

Part IV

MANAGEMENT STRATEGIES TO ADDRESS THE MID-CONTINENT LESSER SNOW GOOSE OVERPOPULATION PROBLEM

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INTRODUCTION

Waterfowl management programs have a long and successful history of providing hunting opportunity consistent with the long-term conservation of populations. Landscape level changes in habitats, due primarily to agriculture but also to refuge provision, have increased the productivity and survival of mid-continent snow geese resulting in the overabundance of these birds. Traditional management programs have not been able to restrain the growth of the Mid-continent snow goose population. Waterfowl managers have, for many years, increased bag limits and lengthened seasons in the Mississippi and Central Flyways in the dual effort of reducing population size and allowing additional recreational hunting opportunity. Despite this, populations have continued to grow and have become a serious problem as documented in Part II of this report.

Managers have engaged in extensive discussions regarding what extraordinary actions could be taken to reduce the numbers of snow geese. As a result of their collective and extensive experience, they have serious doubts that further liberalization of traditional hunting frameworks and techniques can be effective. Nevertheless, managers believe that hunters can, and must be, a major element of the ultimate solution. The collective wisdom of waterfowl managers was drawn upon in the assembly of this section of the report.

Effective population reduction will require reducing adult survival. The most effective time to do this is during the migration and wintering periods when the birds are in areas where hunters are most abundant. Hunters provide a motivated and experienced work force that do not have to be compensated for their involvement if it involves techniques, regulations and situations to which they can easily adapt. The hunting public has a strong vested interest in the long-term integrity of waterfowl populations and will almost certainly be willing and active participants.

Efforts to reduce the population will have to deal with both reducing the numbers of birds in the population and with halting further population growth. Both survival and recruitment rates will likely be addressed. Along with immediate actions to reduce the population size, it is important that managers address the associated habitat issues and the required long-term solutions for maintaining the population size at an appropriate level. A broad range of techniques, covering the entire geographical and temporal distribution of snow geese, will likely be needed.

Below is a list of management strategies recommended to control the overpopulation of snow geese. These have been reconciled through discussions with the Arctic Goose Habitat Working Group, with managers in the Mississippi and Central Flyways and with several other colleagues involved in waterfowl management. In developing this list, a wide range of alternatives was considered. Those which were considered to be ineffective were rejected. Also rejected were strategies which were not consistent with the guiding principle that recognizes the birds as a valuable natural resource for viewing, hunting and food (see

Introduction page 4).

Management strategies have been grouped into two categories:

- I) Population control by hunters.
- II) Population control by wildlife agencies.

These treatments are not listed in order of priority.

I. POPULATION CONTROL BY HUNTERS

Hunters provide the principal financial and political support for waterfowl management. Hunting in the United States and Canada is the major source of mortality for adult snow geese, accounting for 68 percent of adult mortality ($K/(K+E)$ on p. 98). In addition, residents of northern Canada are major users of the snow goose resource. Because of this, hunters throughout the range of snow geese must play an important role in helping to manage snow goose numbers.

While interest in hunting snow geese is high in many areas, many waterfowl hunters have little interest in snow geese. These hunters cite a number of reasons for avoiding snow geese, including: poor table quality, difficulty in processing, difficulty in hunting and equipment expense. Some of these reasons are real, others are viewed to be perceptions or misconceptions which have been perpetuated over time. Regardless, increasing the take of snow geese by hunters to the full potential will require that managers address these issues through communication, education and specific management activities.

A. Spring Harvest by Shooting

Managing overpopulations of migratory birds may require removal of constraints with international migratory bird treaties. The Migratory Bird Treaty with Canada, designed 80 years ago, and the companion treaties with Mexico, Russia and Japan are primarily responsible for the successful conservation of migratory bird populations across North America. Today however, effective management by harvest of mid-continent snow geese, and several other goose populations, is hindered by closed seasons called for in the Treaty. The federal governments of the United States and Canada could negotiate a revision to the Migratory Bird Treaty which would allow appropriate hunting of migratory birds between March 10 and September 1. It is recognized that the recent Treaty amendment negotiations took many years to accomplish. However, it is believed that the two countries should be able to more quickly reach closure on an amendment which would allow managed hunting to preserve the arctic habitats which are vital to a large portion of North America's migratory birds.

