STATUS OF WATERFOWL AND MANAGEMENT ISSUES - ALASKA 1985

A Report to The Board of Game

Alaska Department of Fish and Game

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DUCK POPULATIONS

North American populations of 10 key duck species continued to decline in 1985, reaching record lows for the 31 years of breeding bird surveys. Total ducks are down 24 percent from the 1955-84 average, mallards are down 35 percent and pintails are down 50 percent (20 percent decline since 1984 alone). Because there is considerable interchange between ducks in Alaska and the rest of North America, these trends have been reflected in substantially reduced breeding populations within the state. Compared to the latest 10-year average, Alaska mallards are down 24 percent (-57 percent from 1984), pintails are down 43 percent (-32 percent from 1984) and wigeon are down 26 percent (-38 percent from 1984). These three species, in the above order, are the most important ducks in the Alaska harvest.

The primary cause of these serious population declines is protracted drought and subsequent long-term agricultural damage to breeding habitat in the Canadian prairies, coupled with stable or increasing harvest rates in the U.S. Although water conditions improved in some areas in 1985, habitat damage and deeply depressed population levels will delay and slow recovery. As a result, 1985-86 duck harvest regulations were implemented nationwide to reduce bag limits and shorten seasons through federal regulations, recommendations by the Pacific and the other Flyway Councils, and state regulations.

In Alaska, restrictions on mallards and reductions in overall duck bag limit or season length are unwarranted. However pintail harvest in Alaska has some small impact on Pacific Flyway and other populations. Ideally, sex-specific restrictions are preferred to save females and enhance recruitment potential. However, most pintails are harvested in the early part of Alaska's season when molting males are difficult to distinguish from females. Thus, the only practical restriction that would conserve pintails in Alaska was a species bag limit (3 pintails) within the daily duck bag limit. This restriction was implemented in the 1985-86 season by Emergency Regulation and is recommended as a permanent regulation change to enhance recovery that is likely to take several years.

LEAD SHOT INGESTION STUDY

As reported previously, the department is attempting to follow new federal guidelines in assessing potential lead poisoning problems in ducks. During the 1985 waterfowl season, waterfowl staff collected paired samples of gizzards and livers from hunter-shot mallards and pintails on heavy harvest areas. Adequate numbers of samples were obtained on Susitna Flats, but collections from Palmer Hay Flats, other Cook Inlet areas, Minto and Mendenhall were insufficient to produce the necessary data. Gizzard samples, indicating the rates of lead shot ingestion, will be processed during this winter. Liver samples, that

indicate systemic absorption and impairment of health, await determination of a reliable laboratory to process the samples and cooperative funding with U.S. Fish and Wildlife Service (USFWS).

WESTERN ALASKA GEESE

Population Status

Data on the population status of the four affected goose species have been developed with different methods and have been presented in various, sometimes conflicting ways. Waterfowl managers most often use index or trend counts that are useful for year-to-year or long-term comparisons, but seldom are able to develop accurate total population estimates. Index counts are obtained when and where the largest portion of a population gathers annually, usually from aerial surveys. Index counts reflect varying degrees of error introduced by the observers, weather conditions, timing in relation to goose movements, and geographical coverage.

Cackling Canada Geese

The annual index for cackling geese is taken from surveys of the Klamath Basin in northern California during November. The cackler index declined from 384,000 in 1965 to 26,000 in 1983. A fall index of 21,800 in 1984 was derived from concurrent surveys in the Klamath Basin and Sacramento Valley. However, during the winter of 1984-85, repeated surveys and other means of estimating the population produced total estimates ranging from 26,700 to 38,500. We believe that the 1984 cackler population numbered 30-35,000 and usually cite it conservatively as 30,000.

Several new surveys have been initiated as a result of the seriousness of the cackler situation: the USFWS began an experimental aerial survey on the nesting grounds to develop a second annual index as well as to document distribution shifts; work continues on estimating seasonally partitioned survival of neck-collared geese; and USFWS is conducting aerial and ground counts of cacklers staging at Pilot Point and Cinder River on the Alaska Peninsula. Preliminary data from this last effort provide the most reliable estimate of the number of cacklers, a peak count of 39,300 ~~41,217~~ on October 14, 1985. Recent annual index counts conducted in California and Oregon during November have turned up approximately 32,700 cacklers on wintering areas, an apparent moderate increase over 1984.

Pacific White-fronted Geese

The annual index count for Pacific white-fronts is obtained also in the Klamath Basin of California. Peak counts have ranged from 495,500 in 1967 down to 100,200 in 1984. Total population estimates are difficult to develop for white-fronts because of their mobility and poor detectability on the wintering grounds.

