Register** notice (57 FR 7722), the Service announced that the party members to CITES agreed to transfer the bog turtle from Appendix II to Appendix I; and on June 11, 1992, the species was officially added to Appendix I.

Summary of Comments and Recommendations

In the January 29, 1997, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate Federal and State agencies, county governments, scientific organizations, and other interested parties were contacted and requested to comment. Notices were published in newspapers across the range of the species inviting public comment.

On March 14, 1997, the Service received a written request for a public hearing from Mr. Gary Hoffman, Chief Engineer for the Pennsylvania Department of Transportation (PennDOT). As a result, on April 3, 1997, the Service published a notice in the **Federal Register** (62 FR 15873) announcing the public hearing. The Service conducted a public hearing on April 21, 1997, at the Oley High School in Oley, Pennsylvania. Testimony was taken from 7:00 to 9:00 p.m. (Eastern Standard Time). Thirty-two of the approximately 200 people attending the hearing presented testimony. During the comment period, the Service received 237 comments (letters and oral testimony) from 15 State agencies; 6 local governments; and 216 individuals, groups, and organizations. Eight opposed, 218 supported, and 11 were neutral on the proposed action.

The Service has reviewed all of the written and oral comments received during the comment period. Some comments dealt with matters of opinion or issues unrelated to the question of

listing, and are, therefore, not addressed as part of this rulemaking. Comments updating the data presented in the ''Background'' or ''Summary of Factors Affecting the Species'' sections are incorporated into those sections of this final rule. Opposing comments and other substantive comments concerning the rule have been organized into specific issues, which may be paraphrased. Comments of a similar nature are grouped together by issue. These issues and the Service's response to each are summarized as follows.

Issue 1

Two commenters thought the Service should consider economic impacts when listing species. One commenter further contended that ''all state and federal actions designed to protect alleged threatened and/or assumed endangered species pursuant to the ESA should demonstrate that the benefits to humans exceed the costs to humans.''

Service Response: Under section 4(b)(1)(A) of the Act, a listing determination must be based solely on the best scientific and commercial data available. The legislative history of this provision clearly states the intent of Congress to ''ensure'' that listing decisions are ''based solely on biological criteria and to prevent non-biological criteria from affecting such decisions'' (H.R. Rep. No. 97–835, 97th Cong., 2d Sess. 19 (1982)). As further stated in the congressional report, ''economic considerations have no relevance to determinations regarding the status of species.'' Because the Service is specifically precluded from considering economic impacts in a final decision on a proposed listing, the Service did not consider the possible economic consequences of listing the bog turtle.

Issue 2

Two commenters contended that the Service did not provide adequate opportunity for public comment, and should therefore consider extending the comment period and holding additional public hearings.

Service Response: The Service went through an extensive notification process to make the public aware of the proposal, including **Federal Register** notification, letters to specific concerned parties, and notifications to local newspapers. In order to increase the opportunity for public comment, the Service had a 90-day comment period on the proposed rule, although only a 60-day comment period is required. In response to a request by the PennDOT, the Service also held a public hearing within the core of the bog turtle's range in Pennsylvania. These processes were described at the beginning of this section.

Issue 3

One commenter requested additional information regarding the scientific basis for identifying a species as federally threatened when the species is not considered threatened throughout its entire biological range.

Service Response: The Endangered Species Act requires the Secretary of the Interior (or Commerce, depending on jurisdiction) to determine whether species are endangered or threatened. A ''species'' as defined under the Act includes species, subspecies and ''any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.'' From a biological perspective, the Act supports the goals of conserving genetic resources, and maintaining natural systems and biodiversity over a representative portion of a species' historical occurrence. In that respect, the listing of DPS's may allow the Service to protect and conserve species and the ecosystems upon which they depend before a large-scale decline occurs that would necessitate listing a species throughout its entire range. This may allow protection and recovery of declining organisms in a more timely and less costly manner, and on a smaller scale than the more costly and extensive efforts that might be needed to recover an entire species.

Issue 4

One commenter alleged that the northern population of the bog turtle is not a DPS as defined by Service policy, partially due to the lack of documented genetic differences between the northern and southern populations.

Service Response: According to the Service's policy on Distinct Population Segments (61 FR 4725), three elements are considered regarding the potential recognition of a DPS as endangered or threatened—(1) discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the population segment's conservation status in relation to the Act's standards for listing.

With respect to the bog turtle, the northern population meets the ''discreteness'' criterion in that it is markedly separated from the southern population by a distance of approximately 250 miles. Evidence of such discreteness may include genetic or morphological differences, but this is not a requirement. The northern population of the bog turtle meets the ''significance'' criterion because loss of this DPS, which occurs in seven States and represents over 50 percent of the species' range, would result in a significant void in the range and distribution of the species. The ''status'' criterion is met in that the northern population of the bog turtle, when evaluated with respect to the Act's listing factors (see the ''Summary of Factors Affecting the Species'' section), qualifies for listing as threatened.

Issue 5

With regard to habitat loss, one commenter questioned whether the Service had historical data on habitat, populations, and the species' range, or only considered information from the past 20 years, which may represent an artificial baseline and an ''unusual period in the species' natural history.'' In considering the species historical baseline, this commenter questioned whether bog turtles may have occurred over a smaller range in the distant past, but later followed deforestation into open areas and livestock pastures along floodplains.

Service Response: In assessing the status of the bog turtle, the Service reviewed the best available information regarding populations, past and present distribution, and habitat loss. Information provided by State wildlife agencies, natural heritage programs, researchers, and others dated back to the late 1800's, and indicated a reduction in range, and loss of habitat and populations over this period of time, with the documented loss dramatically accelerating over the past 20 years. In this respect, the past 20 years may represent an unusual period in the species' natural history—a period of unprecedented decline.

Bog turtles inhabit open canopy wetlands, a habitat type which was more common historically than today because (1) historically, the ecological factors of fire and beaver activity were unimpeded in creating and maintaining these areas, and (2) since the 1800's, wetland draining, dredging, and filling have become a prevalent practice of land conversion for development, agriculture, and resource extraction. Bog turtles are occasionally found in grazed wet pastures, and it has been suggested that in precolonial times the grazing activities of large herbivores, such as bison and elk, may have been important in maintaining bog turtle habitat (Lee and Norden 1996). Thus, the occurrence of bog turtles in wetlands lightly grazed by livestock is probably an instance where grazing by livestock has replaced grazing by native herbivores, or replaced one of the other historical factors that

would have acted to maintain the wetlands in an early successional stage.

Issue 6

One commenter suggested that the decline in bog turtle habitat may be due to farm pastures evolving into habitat areas unsuitable for bog turtles.

Service Response: Bog turtles are occasionally found in grazed wet pastures, and vegetative succession in these habitats is a contributing factor, though not the only factor, to the species' decline. Light to moderate grazing may impede vegetative succession by preventing or minimizing the encroachment of invasive native and exotic plant species, and it appears that this level of grazing helps to maintain the intermediate stage of succession required by the bog turtle (Smith 1994, Tryon 1990). When grazing is discontinued the habitat becomes less suitable (or unsuitable) due to succession.

Issue 7

Three commenters requested that the Service delay or not list the bog turtle due to an insufficient amount of data to justify listing. One commenter alleged that a single modeling study (i.e., the assessment of sites using the ''Standardized Bog Turtle Site-quality Analysis'') rather than a sufficient number of diverse studies were used to support the listing. This commenter also contended that the information used to justify the listing was not adequate because the Service did not cite any studies that might question the validity of the proposal, and that where there are data gaps, the Service must complete studies to close those gaps. No data or studies were provided or cited by these commenters supporting their assertion that the information utilized by the Service was incomplete or incorrect.

Expressing a contrary view, peer reviewers and several other biologists familiar with the species stated that the Service had clearly documented the species status and threats to its existence, and concurred that listing was warranted.

Service Response: The Service concludes, as detailed in the ''Background'' and ''Summary of Factors Affecting the Species'' sections, that there are sufficient biological data to warrant listing of the bog turtle under the Act. Information, studies, field data, and site analyses provided by biologists, law enforcement personnel, and others familiar with the bog turtle and its habitat provided adequate information on the distribution, habitat requirements, and, most importantly, threats to the bog turtle to warrant the present action. The listing process includes an opportunity for the public to comment and provide information that is evaluated and considered by the Service before making a final decision. The additional data provided by respondents during the comment period, and other appropriate information available to the Service have been incorporated into this final rule; none of these data indicated that this taxon is not threatened.

Issue 8

Two commenters contended that the Service has insufficient population data to justify listing the bog turtle.

Service Response: The Service agrees that estimates of total population are lacking for this species; however, the Service considered several additional factors that are also important in developing a biologically accurate species status assessment. The biological security of many declining species is more a function of the number of healthy local populations than the total number of individuals in the wild. In addition to considering the number of sites and subpopulations comprising the northern population, the Service also considered factors such as the size of existing subpopulations, historical and current rates of decline, the species' low recruitment potential, distribution and proximity of subpopulations, quantity and quality of available habitat, genetic diversity, and imminent and potential threats to the species and its habitat. Therefore, although quantitative sampling has not been completed throughout the range of the bog turtle, pertinent and significant information regarding the other aspects of the species' status is available. The decreasing number of bog turtle sites and the quality of these remaining sites throughout the species' historical and current distributions are a more accurate reflection of the turtle's status than are rough estimates of the total number of bog turtles. When all of these factors are considered for the bog turtle, it is clear that listing is warranted.

Issue 9

Seven commenters questioned or criticized the use of a model (i.e., the ''Standardized Bog Turtle Site-quality Analysis'') to assess bog turtle sites, claiming that such evaluations are qualitative and subjective, and that such assessments should be based on field data. One commenter requested additional information regarding the methods and data used to characterize sites.

