

2. Revise paragraphs (b) and (g) of § 20.21 Hunting methods to read as follows:

§ 20.21 Hunting methods.

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(b) With a shotgun of any description capable of holding more than three shells, unless it is plugged with a one-piece filler, incapable of removal without disassembling the gun, so its total capacity does not exceed three shells. This restriction does not apply during a light-goose (lesser snow and Ross' geese) only season when all other waterfowl and crane hunting seasons, excluding falconry, are closed while hunting light geese in Central and Mississippi Flyway portions of Alabama, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, Wisconsin, and Wyoming.

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(g) By the use or aid of recorded or electrically amplified bird calls or sounds, or recorded or electrically amplified imitations of bird calls or sounds. This restriction does not apply during a light-goose (lesser snow and Ross' geese) only season when all other waterfowl and crane hunting seasons, excluding falconry, are closed while hunting light geese in Central and Mississippi Flyway portions of Alabama, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, Wisconsin, and Wyoming.

Dated: February 10, 1999.

Donald Barry,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 99-3650 Filed 2-12-99; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Parts 20 and 21

RIN 1018-AF05

Migratory Bird Permits; Establishment of a Conservation Order for the Reduction of Mid-Continent Light Goose Populations

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: Mid-continent light goose populations (lesser snow and Ross' goose combined) has nearly quadrupled within the last 30 years, and have become seriously injurious to their habitat and habitat important to other migratory birds. The U.S. Fish and Wildlife Service (Service or "we") believes that these populations exceed the long-term carrying capacity of their breeding habitats and must be reduced. This rule adds a new subpart to 50 CFR part 21 for the management of overabundant Mid-continent light goose populations, and establishes a conservation order to increase take of such populations under the authority of this subpart.

DATES: This rule takes effect immediately upon publication on February 16, 1999.

ADDRESSES: Copies of the EA are available by writing to the Chief, Office of Migratory Bird Management, U.S. Fish and Wildlife Service, Department of the Interior, ms 634—ARLSQ, 1849 C Street NW, Washington, DC 20240. The public may inspect comments during normal business hours in room 634—Arlington Square Building, 4401 N. Fairfax Drive, Arlington, Virginia.

SUPPLEMENTARY INFORMATION:

Background

Lesser snow and Ross' geese that primarily migrate through North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri, and winter in Arkansas, Louisiana, Mississippi, and eastern, central, and southern Texas and other Gulf Coast States are referred to as the Mid-continent population of light geese (MCP). Lesser snow and Ross' geese that primarily migrate through Montana, Wyoming, and Colorado and winter in New Mexico, northwestern Texas, and Chihuahua, Mexico are referred to as the Western Central Flyway population of light geese (WCFP). Ross' geese are often mistaken for lesser snow geese due to their similar appearance. Ross' geese occur in both the MCP and the WCFP and mix extensively with lesser snow geese on both the breeding and wintering grounds. MCP and WCFP lesser snow and Ross' geese are collectively referred to as Mid-continent light geese (MCLG) because they breed, migrate, and winter in the "Mid-continent" or central portions of North America primarily in the Central and Mississippi Flyways. They are referred to as "light" geese due to the light coloration of the white-phase plumage morph, as opposed to true "dark" geese such as the white-fronted or Canada

goose. We include both plumage morphs of lesser snow geese (white, or "snow" and dark, or "blue") under the designation light geese.

MCLG breed in the central and eastern arctic and subarctic regions of northern Canada. MCLG populations are experiencing high population growth rates and have substantially increased in numbers within the last 30 years. We use operational surveys conducted annually on wintering grounds to derive a December index to light goose populations. December indices of light goose populations represent a certain proportion of the total wintering population, and thus are smaller than the true population size. By assuming that the same proportion of the population is counted each December, we can monitor trends in the true population size.

The December index of MCP light geese has more than tripled within 30 years from an estimated 800,000 birds in 1969 to approximately three million birds in 1998 and has increased an average of 5% per year for the last ten years (Abraham et al. 1996, USFWS 1998b). The December index of WCFP light geese has quadrupled in 23 years from 52,000 in 1974 to 216,000 in 1997 (USFWS 1997b), and has increased an average of 9% per year for the last ten years (USFWS 1998b). The lesser snow goose portion of the 1998 MCP December index mentioned above is estimated to be 2.8 million birds. In 1991, the Central and Mississippi Flyway Councils jointly agreed to set lower and upper management thresholds for the MCP of snow geese at 1.0 million and 1.5 million, respectively, based on the December index. Therefore, the current December index of MCP lesser snow geese far exceeds the upper management threshold established by the Flyway Councils.

MCLG populations have also exceeded North American Waterfowl Management Plan (NAWMP) population objectives, which are also based on December indices. The MCP lesser snow goose December index of 2.8 million birds far exceeds the NAWMP population objective of 1 million birds (USDOI et al. 1998d). The lesser snow goose portion of the WCFP light geese December index is estimated to be 200,000 birds, which exceeds the NAWMP population objective of 110,000 birds (USDOI et al. 1998d). The estimate of the Ross' goose component of the MCLG population December index (WCFP and MCP combined) currently exceeds 200,000 birds. This far exceeds the NAWMP Ross' goose population objective of 100,000 birds

(USDOI et al. 1998d). We compare current population levels to NAWMP population objectives to demonstrate that MCLG populations have increased substantially over what is considered to be a healthy population level. We are not suggesting that MCLG be reduced for the sole purpose of meeting NAWMP population objective levels.

By multiply the current MCLG December index of 3.2 million birds by an adjustment factor of 1.6 (Boyd et al. 1982), we derive an estimate of 5.12 million breeding birds in spring. This is corroborated by population surveys conducted on light goose breeding colonies during spring and summer, which suggest that the breeding population size of MCLG is in excess of five million birds (D. Caswell pers. comm. 1998). Included in these population estimates are 1998 estimates for breeding and non-breeding adult Ross' and lesser snow geese in the Queen Maud Gulf area northwest of Hudson Bay of 1.29 million and 1.82 million birds, respectively (Alisauskas et al. 1998). These geese are in addition to the millions of geese estimated to be nesting along west Hudson and James Bays where the geese have precipitated severe habitat degradation and on Southampton and Baffin Islands where signs of habitat degradation are becoming evident. The estimate of 5.12 million birds does not include non-breeding geese or geese found in un-surveyed areas. Therefore, the total MCLG population currently far exceeds 5.12 million birds. Assuming a 10% growth rate in the breeding population over the next three years, the population will grow from 5.12 million to approximately 6.8 million in the absence of any new management actions. Again, this represents a minimum estimate because non-breeding geese and geese in un-surveyed areas are not included.

Although our intention is to significantly reduce MCLG populations in order to relieve pressures on the breeding habitats, we feel that these efforts will not threaten the long-term status of these populations. We are confident that reduction efforts will not result in populations falling below either the lower management thresholds established by Flyway Councils, or the NAWMP population objectives discussed previously. Monitoring and evaluation programs are in place to estimate population sizes and will be used to prevent over-harvest of these populations. An overview of these monitoring programs is presented in a subsequent section of this document.

The rapid rise of MCLG populations has been influenced heavily by human

activities (Sparrowe, 1998, Batt 1997). The greatest attributable factors are:

- (1) The expansion of agricultural areas in the United States and prairie Canada that provide abundant food resources during migration and winter;
- (2) The establishment of sanctuaries along the Flyways specifically to increase bird populations;
- (3) A decline in harvest rate; and
- (4) An increase in adult survival rates.

Although all of these factors contributed to the rapid rise in MCLG populations, the expansion of agriculture in prairie Canada and the United States is considered to be the primary attributable factor (Sparrowe 1998, Abraham and Jefferies 1997). Today, MCLG continue to exploit soybean, rice, and other crops during the winter, primarily in the Gulf Coast States and are observed less frequently in the natural coastal marshes they historically utilized. Similarly, MCLG migrating through the mid-latitude and northern United States and prairie Canada during spring migration exploit cereal grain crops consisting of corn, wheat, barley, oats and rye (Alisauskas et al. 1988). For example, an estimated 1 to 2 million MCLG stage in the Rainwater Basin in Nebraska from mid-February to mid-March and primarily feed on corn left over from harvesting (USFWS 1998a). These crops provide MCLG with additional nutrients during spring migration, thus assuring that MCLG arrive on the breeding grounds in prime condition to breed. Increased food subsidies during spring migration over the last 30 years has resulted in higher reproductive potential and breeding success (Ankney and McInnes 1978, Abraham and Jefferies 1997). Consequently, more geese survived the winter and migration and were healthier as they returned to their breeding grounds in Canada.

This is not intended to criticize the conservation efforts accomplished by the implementation of conservation-oriented agricultural practices. Such efforts have benefitted numerous wildlife species. We merely point out that MCLG have exploited these artificial resources, resulting in an increase in survival.