Additionally, it may be possible to take birds for "management purposes" outside the normal hunting framework dates under the newly revised Migratory Bird Treaty. This cannot occur until the U.S. Senate has provided its "advice and consent" and the President has ratified the Treaty. International consultation and regulations could follow. Harvest could be permitted under special rules and regulations using normal hunting techniques after March 10. Hunting after March 10 currently occurs only in the northern regions of Canada where people with aboriginal status are allowed to take birds in the spring. One way a management type of hunt could be accomplished is by issuing special collecting permits to hunters. This would be done by the U.S. Fish and Wildlife Service (FWS), Canadian Wildlife Service (CWS) or through state or provincial agencies. It is important to make a distinction between the normal hunting seasons and a management season designed to harvest excess birds from the population.

Snow geese are known to be in excellent condition and a far superior table bird during the spring. In addition, spring hunting would likely draw considerable interest from waterfowl hunters because other migratory bird seasons would not be open.

B. Late Season Hunting

Hunting could be permitted during the late season, prior to March 10. In 1996, hunting of snow geese was permitted in “southern states” (including portions of Iowa and Nebraska and states south) until March 10. The same opportunity could be provided to northern states which may have snow geese present prior to March 10. Opponents to this late season hunting argue that geese should not be hunted during the spring migration period when nutrient reserves are being accumulated and reproductive activities are starting. Additional arguments center around disturbance to other species during the spring migration period. Late season hunting may provide the best opportunity for hunting mortality to be additive and thus have maximum snow goose population control benefits. Currently, the 107-day season length restriction (required by the Migratory Bird Treaty) limits hunting opportunity for snow geese in southern areas north to and including Ontario. Late seasons also provide excellent opportunity to attract additional snow goose hunters because other migratory bird seasons are not open. Note: Snow goose hunting is permitted until March 10 for the 1996-1997 hunting season throughout the Mississippi and Central Flyways, except for the Rainwater Basin portion of Nebraska.

C. Hunting Methods

Restrictions on hunting methods (manner of taking) could be eased to allow increased opportunities to harvest snow geese. Many state, provincial and federal regulations on hunting methods were implemented to help protect waterfowl populations, to regulate hunter ethics and to make hunting more “fair”. Historically, such regulations include, but are not limited to, prohibitions on the use of electronic calls, baiting, live decoys, methods of concealment, sneaking, hazing, shooting from vehicles, the types of firearms that can be used, and the number of shells allowed in a gun magazine. Currently, many of the US federal regulations are being considered in a rewriting of 50CFR. States and provinces also have laws and regulations which may unnecessarily restrict hunters attempting to take snow geese. Many of these regulations are not appropriate for a waterfowl population that needs to be controlled. Because of concern for impacts to other species, regulations could be relaxed first in areas with “snow goose only” seasons. If regulation changes are demonstrated to be successful in increasing the harvest of snow geese in these areas, then regulation changes for snow geese could be pursued where and when other species are also hunted. In many cases both federal and state or provincial regulations would need to be changed.

Many hunters and commercial hunting guides are convinced that permitting the use of electronic calls would greatly enhance the harvest of snow geese. Snow goose harvest is low because of the many “experienced” adults in the population and because of their gregarious behavior of traveling in large flocks during the fall and winter. During the past 30 years, snow geese have learned to avoid decoy spreads and thus have become very difficult to hunt. Electronic calls were apparently used legally for a few years in the early 1960's and showed great promise in attracting geese to decoys. Electronic calls could bring birds into closer range over decoys allowing hunters to harvest more birds. An additional benefit would be the reduced loss of birds to crippling. Law enforcement would likely have concerns about the potential use of electronic calls when harvesting other species. Electronic calls could first be allowed in “snow goose only” hunt areas. It is not known if snow geese would learn to avoid electronic calls after several years of use. Research to measure changes in snow goose response to electronic calls should be conducted.