Service Response: Extensive surveys of potential wetland habitats have been conducted for bog turtles within the range of the northern population. Most of these surveys were designed to primarily document bog turtle presence, not to evaluate habitat quality, threats, or population demography. Merely knowing the total number of occupied bog turtle sites did not allow the Service to adequately assess the status of this species, however. Therefore, a ''Standardized Bog Turtle Site-quality Analysis'' was developed by Dr. Michael Klemens in conjunction with other bog turtle researchers to qualitatively assess the capacity of sites to maintain viable populations of bog turtles. The Service requested that State wildlife agencies, natural heritage programs, and researchers evaluate known bog turtle sites using this site analysis protocol. The evaluators used site-specific information on habitat conditions and threats obtained from field investigations and maps. Using these data, each site received a numerical score ranging from one to five for each of four factors, including—(1) habitat size and degree of fragmentation; (2) percent coverage of invasive plants and later successional species; (3) proximity of major threats (e.g., wetland alteration via ditching, draining, filling, or excavation); and (4) the type and extent of land use within a one-mile radius of the site. When available, data on population size and recruitment were also used. Although qualitative in nature, the Service believes that this method presented a more objective approach to assessing the status of the bog turtle than simply looking at the total number of sites, without regard to habitat quality and threats. The methods and site data are contained within the administrative file (see **ADDRESSES** section).

Issue 10

Two commenters questioned whether certain factors (i.e., predation, flooding of habitat by beaver, mortality due to vehicles and livestock, and pollution) pose a sufficient threat to justify listing.

Service Response: Although these factors pose a significant threat to several known bog turtle sites, none of them, when considered alone, poses a sufficient threat to the northern population to justify listing. When making a listing determination, however, the Service assesses the potential impact of all threats to the species. Although listing of a species might not be justified based upon a single factor, when all factors are considered collectively, the threat may be substantial enough to warrant listing. Such is the case for the bog turtle (see

the ''Summary of Factors Affecting the Species'' section).

Issue 11

One commenter felt that the Service relied almost exclusively on previous habitat loss to justify the listing, rather than focusing on the present or threatened destruction, modification, or curtailment of the species' habitat.

Service Response: The Service considers a variety of factors in making a listing determination. Although historical habitat loss and rates of decline are considered during the species' status assessment, many other factors, including current rates of decline, potential and imminent threats, number and status of populations, and amount and quality of remaining habitat, are evaluated as well. Historical habitat loss and rates of decline are utilized by the Service to ascertain if a species is undergoing a precipitous or gradual decline. The Service considered the historical trend information in combination with all other information to determine whether listing was warranted.

Issue 12

One commenter questioned whether it was warranted to list the bog turtle in the north if most of the trade occurs in the south, where the species is not threatened.

Service Response: Trade occurs in the range of the northern population and poses a threat to the northern population, as documented under factor ''B'' in the ''Summary of Factors Affecting the Species'' section. When considered in conjunction with the other factors affecting the species, listing of the northern population is warranted.

Issue 13

Two commenters questioned the degree of threat posed by illegal collecting. Specifically, one commenter did not believe that over 2000 bog turtles had been shipped overseas for trade, thinking the number more likely to be 20. Another commenter contended that the Service's ''inference that demand for turtles is increasing simply because the price is increasing is questionable.'' Neither commenter supplied the Service with any data or further information to substantiate these assertions.

Service Response: Considering the number of bog turtles that have been found in the possession of individual collectors, the Service has no reason to discount the overseas trade information. The Service's inference about price and demand for turtles is based on the Service's experience with other species vulnerable to trade. This inference is also based upon principles of economics (when supply does not meet demand, price increases); increasing prices for bog turtles likely mean that demand is increasing while the supply of wild bog turtles is decreasing.

Threats from illegal collection are real. Because bog turtles are not uniformly distributed over their range, collecting is often focused on a known source or site, thereby threatening the entire population at the site with extirpation. Listing pursuant to the Act will close the loopholes in the various existing protective laws and make it easier to prove illegal collecting activities.

Issue 14

Six commenters questioned the Service's assertion that existing regulations are inadequate to protect the bog turtle. They argued that Federal listing is unnecessary and redundant because the bog turtle is already protected as a State-listed species. Two of these commenters argued that existing wetland regulations are adequate to protect the bog turtle.

Expressing a contrary position, 38 commenters (including all peer reviewers) noted that Federal, State, and local laws have been ineffective in providing protection for the bog turtle and its habitat. Several commenters noted that bog turtle habitat is particularly vulnerable due to various provisions of Federal and State wetland regulations, including agricultural exemptions, general permits, and nationwide permits. Referring to Pennsylvania's wetland permitting program, the Monroe County Conservation District noted that ''tracking of the state's program demonstrates that permits are generally being issued as requested which will further fragment habitat locally over time.'' Another commenter noted that between 1988 and 1996, 1181 actions were authorized through general permits, and none were denied in 3 Pennsylvania counties inhabited by bog turtles. Several commenters noted that State endangered species laws are ineffective in deterring collection and trade.

Service Response: Based on an examination of the available information, the Service has determined that proposed and on-going damage or destruction of wetlands due to development and agriculture throughout the range of the northern population is prevalent despite existing Federal, State, and local regulations, and that existing levels of protection are not adequate to assure the survival of the bog turtle. In addition, although the bog turtle is State-listed throughout its range, State laws are not sufficient or able to address the threats of collection and trade. For example, some State law penalties are not as stringent as others, and law enforcement priorities vary between States. A more detailed discussion of the inadequacy of existing regulations can be found under the ''Summary of Factors Affecting the Species'' section. Listing pursuant to the Act will provide consistency by providing a uniform regulation that applies across all States.

Issue 15

Two commenters questioned the reliability of surveys in concluding that previously occupied sites were no longer occupied by bog turtles. Specifically, one commenter did not believe that the number of extirpated populations was as high as reported. He noted that surveyors are not always successful in locating bog turtles, even in wetlands where turtles are known to occur. Another commenter contended that some sites may no longer exist, but this ''may only be due to the bog turtle populations moving to another site.''

Service Response: The Service, State wildlife agencies, and bog turtle researchers recognize the difficulties associated with conducting bog turtle surveys; even under the best conditions, bog turtles can be difficult to locate. For those previously documented bog turtle sites that still bore evidence of potentially suitable habitat, repeated surveys were conducted by qualified surveyors before concluding that bog turtles were indeed extirpated from the site.

Although historically bog turtles probably moved from less suitable wetlands (e.g., those undergoing succession) to more suitable wetlands (e.g., those recently formed, or where succession was set back by natural processes), it is much less likely that such movements would be successful today. Bog turtle habitats are now highly fragmented, making successful immigration and emigration difficult due to loss of wetland travel corridors, and the prevalence of roads, subdivisions, and agricultural land near, and often encircling, many sites. In addition, more habitat is becoming unsuitable, and fewer potentially suitable wetland sites are becoming available because those natural processes that served to maintain and create bog turtle habitat have been suppressed or are no longer operative (see the ''Summary of Factors Affecting the Species'' section).

Issue 16

One commenter questioned the thoroughness and geographic extent of the surveys that had been conducted for the species range-wide, including the area between the currently known northern and southern populations.

Service Response: Prior to preparation of the proposed rule, the Service assessed the status of the northern and southern populations. At that time, the Service queried State wildlife agencies, natural heritage programs, and bog turtle researchers about the adequacy of surveys conducted to date. Based on their responses, approximately 10 to 20 percent of the potentially suitable bog turtle habitat within the northern range remains to be surveyed. Surveys of potential bog turtle habitat continue in most of the northern range States. Survey coverage is much less complete in the southern range States, particularly in North Carolina and Virginia, where less than 50 percent of the potentially suitable habitat has been surveyed. A comprehensive survey of the southern population is currently underway, as discussed under Issue 20. Numerous herpetological surveys have failed to locate bog turtles between the northern and southern populations.

Issue 17

The PennDOT proposed that a task force be established to develop a candidate conservation agreement for the bog turtle, rather than list the species. The PennDOT felt such an agreement would provide a greater benefit to the species than listing, while at the same time minimizing Federal intervention, and provide regulatory relief should the species be listed in the future. The PennDOT also indicated that they would be precluded from pursuing proactive efforts to conserve the bog turtle after listing occurs.

Service Response: Candidate conservation agreements are formal agreements between the Service and one or more parties (i.e., land owners, land managers, or State fish and wildlife agencies) to address the conservation needs of proposed or candidate species. The participants take on the responsibility of developing the agreement, and voluntarily commit to implementing specific actions that will remove or reduce the threats to the subject species, thereby contributing to stabilizing or restoring the species. Conservation benefits to the species may include an increase in habitat connectivity, restoration or enhancement of habitats, maintenance or increase of population numbers or distribution, and establishment of buffers for protected areas. The ultimate goal of any candidate conservation agreement is to remove threats to the species thereby eliminating the need for listing under the Act.

In order to preclude the need for listing the bog turtle, a sufficient number of candidate conservation agreements would have to be developed and implemented throughout the seven-State range of the northern population to remove enough threats for the Service to conclude that the bog turtle is no longer in need of protection under the Act. The Service has not been approached by any property owners, land managers, or State wildlife agencies regarding development of candidate conservation agreements. Also, although the PennDOT suggested the development of such an agreement, they have not proposed a specific plan, nor would they have control over implementation of such a plan since they do not own or manage land containing any known bog turtle sites.

Most State wildlife agencies within the range of the northern population have expressed support for Federal listing of the bog turtle, often citing the vulnerability of the species to illegal collection and the need for Federal listing to address this threat. Because candidate conservation agreements would be unable to address the significant threats of trade and illegal collection, their implementation would not preclude the need to list the bog turtle under the Act.