Foraging Behavior of MCLG

The feeding behavior of MCLG is characterized by three foraging methods. Where spring thawing has occurred and above-ground plant growth has not begun, lesser snow geese dig into and break open the turf (grubbing) consuming the highly nutritious below-ground biomass, or roots, of plants. Grubbing continues into late spring. Lesser snow geese also engage in shoot-

pulling where the geese pull the shoots of large sedges, consume the highly nutritious basal portion, and discard the rest, leaving behind large unproductive, and potentially unrecoverable areas (Abraham and Jefferies 1997). A third feeding strategy utilized by many species is grazing which in some cases, stimulates plant growth. Both lesser snow geese and Ross' geese graze. Due to their shorter bill size, Ross' geese are able to graze shorter stands of grass.

Grubbing, grazing, and shoot-pulling are natural feeding behaviors and at lower population levels have had positive effects on the ecosystem. For example, at lower numbers, geese fed on the tundra grasses and actually stimulated growth of plant communities resulting in a positive feedback loop between the geese and the vegetation. However, the rapidly expanding numbers of geese, coupled with the short tundra growing season, disrupted the balance and has resulted in severe habitat degradation in sensitive ecosystems. The Hudson Bay Lowlands salt-marsh ecosystem, for example, consists of a 1,200 mile strip of coastline along west Hudson and James Bays, Canada. It contains approximately 135,000 acres of coastal salt-marsh habitat. Vast hypersaline areas devoid of vegetation degraded by rapidly increasing populations of MCLG have been observed and documented extensively throughout the Hudson Bay Lowlands (Abraham and Jefferies 1997). Rockwell et al. (1997a) observed the decline of more than 30 avian populations in the La Pérouse Bay area due to severe habitat degradation. These declines and other ecological changes represent a decline in biological diversity and indicate the beginning of collapse of the current Hudson Bay Lowlands salt-marsh ecosystem. Experts fear that some badly degraded habitat will not recover (Abraham and Jefferies 1997). For example, in a badly degraded area, less than 20% of the vegetation within an enclosure (fenced in area where geese cannot feed) has recovered after 15 years of protection from MCLG (Abraham and Jefferies 1997). Recovery rates of degraded areas are further slowed by the short tundra growing season and the high salinity levels in the exposed and unprotected soil.

Long-term research efforts have indicated signs of "trophic cascade" in La Pérouse Bay, Cape Henrietta Maria, and Akimiski Island (R. Rockwell pers. comm. 1998). Trophic cascade is essentially the collapse of an existing food chain indicating that the ecosystem is unable to support its inhabitants. Impacts associated with trophic cascade are indicative that MCLG populations

have exceeded the carrying capacity of much of their breeding habitat. Impacts such as a decline in biological diversity and physiological stress, malnutrition, and disease in goslings have been documented and observations of such impacts are increasing. Additional observations in areas north of Hudson Bay on Southampton and Baffin Islands, northwest in the Queen Maud Gulf region, and south off the west coast of James Bay on Akimiski Island also suggest similar habitat degradation patterns from expanding colonies of MCLG. Batt (1997) reported the rapid expansion of existing colonies and the establishment of new colonies in the central and eastern arctic. In 1973, for example, Canadian Wildlife Service data indicated that approximately 400,000 light geese nested on West Baffin Island. In 1997, approximately 1.8 million breeding adults were counted. Similar colony expansions have been reported for the Queen Maud Gulf region and Southampton Island. Rapid colony expansion must be halted and the populations must be reduced to prevent further habitat degradation and to protect the remaining habitat upon which numerous wildlife species depend.

Breeding Habitat Status

MCLG breeding colonies occur over a large area encompassing eastern and central portions of northern Canada. Habitat degradation by MCLG has been most extensively studied in specific areas where colonies have expanded exponentially and exhibit severe habitat degradation. For example, the Hudson Bay Lowlands salt-marsh ecosystem lies within a 135,000 acre narrow strip of coastline along west Hudson and James Bays and provides important stopover sites for numerous migratory bird species. Of the 135,000 acres of habitat in the Hudson Bay Lowlands, 35% is considered to be destroyed, 30% is damaged, and 35% is overgrazed (Batt 1997). Habitats currently categorized as "damaged" or "overgrazed" are being further impacted and will be classified as "destroyed" if goose populations continue to expand. Accelerated habitat degradation has been observed by Canadian biologists on Southampton and Baffin Islands and appear to be following the same pattern as documented in the Hudson Bay Lowlands. Current research efforts are underway to confirm observations of habitat degradation by MCLG in other areas.

Migration and Wintering Habitat Conditions and Degradation

There is no evidence to support that wintering habitat for MCLG is threatened or that it may limit population growth. Presently, there are approximately 2.25 million acres of rice fields in Texas, Louisiana, and Arkansas, in addition to the millions of acres of cereal grain crops in the Midwest. Consequently, food availability and suitable wintering habitat are not limiting MCLG during the migration and wintering portions of the annual cycle.

Summary of Environmental Consequences of Taking No Action

At each site they occupy, MCLG will continue to degrade the plant communities until food and other resources are exhausted, forcing yet more expansion of colonies. The pattern has been, and will continue to be, that as existing nesting colonies expand, they exploit successively poorer quality habitats, which are less able to accommodate them and which become degraded more quickly. Eventually, the coastal salt-marsh communities surrounding Hudson Bay and James Bay will become remnant. There will be little chance of recovery of such habitat as long as MCLG populations remain high. Even if goose populations decline at some point due to natural causes, which may not occur to the degree necessary, it will take the habitat a prolonged time period to recover. The functioning of the whole coastal ecosystem, from consolidation of sediments by colonizing plants to provision of suitable habitats for invertebrate and vertebrate fauna, will be detrimentally and possibly irrevocably altered. Similar conditions will prevail at selected non-coastal areas where MCLG have occupied most of the suitable nesting habitats. As many as 30 other avian species, including American wigeon, Northern shoveler, stilt sandpiper, Hudsonian godwit, and others, that utilize those habitats have declined locally, presumably due to habitat degradation by MCLG. Other species, such as Southern James Bay Canada geese, a species of management concern, that breed on nearby Akimiski Island and numerous other waterfowl species that migrate and stage with MCLG, have been and will continue to be negatively impacted. Arctic mammalian herbivores will also be impacted as the vegetative communities upon which they depend become depleted. Due to the rapidly expanding populations and the associated ecological impacts identified, we have

concluded that MCLG populations have become seriously injurious to themselves and other migratory birds, their habitat and habitat of other migratory birds.

We expect that MCLG populations will continue to grow at least 5–10% annually, resulting in more severe and widespread ecological impacts. Although several factors influence population dynamics, the greatest single factor in the populations' increase is high and increasing adult survival rates (Rockwell et al. 1997b). Therefore, removing adults from the populations is the most effective and efficient approach in reducing the populations. Experts feel that breaking eggs and other non-lethal techniques have been determined to be ineffective in significantly reducing the populations within a reasonable time to preserve and protect habitat (Batt 1997).

We have attempted to curb the growth of MCLG populations by increasing bag and possession limits and extending the open hunting season length for light geese to 107 days, the maximum allowed by the Treaty. However, due to the rapid rise in MCLG numbers, low hunter success, and low hunter interest, harvest rate (the percentage of the population that is harvested), has declined despite evidence that the actual number of geese harvested has increased (USFWS 1997b). The decline in harvest rate indicates that the current management strategies are not sufficient to stabilize or reduce population growth rates.

New Management Actions

We realize that current MCLG management policies need to be re-examined and believe that alternative regulatory strategies designed to increase MCLG harvest, implemented concurrently with habitat management and other non-lethal control measures, have the potential to be effective in reducing MCLG populations to levels that the remaining breeding habitat can sustain. Batt (1997) estimated that the MCLG population should be reduced by 50% by the year 2005. Based on the current MCLG December index of approximately 3.2 million birds, this would entail a reduction of the December index to 1.6 million birds. Using the adjustment factor of 1.6, this would translate to a minimum breeding population size of 2.56 million birds. The estimate of 2.56 million birds does not include non-breeding geese or geese found in un-surveyed areas. Therefore, the total MCLG spring population would be much higher.

We prefer to implement alternative regulatory strategies designed to

increase MCLG harvest afforded by the Migratory Bird Treaty and avoid the use of more drastic population control measures. More direct population control measures such as trapping and culling programs may be necessary if the current regulatory action, in concert with habitat management, is not successful. Should the conservation order be deemed unsuccessful we will consider more direct population control measures to reduce MCLG.

We restrict the scope of this proposed rule to mid-continent populations of light geese (MCLG): Mid-continent and Western Central Flyway lesser snow geese (*Chen caerulescens caerulescens*) and Ross' geese (*C. rossii*) and the United States portions of the Central and Mississippi Flyways (Alabama, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, Wisconsin, and Wyoming) where they migrate, stage, or winter. Evidence exists to support the conclusion that MCLG which migrate, stage, and winter in these areas subsequently return to breed in the arctic and subarctic areas that are experiencing severe habitat degradation.

We are concurrently implementing a separate population reduction strategy. In addition to this proposed rule to amend 50 CFR part 21, we are also amending 50 CFR part 20 to authorize the use of new hunting methods to harvest MCLG. The second rule would authorize States to allow the use of new hunting methods to harvest MCLG during a light-geese only season when all other waterfowl and crane hunting seasons, except falconry, are closed. The second rule is published in this issue of the **Federal Register**.