D. Subsistence Harvest in the Far North

Subsistence harvest in the far north could be increased. Increasing the harvest by native people in the Arctic could increase the overall harvest of snow geese, and could be managed so as to be colony-specific to a large extent. Subsidies have recently (1994) been implemented in the Northwest Territories to provide people with transportation equipment for trapping; this coincidentally serves to improve the potential for access to geese in spring. Communities associated with goose colonies are not currently restricted in their harvest. However, with encouragement, people would respond by harvesting more geese to be shipped to neighboring communities which do not have access to birds. The proposed Amendment to the Migratory Bird Treaty between the United States and Canada provides the opportunity for commercial sale and trade of migratory birds within and between aboriginal communities in Canada for peoples whose land claim settlements call for this provision. Some communities have already indicated an interest in pursuing this, specifically to help with the problem of overabundance, and in ways consistent with long term conservation (e.g., they would prefer colony specific quotas). This interest and awareness should be supported, with assistance in developing a long-term program directed at maintaining a reduced population. It would be important to develop monitoring activities to measure the harvest and impacts on goose numbers in individual colonies.

E. Egging

The taking of eggs on the breeding grounds for subsistence purposes could be increased. Migratory bird eggs are a traditional source of food for northern residents. Egging has declined over most of the Arctic for a variety of reasons. It may be possible to reinstate the egging tradition in groups of native people. The potential to use egging to help control snow geese suggests the need to investigate sustainable egging techniques best suited for waterfowl populations that are increasing, decreasing or stable. Such a study has been proposed by Bob Bromley, Northwest Territories waterfowl biologist. The proposed experimental population would be lesser snow geese on the west Hudson Bay coast. Recommendations for egg quotas could be developed.

F. Provide Additional Hunting on State, Provincial and Federal Refuges

Additional snow goose hunting opportunity could be provided on state, provincial and federal refuges. Allowing hunting in refuges used by snow geese could increase the total harvest and indirectly provide benefits similar to hazing. In some cases, hunting opportunities could be increased with little effort. In other situations, extensive redirection of refuge management activities would be required. There are concerns about the impacts of increased snow goose hunting on refuges to other species which are also hunted on refuges. Refuges could first be opened during "snow goose only" seasons such as currently occur during the late season in southern states. If increased snow goose hunting seasons on refuges were successful, managers could develop strategies to address concerns about hunting snow geese and other species on refuges at the same time. In some cases, principally fall staging areas, refuges or rest areas serve to hold birds during the hunting season and thus contribute to increased harvest. Elimination of these types of areas could decrease harvest in these areas. Also, increased hunting on refuges could increase depredation problems on surrounding croplands. Disturbance and impacts to other migratory birds could be a major concern. Use of this strategy in conjunction with strategy II-C could increase the efficiency of both strategies in reducing and controlling snow goose numbers.

G. Award Programs

Awards or incentives could be offered to increase the harvest. Reward leg bands applied to geese could be used to increase hunter interest in taking snow geese. A high value or "million dollar" leg band or multiple bands of lesser value could generate considerable interest in snow goose hunting. Similar programs have been used in fishing contests for many years. If a reward band were applied to an adult goose, the

probability of harvest would be low. The cost of the prize could be covered by an insurance policy. Contest participation forms could be sold, with proceeds being dedicated to additional snow goose management efforts. Another option would be a “lottery” based on a randomly selected band number from leg bands turned in by hunters. Programs such as these could generate considerable interest in snow goose hunting, but could also lead to some waste or problems, either perceived or real, with hunter behavior or hunter ethics. Any activity dealing with bands could also be detrimental to other waterfowl banding programs by changing reporting rates. There may be other avenues to pay or somehow reward hunters who assist with snow goose population control. In some regions it may be most efficient and economical to hire people to harvest snow geese using normal hunting techniques.