Regarding implementation of proactive efforts to conserve bog turtles, these efforts would be encouraged, not precluded, by the Service after listing. Because the bog turtle occurs primarily on private property, the Service fully realizes that recovery of this species will depend upon the voluntary cooperation of private landowners, and welcomes them as partners in the recovery effort. The Service will work to provide technical assistance to those property owners and land managers who wish to implement conservation measures for this species.

Issue 18

Forty-one commenters (including two peer reviewers) recommended that the Service list the northern population as endangered rather than threatened. Although little additional information was offered by these commenters to support the change in status, some argued that the threats (particularly the inadequacy of existing regulations) were substantial enough to support such a listing. Others contended that the information in the proposed rule supported an endangered listing, or felt that the species would receive better protection if designated as endangered.

The Tortoise and Freshwater Turtle Specialist Group of the International Union for the Conservation of Nature (IUCN) commented that they recently evaluated the status of the bog turtle and added it as ''endangered'' to their 1996 IUCN Red List. Based on the information in the proposed rule, as well as their extensive knowledge of the species and threats to its survival, they concluded that the northern population should be federally listed as endangered.

Service Response: Based on the available information on the bog turtle's status, and a careful assessment of threats, the Service proposed the bog turtle for listing as threatened. Although the northern population of the bog turtle faces serious ongoing and potential threats, it is not currently in imminent danger of extinction. Although some additional data on threats and the species' status were received during the public comment period, these data did not justify a change in the proposed classification of threatened. The Service, therefore, still believes that a listing of threatened is appropriate for the northern population.

Issue 19

One commenter stated that listing of the southern population must be based on more than its similar physical appearance to the northern population.

Service Response: Listing of the southern population as threatened due to similarity of appearance is based upon more than its similar physical appearance to the northern population, as detailed in the proposed rule and this final rule (see ''Similarity of Appearance'' section).

Issue 20

The Service received 10 comments disagreeing with the proposed listing of the southern population as threatened due to similarity of appearance. Four commenters recommended listing the bog turtle as threatened or endangered in Georgia, Tennessee, and/or South Carolina, specifically excluding North Carolina and Virginia. Six commenters recommended listing the entire southern population as threatened or endangered. In addition, one commenter stated that the Service has insufficient data on the southern population to say that it is not biologically threatened or endangered at this time.

Service Response: The northern and southern populations of the bog turtle can each be considered a DPS under the Service's DPS Policy (see discussion under Issue 4). However, while both

populations meet the ''discreteness'' and ''significance'' criteria under this policy, the Service only has sufficient status and threat data on the northern population to justify its listing.

Prior to proposing the northern population of the bog turtle for listing, the Service conducted a status review of both the northern and southern populations. Several factors weighed into the Service's decision not to propose the southern population for listing, including—(1) the recent discovery of bog turtle sites in the Piedmont physiographic province of North Carolina, well outside the species' previously known Appalachian Mountains range; (2) limited information regarding threats; and (3) inadequate survey coverage within the southern range. A comprehensive status survey of the southern population is currently underway and is anticipated to be completed by December 1999. The Service agrees that it is premature to draw any conclusions regarding the status of the southern population until additional survey and threat information becomes available.

Although the Service could have delayed action on the northern population until such time that additional data became available on the southern population, such an action would have been irresponsible considering the northern population faces documented and substantial threats, and forthcoming data on the southern population may or may not demonstrate that it qualifies for Federal listing.

Federal listing of only a portion of the southern population (e.g., bog turtles occurring in Georgia, South Carolina, and Tennessee) is not appropriate because subpopulations do not qualify as legitimate listing entities (i.e., DPS's) under the Service's DPS Policy. Also, boundaries between States are not considered when determining whether a population is ''discrete'' under the DPS Policy.

Issue 21

Five commenters expressed concerns that listing of the southern population as threatened due to similarity of appearance will result in intentional destruction of bog turtle habitat by landowners who fear the potential for future listing, who don't understand what the similarity of appearance listing means, or who don't believe that the southern population will be regulated differently from the northern population. Some of these commenters were also concerned that the special rule exempting incidental take would further contribute to loss of bog turtle habitat in the southern range.

Service Response: The Service recognizes that it has a responsibility to conduct outreach activities to ensure that the public understands the implications of the similarity of appearance listing for the southern bog turtle population. Because bog turtle collection and trade are already prohibited acts under State law throughout the southern range, Federal listing will have no effect on landowners within the southern range unless they are engaged in these already illegal activities. Wanton destruction of bog turtle habitat within the southern range, however, could precipitate the action that these landowners would most like to avoid (i.e., Federal listing of the southern population).

While the special rule for the southern population does exempt incidental take, this does not mean that the Service condones the destruction of bog turtle habitat in the southern range. The Service recognizes that the bog turtle is State-listed in all five southern range States, and hopes that land owners, land managers, and Federal, State and local agencies will take this into account and give the species the full consideration it deserves when planning and implementing projects.

Issue 22

The Connecticut Farm Bureau Association presented information which they felt contradicted the Service's assertion that deleterious agricultural practices are affecting the bog turtle. They stated that ''according to USDA/NARCS data, between 1982 and 1992, the amount of cropland still requiring conservation treatment declined by nearly a quarter. Pasture and forest acres needing conservation treatment also declined between 1982 and 1992.''

Service Response: While the information presented may reflect positive national trends in soil conservation, it also implies that progress is slow and incomplete (i.e., in 10 years, less than 25 percent of the land needing conservation treatment received such treatment). It also does not contradict available information on known and potential threats to bog turtles posed by agricultural activities, including conversion of wetlands to farm ponds; heavy grazing; hydrological alteration of wetlands (e.g., draining, ditching); and chemical and sediment input to wetlands.

Issue 23

Seven commenters criticized the Service's decision not to designate critical habitat for the bog turtle. Three of these commenters felt that the additional protection and recovery benefits afforded by such designation would outweigh the potential risk from increased collecting. Four commenters who opposed the listing stated that the Service's failure to identify critical habitat would mean that landowners could be found in violation of the Act without knowledge of where the species' habitat is located. They also contended that landowners have a right to know how the listing will affect use of their property.

Expressing a contrary view, several commenters concurred with the Service's decision not to designate critical habitat, citing the threat posed by illegal collection and the pet trade.

Service Response: The Service maintains that the risks associated with designation of critical habitat for the bog turtle outweigh any benefits of such designation. Once sites become publicly known, they can be quickly exploited by collectors; exploitation of sites by collectors soon after the sites had become publicly known has been documented. Due to the small size of existing populations and the low reproductive and recruitment potential of this species, the removal of even a few breeding adults can do irrevocable damage to a population. Therefore, due primarily to the threat of illegal collection, the Service concludes that designation of critical habitat is not prudent, as discussed in detail in the ''Critical Habitat'' section of this rule.

The Service appreciates the concern that landowners have about the potential implications of having a federally listed species on their property. Therefore, in order to increase awareness of the effect of listing on proposed and ongoing activities, and minimize the likelihood of landowners unknowingly affecting listed species and their habitat, the Service has identified those activities that would or would not constitute a violation of section 9 of the Act, as detailed in the ''Available Conservation Measures'' section. Questions regarding whether specific activities may constitute a violation of section 9 should be directed to the appropriate Service Field Office. In addition, based on information provided by State wildlife agencies and natural heritage programs, the Service notified persons (within the northern range States) having known bog turtle habitat on their property about the proposed rulemaking, and will notify these landowners about the final listing as well.

Issue 24

One commenter noted that some bog turtles are legally possessed by Maryland citizens as grandfathered animals (i.e., they were in possession prior to State listing), and questioned whether it would be a violation of section 9 to possess these turtles.

Service Response: The Service would not consider it a violation of section 9 for a person to possess bog turtles, if at the time of Federal listing, those bog turtles were legally in their possession under a permit or other provisions (e.g., ''grandfathering'' provisions) of State law. Documentation (e.g., valid State permit) is recommended to serve as proof of legal possession. However, as with other listed species, a ''grandfathered'' bog turtle or its progeny cannot be sold in interstate commerce.

Issue 25

One commenter noted that the market value of the bog turtle will increase once the species is listed, which will likely lead to increased take from the wild. They recommended that the Service address this concern by either enhancing law enforcement activities, or allowing for the legal trade of captively-produced bog turtles to meet market demand.

Service Response: Although Federal listing of the bog turtle may increase its market value, it is unclear whether this will result in increased collection pressure. The Service recognizes that Federal listing of the bog turtle may serve as a deterrent to some collectors. The subsequent smaller market source for bog turtles would increase the vulnerability of large-scale illegal operations to exposure. Fortunately, public awareness about the plight of this species has increased dramatically since the proposed rulemaking. This has prompted some citizen groups to establish surveillance at bog turtle sites to protect the turtles from collection. The Service applauds the efforts of these groups, and recognizes that concerned citizens, landowners, and State law enforcement personnel have a vital role to play in protecting this vulnerable species from collection. The Service anticipates that its law enforcement efforts will increase as well in response to the Federal listing of the bog turtle.

The Service believes that if trade in captive-produced bog turtles were allowed, it would pose a significant threat to wild bog turtles. We have noted that despite State-listing throughout its range, and the existence of some captive breeding stock, bog turtles are still being collected from the wild. Also, considering the low reproductive potential of the species and the small number of bog turtles known to be legally in captivity, it is unlikely that there are enough bog turtles in captivity to legally supply the market demand. If trade were legalized and the demand could not be met by captive-produced turtles, it is very likely that turtles would be taken from the wild for direct sale and for use as breeders. In addition, it would be difficult, if not impossible, to devise a process that would preclude the possibility of substituting wild-caught turtles or eggs for those claimed to be captive-produced. Finally, it would be extremely difficult to prosecute a case of illegal take unless the actual taking from the wild was observed or extensive circumstantial evidence was available. Based on these factors, the Service believes that legalizing trade in bog turtles would be inconsistent with the Service's responsibilities to conserve, protect, and recover this species under the Act.