We do not expect the second rule (amendment to 50 CFR part 20) implemented alone to achieve our overall management objective of reducing the MCLG December index to approximately 1.6 million birds. The success of that strategy will hinge upon State participation, hunter participation, and hunter effectiveness. If a State does not participate, then its hunters will not be able to participate in that state, decreasing the program's potential. We anticipate that some northern and mid-latitude States will elect not to implement the second rule (authorization of electronic calls and un-plugged shotguns) due to the infeasibility of closing all other waterfowl and crane seasons during the fall. It is more likely that those states will participate in a conservation order

during the spring, when it is more feasible to close all other waterfowl and crane hunting seasons, excluding falconry. Conversely, many waterfowl and crane hunting seasons in southern States close prior to 10 March. Therefore, it is much more feasible for southern States to implement the second rule by establishing a light-geese only season when all other waterfowl and crane hunting seasons, excluding falconry, are closed.

We are implementing the conservation order in order to maximize the overall program's potential and to try to achieve our management objective within a reasonable time-frame. This action will be complemented by attempts to alter habitat management practices that tend to increase MCLG. These actions will reduce the likelihood of the need to use more direct population control programs. The conservation order will allow northern States to participate in this effort and enable them to harvest MCLG during spring migration, particularly after 10 March. Harvest projections for the second rule (amendment 50 CFR part 20) are rolled into the harvest projections for the conservation order. Harvest projections for the second rule are not in addition to the harvest projections for the conservation order.

Conservation Order for MCLG

We are establishing a new subpart in 50 CFR part 21 for the management of overabundant MCLG populations. Under this new subpart, we are establishing a conservation order specifically for the control and management of MCLG. Conditions under the conservation order require that participating States inform participants acting under the authority of the conservation order of the conditions that apply to the amendment.

Under the authority of this rule, States could initiate aggressive harvest management strategies with the intent to increase MCLG harvest without having to obtain an individual permit, which will significantly reduce administrative burden on State and Federal governments. A permit process would slow efforts to reduce the populations and prolong habitat degradation on the breeding grounds. This rule will enable States, as a management tool, to use hunters to harvest MCLG, by shooting in a hunting manner, inside or outside of the regular open migratory bird hunting season frameworks. States could maximize the opportunity to increase harvest of MCLG by implementing this action beyond 10 March, where historically States have been limited by

hunting season framework closing dates to take migratory birds. In order to minimize or avoid take of non-target species, States may implement this action only when all waterfowl and crane hunting seasons, excluding falconry, are closed. We expect that this action will facilitate other protection and recovery efforts. This rule would further result in biologically sound and more cost-effective and efficient overabundant MCLG management and could preclude the use of more drastic direct population control measures such as trapping and culling programs. Although the desired goal is to reduce overabundant MCLG populations, we believe that this rule will not threaten the long-term status of MCLG populations or threaten the status of other species that could be impacted through the implementation of this rule. We have evaluation and monitoring strategies to assess the overall impact of this action on MCLG harvest and impacts to non-target species that may be affected by the implementation of this action.

Summary of Environmental Consequences of Action

MCLG Populations and Associated Habitats

We project that we will harvest a cumulative total of two million MCLG over the next three years without the use of this action, based on current MCLG harvest trends. Under certain assumptions, our most liberal estimate is that we can expect to cumulatively harvest an additional 3.8 million MCLG over the next three years of implementation of this action. This would bring the total cumulative harvest to 5.8 million MCLG after three years of implementation of this action. The amendment to 50 CFR Part 21 will be revoked if the December index of MCLG is reduced to the recommended level of approximately 1.6 million birds. Using the adjustment factor of 1.6, developed by Boyd et. al (1982) to convert winter indices to spring breeding population indices, this would result in a minimum estimate of 2.56 million breeding MCLG in spring. The total spring population would be higher because non-breeding geese and geese in un-surveyed areas are not included in this estimate.

The impact is expected to be regional within the Central and Mississippi Flyway States that choose to participate in the conservation order. Since the action may take place between 11 March and 31 August, we expect MCLG take to increase among mid-latitude and northern States according to migration

chronology. Increased harvest will be further facilitated by the use of additional hunting methods (electronic callers and unplugged shotguns) authorized by a State under the authority of this rule. Although we can expect the additional hunting methods to be effective in increasing harvest per hunter, there is no precedent to guide us in determining to what degree they will be effective. It is equally difficult to ascertain to what degree the public will participate in the implementation of this action, which will influence its effectiveness. However, with certain assumptions, we may project an increase in harvest using existing harvest data.

Before projecting the effect of the action on harvest we must establish several assumptions. We are assuming that all eligible States will act under the authority of this rule and will allow all new hunting methods authorized in the rule (electronic callers and unplugged shotguns), including the utilization of the maximum number of days available after the regular light-geese season. We are also assuming that current MCLG hunter numbers will not decrease and that the new methods authorized in this rule, if used, will increase hunter effectiveness and overall harvest. We do not assume that all MCLG hunters will participate in the implementation of this action and of those that do, we do not assume that all will increase their effectiveness by using new hunting methods. We are assuming that 25% of the MCLG hunters will use the new methods and will increase his/her effectiveness in harvesting MCLG.

States that have MCLG after 10 March may choose not to harvest MCLG after 10 March. Of those that do, the number of days each State may harvest outside of their regular open light-geese season likely will vary. For purposes of this exercise, we are assuming MCLG harvest is consistent throughout the entire light-geese season and that all affected States will use the action. It is important to note that the relationship between the number of hunting days and harvest of migratory birds continues to be extensively analyzed. In that respect, our projections regarding MCLG harvest represent our best estimates based on existing data, and are considered to be a liberal estimate.

We determined, based on a linear regression analysis of historical harvest data, that regular-season harvest of MCLG has increased approximately 31,600 MCLG per year for the last ten years. A simple linear regression of the harvest data represents our most conservative estimate because the analysis does not take into account

other factors that may have influenced harvest, such as the recent regulation changes for light geese. A more complex analysis will demonstrate that harvest number has actually increased at a faster rate since the bag and possession limits for light geese have been increased (USFWS 1998c). Today, more MCLG are harvested with fewer hunters, but hunter participation in light geese hunting is now increasing. Therefore, we conservatively project that regular-season harvest will increase 31,600 per year for the next several years.

During 1997–98, hunters harvested 604,900 MCLG in the affected States (AR, CO, IL, IN, IA, KY, KS, LA, MI, MS, MO, MT, NE, NM, ND, OH, OK, SD, TN, TX, WI, and WY). Combined with our projection that regular-season harvest will increase by 31,600 per year without any changes to hunting regulations, we can expect to harvest 636,500 MCLG in the 1998–1999 regular light geese season in those affected States. Under the assumptions stated above, we expect to harvest an additional 618,400 MCLG through the implementation of this proposed action (authorize electronic callers, unplugged shotguns, and additional days to harvest). Therefore, we project a total harvest of 1.25 million MCLG in the first year of implementation of this action. Because we expect regular-season harvest to increase annually, the total projected harvest will also increase annually. We expect to harvest a total of 1.9 million MCLG in the second year of implementation and 2.6 million in the third year of implementation. These estimates include regular-season harvest of MCLG.

Batt (1997) estimated that the MCLG population should be reduced by 50% by 2005. That would suggest a reduction in the MCLG December index from approximately 3.2 million birds to approximately 1.6 million birds. Central and Mississippi Flyway Council management thresholds for MCP lesser snow geese (not including WCFP lesser snow or Ross' geese) rests between 1.0 and 1.5 million birds, based on the December index. Therefore, our MCLG population reduction goal closely parallels those established by Flyway Councils and the scientific community. As mentioned previously, a December index of 1.6 million would translate to a minimum estimate of 2.56 million breeding MCLG in spring. We will carefully analyze and assess the MCLG reduction on an annual basis, using the December index and other surveys, to ensure that the populations are not over-harvested.

We expect an increase in MCLG harvest to facilitate other efforts, such as

habitat management on the wintering grounds and increased harvest by Canadian aboriginals. Decreased MCLG numbers will also relieve pressures on the breeding grounds. There is no evidence to suggest that the implementation of this action will result in an over-harvest of MCLG. Once the December index is reduced to approximately 1.6 million birds we will revoke this action and the methods we authorized. It is improbable that the implementation of this action will threaten the long-term status of MCLG populations, because we will monitor the MCLG populations and act accordingly if it is threatened by modifying or revoking the action.

Other Species

We expect an increase in harvest, and subsequently a decrease in MCLG numbers, to relieve pressures on other migratory bird populations that utilize MCLG breeding and wintering grounds and other areas along the migration routes. This decrease should reduce the possibility that other species will be forced to seek habitat elsewhere or abandon unsuitable degraded habitat altogether, which could potentially result in decreased reproductive success of affected populations. We expect a significant decrease in MCLG populations to contribute to increased reproductive success of adversely impacted populations. Further, we expect that by decreasing the numbers of MCLG on wintering and migration stopover areas, the risk of transmitting avian cholera to other species will be reduced which will reduce the threat of a widespread avian cholera outbreak.