H. Reciprocal, International or Inter-state/Provincial Snow Goose Hunting Licenses

Wildlife agencies could cooperate to allow hunters legally licensed to hunt waterfowl in their own home state or province to hunt snow geese in another state or province. This would not preclude the need to purchase Canadian or US federal migratory bird hunting stamps. States/Provinces could require reciprocal legislation or could allow “free” snow goose hunting without reciprocity. As an example, if appropriate legislation was passed by states and provinces, a hunter legally licensed to hunt waterfowl in North Dakota, could also hunt snow geese (only) in Saskatchewan (if he/she had a Canadian Migratory Bird Hunting Permit), and any other cooperating state or province from Minnesota and South Dakota to Texas and Louisiana if he/she had a federal Duck Stamp. Hunters wishing to hunt species other than snow geese would need to purchase appropriate licenses. This strategy would serve to increase snow goose hunting activity, increase snow goose harvest, increase the number of hunters, recruit new hunters, help to build hunting traditions, increase sales of arms and ammunition (and thus Pittman-Robertson funding), and increase waterfowl hunting expenditures into local, regional and national economies. A problem could be the logistics of passing similar legislation in all participating states and provinces. Some may argue that this program could reduce income from license sales. However, it seems unlikely that many hunters would hunt only snow geese year after year. Many of these hunters would be recruited to hunt other species and thus benefit wildlife agencies through license purchases. This strategy would have very low administrative costs and could be especially useful for states and provinces where snow geese regularly move across political boundaries. Currently, several states (North Dakota, Minnesota, and Colorado) have reciprocal reduced license fee agreements for youth waterfowl hunters.

I. Improved Access for Hunting on Private Land

Agencies could work to improve access to snow goose hunting on private lands. A major problem faced by many hunters is gaining access to private land for hunting. In most areas, private land is posted to prohibit hunting or leased to specific hunters or guiding services. Increasing the proportion of the landscape available to hunters would increase hunting opportunity and the harvest. Agencies could seek to increase access through information and education programs, individual contacts, purchasing or leasing hunting rights, tax incentives or other options. This strategy would increase the harvest of snow geese as well as provide benefits similar to hazing.

J. Subsidize Hunting

Agencies could work to reduce the cost of snow goose hunting or provide financial incentives for hunters and guides. Some hunters may not take up hunting because of the expense and difficulty in purchasing, maintaining and transporting equipment, especially decoys. Agencies, tourism promotion groups, chambers of commerce, wildlife clubs or private enterprise could supply or arrange for decoys, trailers and other equipment (such as coveralls, blinds, guns and calls) through loan or rental. There are several examples of similar incentive programs. Currently, North Dakota Game and Fish Department has a

fishing equipment loan program through libraries for youth wanting to fish. The North Dakota Park Service has a camping equipment program for those wishing to try camping. Such a program would be especially useful to novice or first-time hunters, students, apartment and urban dwellers and nonresidents who fly or travel long distances to hunt but don't wish to hire guides. A long-term benefit of such a program may be the recruitment of new hunters. An additional approach may be to help develop guide operations. Agencies could help individuals acquire small business loans or grants or provide other subsidies to assist in the development of snow goose guiding operations.

K. Bag Limits and Possession Limits

Bag and possession limits could be liberalized. Bag limits for snow geese have been liberalized over the past 15 years. While it was recognized that increases in bag limits would have little impact on the total harvest, limits were liberalized to provide as much hunting opportunity as possible. Bag limit and season length changes have also increased the sportsmen's awareness of the snow goose population problem. Snow goose hunting is often a 'boom or bust' situation. Many times hunters have opportunities to take only a few birds. Less frequently, hunters have opportunities to take large numbers of birds. In these cases, more liberal bag limits, or even no bag limit, could serve to increase harvest. Guides are generally opposed to large bag limits because it increases the time and cost of providing hunts.