Issue 26

One commenter recommended that the Service define ''heavy grazing'' if violations of section 9 due to heavy grazing are foreseen. Several other commenters stressed the importance of light to moderate grazing in maintaining bog turtle habitat in an early successional stage, thereby preventing canopy closure and minimizing encroachment of invasive native and exotic plant species.

Service Response: The Service recognizes both the risks and the benefits associated with livestock grazing of bog turtle habitat. Where light to moderate grazing serves to maintain the suitability of bog turtle habitat, the benefits of grazing are likely to outweigh the risks (e.g., trampling of bog turtles or their nests, and nutrient input from animal excrement). Heavy grazing, however, is detrimental to bog turtles and their habitat. At the extreme, it is recognized by closely cropped vegetation and exposed soil (e.g., denuded, compacted or muddy) due to trampling and overgrazing. Due to the damage inflicted upon pasture land, heavy grazing is probably not a desirable or sustainable land use practice.

The Service recognizes that the terms light, moderate, and heavy grazing are subjective; however, at this time the Service is unable to quantify these terms with respect to potential positive and negative effects to bog turtles and their habitat. The Service looks forward to working cooperatively with the agricultural community, researchers, and others to determine what levels of grazing (e.g., animal densities, seasons, rotations, etc.) are most beneficial to bog turtles.

Issue 27

One commenter requested that if the Service proceeds with listing, information should be included with the listing to identify which population and/or habitat criteria must be met for the species to be considered no longer threatened.

Service Response: This type of information is not included in the listing; however, it will be included in the species' recovery plan. Recovery plans, which are developed after a species is listed, identify delisting criteria and the tasks which must be implemented to achieve recovery.

Peer Review

In conformance with Service policy on information standards under the Act (59 FR 34270; July 1, 1994), the Service solicited the expert opinions of three appropriate and independent specialists (Dr. Michael Klemens; Dr. Joseph Mitchell; and Dr. C. Kenneth Dodd, Jr.) regarding issues and assumptions relating to the biological and ecological information in the rule, and scientific data relating to the factors for listing. Comments received from these reviewers were supportive of Federal listing of the northern population.

Dr. Klemens indicated that the Service had conducted a ''thorough analysis of the biological, ecological, and commercial issues that threaten this turtle,'' and had accurately depicted the conservation status and viability of the northern population. He also thought that the species had surpassed the threshold of threatened and should be listed as endangered (see Issue 18 for the Service's response), based on the Service's data, his professional opinion, and ''given the alarming drop in both suitable habitat and viable populations.'' He stated that the prognosis for the northern population ''is very poor if this species is reliant upon the varied habitat and take protection offered by the range States and the total absence of protection from commercial exploitation afforded by the non-range States.'' He concurred that designation of critical habitat is not prudent. With regard to the southern population, he (1) concurred with its listing as threatened due to similarity of appearance; (2) felt that with large areas of potential habitat unsurveyed, it was impossible for the Service to draw any conclusions about the status of the southern population (see Issue 20 for the Service's response); and (3) was

concerned that incidental take under the special rule would reduce bog turtle habitat and populations (see Issue 21 for the Service's response).

Dr. Dodd also supported Federal listing of the bog turtle, concurring that illegal collection and trade posed a significant threat which States have been unable to address. He also agreed that loss of wetland habitat had reduced bog turtle populations, particularly within the northern range.

Dr. Mitchell recommended that the northern population of the bog turtle be listed as endangered, and the southern population be listed as threatened. Despite the lack of geographic survey coverage in North Carolina, he felt that the trends in land use in the south were similar to those in the north, and that in the next 20 to 30 years the southern population would be in the same shape the northern population is in now (see Issue 20 for the Service's response). He referred to the status of the northern population as ''dire'' and stated that with most of the known bog turtle populations occurring on private lands, ''remaining habitat will certainly be reduced in the very near future to a point where most of them will be unable to support viable populations.'' He questioned whether the Service may have been politically motivated in proposing the northern population as threatened instead of endangered, and stated that such a decision ''should be based solely on biological criteria.''

Dr. Mitchell agreed that the species is vulnerable to illegal collection and trade, and noted that bog turtles had even been stolen from the Atlanta Zoo, a locked facility. He also noted that a few days after a newspaper article appeared in the Richmond *Times-Dispatch* mentioning the proposed listing, he received ''information that several people in that area who collected turtles in the genus *Clemmys* for the pet trade were hard at work scouring topographic maps looking for potential sites to poach.''

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the northern population of the bog turtle should be classified as a threatened species. Procedures found at section 4(a)(1) of the Act and regulations implementing the listing provisions of the Act (50 CFR part 424) were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the bog turtle (*Clemmys muhlenbergii*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Habitat loss is a major factor for the past and present decline of bog turtles throughout much of their range. Wetland habitats have been drained and filled for development, agriculture, road construction, and impoundments. These activities have also severely fragmented the remaining habitat and have created physical barriers to movement, thus isolating existing bog turtle populations from other such sites.

Even when located in upland areas, development and agriculture can also cause indirect hydrological alterations of adjacent wetland habitats. If these alterations present a barrier to surface water or groundwater flow, the wetland can become wetter or drier, either of which may render the habitat less suitable or unsuitable for bog turtles. If surface water flow is intercepted, groundwater recharge may be reduced, potentially reducing water levels in adjacent wetlands.

The concentration of storm water runoff, such as discharges from storm water detention basins associated with developments, poses a threat to adjacent bog turtle habitat, as illustrated by a documented case of habitat destruction. A New Jersey bog turtle site was destroyed over the course of 4 years as water from an upland storm water detention basin was released into an adjacent wetland. The storm water discharge carved a channel through the wetland; modified the site hydrology by removing the surface inundation and many of the spring-fed seeps; and increased the invasion of woody and annual plant species which replaced the sedges and rushes typical of bog turtle habitat. Bog turtles no longer occur at this site (Torok 1994).

Development in the vicinity of wetlands also poses a threat when the water table is lowered due to the sinking of wells, or when roads act as barriers to the normal flow of surface water (Klemens 1988, 1989). Urban, commercial, and residential development contribute to increased traffic (leading to increased bog turtle road-kills), surface water pollution, and accelerated succession by invasive native and exotic plant species (due to changes in wetland hydrology, and suppression of natural factors that impede succession).

Untimely mowing or burning and the use of herbicides and pesticides on adjacent agricultural fields also degrade bog turtle habitat (Klemens 1988). Many wetlands occupied by bog turtles are located in agricultural areas that are subject to frequent livestock grazing. Light to moderate grazing impedes plant succession by minimizing the encroachment of invasive native and exotic plant species. However, heavy grazing destroys bog turtle habitat by cropping and trampling vegetation that is necessary for turtle nesting, basking, foraging, and cover.

Three of Connecticut's eight known bog turtle sites have already been extirpated. A Fairfield County population was obliterated by industrial development, and two Litchfield County populations were destroyed by pond construction. The five remaining sites are small, isolated pockets ringed by development, with ''no opportunity for turtle movement between locations for interbreeding or to escape successional changes'' (Julie Victoria, Connecticut Department of Environmental Protection, *in litt.* 1997). Residential development and natural plant succession have already contributed to the partial loss of two of these extant populations in Litchfield and Fairfield counties (Victoria, *in litt.* 1994). Also, in the vicinity of the current populations are ''remnants of what were at one time suitable habitats which have been altered by agricultural practices, housing development, ponding, etc.'' (Hank Gruner, Science Center of Connecticut, *in litt.* 1997).

Only a small fraction of Delaware's freshwater wetlands are potential bog turtle habitat, and between approximately 40 and 50 percent of the State's freshwater wetlands have already been lost (Tiner 1985). The four remaining bog turtle populations are threatened by invasive exotic plant species, collecting, and development (Gelvin-Innvaer and Stetzar 1992); one of these sites is also threatened by a proposed reservoir project.

Maryland's 178 historical bog turtle occurrence locations (Taylor *et al.* 1984) are represented by 90 (population analysis) sites, 25 of which have been lost in the last 15 years (Smith, *in litt.* 1994). Plant succession and exotic plant invasions have caused the extirpation of turtles at some of these sites, while other sites were lost due to wetland destruction and alteration and stream channelization. In addition, heavy grazing has been implicated in the loss of at least six sites (Smith, *in litt.* 1994).

Of the remaining 65 sites, 17 are considered good, 23 fair and 25 poor. Habitat at 31 of these sites has been partially destroyed or degraded by pond construction (6 sites), filling of wetlands (1 site), heavy grazing (4 sites), and wetland ditching, draining, tiling and

stream channelization (13 sites) (Smith, *in litt.* 1994). Succession, exotic plants, pollution, and beaver activity also pose a threat to many of the remaining populations. In addition, at least five wetlands known or suspected to support bog turtle populations are threatened by proposed highway bypass projects and residential developments (Jeffrey Trulick, *in litt.* 1997).

In Massachusetts, the bog turtle has a limited range, limited available habitat, and small populations (Thomas French, Massachusetts Division of Fisheries and Wildlife, *in litt.* 1997). There are four recorded bog turtle sites for the State; three extant and one historical. The historical population was lost when the fen was inundated after dam construction. One extant site supports a healthy bog turtle population but faces encroachment by giant reed, succession by alders, and the drying of several large channels feeding the fen (possibly due to diversion of water for agricultural purposes). Another site is threatened by residential development and by invasion of giant reed and alder (Klemens 1988). Although there are conservation agreements in place to protect the above two sites, they do not address the threats to habitat quality. In 1986, the fen at the third site was ditched and most of the water was diverted for cattle use. The water supply has subsequently been restored to the fen and the habitat partially restored. However, much of the suitable bog turtle habitat continues to be threatened by annual burning, severe overgrazing, and nutrient enrichment (Klemens 1986, 1988).