Socio-economic

Any migratory bird hunting or conservation order action has economic consequences. Continued inaction is likely to result in ecosystem failure of the Hudson Bay Lowlands salt-marsh ecosystem and potentially other ecosystems as MCLG populations expand and exploit new habitats. Without more effective population control measures to curb the populations, the populations of MCLG are expected to continue increasing and become more and more unstable as suitable breeding habitat diminishes. As population densities increase, the incidence of avian cholera among MCLG and other species is likely to increase throughout the Flyways, particularly at migration stopover sites. Losses of other species such as pintails, white-fronted geese, sandhill cranes, and whooping cranes, from avian cholera may be great. This may result in reduced hunting, birdwatching, and other opportunities.

It may also result in the season closures of adversely impacted migratory game birds such as white-fronted geese, sandhill cranes, and pintails. Goose damage to winter wheat and other agricultural crops will continue and worsen. Habitat damage in the Arctic will eventually trigger density-dependent regulation of the population which likely will result in increased gosling mortality and may cause the population to decline precipitously. However, it is not clear when such population regulation will occur and what habitat, if any, will remain to support the survivors. Such a decline may result in a population too low to permit any hunting, effectively closing MCLG hunting seasons. The length of the closures will largely depend on the recovery rate of the breeding habitat, which likely will take decades. Although the overall impact of closures of light-geese seasons in the Central and Mississippi Flyways that could result from continued degradation of the breeding habitat is small on a national scale, it would be concentrated where large flocks of geese stage and winter. Because people that provide services to hunters tend to be those with low incomes, the impact of a closure would fall disproportionately on low income groups near goose concentrations. We expect this action to reduce the risk of light-geese season closures in the Central and Mississippi Flyways and avoid a \$70 million loss in output and reduce the possibility of increased agricultural loss. We expect special MCLG population control efforts to create additional take opportunities which is expected to add \$18 million in output to local economies.

Public Comments Received

The November 9, 1998, proposed rule published in the **Federal Register** (63 FR 60278) invited public comments from interested parties. The closing date for receipt of all comments was January 8, 1999, which was subsequently extended to January 15, 1999 (64 FR 822). During the comment period, we received 615 comments consisting of 468 from private citizens, 21 from State wildlife agencies, 2 from Flyway Councils, 27 from private organizations, 10 from Native organizations, 65 from individuals that signed a petition, and 22 from private organizations that signed a petition. Comments generally were dichotomized by two points of view.

To summarize, 361 comments were supportive of our intent to implement a conservation order to reduce the MCLG population. Comments in support of such action were received from 268

private citizens, 21 State wildlife agencies, 2 Flyway Councils, 12 private organizations, 1 Native organization, and 57 from people who signed a petition. These commenters agreed that there was a problem and that the resolution should entail reduction by lethal means and supported the use of additional methods to increase take of MCLG. Several State wildlife agencies and both Flyway Councils suggested that the requirement to have all other migratory bird hunting seasons closed in order to implement changes in regulations to address light goose population control is overly restrictive. They suggested that only other waterfowl seasons be closed in order to implement changes in light goose regulations. Furthermore, several of these commenters suggested that the Service should implement existing dove baiting regulations for the proposed conservation order rather than the more restrictive waterfowl baiting regulations. A private citizen voiced opposition to the closure of falconry seasons during implementation of new light goose regulation changes.

A State wildlife agency requested clarification on whether the requirement to close all other migratory bird seasons pertained to zones within a State, or the entire State, and also whether the regulation changes could be implemented prior to March 11. Several State wildlife agencies questioned why other Mississippi Flyway States (i.e. MI, OH, WI, IN, KY, and TN) were not included in the list of those eligible to implement alternative regulatory strategies aimed at MCLG. Some State wildlife agencies urged that the Service not wait a full five years before the proposed population reduction strategies are evaluated and other management options are considered. A State wildlife agency commented that the requirement to close Bosque del Apache NWR during the period of implementation of light goose regulations was inappropriate and that existing hunt management plans will avert potential impacts to whooping cranes.

Several private organizations and a Native organization expressed support of the findings of the international panel of scientists and waterfowl managers that documented (Batt 1997) habitat degradations caused by overabundant light goose and recommended actions to reduce populations. However, the organizations urged monitoring and evaluation of management actions and that such actions should be used only until populations are sufficiently reduced. A private organization that fully supported the proposed actions

expressed concern about differing views in the academic and management community about the magnitude of harvest that is necessary to effect the desired population reduction.

Conversely, 254 comments received were in opposition to the Service's intent to reduce MCLG populations by use of lethal means either because they believe it is not legally or scientifically justified to reduce the populations, or attempts to do so would be inhumane. Comments in opposition to such action were received from 200 private citizens, 15 private organizations, 9 Native organizations, 8 individuals that signed a petition, and 22 private organizations that signed a petition.

Many commenters stated that grazing by geese may be changing the vegetation communities on their breeding grounds but they "cannot devastate an ecosystem of which they are a part". Furthermore, they felt that if there are too many geese for their habitats to support, the geese will either nest in other areas or fail to successfully raise young. A private individual commented that the habitat destruction occurring in the arctic may be due to pollution and increased salinity resulting from oil drilling.

Several private organizations commented that the draft Environmental Assessment and the Proposed Rule fail to provide detailed estimates of the extent of grazing damage caused by MCLG. They further stated that we have not adequately addressed the relationship between isostatic uplift (raising of land due to the removal of pressure once exerted by glaciers) and vegetative succession, or the agricultural practices that have contributed to expansion of MCLG populations. In addition they criticized the lack of reliable current breeding population estimates of MCLG and our inability to demonstrate that current populations are higher than those ever experienced in the past. Furthermore, they questioned how killing millions of snow geese in the mid-western U.S. could remedy alleged damage to habitats at specific sites in the Canadian arctic. Finally, they protested that Native groups in Canada that would be directly impacted by the proposals were not consulted in the development of management actions. Comments provided by several Native organizations indicated that they were not consulted and they oppose the management action.

A private organization recommended nest destruction, eggging, and hazing of geese from areas that have sustained habitat changes as alternatives to the proposed actions. Furthermore, they stated that the use of lethal control, if it

is justified at all, must be conducted at specific sites where damage is occurring to be effective. Finally, they advocated that the Service implement ecosystem management to address the MCLG issue. Their view of ecosystem management assumes that the component species of an ecosystem determine their own distribution and abundance, consistent with the age and condition of their habits, thus requiring a more "hands-off" rather than a direct, interventionist, approach by managers."

Many private individuals and several private organizations commented that an Environmental Assessment was insufficient to comply with NEPA requirements, and that a full Environmental Impact Statement should be prepared before action is taken to address this problem. A private organization commented that the Service will be violating the 1916 Convention Between the United States and Great Britain for the Protection of Migratory Birds if take of MCLG beyond March 10 is allowed. They believed that a conservation order to be implemented beyond March 10 will constitute an illegal hunting season on a protected species.

Service response: We have conducted an Environmental Assessment of alternative regulatory strategies to reduce MCLG populations. Based on review and evaluation of the information contained in the assessment, we have determined that the proposed action to amend 50 CFR Part 21 to establish a conservation order for the reduction of MCLG populations is not a major Federal action that would significantly affect the quality of the human environment within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969. Accordingly, we made a Finding of No Significant Impact on this action. Therefore, preparation of an Environmental Impact Statement is not required. The EA and Finding of No Significant Impact are available to the public at the location indicated under the ADDRESSES caption.

With regard to violation of the 1916 Convention, regulations allowing the take of migratory birds are authorized by the Migratory Bird Treaty Act (Act) (16 U.S.C. Secs. 703-712), which implements the four bilateral migratory bird treaties the United States entered into with Canada, Mexico, Japan, and Russia. Section 3 of the Act authorizes and directs the Secretary of the Interior to allow hunting, taking, etc. of migratory birds subject to the provisions of, and in order to carry out the purposes of, the four migratory bird treaties. The Convention with Great

Britain establishes a "closed" season on hunting migratory game birds between March 10 and September 1. However, Section VII of the U.S.-Canada Migratory Bird Treaty authorizes permitting the take, kill, etc. of migratory birds that, under extraordinary conditions, become seriously injurious to agricultural or other interests. We are exercising this authority to carry out a necessary management action. Although "hunters" will be utilized in this effort, this is not intended as an open season or extension of a season. This is a management effort that is being carried out in partnership with State/Tribal wildlife agencies under strict monitoring and control requirements contained in the order. The information available to us as discussed in SUPPLEMENTARY INFORMATION, and in the Environmental Assessment accompanying this action, demonstrates that the extraordinary population levels are causing serious injury to the breeding habitat of light geese and other migratory birds, and the habitat of other wildlife species. Therefore, we believe that implementation of this conservation order is in accordance with and compatible with the terms of the Convention.