Possession limits can restrict the harvest for nonresidents and residents who travel and hunt more than two days. Thus, increases in possession limits could serve to increase harvest. There may be a need to consider the secondary effects of bag and possession limit liberalizations on other species. There is also concern that additional increases in bag and possession limits could degrade the image of snow geese as a desirable migratory game bird. Some are concerned that excessive bag limits will "devalue" snow geese in the minds of hunters and the public. Note: Snow goose possession limits were increased to 30 in the Mississippi Flyway and 40 in the Central Flyway and four times the daily bag in Manitoba for the 1996-97 season.

An alternative approach would be to issue tags that would allow hunters to take a set number of birds (say 100) during each season. Hunters could take all the birds in a single day or spread the take out throughout the season. Once the tags were used, then hunters could still be allowed to hunt under daily bag and possession limits. A similar approach would be to issue bonus tags which could be used by hunters to take birds in excess of the daily bag limit. Only birds in excess of the daily bag limit would need to be tagged. Such tags could be called "Arctic Habitat Conservation Tags" to help educate hunters about the need to harvest additional snow geese.

L. Shooting Hours

Shooting hours could be adjusted to increase hunting opportunity and harvest. Shooting hours for waterfowl end at sunset in the United States and one-half hour after sunset in Canada. Extending shooting hours in the U.S. to one-half hour after sunset could increase snow goose harvest.

Half-day hunting is currently used in ND, MB and SK and many private hunting areas in southern states to increase the harvest of snow geese. Restricting hunting to the first half of the day allows geese to rest and feed and encourages them to remain in an area for an extended time period. Although harvest in a local area may be increased by half-day hunting, geese which remain on northern migration areas in the fall may experience higher survival rates than those that are forced to migrate earlier. Elimination of half-day hunting could reduce the total take of geese in northern areas but increase the take in other areas. Survival rates could decrease if hunting pressure forced geese to migrate rather than remain in an area to build nutrient reserves. To be effective, half-day hunting may need to be eliminated simultaneously in adjoining

jurisdictions.

Snow geese can quickly adapt to half-day shooting hours by feeding only in the afternoon. Some type of variable or changing shooting hours in half-day hunt areas could increase the harvest. Shooting hours could be periodically adjusted so that snow geese could not adapt to regular shooting hour schedules, while still allowing adequate feeding time so that birds would not be driven from the area. Research or evaluation of periodic shooting hour changes should be conducted to determine their effectiveness in increasing harvest.

M. Nonresident Hunter Quotas, Day and Zone Restrictions

Agencies could work to increase the number of nonresident snow goose hunters. Some states and provinces have restrictions on the number of nonresident waterfowl licenses sold, restrictions on the number of days nonresidents can hunt and restrictions on zones open to hunting by nonresidents. These restrictions could be eliminated or changed to encourage nonresidents to hunt snow geese. Virtually all states and provinces charge higher fees for nonresident waterfowl hunters. These fees could be reduced to encourage snow goose hunting.

N. Information and Education Program

Snow geese can be more difficult to hunt than other geese and snow goose hunters tend to have lower rates of success. There are likely several reasons for this. Snow geese usually occur in large flocks which makes decoying and other hunting techniques difficult. Additionally, a high percentage of the population is composed of older, experienced adults which are more difficult to hunt successfully. Snow geese experience boom or bust production. In years with high production, an abundance of young (inexperienced) birds in the flocks increases hunter success. Hunters have low success during production busts when few young birds are present. Snow goose hunting can be quite expensive and time consuming compared to other geese. Many of the more successful hunters use one thousand or more decoys. Snow geese receive mixed reviews as to table quality. While many people enjoy eating snow geese, other find other goose species more appealing. Snow geese generally do not pluck well as the skin frequently tears during plucking.