Bog turtles have been extirpated from 8 of the 17 New Jersey counties in which they occurred (Bergen, Camden, Cape May, Gloucester, Mercer, Middlesex, Passaic, and Salem). Surveys conducted in 1988 and 1989, revealed that 44 of the 75 known sites (recent and historical) had been lost due to natural succession (17 sites), wetland alteration (9 sites), and development (18 sites). In addition, bog turtles were located at only 12 of the 31 remaining sites (Zappalorti, *in litt.* 1997). By 1994, a total of at least 53 sites had been lost—33 to urban, commercial, and residential development and wetland alteration and the remainder to plant community succession and the invasion of exotic plants (Sciascia and Zappalorti 1989; Sciascia and Zappalorti, *in litt.* 1994). Many of the remaining populations are small, isolated, and threatened by development, collection, agricultural pollution, and vegetative succession (Michael Torocco, *in litt.* 1997; Zappalorti, *in litt.* 1997); these threats are exacerbated by the proximity of the sites to urban and suburban areas (e.g., Philadelphia, Camden, Trenton, and New York City). As of 1996, there were 53 known extant bog turtle sites in New Jersey (Sciascia and Zappalorti, *in litt.* 1994; Sciascia, *in litt.* 1997). Eight are considered good, 21 fair, and 18 poor, and 6 are of unknown status. Based on recent surveys, the suitability of three of these sites declined since they were originally ranked in 1993 and 1994 (Sciascia, *in litt.* 1997).

Bog turtles were reported from 17 counties in New York, but have been eliminated from 12 counties (Albany, Genessee, Onondaga, Oswego, Otsego, Rockland, Sullivan, Tompkins, Ulster, Warren, Wayne, and Westchester) (Breisch *et al., in litt.* 1994). Of New York's 24 remaining sites, only 18 populations are extant; of the 18 occupied sites, 5 are considered good, 6 fair, and 7 poor. This represents a significant reduction in range and reflects the loss of at least 33 of 57 bog turtle sites.

The bog turtle's range in New York is now limited to the Lower Hudson River and Housatonic River drainages in the southeastern corner of the State, and to one site in western New York. In western New York, six of the seven historical bog turtle sites have been lost. Two sites were eliminated due to plant community succession; one was destroyed by a sand and gravel mining operation and dumping of concrete rubble; and two were eliminated due to plant succession and hydrological alteration (due to agricultural activities at one site and construction of the Erie Canal at another) (Breisch *et al., in litt,* 1994; Collins 1990). Loss of the disjunct population in the Lake George watershed is attributed to plant succession, while the loss of the Susquehanna River drainage population was caused by the construction of an interstate highway (Breisch *et al., in litt.* 1994).

At least 26 known bog turtle sites have been lost in southeastern New York due primarily to road construction, impoundments, plant succession, and development. In addition, the historical bog turtle sites on Staten Island were eliminated by development (Nemuras 1967). In western New York, the viability of the Seneca County site is questionable, since it is threatened by collecting, plant succession and construction of an interstate highway through the wetland within 200 feet of bog turtle habitat (Breisch *et al., in litt.* 1994).

Of the remaining 24 bog turtle sites in New York, most are of poor quality. The presence of bog turtles at six sites is highly questionable since turtles have not been reported from these sites for 15 to 25 years, and habitat conditions at most of these sites have deteriorated. Most of the known extant sites are threatened by habitat loss and degradation due to residential and commercial development, road construction, and vegetative succession. The New York Natural Heritage Program recently reported that, based on additional surveys conducted since 1994, ''there are no sites in New York whose status has improved since the 1994 assessment, whereas several sites have declined'' (Novak, *in litt.* 1997). At least 99 percent of bog turtle habitat in New York occurs on private lands and all but two of the remaining populations are found in areas of high human population density. One researcher noted that even State acquisition does not necessarily ensure the protection of bog turtle habitat, as one site acquired by New York has been negatively affected by subdivisions, exotic plant species, and collection (Behler, *in litt.* 1997).

In Pennsylvania, 28 of the 71 known bog turtle occurrences are considered extirpated. Bog turtles have been extirpated from Mercer, Crawford, Delaware, and Philadelphia counties. The reasons for the loss of a disjunct population, represented by three historical locations, in the northwestern counties are unknown. However, much of the historical bog turtle habitat at Pymatuning Swamp was destroyed after a dam was constructed to create Pymatuning Lake.

In Pennsylvania, most bog turtle habitat is concentrated in the southeastern corner of the State, within portions of the Delaware and Susquehanna River drainages. Land use in southeastern Pennsylvania is primarily urban (several large cities, including Philadelphia, Harrisburg, Reading, Lancaster, and York are located there), residential, and agricultural. Agricultural areas are intensively farmed and are facing increasing threats from residential development. Development, urbanization, road construction, and agriculture are largely responsible for the loss of bog turtle habitat in southeastern Pennsylvania, and continue to pose threats to the species. Extirpation of bog turtle populations was noted by Robotham (*in* Nemuras 1967), who documented the destruction of two bog turtle sites in the West Chester-Downington area of Chester County in the early 1960s. One site was destroyed after a housing development company constructed a road through the center of the marsh and drained the marsh for development. The other site

was destroyed by a bypass road, commercial development, and excavation for a lake.

Due to prevalent habitat fragmentation, many remaining extant sites in Pennsylvania are small, isolated, and support few bog turtles; these sites are at great risk from collection, agricultural pollution, and vegetative succession (Torocco, *in litt.* 1997). Some sites are in the process of being encircled by residential developments; these developments often encroach to the very edge of delineated wetlands, and it is not unusual for lot boundaries to extend well into wetlands. Ground water withdrawal also poses a threat to some sites; a site in Berks County is threatened by a proposal to withdraw over 250,000 gallons of groundwater per day to market as spring water.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The bog turtle is a target for pet collectors due to its rarity in the wild, distinctive coloration, and small size. Take (primarily illegal) both for the national and international commercial pet trade industry has occurred for many years. Collecting is a significant factor in the species decline and is an ongoing threat to its continued existence in the wild (Anon. 1991; Earley 1993; David Flemming, U.S. Fish and Wildlife Service, *in litt.* 1991; Herman 1990; Klemens *in press*; Stearns *et al.* 1990; Tryon 1990; Tryon and Herman 1990). During the last 5 to 10 years, an increasing number of bog turtles have been advertised for sale, and prices have increased substantially. The increase in price most likely reflects the increase in demand for the turtles; the increase in demand increases the threats to the wild populations (Tryon and Herman 1990).

Atlanta Zoo personnel reported that from 1989 to early 1991, over 1000 bog turtles were exported to Japan. These figures differ significantly from CITES data and represent a significant amount of unreported illegal trade (Anon. 1991). The World Wildlife Fund recently listed bog turtles as among the world's top 10 ''most wanted'' endangered species (Earley 1993). According to Alan Salzburg, President of the American Turtle and Tortoise Society, the bog turtle is considered the most prized turtle in the United States, and when bog turtle locations become publicly known, they are exploited by collectors within 1 year (Laura Hood, Defenders of Wildlife, *in litt.* 1997).

Due to the threats facing bog turtle populations, the Society for the Study of Amphibians and Reptiles adopted a resolution calling for the prohibition of collection from wild populations (Stearns *et al.* 1990). Due to the small size of existing populations, and the low reproductive and recruitment potential of this species, the removal of even a few breeding adults can do irrevocable damage to a population (Tryon 1990). Collecting has been a factor in the reduction or extirpation of several bog turtle populations in Delaware (Anon. 1991), Maryland (Anon. 1991; Smith, *in litt.* 1994), Massachusetts (Anon. 1991), New Jersey (Farrell and Zappalorti 1989; Zappalorti, pers. comm. 1994; Zappalorti, *in litt.* 1997), New York (Breisch, *in litt.* 1993; Breisch *et al., in litt.* 1994; Collins 1990; Behler, *in litt.* 1997), and Pennsylvania (Ralph Pisapia, U.S. Fish and Wildlife Service, *in litt.* 1992; Zappalorti, *in litt.* 1997). Many sites in these States have suitable habitat, but have much-reduced bog turtle populations, probably due to collecting.

Throughout the bog turtle's entire range, States regulate take through classification of the species as endangered (in Connecticut, Delaware, Massachusetts, New Jersey, New York, Pennsylvania, and Virginia) or threatened (in Georgia, Maryland, North Carolina, South Carolina and Tennessee), yet trade continues.

Illegal trade is difficult to detect due to the questionable origin of turtles being offered for sale. Bog turtles are often ''laundered'' through States which either do not have native populations (e.g., West Virginia, Florida, California), or through States which have inadequate protection of their own bog turtle populations (Charles Bepler, U.S. Fish and Wildlife Service, *in litt.* 1993; Breisch, *in litt.* 1993; Michael Klemens, in *litt.* 1990). For example, in recent years dealers have claimed West Virginia as the State of origin for bog turtles; however, there is no evidence to support the contention that the bog turtle occurs in that State (Dennis Herman, Project Bog Turtle Coordinator, *in litt.* 1997; Tom Thorp, North Carolina Herpetological Society, *in litt.* 1997). Hatchling and juvenile turtles marketed as ''captive-born'' are usually offspring from gravid adult females illegally brought into captivity and held until they deposit eggs. The eggs are then hatched in captivity, and the captive-born (but not captive-bred) offspring are then marketed or retained (Bepler, *in litt.* 1993).