We are unaware of any evidence indicating that the severe habitat damage occurring in MCLG breeding areas is the result of oil drilling activities. The feeding behavior of MCLG causes the removal of vegetation from sites and sets in motion a series of events that causes soil salinity to increase. With regard to the ability of MCLG to devastate an ecosystem of which they are a part, we point to studies summarized by Abraham and Jefferies (1997) indicating that goose feeding activities reduce the thickness of the vegetation mat that insulates the underlying marine sediments from the air. Evaporation rates from the surface sediments increase and inorganic salts from the marine clay produce high salt concentrations that reduce growth of preferred forage plants. This together with continued intensive grazing by geese maintains open areas and high salt concentration and results in a positive feedback producing increased destruction of salt-marsh areas and desertification of the landscape. This is illustrated by fenced enclosure plots on impacted areas that prevent geese from grazing in plots. Both the enclosures and the areas in their immediate vicinity are experiencing isostatic uplift (raising of land as a result of glacial retreat) and yet the rate of plant species turnover in the two areas is markedly different, driven

by excessive goose foraging. Several commenters stated that recolonization of mud flats by plants will occur naturally. However, they do not elaborate on the amount of time this process will require. Exclosure experiments indicate that it may take at least 15 years for vegetation stands to begin to develop, which would require total absence of goose foraging. This length of time is beyond the life expectancy of a single age cohort of lesser snow geese. Hence, the effects on the habitat outlive the geese.

With regard to the assertion that if there are too many geese for their habitats to support, the geese will nest in other areas or fail to raise young, we generally concur. We note that geese have the ability to escape the effects of high population densities by their ability to disperse from breeding colonies. However, there are signs that habitat in the areas geese are dispersing to are also being degraded, forcing the birds to disperse even further. Thus, birds invade previously undisturbed habitats and consume plant biomass to the point where it is no longer advantageous to remain in those areas, and then they disperse. The ability to disperse to and subsequently degrade new habitats is of much concern to wildlife managers and is the reason we feel that MCLG populations need to be controlled. With regard to documentation of the total acreage of damage caused by MCLG, we note that quantification of habitat degradation by geese in the entire arctic and sub-arctic region is made difficult by logistical constraints. However, we point to the numerous habitat studies that document habitat damage, which are summarized in the report by Batt (1997). This information has been collected during the past 25+ years by numerous scientists of varying disciplines. Most claims of little or no damage to habitats have been based solely on a report by Thomas and MacKay (1998), which was the result of a field trip to a limited number of sites on the west coast of Hudson Bay that lasted less than 72 hours. We do not believe this cursory examination of habitats in this region is a valid method of documenting habitat degradation due to MCLG activity.

Concerning the relationship between isostatic uplift and plant succession, we acknowledge the impact that this geologic process has on plant communities. However, the time frame in which the process occurs is much slower than the time frame in which geese can impact habitats. Therefore, we do not believe that isostatic uplift will create new habitat quickly enough to counteract damage created by geese.

With regard to the relationship between agricultural practices and MCLG populations, we have previously stated that habitat management approaches to population control should be pursued in conjunction with alternative regulatory strategies (63 FR 60281). Inclusion of habitat management strategies is beyond the scope of our rulemaking authority. This may create the false impression to some observers that we are considering only lethal means to control MCLG populations. In fact, we are working with our partners to develop various non-regulatory action plans that will include land use recommendations for the Northern Prairie, Midwest, and Gulf Coast regions of the U.S. to address habitat management approaches to controlling overabundant MCLG populations (Bisbee 1998). We are also pursuing changing habitat management practices on our own lands. We believe that a comprehensive, long-term strategy that involves both lethal methods and habitat management is a sound approach to addressing the MCLG issue.

Concerning the question of how killing MCLG in the U.S. will remedy damage to habitats in specific breeding colonies in the Canadian arctic, we point out that MCLG migrate and winter in large concentrations almost exclusively in the Central and Mississippi Flyways. Therefore, these regulatory strategies aimed at taking MCLG in this portion of the U.S. will reduce the number of birds returning to breeding areas that are experiencing habitat degradation. It will also reduce the number of birds that are able to disperse to and degrade other breeding habitats. We believe this is a cost-effective and efficient alternative to selective culling of birds at breeding colonies, which would entail massive disposal efforts and waste of birds at enormous cost. Similarly, we believe that alternative regulatory strategies will be more cost-effective and efficient control methods than proposals to destroy nest, harvest eggs, and haze geese from breeding colonies.

With regard to our ability to estimate the current size of the breeding population of MCLG, we point out that the lack of definitive continental breeding population estimates is due to the enormous logistical barriers to designing a comprehensive survey of the entire arctic and sub-arctic region. Consequently, we have relied on surveys conducted on wintering areas in December to provide an index to the breeding population. It is clear that many people are confused about the relationship between the December index and the breeding population size.

The December survey results in a count of MCLG on portions of its wintering range and does not represent a total population count, nor is it intended to be such. However, we believe that the December index tracks the true population size and allows managers to determine when the MCLG population is increasing, decreasing, or is stable. In fact, we have used the December index in the development of annual snow goose hunting regulations since its inception in 1969. Therefore, we have chosen to use the December index to determine the status of the MCLG population. In the proposed rule (63 FR 60278) we made an incorrect contextual reference to the Central and Mississippi Flyway Council (1982) management guideline of 800,000 to 1.2 million birds because this guideline was based on snow goose population estimates for the breeding grounds, rather than on wintering ground indices. We will continue to base our objectives on winter indices. In order to achieve a 50% reduction in the MCLG population, this would entail achieving a reduction in the December index from approximately 3.2 million to 1.6 million birds. In 1991, the Mississippi and Central Flyway Councils passed resolutions to adopt management goals for MCLG of 1 to 1.5 million birds, based on the December index. Therefore, our objective is in close agreement with management goals previously stated by the Flyway Councils. Beginning in January 1999, the Central and Mississippi Flyway Councils designated a January survey of wintering MCLG to be the official index to the population, which we will use to monitor the population. This change should have negligible effect on the winter index and subsequent management objectives.

With regard to debate about the magnitude of harvest that is necessary to bring about the desired population reduction, we point out that the debate is centered around the annual harvest that is required to achieve the reduction by the year 2005. Rockwell et al. (1997) recommend a 2-3 fold increase in annual harvest to achieve the desired population reduction. The authors stated that, "different assumptions will lead to somewhat different values under this type of strategy * * * (Rockwell et al. 1997:99). Subsequently, Cooke et al. (unpublished report) estimated that annual harvest would need to be increased by a factor of anywhere from 3.5 to 6.7 to reduce the MCLG population. We note the near overlap in the ranges of recommended increases in annual harvest contained in the two

reports. At the present, we believe that pursuing a three-fold increase in annual harvest represents a responsible approach to MCLG population reduction. Implementation of new regulatory strategies will allow managers to measure the actual effects of such strategies on the MCLG population. If this harvest level is subsequently deemed inadequate to achieve the population-reduction goal, this strategy will be re-evaluated.

With regard to the relationship between current MCLG population levels and those experienced in the past, we point out the problems with comparisons of anecdotal accounts of MCLG population levels with population indices derived from modern aerial surveys. We suggest that debates about anecdotal accounts of former MCLG abundance will not be fruitful. What is known, is that current MCLG population indices derived from standardized aerial surveys are higher than ever previously recorded. Therefore, we believe that alternative regulatory strategies to address overabundant MCLG and their impacts on habitat are appropriate and urgently needed.

Concerning consultation with Native groups that may be affected by alternative regulatory strategies implemented in the U.S., we point out that the U.S. has met the legal obligation to consult with the government of Canada. In turn, various territorial, provincial and federal governments in Canada have consulted with aboriginal groups through various forums, and through the distribution of reports and proposals for Canadian hunting seasons. These consultations are and will continue to be ongoing. Because the locations of many of the largest light goose breeding colonies are north of 60 degrees north latitude, much of the direct consultation to date has been with people in those areas. We have also been informed that a number of Inuit groups such as the Arviat Hunters and Trappers Organization, and the Aiviq Hunters and Trappers Association in Cape Dorset have already participated in pilot programs to increase their harvest of light geese. The Nunavut Wildlife Management Board has had the light goose overabundance issue as a standing item for some time. Other northern wildlife management boards, including the Inuvialuit which participated in a stakeholder's committee, have been informed of the light goose issue. In light of this information, we feel claims that Native groups have not been consulted are unfounded.

We disagree with the view that an ecosystem approach to managing

overabundant MCLG requires a "hands off" rather than a direct interventionist approach by managers. In fact, we believe that implementation of alternative regulatory strategies to address this problem is the epitome of ecosystem management. The Service's goal of its ecosystem approach is the effective conservation of natural biological diversity through perpetuation of dynamic, healthy ecosystems (USFWS 1995). Others have defined ecosystem management as "the integration of ecologic, economic, and social principles to manage biological and physical systems in a manner that safeguards the ecological sustainability, natural diversity, and productivity of the landscape" (Wood 1994). We believe that if MCLG populations are not immediately controlled by direct methods, that biological diversity on breeding areas will decline, productivity of the landscape will be severely reduced, and the health of the ecosystem will be compromised to the extent that it will take many decades to recover, if ever.