Intensive efforts such as those used for cacklers have not been implemented. White-fronts are widely dispersed on the breeding grounds and have no concentrated staging areas where counts can be obtained in Alaska. The November 1985 Klamath Basin index counts totaled approximately 93,900 white-fronts. December and January mid-winter inventories may provide additional comparative data.

Emperor Geese

Two annual estimates are derived for the emperor goose population, both from aerial surveys done during migration when weather conditions can significantly affect the results. The spring survey in April is considered more reliable than the fall count in October because of more compact movements of the birds and more conducive survey weather. The earliest survey in spring of 1964 tallied 139,000 emperors, with subsequent counts declining to 71,217 in 1984.

Interpretation of the spring and fall estimates from 1985 is made more speculative by the unusual survey conditions and migration patterns observed. Spring breakup was very late and ice remained in many coastal bays and staging areas. The 1985 spring count of 58,833 emperors most likely reflects delayed departures from the Aleutians (birds not in the survey zone yet) and unusual dispersal of the birds along the route, making counts difficult. With a minimum estimate of 82,842 emperors in the fall of 1984, it is highly improbable that nearly 24,000 birds were lost to unknown causes over winter and that the spring count was an accurate reflection of the total population.

The recent fall survey, October 10-14 counted 59,792 emperors, but is also thought to have been affected by timing and weather. Protracted mild weather may have promoted early movements westward out of the survey area, especially by subadults and unsuccessful breeders. Given the suspected underestimate of the spring population (less than 59,000), and composition estimates of 17.4 percent young in the fall population (by inference leaving only 49,400 subadults and adults), it is likely that there are currently more emperors than are indicated by the fall count. It is difficult to accept an apparent calculated fall-to-fall loss of over 33,400 emperors, primarily associated with non-hunting winter mortality. We conclude that additional surveys scheduled for spring, are necessary to obtain a more reliable assessment of the emperors' status.

Black Brant

The black brant population is estimated annually from coordinated aerial surveys in Mexico and Pacific coast states during January. Over the past 35 years, the population has oscillated considerably between years and over the long-term, having been below its present level eight times during 1950-64 and 11 times since 1965. The average for the period 1950-64 is 139,177 and for 1965 to

present 143,293. Recent concern has been based on a falling three-year average since 1981 (156,658 to 121,262 in 1984), however, the annual counts have increased in 1984 and by 8.5 percent in 1985 to the ~~present~~ estimate of 144,803. The recent 1986 survey indicates an index of 128,570 with a 3-year average of 135,601.
Although there is reason for concern about the black brant population as a whole, factors outside the Y-K Delta in arctic Canada and U.S.S.R. and on the wintering grounds play a substantial role in the species' overall production and survival. The primary concern, relevant to the Y-K Delta, is the unexplained, dramatic drop in the number of brant nesting on the delta and poor nest success in recent years. Since 1981, the number of nesters has fallen from 67,783 (close to the historic 50 percent of the population) to 16,267 in 1984, at a rate that is too precipitous to be explained by local hunting pressure, disturbance or brant recruitment. Most waterfowl biologists are baffled and are examining theories on brant nutrition, climatic changes and gradual shifts in brant nesting tradition toward northern arctic regions.

Progress from the Y-K Delta Goose Management Plan

1. Cackling Canada geese may have stabilized or increased slightly as indicated by an October count of ~~41,217~~ 39,300, despite a flyway-wide harvest of approximately 3,000 birds and below average production in 1984-85. Given good survival over winter, more intensive monitoring, increased efforts to achieve compliance throughout the flyway, and improved production in 1986, the cackler population should begin an accelerating increase.

2. Population status of white-fronted geese will be determined from November-December counts in California, but significantly greater survival last winter and moderate nest success in 1985 is likely to produce a moderate increase in the population, with more rapid long-term recovery than is possible with the other species.

3. The status of emperor geese is currently in question because of the conditions affecting the reliability of both 1985 counts, but moderate production in 1985 should sustain this population, barring the effects of unknown mortality factors.

4. The status of black brant ~~will be~~ was assessed in January 1986, (128,570) but good nesting conditions in the high arctic should mostly or wholly ameliorate production losses on the Y-K Delta. The causes of significant reductions in the Delta's breeding brant population are unknown and need further investigation.

5. The information and education program was very successful in communicating goose issues and the provisions of the plan on the Y-K Delta. The program is being focused within villages and broadened to be more effective in other states.

6. Regulation changes to reduce fall and winter goose harvests have been very successful for white-fronts and effective for cacklers, emperors, and brant. The 1985 regulations and enforcement efforts have been improved to minimize illegal fall and winter harvest of cacklers.