A few specific instances of illegal bog turtle collecting and trade are reported below:

(1) An undercover officer purchased eight bog turtles from a person who had collected them near Lancaster, Pennsylvania. Also, two additional bog turtles were recovered from persons who had gotten them from friends allegedly in the New York area (Bepler, *in litt.* 1993);

(2) An individual from New Jersey was arrested for bringing bog turtles from New Jersey to Florida and selling them as captive-born. It is suspected that he collected about six turtles per year over a period of several years (Bepler, *in litt.* 1993);

(3) A reliable source in New York reported that over 2000 wild-caught bog turtles were shipped to Japan in a 2-year period (Murdock, *in litt.* 1990);

(4) Researchers found several turtle traps and a much-diminished bog turtle population at an important bog turtle site in Pennsylvania (Pisapia, *in litt.* 1992);

(5) In 1993, a New Jersey resident purchased 47 bog turtles in Florida, and since 1984 had also bought 20 additional bog turtles. This individual supposedly has an active breeding program for bog turtles (Terry Tarr, U.S. Fish and Wildlife Service, *in litt.* 1993);

(6) When confronted in a New York wetland, an individual claiming to be a birdwatcher revealed the contents of the cloth bag he was carrying—a bog turtle and spotted turtle (Paul Novak, New York Natural Heritage Program, *in litt.* 1990);

(7) A reliable source reported seeing approximately 60 bog turtles at the Ohio residence of a person who frequents reptile shows. Based on the physical appearance of the bog turtles, they were not captive-bred (Scott Smith, Maryland Department of Natural Resources, *in litt.* 1996);

(8) Bog turtles have been available at the major Herpetological Expo in Orlando, Florida for the last 2 years (Herman, *in litt.* 1997; Thorp, *in litt.* 1997); and

(9) Bog turtles were observed in several Florida dealerships in 1996, although they have not been openly advertised for sale (Herman, *in litt.* 1997).

The general consensus among bog turtle researchers, nongame biologists, and law enforcement officials is that illegal collecting is occurring at a much greater rate than detected or reported (Anon. 1991; Breisch, *in litt.* 1993; Flemming, *in litt.* 1991). Bog turtles are already extremely low in numbers throughout much of their range, and any additional take could eliminate marginal populations and hamper survival and recovery efforts.

Protecting existing sites for bog turtles can pose a threat when these specific sites are revealed and publicized. In addition to the threat of collection for the pet trade industry, collection of bog

turtles for exhibition at nature centers is also a threat (Anon. 1991).

C. Disease or Predation

Bog turtles (particularly the eggs and young) are preyed upon by raccoons, opossums, skunks, foxes, snapping turtles, water snakes, and large birds (Herman and George 1986). Predation by raccoons appears to increase in areas with high human density, since raccoons favor fragmented areas consisting of farmland, forests, and residential development (Klemens 1989).

In some cases, predation contributes to population declines by impairing reproductive recruitment so that the population age structure is skewed toward older individuals (Zappalorti and Rocco 1993). Zappalorti (*in litt.* 1997) reported that one of his Pennsylvania study sites has undergone a dramatic population decline in the past 25 years. Although 14 different nests containing 52 eggs were located at this site, the only non-adults found during the 3-year study were an empty shell of a dead juvenile and 3 hatchlings. Also, 93 percent of the population structure was strongly skewed towards old adults, in favor of females. In monitoring the fate of 21 eggs, he documented that 6 hatched, 10 were taken by predators, 2 were broken by nesting females, and 3 failed to hatch. Predation of eggs and/or hatchlings, therefore, may play a significant role in reducing the size of the population and skewing its age structure.

Of additional concern is the recent discovery of *Mycoplasma* (the bacterium that adversely affects the desert tortoise (*Gopherus agassizii*)) at a bog turtle site in New York (Behler, *in litt.* 1997; Paul Novak, New York Natural Heritage Program, *in litt.* 1997). This disease has the potential to cause significant declines in bog turtle populations. The site where *Mycoplasma* has been discovered ''has been identified as one of the best remaining New York sites and lies in a valley with additional, extant sites leading to the possibility of spread of the disease through a significant portion of the remaining bog turtle range in New York State'' (Novak, *in litt.* 1997).

D. The Inadequacy of Existing Regulatory Mechanisms

Bog turtles receive some degree of protection through State listings as endangered or threatened species, and take from the wild within all range States requires a valid permit.

In Connecticut, the bog turtle is listed as endangered and the take of endangered species is prohibited. Regulations require that any person owning or possessing a bog turtle must register with the Wildlife Bureau of the Department of Environmental Protection. There are no special provisions for the protection of species of special concern under Connecticut's wetland laws and regulations and only about 10 percent of the wetland permits issued by townships are checked for species of special concern (Doug Cooper, Connecticut Department of Environmental Protection, pers. comm. 1994).

In Delaware, the bog turtle is listed as endangered and, except under permit, it is unlawful to import, transport, possess, or sell this species. Currently, there is no regulatory mechanism to protect wetland habitat, since Delaware's wetland laws only address tidal wetlands.

In Maryland, the bog turtle was listed as endangered in 1972 when bog turtle populations were extant at only 5 of the 23 then known historical occurrence locations. However, it was removed from the State endangered species list in 1982 after 173 new occurrence locations were discovered during surveys conducted between 1976 and 1978 (Smith 1994, Taylor *et al.* 1984). In 1992 and 1993, the Maryland Department of Natural Resources conducted follow-up surveys of the 178 occurrence locations documented by Taylor *et al.* (1984) to support bog turtles. Of the 159 occurrence locations surveyed, bog turtles were found at 91 occurrence locations; this represents a 43 percent reduction of bog turtle occurrence locations over a 15-year period (Smith 1994). Based on the results of these surveys, bog turtles are now classified as threatened in Maryland. Bog turtles also receive additional protection under the State's Reptile and Amphibian Possession and Permit Regulations which regulate the possession, breeding, sale, and trade of certain native reptiles and amphibians. Under these regulations, it is illegal to take bog turtles from the wild or to breed them in captivity. In addition, the regulations prohibit the possession, sale, offering for sale, trade, or barter of any turtle with a carapace length less than 4 inches (which applies to most bog turtles due to their small size).

A portion of bog turtle habitat in Maryland receives some degree of protection under the Nontidal Wetlands Protection Act. Habitat in agricultural areas receives little or no protection due to the Act's exemption of agricultural activities from permit requirements.

In Massachusetts, the species is classified as endangered, and it is unlawful to take or possess bog turtles without a permit. Currently no person in the State has a valid permit to possess bog turtles (Tom French, Massachusetts Department of Fisheries and Wildlife, pers. comm. 1994). Its habitat receives some degree of protection under the Massachusetts Wetlands Protection Act which prohibits permitted projects from having an adverse effect on wetland habitat that supports endangered and threatened species or species of special concern. This law also allows for a 100-foot buffer zone around such wetlands when activities in the buffer zone could result in the alteration of adjacent wetlands (Melvin and Roble 1990).

In New Jersey, the bog turtle is listed as endangered. It is unlawful to take, possess, transport, export, process, sell, offer for sale, or ship bog turtles without a permit. Bog turtle habitat receives some protection under the Exceptional Resource Value Wetland provision of New Jersey's Freshwater Wetland Protection Act. This law allows for a 150-foot buffer zone around wetlands, includes a stringent permit review process, and prohibits activities that would likely jeopardize or destroy bog turtles habitat (Torok, pers. comm., 1994). Many agricultural activities are exempt from these regulations.

In New York, the bog turtle has been listed as endangered since 1971, and the animal and its parts (including eggs) are protected from unauthorized take, import, transport, possession, or sale. Wetlands occupied by an endangered or threatened species are considered Class 1 Wetlands, which receive some added protection from filling and excavation. Certain activities, such as draining of wetlands for agriculture, are exempted from permitting requirements as long as no excavations are required to accomplish the draining.

In Pennsylvania, the bog turtle is listed as endangered. It is illegal to catch, take, kill, possess, import, export, sell, offer for sale, or purchase any individual of this species, alive or dead, or any part thereof, without a special permit. Bog turtle habitat receives some degree of protection under State wetland regulations which categorize wetlands that serve as habitat for endangered or threatened flora or fauna as ''exceptional value wetlands.'' Issuance of permits to alter such wetlands is contingent upon meeting specific requirements.

Section 404 of the Clean Water Act (33 U.S.C. 1344 *et seq.*) (CWA) regulates the discharge of dredged or fill material into the waters of the United States. The phrase ''waters of the United States'' reaches to the farthest extent permissible under the Commerce Clause

and includes rivers, lakes, streams, ponds and wetlands. It does not include prior converted cropland. The U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) are responsible for administering section 404. The Corps is responsible for program administration; the EPA has an important oversight role. Section 404 requires that project proponents obtain a CWA section 404 permit from the Corps before undertaking activities in waters of the United States involving a discharge of dredged or fill material. These regulatory agencies are also required to consult with the Service and State resource agencies regarding potential impacts of these projects on fish and wildlife.

The Corps authorizes projects involving the discharge of dredged or fill material into waters of the United States using either individual permits or general permits. Individual permits are carefully evaluated through the Corps' public interest review and its analysis of compliance with the EPA's 404(b)(1) guidelines. The EPA's 404(b)(1) guidelines require a rigorous examination of the availability of practicable alternatives, and prohibit the authorization of any project that would result in significant adverse impacts, among other requirements. General permits are issued for activities which are similar in nature and which result in no more than minimal environmental effects on a single project and cumulative adverse impact basis. General permits also take several forms, including nationwide permits, which are available for the entire country, and State Programmatic General Permits, which are linked to State wetland regulatory programs, and which attempt to integrate State and Federal programs for authorizing minor impact activities. The purposes of all general permits are to provide workload relief for the Corps for projects which should not require a lot of analysis and to provide some measure of relief for the public for activities which are similar in nature and result in only minor impacts.

The regulatory relief and expedited permit review associated with general permit authorization is based on a one-time only determination that the general permit itself will meet the 404(b)(1) guidelines and thus would not allow authorization of projects with more than minimal impacts. Following adoption of a general permit, projects which fit the terms and conditions of the general permit are authorized with little scrutiny. Some require that the applicant notify the Corps before using the permit; others do not require any notification as long as they meet the permit conditions.