With regard to the comment that requiring closure of all other migratory bird seasons is overly restrictive, we agree. Our intent is to minimize the impacts of regulatory strategies on non-target species, and we believe that limiting the required closure to all waterfowl and crane hunting seasons, excluding falconry, will not increase the potential impacts on non-target species. These closures can be undertaken on a zone basis within a state. Such strategies could be implemented prior to March 11 in a given year, as long as the above requirement is met. With regards to the eligibility of the States of MI, OH, WI, IN, KY, and TN to implement alternative regulatory strategies, we agree that these States harvest light geese during normal hunting seasons, and thus would have the potential to harvest MCLG using alternative regulatory strategies. For example, 20,000 to 60,000 snow geese annually winter in western Kentucky. Therefore, we are including all Mississippi Flyway and Central Flyway States as being eligible for implementation of such strategies.

With regards to baiting regulations, we prefer to utilize current regulations that pertain to waterfowl. Implementation of dove baiting regulations in a waterfowl management strategy may create confusion among hunters. The larger question of the use of baiting to increase harvest of MCLG may need to be re-visited, once we have experience with the alternative regulations options currently being implemented. We note that baiting

regulations for all migratory birds are currently under review and a decision with regards to the use of baiting to control MCLG should be postponed until the review is completed.

Concerning the requirement to close several crane wintering and migration areas to implementation of MCLG regulatory strategies, we feel that this requirement will help ensure protection of whooping cranes. We believe a conservative approach to implementing new MCLG strategies is warranted, at least initially. Once we gain experience in dealing with these new strategies, and if a determination is made that such closures are unnecessary, they can be discontinued at that time.

With regard to monitoring programs that are needed to evaluate MCLG control measures and the status of their population, we note that the Arctic Goose Joint Venture has developed a draft science needs document that outlines various population and habitat monitoring programs. Included in this document are banded sample sizes that are needed to detect average annual changes in survival rates of MCLG. The document outlines banding goals for various breeding colonies. Breeding population surveys that will be utilized include photo inventories and helicopter surveys of selected breeding colonies. Annual indices to MCLG population size will continue to be derived from winter surveys conducted in the U.S. Harvest estimates for normal light goose hunting seasons will continue to be derived through existing federal harvest surveys. Estimates of harvest during the conservation order will be obtained from individual State wildlife agencies. We will accomplish habitat monitoring through satellite imagery and continuation of on the ground sampling associated with current research projects.

We agree that we should not wait until five years have elapsed before an evaluation of the MCLG conservation order is completed and other alternatives are considered. Annual monitoring will indicate if the conservation order is effective in reducing the MCLG population. We will consider additional population-reduction strategies if the conservation order is deemed ineffective. We note that non-lethal management strategies to control MCLG populations recently have been completed or are under development (e.g. Bisbee 1998). We look forward to working with all stakeholders in the development of long-term strategies to deal effectively with overabundant MCLG.

References Cited

- Abraham, K. F., R. L. Jefferies, R. F. Rockwell, and C. D. MacInnes. 1996. Why are there so many white geese in North America? 7th International Waterfowl Symposium, Memphis, TN.
- Abraham, K. F., and R. L. Jefferies. 1997. High goose populations: causes, impacts and implications. Pages 7-72 in B. D. J. Batt, ed. *Arctic Ecosystems in Peril: Report of the Arctic Goose Habitat Working Group*. Arctic Goose Joint Venture Special Publication. U. S. Fish and Wildlife Service, Washington, D.C. and Canadian Wildlife Service, Ottawa, Ontario. 120 pp.
- Alisauskas, R., C. D. Ankney, and E. E. Klaas. 1988. Winter diets and nutrition of mid-continent lesser snow geese. *J. Wildl. Manage.* 52:403-414.
- Alisauskas, R., S.M. Slattery, D.K. Kellett, D.S. Stern, and K.D. Warner. 1998. Spatial and temporal dynamics of Ross's and snow goose colonies in Queen Maud Gulf Bird Sanctuary, 1966-1998. Canadian Wildlife Service, Saskatoon, Saskatchewan. 21pp.
- Ankney, C. D. and C. D. MacInnes. 1978. Nutrient reserves and reproductive performance of female lesser snow geese. *Auk* 95:459-471.
- Batt, B. D. J., editor. 1997. *Arctic ecosystems in peril: report of the Arctic Goose Habitat Working Group*. Arctic Goose Joint Venture Special Publication. U. S. Fish and Wildlife Service, Washington, D.C. and Canadian Wildlife Service, Ottawa, Ontario.
- Bisbee, R. 1998. Gulf states action plan for mid-continent snow geese: A specific action plan focused on public land management for the years 1998, 1999, and 2000. U. S. Fish and Wildlife Service, Washington, D.C.
- Boyd, H., G. E. J. Smith and F. G. Cooch. 1982. The lesser snow goose of the eastern Canadian Arctic: their status during 1964-1979 and their management from 1982-1990. Canadian Wildlife Service Occasional Paper No. 46. 21 pp.
- Rockwell, R. F., E. Cooch, and S. Brault. 1997a. Dynamics of the Mid-continent population of lesser snow geese: projected impacts of reductions in survival and fertility on population growth rates. Pages 73-100 in B. D. J. Batt, ed. *Arctic Ecosystems in Peril: Report of the Arctic Goose Habitat Working Group*. Arctic Goose Joint Venture Special Publication. U. S. Fish and Wildlife Service, Washington, D.C. and Canadian Wildlife Service, Ottawa, Ontario. 120 pp.
- Rockwell, R. F., D. Pollack, K. F. Abraham, P. M. Kotanen, and R. L. Jefferies. 1997b. Are there declines in bird species using La Pérouse Bay? The Hudson Bay Project status report for Ducks Unlimited, Inc.
- Ryder, J. P. 1969. Nesting colonies of Ross' goose. *Auk*:86-282-292.
- Rockwell, R. F. 1998. Personal Communication. American Museum of Natural History, New York, NY.

- Sparrowe, R. 1998. Report of the Stakeholder's Committee on Arctic Nesting Geese. Rollin Sparrowe, Chair. Wildlife Management Institute, Washington, D.C.
- U.S. Department of the Interior, Environment Canada, and Secretaria De Desarrollo Social. 1998. 1998 update to the North American Waterfowl Management Plan—fulfilling the legacy: expanding the vision. U.S. Fish and Wildlife Service, Washington, D.C.
- USFWS. 1995. An ecosystem approach to fish and wildlife conservation. Concept Document. Washington, D.C. 21 pp.
- USFWS. 1997a. Waterfowl population status, 1997. Office of Migratory Bird Management, Arlington, VA. 32 pp.
- USFWS. 1997b. Harvest and population survey data book, Central Flyway, compiled by D.E. Sharp. Office of Migratory Bird Management, Denver, CO. 123 pp.
- USFWS. 1998a. Mid-continent Lesser Snow Goose Workshops: Central and Mississippi Flyways, Fall 1997. Office of Migratory Bird Management and Division of Refuges, Arlington, VA.
- USFWS. 1998b. Waterfowl populations status, 1998. Department of the Interior, U.S. Fish and Wildlife Service, Arlington, VA. 31 pp.
- USFWS. 1998c. Waterfowl Population Status, 1998. Department of the Interior, U.S. Fish and Wildlife Service. Arlington, VA.
- Yancey, R., M. Smith, H. Miller, and L. Jahn. 1958. Waterfowl distribution and migration report (Mississippi Flyway States). Proceedings 11th Annual Southeastern Association of Game and Fish Commissioners: 105–115.

Effective Date

Under the APA (5 U.S.C. 553(d)) we waive the 30-day period before the rule becomes effective and find that “good cause” exists, within the terms of 5 U.S.C. 553(d)(3) of the APA, and this rule will, therefore, take effect immediately upon publication. This rule relieves a restriction and, in addition, it is not in the public interest to delay the effective date of this rule. During the public comment period we received 615 comments consisting of 468 from private citizens, 21 from State wildlife agencies, 2 from Flyway Councils, 27 from private organizations, 10 from Native organizations, 65 from individuals that signed a petition, and 22 from private organizations that signed a petition. It is in the best interest of migratory birds and their habitats to implement a conservation order to reduce the number of MCLG. It is in the best interest of the hunting public to provide alternative regulatory options to address the problem of overabundant MCLG that may affect other migratory bird populations and hunting seasons.

NEPA Considerations

In compliance with the requirements of section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(C)), and the Council on Environmental Quality's regulation for implementing NEPA (40 CFR 1500–1508), we prepared an Environmental Assessment in January 1999. This EA is available to the public at the location indicated under the ADDRESSES caption. Based on review and evaluation of the information in the EA, we determined that amending 50 CFR Part 21 to establish a conservation order for the reduction of MCLG populations would not be a major Federal action that would significantly affect the quality of the human environment. This Environmental Assessment considers short-term options for addressing the ever-increasing MCLG population. In 2000, we will initiate the preparation of an Environmental Impact Statement to consider the effects on the human environment of a range of long-term resolutions for the MCLG population. Completion of the EIS by summer 2002 will afford the Service the opportunity to assess the effectiveness of the current preferred alternative. It will also allow for a more detailed evaluation of options to correspond with the results of the assessment and ongoing MCLG issues.