7. Spring and summer harvests of all four species of geese on the Y-K Delta have been markedly reduced in 1984 and 1985 from previous years. The goal of eliminating cackler harvest was not achieved, but 1985 harvests were reduced by 78-90 percent among different areas of the Y-K Delta. Substantial harvest reductions were also evident for white-fronts (45 percent), emperors (58 percent), and black brant (45 percent) in comparison with 1980-81 estimates. Harvests of goose eggs on the Y-K Delta have been sharply curtailed and are inconsequential in comparison to nest losses from predators.

8. Losses of geese and nests to predators, especially arctic foxes, have significantly suppressed production on the Y-K Delta and delayed recovery of goose populations. Cyclic reductions of fox populations caused by rabies and fluctuating availability of alternate prey species should reduce predation pressure in the next year or two and "release" goose production to normal levels. Ongoing research is providing insight on predator-prey interactions and the potential effectiveness of management techniques.

9. The intense and diverse program of biological research projects on Y-K Delta geese is providing useful data on goose ecology, distribution, production, and mortality, and will continue in 1986. Efforts are being expanded into staging and wintering areas to examine mortality and physical condition factors throughout the annual cycle.

10. The village harvest survey project was the most comprehensive and effective to date and with minor revisions will be useful in 1986 and beyond to accurately assess harvests on the Delta.

11. Habitat conservation continues to be one of the most difficult tasks called for in the plan. Although the California habitat funds, federal easement programs and vigilance of conservation groups contribute to substantial protection and enhancement of goose habitats, the obstacles of political/legislative impediments, agricultural economics, oil and gas exploration, and urban expansion limit the rate at which important habitats can be maintained and rehabilitated.

12. The unprecedented levels of local, state, and federal participation in the goose management plan process has increased the level of cooperation, trust, and commitment to restore goose populations along the Pacific Flyway. The cooperative process also provides the basis for a long-term

local involvement system on the Y-K Delta to achieve a wide variety of wildlife conservation objectives. Overall the plan has shown substantial success in reducing mortality in the four goose populations along the Pacific Flyway. Subsequent years should see further progress in conservation, restoration, and achievement of the population objectives for the four species.

DUSKY CANADA GEESE

Developments regarding dusky Canada geese in 1985 is a good news-bad news story. Persistent snow cover, a 2-3 week delay in spring warming, and continued cold, wet weather produced poor nesting conditions during May and early June. As a consequence, poor energy reserves in duskys contributed to a record low average clutch size of 4.4 eggs per nest. Slow development of nest cover and high levels of predation by brown bears and coyotes resulted in only 8.9 percent nest success, the poorest on record. Mammalian predators were responsible for 76 percent of the nest destruction, and a concurrent study of brown bear activities confirmed that immature bears and sows with cubs were very active in coastal areas and habitat types occupied by nesting duskys. A July goose production survey indicated that there was only about 3.7 percent young in the post-nesting population, the worst production on record for duskys.

The good news is in regard to the population status of duskys and progress in management efforts. The extensive nest losses caused most birds to join large molting flocks earlier than usual, providing an opportunity to count nearly the entire population. Data from direct counts and photographs of large flocks taken during the July aerial survey indicate a total of approximately 13,780 duskys on the Copper River Delta, nearly double the 7,500 that were estimated on the 1984-85 mid-winter index from Oregon. Subsequently, the July count will be repeated and tested as a potentially more accurate annual index.

Research on the relationship between sex- and age-specific activity of brown bears and goose production has produced valuable information on the bear population size, movements and home ranges of individuals, and habitat use patterns. The study will be concluded in 1986 and the department is currently assessing the feasibility of both nest protection and bear management options. Goose season restrictions in Alaska and implementation of severely limited quota hunts in Washington and Oregon have successfully achieved desired harvest reduction for duskys, while allowing opportunities to take other geese.

ALASKA DUCK STAMP

The Alaska Waterfowl Conservation Stamp program was very successful in its first year, largely as a result of the strong image of

unique Alaskan emperor geese and effective national marketing efforts. Alaska sold more duck stamp prints than any state in history, 17,350, and will receive approximately $700,000 in royalties. An additional $200,000 is anticipated from the sale of stamps to hunters, collectors, and print buyers. Stamp revenues are deposited in the Fish and Game Fund and print revenues have been requested as part of a multi-year CIP project in the Department's FY87 budget.

The 1986 design, featuring Steller's eiders, has been selected and is on display with the other entries at the Anchorage Museum until January 19. The exhibit will be at the State Museum in Juneau, January 25-February 9. Strong 1985 print sales within Alaska and the nation-wide appeal of Alaskan subjects should uphold print revenues in 1986, although normal market decline is expected to produce less than $350,000 from both prints and stamps.