The Corps currently utilizes 39 nationwide permits, including Nationwide Permit 26, which addresses the discharge of dredged or fill material for any purpose in isolated waters or headwaters. Nationwide Permit 26, until 1996, was available for use for projects up to 10 acres. It has now been modified for use for fills of up to no more than 3 acres. When the fill activity is larger than ⅓ acre, the permit applicant must notify the Corps prior to permit use. For projects less than ⅓ acre, the permittee must submit a report within 30 days to the Corps providing basic information about the permit's use. The Corps plans to phase out Nationwide Permit 26 as there is a high likelihood that the permit has resulted in more than minimal single project and cumulative adverse impacts. In its place, however, will be an additional unknown number of nationwide permits which will be designed for activities which are similar in nature. The potential adverse impacts of these additional nationwide permits are unknown at this time.

The Corps can take discretionary authority and require an applicant to undergo a full individual permit process, if the Corps believes that the resource issues are significant, and if the Corps believes that the project requires additional consideration. For workload management reasons, this authority is not invoked frequently.

Many of the States in the Northeast have eliminated many or most of the nationwide permits and replaced them with a single programmatic general permit which combines the State and Federal programs and sets thresholds and conditions for its use tailored to the aquatic resources and threats to those resources in their areas of jurisdiction.

The bog turtle could potentially be affected by projects requiring 404 permits, especially projects which would appear to meet the terms and conditions of nationwide permits such as Nationwide Permit 26. The Corps is planning to initiate a programmatic consultation on the impacts of nationwide permits on endangered species, and it is our expectation that listed species will receive adequate consideration following completion of the consultation process. However, under the CWA section 404 program, destruction of bog turtle habitat continues to be authorized.

Furthermore, the bog turtle is affected by agricultural practices which are entirely exempt from regulation under section 404. Such activities take place without Corps or EPA oversight or review. In addition to an agricultural exemption for maintenance of existing agricultural drainage systems, other exempted activities include plowing, planting and harvesting in existing cropped wetlands, and construction or maintenance of farm roads and stock ponds as long as the activity is part of an ongoing farming operation.

On July 1, 1975, the bog turtle was added to Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and on June 11, 1992 (57 FR 20443), it was transferred from Appendix II to Appendix I. Both import and export permits are required from the importing and exporting countries before an Appendix I species can be transported, and an Appendix I species can not be exported for primarily commercial purposes. These CITES permits are not issued if the export will be detrimental to the survival of the species or if the specimens were not legally acquired.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Plant community succession and the invasion of wetland systems by exotic plant species have also contributed to the decline of the bog turtle (Behler, *in litt.* 1997; Zappalorti, *in litt.* 1997). Unless set back by fire, beaver activity, light to moderate grazing, or periodic wet years, some bog turtle habitats succeed into wooded swampland and become unsuitable for the species. Various human activities, such as fire suppression, beaver control, fertilizer and sediment runoff, and wetland draining, ditching and filling accelerate both natural succession and the invasion of exotic plants (Gelvin-Innvaer and Stetzar 1992, Klemens 1984).

Development and agriculture adjacent to bog turtle habitat can result in soil disturbance and increases in the nutrient and sediment load, thus allowing for the invasion of exotic species such as multiflora rose (*Rosa multiflora*), purple loosestrife (*Lithrum salicaria*), giant reed (*Phragmites australis*), and reed canary grass (*Phalaris arundinacea*), as well as native species such as red maple and alder (Klemens 1984, 1989, and *in press*).

Beavers pose a threat to those bog turtle populations that are isolated and/or occur within the only remaining suitable habitat within a watershed. Smith (*in litt.* 1994) reported that flooding caused by beavers now poses a threat to three bog turtle populations in Maryland.

Thick deposits of iron bacteria, suggesting possible contamination from pollutants, have been found at three bog

turtle sites in Maryland. Reptile and amphibian populations at these sites are much smaller in size than one would expect based on the habitat characteristics (Smith, *in litt.* 1994). Wetland habitats are also vulnerable to pollutants (oil and grease) carried by storm water runoff. Farrell and Zappalorti (1989) reported that one New Jersey wetland occupied by bog turtles was degraded by trash and motor oil that was carried through a storm drain.

The bog turtle is also vulnerable to local extirpation and range-wide reduction due to—(1) the small size of many populations; (2) the isolation of existing populations; (3) the delay in reaching sexual maturity; (4) low juvenile recruitment rates; and (5) relatively low mobility and small home ranges (Arndt 1977, Chase *et al.* 1989). Isolation of populations prevents gene flow which can result in an inbred population with low fecundity. Further, isolation and habitat fragmentation prevent recolonization of existing habitat or expansion and colonization into newly created habitats.

Vehicles and livestock pose a direct threat to bog turtles because they can kill and injure individuals. Roads near occupied bog turtle sites contribute significantly to mortality as is evidenced by the number of dead turtles found along roadsides. Roads that are adjacent to or within wetlands pose the greatest threat to bog turtles (Arndt 1977). Because livestock can trample bog turtles, a large number of livestock within a wetland can pose a threat to the turtle population (M. Klemens, pers. comm. 1994; S. Smith, pers. comm. 1994).

The Tortoise and Freshwater Turtle Specialist Group of the IUCN recently evaluated the status of the bog turtle. Based on the species' precipitous decline and threats to its continued existence, the bog turtle was included as an endangered species on their 1996 IUCN Red List (Behler, *in litt.* 1997).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present and future threats faced by the species in determining to make this rule final. Based on this evaluation, the preferred action is to list the northern population of the bog turtle as threatened, and the southern population as threatened due to similarity of appearance. In spite of existing State protective regulations, the northern population has declined by approximately 50 percent (primarily over the past 20 years) and has experienced a significant decrease in its known range. Currently, less than 200 extant sites remain in the north, and only 33 of these sites are likely to be able to support viable bog turtle populations over the long term. Most of the extant sites consist of small wetlands isolated from one another and often in close proximity to human habitation. Although the northern population of the bog turtle faces serious ongoing and potential threats, it is not currently in imminent danger of extinction. The northern population is, however, likely to become endangered throughout all or a significant portion of its range in the foreseeable future; therefore, classification of the northern population of the bog turtle as threatened is appropriate. Critical habitat is not being designated for the reasons described below.

Although final listing determinations are usually not effective until 30 days after their publication in the **Federal Register**, such a delay would pose an additional, unacceptable risk to the bog turtle. Several persons and State agencies have expressed a concern about the heightened risk of illegal collection due to the proposed listing, and requested that the final listing be implemented as soon as possible to reduce this risk. One of the peer reviewers of the proposed rule noted that he had ''received reliable reports of increased interest in the location of bog turtle sites by well-known collectors. There is a heightened threat of take right now as collectors are stockpiling bog turtles in anticipation of a federal listing.'' Therefore, due to the significant ongoing threats of illegal collection and trade, the Service has determined that the bog turtle will receive full protection under the Act effective upon publication of this rule in the **Federal Register**.

Critical Habitat

Critical habitat is defined in section 3 of the Act as—(i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Conservation means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer required.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat for the bog turtle is not prudent. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist, (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species; or (2) such designation of critical habitat would not be beneficial to the species.

Listing of the bog turtle as threatened elevates the awareness of the rarity of the species, thereby increasing the likelihood of take by private and commercial collectors. The listing could lead to increased illegal take and the risk of eggs being accidentally destroyed by collectors searching for adult turtles. The publication of precise maps and descriptions of critical habitat in the **Federal Register** would increase the vulnerability of the bog turtle to the threats of collection and accidental destruction of its eggs.

Designation of critical habitat could also increase the vulnerability of bog turtle habitat to intentional destruction by landowners who do not want a protected species on their property. Tryon and Herman (1990) report that on more than one occasion, landowners, fearing involvement from State or Federal authorities, have drained (ditched) bog turtle habitat after researchers visited the site.

Furthermore, designation of critical habitat for the bog turtle would provide little or no benefit to the species or its habitat. Critical habitat receives consideration under section 7 of the Act with regard to actions carried out, authorized, or funded by a Federal agency. Critical habitat designation serves as notification to Federal agencies of the habitats which are essential for the conservation of the species; the Act requires Federal agencies to ensure that their actions do not result in destruction or adverse modification of critical habitat. The Service believes that notification to Federal agencies of the habitats which are essential for the conservation of the species can be accomplished informally through periodic coordination meetings, project-specific meetings, and other contacts; the Service believes that notification through these means ensures that other Federal agencies receive the most recent and reliable information concerning habitats

important for the conservation of the species. In addition, the Service believes that, because the ''jeopardy'' and ''adverse modification'' standards are similar, any project which would cause destruction or adverse modification of critical habitat would also jeopardize the continued existence of the species. In fact, biological opinions that conclude that a Federal agency action is likely to adversely modify critical habitat but not jeopardize the species are extremely rare.

Because any benefit potentially provided by designation of critical habitat for the bog turtle would be outweighed by the increase in threats to the species and its habitat from illegal collecting and vandalism caused by such designation, the Service has determined that designation of critical habitat is not prudent. Protection of bog turtle habitat will be addressed through the section 7 consultation process and through recovery actions.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery action, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is listed as endangered or threatened. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of any species listed as endangered or threatened, or destroy or adversely modify its critical habitat. If a Federal action could affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions that may require consultation as described in the preceding paragraph include—Corps involvement in projects such as the construction of roads and bridges; Corps permitting of wetland filling and dredging projects subject to section 404 of the CWA and section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 *et seq.*); Natural Resources Conservation Service projects; EPA authorization of discharges under the National Pollutant Discharge Elimination System; and U.S. Housing and Urban Development projects. In addition, Federal involvement under section 7 would be expected for management and other land use activities on Federal lands with bog turtle populations.