Endangered Species Act Consideration

Section 7(a)(2) of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531–1543; 87 Stat. 884) provides that “Each Federal agency shall, in consultation with the Secretary, insure that any action authorized, funded, or carried out * * * is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of (critical) habitat * * *” We have completed a Section 7 consultation under the ESA for this rule and determined that establishment of a conservation order for the reduction of MCLG populations is not likely to affect any threatened, endangered, proposed or candidate species. The result of our consultation under Section 7 of the ESA is available to the public at the location indicated under the ADDRESSES caption.

Regulatory Flexibility Act

The economic impacts of this rulemaking will fall disproportionately on small businesses because of the structure of the waterfowl hunting related industries. The regulation benefits small businesses by avoiding ecosystem failure to an ecosystem that produces migratory bird resources important to American citizens. The

Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.) requires the preparation of flexibility analyses for rules that will have a significant effect on a substantial number of small entities. Data are not available to estimate the number of small entities affected, but it is unlikely to be a substantial number on a national scale. We expect this action to reduce the risk of light-geese season closures in the Central and Mississippi Flyways subsequently avoiding a \$70 million loss in output and reducing the possibility of increased agricultural loss. We expect special MCLG population control efforts to create additional take opportunities which is expected to add \$18 million in output to local economies. We have determined that a Regulatory Flexibility Act Analysis is not required.

Executive Order 12866

This rule was not subject to review by the Office of Management and Budget under E.O. 12866. E.O. 12866 requires each agency to write regulations that are easy to understand. The Service invites comments on how to make this rule easier to understand, including answers to questions such as the following: (1) Are the requirements in the rule clearly stated? (2) Does the rule contain technical language or jargon that interferes with its clarity? (3) Does the format of the rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Would the rule be easier to understand if it were divided into more (but shorter) sections? (5) Is the description of the rule in the “Supplementary Information” section of the preamble helpful in understanding the rule? What else could the Service do to make the rule easier to understand?

Congressional Review

This is not a major rule under the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 801–808).

Paperwork Reduction Act and Information Collection

We examined these regulations under the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)). Under the Act, information collections must be approved by the Office of Management and Budget (OMB). Agencies may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. We estimate that State/Tribal governments that participate in the program will expend an average of 30 hours annually to fulfill the information

collection requirements. Any suggestions on how to reduce this burden should be sent to the Information Collection Clearance Officer, U.S. Fish and Wildlife Service, ms 222-ARLSQ, 1849 C Street, NW, Washington, DC 20204. We will use the recordkeeping and reporting requirements imposed under regulations established in 50 CFR Part 21, Subpart E to administer this program, particularly in the assessment of impacts alternative regulatory strategies may have on MCLG and other migratory bird populations. We will require the information collected to authorize State and Tribal governments responsible for migratory bird management to take MCLG within our guidelines. Specifically, OMB has approved the information collection requirements of this action and assigned clearance number 1018-0103 (expires 01/31/2002).

Unfunded Mandates

We have determined and certify, in compliance with the requirements of the Unfunded Mandates Act (2 U.S.C. 1502 et seq.), that this rulemaking will not impose a cost of \$100 million or more in any given year on local or State government or private entities. This rule will not "significantly or uniquely" affect small governments. No governments below the State level will be affected by this rule. A Small Government Agency Plan is not required. This rule will not produce a Federal mandate of \$100 million or greater in any year, i.e., it is not a "significant regulatory action" under Unfunded Mandates.

Civil Justice Reform—Executive Order 12988

The Department, in promulgating this rule, has determined that these regulations meet the applicable standards provided in Sections 3(a) and 3(b)(2) of Executive Order 12988. This rule has been reviewed by the Office of the Solicitor. Specifically, this rule has been reviewed to eliminate errors and ambiguity, has been written to minimize litigation, provides a clear legal standard for affected conduct, and specifies in clear language the effect on existing Federal law or regulation. We do not anticipate that this rule will require any additional involvement of the justice system beyond enforcement of provisions of the Migratory Bird Treaty Act of 1918 that have already been implemented through previous rulemakings.

Takings Implication Assessment

In accordance with Executive Order 12630, this rule, authorized by the Migratory Bird Treaty Act, does not have significant takings implications and does not affect any constitutionally protected property rights. The rule will not result in the physical occupancy of property, the physical invasion of property, or the regulatory taking of any property. In fact, the rule allows hunters to exercise privileges that would be otherwise unavailable; and, therefore, reduce restrictions on the use of private and public property.

Federalism Effects

Due to the migratory nature of certain species of birds, the Federal government has been given responsibility over these species by the Migratory Bird Treaty Act. These rules do not have a substantial direct effect on fiscal capacity, change the roles or responsibilities of Federal or State governments, or intrude on State policy or administration. Therefore, in accordance with Executive Order 12612, these regulations do not have significant federalism effects and do not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951) and 512 DM 2, we have evaluated possible effects on Federally recognized Indian Tribes and have determined that there are no effects.

Authorship

The primary author of this final rule is James R. Kelley, Jr., Office of Migratory Bird Management.

List of Subjects in 50 CFR Parts 20 and 21

Exports, Hunting, Imports, Reporting and recordkeeping requirements, Transportation, Wildlife.

For the reasons stated in the preamble, we hereby amend parts 20 and 21, of the subchapter B, chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 20—[AMENDED]

The authority citation for part 20 continues to read as follows:

Authority: 16 U.S.C. 703-712; and 16 U.S.C 742a-j.

§ 20.22 [Amended]

2. In § 20.22, the phrase "except as provided in part 21" is added following the word "season".

PART 21—[AMENDED]

1. The authority citation for part 21 continues to read as follows:

Authority: Pub. L. 95-616, 92 Stat. 3112 (16 U.S.C. 712(2)).

2. Subpart E, consisting of § 21.60, is added to read as follows:

Subpart E—Control of Overabundant Migratory Bird Populations

§ 21.60 Conservation Order for Mid-continent light geese.

(a) *Which waterfowl species are covered by this order?* This conservation order addresses management of lesser snow (*Anser c. caerulescens*) and Ross' (*Anser rossii*) geese that breed, migrate, and winter in the mid-continent portion of North America, primarily in the Central and Mississippi Flyways (Mid-continent light geese).

(b) *In what areas can the conservation order be implemented?* (1) The following States, or portions of States, that are contained within the boundaries of the Central and Mississippi Flyways: Alabama, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, Wisconsin, and Wyoming.

(2) Tribal lands within the geographic boundaries in paragraph (b)(1) of this section.

(3) The following areas within the boundaries in paragraph (b)(1) of this section above are closed to the conservation order after 10 March: Monte Vista National Wildlife Refuge (CO); Bosque del Apache National Wildlife Refuge (NM); the area within 5 miles of the Platte River from Lexington, Nebraska to Grand Island, Nebraska; the following area in and around Aransas National Wildlife Refuge; those portions of Refugio, Calhoun, and Aransas counties that lie inside a line extending from 5 nautical miles offshore to and including Pelican Island, thence to Port O'Conner, thence northwest along State Highway 185 and southwest along State Highway 35 to Aransas Pass, thence southeast along State Highway 361 to Port Aransas, thence east along the Corpus Christi Channel, thence southeast along the Aransas Channel, extending to 5 nautical miles offshore; except that it is lawful to take Mid-continent light geese after 10 March

within the Guadalupe WMA. If at any time evidence is presented that clearly demonstrates that there no longer exists a need to close the above areas, we will publish a proposal to remove the closures in the **Federal Register**.

(c) *What is required in order for State/Tribal governments to participate in the conservation order?* Any State or Tribal government responsible for the management of wildlife and migratory birds may, without permit, kill or cause to be killed under its general supervision, mid-continent light geese under the following conditions:

(1) Activities conducted under this section may not affect endangered or threatened species as designated under the Endangered Species Act.

(2) Control activities must be conducted clearly as such and are intended to relieve pressures on migratory birds and habitat essential to migratory bird populations only and are not to be construed as opening, re-opening, or extending any open hunting season contrary to any regulations promulgated under section 3 of the Migratory Bird Treaty Act.

(3) Control activities may be conducted only when all waterfowl and crane hunting seasons, excluding falconry, are closed.

(4) Control measures employed through this section may be implemented only between the hours of one-half hour before sunrise to one-half hour after sunset.

(5) Nothing in this section may limit or initiate management actions on Federal land without concurrence of the Federal Agency with jurisdiction.

(6) States and Tribes must designate participants who must operate under the conditions of this section.

(7) States and Tribes must inform participants of the requirements/conditions of this section that apply.

(8) States and Tribes must keep records of activities carried out under the authority of this section, including the number of mid-continent light geese taken under this section, the methods by which they were taken, and the dates they were taken. The States and Tribes must submit an annual report summarizing activities conducted under this section on or before August 1 of each year, to the appropriate Assistant Regional Director—Refuges and Wildlife (see § 2.2 of this chapter).

(d) *What is required in order for individuals to participate in the conservation order? Individual participants in State or tribal programs covered by this section are required to comply with the following requirements:*

(1) Nothing in this section authorizes the take of mid-continent light geese

contrary to any State or Tribal laws or regulations; and none of the privileges granted under this section may be exercised unless persons acting under the authority of the conservation order possesses whatever permit or other authorization(s) as may be required for such activities by the State or Tribal government concerned.