Communication efforts could be undertaken to increase hunting and the harvest of snow geese. Snow goose hunting could be encouraged by improving the image of the activity, improving perceptions of the desirability of snow goose hunting and helping hunters learn techniques and find places to hunt. Efforts could be directed at recruiting new hunters and recovering hunters who have quit. Seminars, workshops, videos, booklets, popular magazine articles and similar delivery methods would be used. Local organizations, chambers of commerce, guide services and others can work to attract more hunters. Recipes could be developed and promoted in books and magazines to increase the interest in using snow geese as food.

II. POPULATION CONTROL BY WILDLIFE AGENCIES

If improvements in hunting opportunity cannot achieve a higher harvest of birds, and a reduction in the size of the snow goose population to a level commensurate with habitat protection, recovery and maintenance, then direct population reduction will be necessary. Strategies IIA and IIB are aimed at “direct population control”, i.e., purposeful removal of birds from the population using techniques other than hunting. Strategy IIC is directed at reducing the population growth rate and size by reducing both survival and recruitment.

A. Commercial Harvest

Commercial harvest opportunities could be permitted and developed to allow private enterprise to take, process and market snow geese for food. Hunters could also be permitted to sell snow geese to specialized poultry markets. It is understood that the current Migratory Bird Treaty amendment, if approved, will allow the sale of migratory birds only between aboriginal communities in Canada. A basic need may be to reduce regulation restrictions which would make implementation of a commercial harvest difficult. Encouraging a commercial harvest could be a very cost effective way for agencies to increase snow goose harvest. Both hunters and the general public may find commercial harvest distasteful. Birds harvested commercially could be sold for food in the United States and Canada or shipped to native communities in the north for use as food. Birds could also be shipped to Europe where there is a thriving market for wild game, including waterfowl. A concern is that commercial operators may become dependent on snow geese as a source of income and that the snow goose population may not be able to support a commercial harvest in every year. If the population were reduced, demands for commercial harvest would compete with demands for hunting opportunity. Commercialization of a snow goose harvest would have to be initiated with a full understanding that commercial harvest would be reduced or eliminated when populations were at objective levels.

B. Trapping and Culling Birds on Migration and Wintering Areas

Wildlife agencies or their designees could capture geese using a variety of techniques such as rocket netting. Captured geese would be killed and used for human consumption. Donation to food shelters or other needy organizations is possible. Feathers and down could perhaps be sold to recover some program expenses if special permits were allowed.

C. Refuge Management

Management practices on state, provincial and federal refuges could be changed to reduce the availability of food subsidies, roosting areas and areas safe from hunting. The concept is to decrease survival of adult and young birds and to reduce their reproductive potential. Efforts such as eliminating or reducing agricultural crops which provide food, managing water, restricting roost sites and permitting activities which help to move birds off refuge situations would all help to reduce population growth. Conflicts may exist with management practices which benefit other migratory birds and wildlife.

PRIORITY RECOMMENDATIONS

The alternative of doing nothing and letting nature take its course with snow geese and arctic habitats is rejected. The snow goose problem is a man-caused problem. Doing nothing to correct this situation would lead to a significant environmental disaster. Therefore, it is recommended that appropriate management actions be implemented as quickly as possible.

It is believed that no single management strategy can correct the snow goose overpopulation problem. Rather, population control will only be achieved through application of a variety of techniques each applied wherever and whenever possible. Virtually all strategies considered and proposed are controversial at some level. Most, especially those with the most promise for successfully achieving population control, are highly controversial. Resolution of controversial aspects of the most potentially effective strategies should be a priority focus of all agencies involved.

A comprehensive communication plan aimed at informing all potentially affected interests across North America about the snow goose problem and the need for resolution needs to be developed and implemented immediately. In addition to informing people about the problem, this plan should also contain

specific strategies for dealing with the controversies implicit in implementing population control measures. It must be geared at obtaining the consent or “permission to proceed” from those most likely to stand in the way of successfully dealing with the snow goose problem. To ignore these interests and their concerns will guarantee failure. Because the primary authority and responsibility for management of these populations lies with the U.S. Fish and Wildlife Service and the Canadian Wildlife Service, these two agencies need to take the lead in accomplishing this task. State and provincial agencies and other partners who have a large stake in the welfare of snow geese and arctic habitats must stand prepared to provide as much assistance as possible.