The Act and implementing regulations set forth a series of general prohibitions and exceptions that apply to all threatened wildlife. The prohibitions, codified at 50 CFR 17.21, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in the course of otherwise lawful activities. For threatened species, permits also are available for zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act.

It is the policy of the Service (59 FR 34272; July 1, 1994) to identify to the maximum extent practicable at the time a species is listed those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of the listing on proposed and ongoing activities within a species' range. The Service believes, based on the best available information, that the following actions will not result in a violation of section 9:

(1) Transferring individual turtles from roads to immediately adjacent habitat;

(2) Light to moderate livestock grazing that prevents or minimizes the encroachment of invasive native and exotic plant species;

(3) Possession of bog turtles legally acquired prior to the effective date of this rule and consistent with 50 CFR 17.4; and

(4) Actions that may affect bog turtles and are authorized, funded or carried out by a Federal agency when the action is conducted in accordance with section 7 of the Act.

With respect to both the northern and southern populations of the bog turtle, the following actions would be considered a violation of section 9:

(1) Take of bog turtles without a permit (this includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting any of these actions). However, with respect solely to the southern population, incidental take (see special rule below) would not be considered a violation of section 9;

(2) Possess, sell, deliver, carry, transport, or ship illegally taken bog turtles:

(3) Interstate and foreign commerce (commerce across State and international boundaries) and import/export (as discussed earlier in this section) without prior obtaining a threatened species, similarity of appearance, or CITES permit.

With respect solely to the northern population, activities that the Service believes could result in the take of bog turtles include, but are not limited to:

(1) Destruction or alteration of the species' habitat by activities that include, but are not limited to, draining, ditching, discharging fill material, excavation, impoundment, or water diversion, except as outlined in (4) above;

(2) Destruction or degradation of wetland vegetation used by the turtles for nesting, basking, foraging, or cover; and

(3) Discharging or dumping of toxic chemicals or other pollutants into wetlands occupied by the species.

Questions regarding whether specific activities may constitute a violation of section 9 should be directed to the Field Supervisor of the appropriate Service Field Office as follows: in Pennsylvania, the Pennsylvania Field Office, 315 S. Allen Street, Suite 322, State College, PA 16801 (814/234–4090); in Maryland and Delaware, the Chesapeake Bay Field Office, 177 Admiral Cochrane Drive, Annapolis, MD 21401 (410/224–2732); in New York, the New York Field Office, 3817 Luker Road, Cortland, NY 13045 (607/758–9334); in Massachusetts and Connecticut, the New England Field Office, 22 Bridge Street, Concord, NH 03301–4986 (603/225–1411); and, in New Jersey, the New Jersey Field Office, 927 North Main Street, Building D1, Pleasantville, NJ 08232 (609/747–0620). Requests for copies of the regulations

regarding listed wildlife and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, Massachusetts 01035 (telephone 413/253–8200; facsimile 413/253–8482).

Similarity of Appearance

Section 4(e) of the Act authorizes the treatment of a species (subspecies or population segment) as endangered or threatened even though it is not otherwise listed as endangered or threatened if—(a) the species so closely resembles in appearance an endangered or threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and (3) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act.

There are only slight morphological differences in this species throughout its range (Amato *et al.* 1993; Nemuras 1967), making it extremely difficult to differentiate the location from where bog turtles are taken. Presently, the origin and legality of a specimen (specific wetland, locality, or State) cannot be determined. This poses a problem for Federal and State law enforcement agents trying to stem illegal trade in the threatened northern population. The listing of the southern population as threatened due to similarity of appearance eliminates the ability of commercial collectors to commingle northern bog turtles with southern ones or to misrepresent them as southern bog turtles for commercial purposes. For these reasons, the Service is listing the southern population (occurring in the States of Georgia, North Carolina, South Carolina, Tennessee and Virginia) as threatened due to similarity of appearance to the northern population.

The special rule exempts incidental take of the southern population of bog turtles. Incidental take is take that results from, but is not the purpose of, carrying out an otherwise lawful activity. For example, legal application of pesticides and fertilizers, livestock grazing and other farming activities, mowing, burning, water diversion, and any other legally undertaken actions that result in the accidental take of a bog turtle will not be considered a violation of section 9 of the Act in the States of Georgia, North Carolina, South Carolina, Tennessee, and Virginia. The Service believes that listing the southern population under the similarity of appearance provision of the Act, coupled with the special rule, minimizes enforcement problems and helps to conserve the northern population. It is the intent of the special rule to treat bog turtles from the southern population in the same way as the threatened northern population with regard to permit requirements for pre-Act wildlife (50 CFR 17.4).

The Service believes that the provision to allow incidental take for the southern population (i.e., for land alteration activities in Georgia, North Carolina, South Carolina, Tennessee, and Virginia) will not pose a threat to the northern population because—(1) the two populations are sufficiently separate that incidental take of southern specimens will not inadvertently be applicable to members of the northern population, and (2) the primary threat to the northern population from activities involving the southern population stem from commingling of specimens in commercial trade.

National Environmental Policy Act

The Service has determined that Environmental Assessments and Environmental Impact Statements, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein is available upon request from the U.S. Fish and Wildlife Service, Pennsylvania Field Office (see **ADDRESSES** section).

Author

The primary author of this document is Carole K. Copeyon (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, the Service amends part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat 3500, unless otherwise noted.

2. Amend section 17.11(h) by adding the following, in alphabetical order under ''Reptiles,'' to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
REPTILES							
*	*	*	*	*	*		*
Turtle, bog (=Muhlenberg).	*Clemmys muhlenbergii.*	U.S.A. (CT, DE, GA, MD, MA, NC, NJ, NY, PA, SC, TN, VA).	Entire, except GA, NC, SC, TN, VA.	T	626	NA	NA
Do	do	do	U.S.A. (GA, NC, SC, TN, VA).	T(S/A)		NA	17.42(f)
*	*	*	*	*	*		*

3. Amend section 17.42 by adding paragraph (f) as follows:

§ 17.42 Special rules—reptiles.

* * * * *

(f) Bog turtle (*Clemmys muhlenbergii*), southern population—(1) *Definitions of*

terms. For the purposes of this paragraph (f): *Bog turtle* of the southern population means any member of the species *Clemmys muhlenbergii*, within Georgia, North Carolina, South Carolina, Tennessee and Virginia, regardless of whether in the wild or captivity, and also applies to the progeny of any such turtle.

(2) *Prohibitions.* Except as provided in paragraph (f)(3) of this section, the provisions of Sec. 17.31 (a) and (b) of this part applies to bog turtles of the southern population (see also 50 CFR part 23).

(3) *Take.* Incidental take, that is, take that results from, but is not the purpose of, carrying out an otherwise lawful activity, does not apply to bog turtles of the southern population.

Dated: October 23, 1997.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

[FR Doc. 97–29088 Filed 11–3–97; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 679

[Docket No. 961126334–7025–02; I.D. 102997B]

Fisheries of the Exclusive Economic Zone Off Alaska; Sablefish in the Central Regulatory Area of the Gulf of Alaska

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

ACTION: Closure.

SUMMARY: NMFS is prohibiting retention of sablefish by vessels using trawl gear in the Central Regulatory Area in the Gulf of Alaska (GOA). NMFS is requiring that catches of sablefish by vessels using trawl gear in this area be treated in the same manner as prohibited species and discarded at sea with a minimum of injury. This action is necessary because the allocation of the sablefish 1997 total allowable catch (TAC) assigned to trawl gear in the Central Regulatory Area of the GOA has been reached.

DATES: Effective 1200 hrs, Alaska local time (A.l.t.), October 30, 1997, until 2400 hrs, A.l.t., December 31, 1997.

FOR FURTHER INFORMATION CONTACT: Thomas Pearson, 907–486–6919.

SUPPLEMENTARY INFORMATION: The groundfish fishery in the GOA exclusive economic zone is managed by NMFS according to the Fishery Management Plan for Groundfish of the Gulf of Alaska (FMP) prepared by the North Pacific Fishery Management Council under authority of the Magnuson-Stevens Fishery Conservation and Management Act. Fishing by U.S. vessels is governed by regulations implementing the FMP at subpart H of 50 CFR part 600 and 50 CFR part 679.

The allocation of the sablefish TAC assigned to trawl gear in the Central Regulatory Area of the GOA was established by the Final 1997 Harvest Specifications of Groundfish for the GOA (62 FR 8179, February 24, 1997) as 1,282 metric tons (mt). (See § 679.20(a)(4)(ii)(B).)

In accordance with § 679.20 (d)(2), the Administrator, Alaska Region, NMFS (Regional Administrator), has determined that the allocation of the sablefish TAC assigned to trawl gear in the Central Regulatory Area of the GOA has been reached. Therefore, the Regional Administrator is requiring that further catches of sablefish by vessels using trawl gear in the Central Regulatory Area be treated as prohibited species in accordance with § 679.21 (b).

Classification

This action responds to the best available information from the fishery. It must be implemented immediately to prevent overharvesting the 1997 TAC for sablefish assigned to trawl gear in the Central Regulatory Area of the GOA. A delay in the effective date is impracticable and contrary to public interest. The trawl fleet will soon take the assigned TAC for sablefish. Further delay would only result in overharvest and disrupt the FMP's objective of limiting the harvest of sablefish by vessels using trawl gear. NMFS finds for good cause that the implementation of this action cannot be delayed for 30 days. Accordingly, under 5 U.S.C. 553(d), a delay in the effective date is hereby waived.

This action is required by 50 CFR 679.20 and is exempt from review under E.O. 12866.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: October 29, 1997.

Bruce C. Morehead,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 97–29158 Filed 10–30–97; 3:36 pm]

BILLING CODE 3510–22–F