(2) Participants who take mid-continent light geese under this section may not sell or offer for sale those birds nor their plumage, but may possess, transport, and otherwise properly use them.

(3) Participants acting under the authority of this section must permit at all reasonable times including during actual operations, any Federal or State game or deputy game agent, warden, protector, or other game law enforcement officer free and unrestricted access over the premises on which such operations have been or are being conducted; and must promptly furnish whatever information an officer requires concerning the operation.

(4) Participants acting under the authority of this section may take mid-continent light geese by any method except those prohibited as follows:

(i) With a trap, snare, net, rifle, pistol, swivel gun, shotgun larger than 10 gauge, punt gun, battery gun, machine gun, fish hook, poison, drug, explosive, or stupefying substance;

(ii) From or by means, aid, or use of a sinkbox or any other type of low floating device, having a depression affording the person a means of concealment beneath the surface of the water;

(iii) From or by means, aid, or use of any motor vehicle, motor-driven land conveyance, or aircraft of any kind, except that paraplegics and persons missing one or both legs may take from any stationary motor vehicle or stationary motor-driven land conveyance;

(iv) From or by means of any motorboat or other craft having a motor attached, or any sailboat, unless the motor has been completely shut off and the sails furled, and its progress therefrom has ceased. A craft under power may be used only to retrieve dead or crippled birds; however, the craft may not be used under power to shoot any crippled birds;

(v) By the use or aid of live birds as decoys; although not limited to, it shall be a violation of this paragraph for any person to take Mid-continent light geese on an area where tame or captive live geese are present unless such birds are and have been for a period of 10 consecutive days before the taking, confined within an enclosure that

substantially reduces the audibility of their calls and totally conceals the birds from the sight of Mid-continent light geese;

(vi) By means or aid of any motor-driven land, water, or air conveyance, or any sailboat used for the purpose of or resulting in the concentrating, driving, rallying, or stirring up of Mid-continent light geese;

(vii) By the aid of baiting, or on or over any baited area. As used in this paragraph, "baiting" means the placing, exposing, depositing, distributing, or scattering of shelled, shucked, or unshucked corn, wheat or other grain, salt, or other feed so as to constitute for such birds a lure, attraction or enticement to, on, or over any areas where hunters are attempting to take them; and "baited area" means any area where shelled, shucked, or unshucked corn, wheat or other grain, salt, or other feed capable of luring, attracting, or enticing such birds is directly or indirectly placed, exposed, deposited, distributed, or scattered; and such area shall remain a baited area for 10 days following complete removal of all such corn, wheat or other grain, salt, or other feed. However, nothing in this

paragraph prohibits the taking of Mid-continent light geese on or over standing crops, flooded standing crops (including aquatics), flooded harvested croplands, grain crops properly shucked on the field where grown, or grains found scattered solely as the result of normal agricultural planting or harvesting; or

(viii) Participants may not possess shot (either in shotshells or as loose shot for muzzleloading) other than steel shot, or bismuth-tin, or other shots that are authorized in 50 CFR 20.21(j). Season limitations in that rule do not apply to participants acting under this order.

(e) *Under what conditions would the conservation order be revoked?* The Service will annually assess the overall impact and effectiveness of the conservation order to ensure compatibility with long-term conservation of this resource. If at any time evidence is presented that clearly demonstrates that there no longer exists a serious threat of injury to the area or areas involved, we will initiate action to revoke the conservation order.

(f) *Will information concerning the conservation order be collected?* The information collection requirements of the conservation order have been approved by OMB and assigned clearance number 1018-0103. Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The recordkeeping and

reporting requirements imposed under regulations established in 50 CFR Part 21, Subpart E will be utilized to administer this program, particularly in the assessment of impacts alternative regulatory strategies may have on Mid-continent light geese and other migratory bird populations. The information collected will be required to authorize State and Tribal governments responsible for migratory bird management to take Mid-continent light geese within the guidelines provided by the Service.

Dated: February 10, 1999.

Donald Barry,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 99-3649 Filed 2-12-99; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 229

[Docket No. 970129015-9044-09; I.D. 031997C]

RIN 0648-A184

Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations

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

ACTION: Final rule.

SUMMARY: NMFS by this action issues a final rule implementing a plan to reduce serious injury and mortality to four large whale stocks that occur incidental to certain fisheries. The target whale stocks are the North Atlantic right whale (*Eubalaena glacialis*) western North Atlantic stock; humpback whale (*Megaptera novaeangliae*) western North Atlantic stock; fin whale (*Balaenoptera physalus*) western North Atlantic stock; and minke whale (*Balaenoptera acutorostrata*), Canadian East Coast stock. Covered by the plan are fisheries for multiple groundfish species, including monkfish and dogfish, in the New England Multispecies sink gillnet fishery; multiple species in the U.S. mid-Atlantic coastal gillnet fisheries; lobster in the Gulf of Maine and U.S. mid-Atlantic trap/pot fisheries; and sharks in the Southeastern U.S. Atlantic gillnet fishery. This final rule includes time and area closures for the lobster,

anchored gillnet and shark gillnet fisheries; gear requirements, including a general prohibition on having line floating at the surface in these fisheries; a prohibition on storing inactive gear at sea; and restrictions on setting shark gillnets off the coasts of Georgia and Florida and drift gillnets in the mid-Atlantic. The plan also contains non-regulatory aspects, including gear research, public outreach, scientific research, a network to inform mariners when right whales are in an area, and increasing efforts to disentangle whales caught in fishing gear.

DATES: The regulations in this final rule are effective April 1, 1999.

ADDRESSES: Copies of progress reports on implementation of the Atlantic Large Whale Take Reduction Plan (ALWTRP) and of the Final Regulatory Flexibility Analysis for this rule may be obtained by writing Doug Beach, NMFS, 1 Blackburn Dr., Gloucester, MA 01930. Copies of the most recent Stock Assessment Reports for northern right whales, humpback whales, fin whales and minke whales may be obtained by writing to Gordon Waring, NMFS, 166 Water St., Woods Hole, MA 02543.

FOR FURTHER INFORMATION CONTACT: Kevin Chu, NMFS, Northeast Region, 508-495-2367; Katherine Wang, NMFS, Southeast Region, 727-570-5312; or Greg Silber, NMFS, Office of Protected Resources, 301-713-2322.

SUPPLEMENTARY INFORMATION:

Background

The Marine Mammal Protection Act (MMPA) requires commercial fisheries to reduce the incidental mortality and serious injury of marine mammals to insignificant levels approaching a zero mortality and serious injury rate by April 30, 2001 (section 118(b)(1)).

For some marine mammal stocks and some fisheries, section 118(f) requires NMFS to develop and implement take reduction plans to assist in recovery or to prevent depletion. The immediate goal of a take reduction plan is to reduce, within 6 months of its implementation, the mortality and serious injury of stocks incidentally taken in the course of U.S. commercial fishing operations to below the Potential Biological Removal (PBR) levels established for such stocks. The PBR level is defined in the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The long-term goal of a take reduction plan is to reduce, within 5 years of its implementation, the

incidental mortality and serious injury of strategic marine mammals taken in the course of commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate, taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans.

On July 22, 1997, NMFS published in the **Federal Register** an ALWTRP, or a "Plan", and interim final regulations implementing that Plan (62 FR 39157). In this notice, NMFS reports on actions taken pursuant to the Plan, and issues a final rule for it. The final rule makes minor changes to the regulations in the interim final rule, but the general outline of the Plan remains the same.

The Plan, in conjunction with other management actions, is intended to meet the goals stated here for right whales, humpback, and fin whales, all of which are listed as endangered species under the Endangered Species Act (ESA), and for minke whales. The Plan may be amended in the future to take account of new information or circumstances.

The fisheries most affected by this plan are: anchored gillnet fisheries, including the New England sink gillnet fishery; the Gulf of Maine/U.S. Mid-Atlantic lobster trap/pot fishery; the U.S. mid-Atlantic coastal gillnet fisheries; and the Southeastern U.S. Atlantic shark gillnet fishery. The New England Multispecies sink gillnet fishery has an historical incidental bycatch of humpback, minke, and possibly fin whales. This gear type has been documented to entangle right whales in Canadian waters. Additionally, entanglements of right whales in unspecified gillnets have been recorded for U.S. waters, although U.S. sink gillnets have not been conclusively identified as having entangled right whales. The Gulf of Maine/U.S. mid-Atlantic lobster trap/pot fishery has an historical bycatch of right, humpback, fin, and minke whales. The mid-Atlantic coastal gillnet fisheries have an historical incidental bycatch of humpback whales. The Southeastern U.S. Atlantic gillnet fishery (for which sharks are generally the target species) is believed to be responsible for bycatch of at least one right whale.

Some waters are exempt from this plan. The basic rule for the exempted water boundaries is that all waters landward of the first bridge over any embayment, harbor, or inlet will be exempted. Some bays that do not have bridges over them are also exempted, including Long Island Sound and Delaware Bay. South of the Virginia/