Increasing hunting opportunity needs to be the focus of initial snow goose population control efforts. All reasonable avenues for increasing the kill of snow geese by hunting need to be implemented across the United States, Canada and Mexico prior to consideration of more direct and rigorous techniques (II-A and II - B). If the mid-continent snow goose population is not reduced by 50 percent by 2005 (or significant progress is not being made), then efforts should be initiated to implement strategies aimed at direct population control as detailed under Section II.

The Mississippi and Central Flyway Councils were asked to review an earlier draft of proposed management strategies and to recommend those which should receive high priority for implementation. Two recommendations which received a “priority” recommendation from both the Central and Mississippi Flyways were implemented for the 1996-1997 waterfowl season: 1) extending snow goose hunting frameworks to March 10 throughout both flyways and 2) increasing possession limits.

In addition, both flyways recommended three other strategies for immediate implementation.

1. Relax restrictions on the use of electronic calls. This should be first done at times and in areas with “snow goose only” seasons. Research should be conducted to determine the effectiveness of this technique and to provide baseline data to determine if snow geese learn to avoid electronic calls.
2. Provide additional hunting on state, provincial and federal refuges. Management practices should be adjusted to reduce refuge benefits to snow geese and to increase the harvest both on and around refuges. Changes should include, but not be limited to, opening additional areas on these refuges to hunting, and reducing food resources, roosting areas and areas safe from hunting. Care will be needed to avoid significant impacts to other species using refuges. However, managers must balance the concern for other species on refuges with concern for the snow geese and the variety of other species which depend on healthy arctic habitats. Concern for other species on refuges must not preclude addressing the serious snow goose/arctic habitat problem. Refuge managers should be the target of communication efforts to inform them about the snow goose problem and the role they can play in helping to resolve it. Managers should be charged with the task of reducing refuge benefits to snow geese while maintaining benefits to other species whenever possible.
3. Both Flyways recognized the need to hunt snow geese beyond March 10 and the difficulty in modifying Migratory Bird Treaties to allow this. However, in the long run, Treaty modification to allow spring hunting may be one of the most effective and efficient population control techniques available. The U.S. and Canadian governments should jointly pursue Treaty modifications which will allow management of over-populations of migratory birds. Work on a new Treaty amendment should begin immediately.

The Mississippi Flyway suggested that elimination of state and provincial restrictions on nonresident waterfowl hunting licenses and day and zone restrictions should receive high priority. The Central Flyway agreed that this strategy would be useful, but believed this to be an extremely controversial issue in some

states which would require considerable effort to implement legislative changes. The Flyways and state agencies should pursue these issues.

Relaxation of restrictions on shell limits, baiting, hazing, live decoys and shooting hours were all recommended as useful strategies to pursue. Of these, changes in baiting regulations have the most potential for increasing harvest. It was suggested that baiting regulations for snow geese could be identical to that for dove hunting. Shooting hours could be relaxed to allow hunting until one-half hour after sunset as is the current practice in Canada. Again relaxation of these hunting method restrictions could be implemented first in "snow goose only" hunt areas. Both federal governments and state and provincial agencies should cooperate to implement appropriate changes in hunting restrictions which could increase the harvest of snow geese.

Both Flyways recognized the need to increase the harvest by northern residents but also recognized the difficulty of significantly increasing the take by these hunters. Government agencies in Canada should implement strategies to increase the take of snow geese by northern residents.

Both Flyways recognized the potential need for agencies to implement direct population control (II-A and II-B). The high cost of this work and the difficulty and expense of using the birds for human consumption were seen as significant obstacles. At some point, if direct population control becomes necessary, the principle of ethical use of the birds may have to be set aside in favor of more rigorous efforts to control the population and save arctic habitats. While it is hoped that this never occurs, managers need to be aware of and begin preparing for this possibility.

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