

believed to have been restricted to areas north of 35 degrees and south of about 70 degrees latitude (Bent 1925; Delacour 1954; Bellrose 1976; Palmer 1976). Today, in the conterminous United States, Canada geese can be found nesting in every State, primarily due to translocations and introductions since the 1940s.

The majority of Canada geese still nest in localized aggregations throughout Canada and Alaska and migrate annually to the conterminous United States to winter, with a few reaching as far south as northern Mexico. However, the distribution of Canada geese has expanded southward and numbers have increased appreciably throughout the southern portions of the range during the past several decades (Rusch *et al.* 1995). The following is a brief description of the status and distribution of the major management populations of Canada geese covered by this proposed rule:

In the Atlantic Flyway, the resident population of Canada geese nests from Southern Quebec and the Maritime Provinces of Canada southward throughout the States of the Atlantic Flyway (Sheaffer and Malecki 1998; Johnson and Castelli 1998; Nelson and Oetting 1998). This population is believed to be of mixed racial origin (*B. c. canadensis*, *B. c. interior*, *B. c. moffitti*, and *B. c. maxima*) and is the result of purposeful introductions by management agencies, coupled with released birds from private aviculturists and releases from captive decoy flocks after live decoys were outlawed for hunting in the 1930s. Following the Federal prohibition on the use of live decoys in 1935, Dill and Lee (1970) cited an estimate of more than 15,000 domesticated and semi-domesticated geese that were released from captive flocks. With the active restoration programs that occurred from the 1950s through the 1980s, the population has grown to over 1 million birds in the northeastern United States and has increased an average of 5 percent per year since 1993 (Sheaffer and Malecki 1998; Atlantic Flyway Council 1999; U.S. Fish and Wildlife Service, 2002).

In the Mississippi Flyway, most resident Canada geese are giant Canada geese (*B. c. maxima*). Once believed to be extinct (Delacour 1954), Hanson (1965) rediscovered them in the early 1960s, and estimated the giant Canada goose population at about 63,000 birds in both Canada and the United States. In the nearly 40 years since their rediscovery, the breeding population of giant Canada geese in the Mississippi Flyway now exceeds 1.4 million individuals and has been growing at a

rate of about 6 percent per year since 1993 (Rusch *et al.* 1996; Wood *et al.* 1996; Nelson and Oetting 1998; U.S. Fish and Wildlife Service, 2002).

In the Central Flyway, Canada geese that nest and/or reside in the States of the Flyway consist mainly of two populations, the Great Plains and Hi-Line. The Great Plains Population (Nelson 1962; Vaught and Kirsch 1966; Williams 1967) consists of geese (*B. c. maxima*/*B. c. moffitti*) that have been restored to previously occupied areas in Saskatchewan, North and South Dakota, Nebraska, Kansas, Oklahoma, and Texas. For management purposes, this population is often combined with the Western Prairie Population (composed of geese (*B. c. maxima*/*B. c. moffitti*/*B. c. interior*) that nest throughout the prairie regions of Manitoba and Saskatchewan) and winter together from the Missouri River in South Dakota southward to Texas. The Hi-Line Population (Rutherford 1965; Grieb 1968, 1970) (*B. c. moffitti*) nests in southeastern Alberta, southwestern Saskatchewan and eastern Montana, Wyoming, and northcentral Colorado. The population winters from Wyoming to central New Mexico. Overall, these three populations of large subspecies of Canada geese have increased tremendously over the last 30 years as the result of active restoration and management by Central Flyway States and Provinces. In 1999, the index for these three populations was over 900,000 birds, 95 percent higher than 1990, and 687 percent higher than 1980 (Gabig 2000). More recently, the 2002 mid-winter survey estimate of the Great Plains Population (surveyed together with the Western Prairie Population) was 710,300 geese and has increased an average of 10 percent per year since 1993. For the Hi-Line Population, both the mid-winter survey and the spring survey estimates have increased an average of 6 percent per year since 1993 (U.S. Fish and Wildlife Service, 2002).

In the Pacific Flyway, two populations of the western Canada goose, the Rocky Mountain Population and the Pacific Population, are predominantly composed of Canada geese that nest and/or reside in the States of the Flyway. The Rocky Mountain Population (*B. c. moffitti*) nests from southwestern Alberta southward through the intermountain regions of western Montana, Utah, Idaho, Nevada, Colorado, and Wyoming. They winter southward from Montana to southern California, Nevada, and Arizona. Highly migratory, they have grown from a breeding population of about 14,000 in 1970 (Krohn and Bizeau 1980) to over 130,000 (Subcommittee on Rocky Mountain Canada Geese 2000;

U.S. Fish and Wildlife Service, 2002). Mid-winter survey estimates of Rocky Mountain Population Canada geese have increased an average of 4 percent per year since 1993, while spring populations have increased 6 percent per year over the last 10 years (U.S. Fish and Wildlife Service, 2002). The Pacific Population (Krohn and Bizeau 1980; Ball *et al.* 1981) (*B. c. moffitti*) nests from southern British Columbia southward and west of the Rockies in the States of Idaho, western Montana, Washington, Oregon, northern California, and northwestern Nevada. They are essentially nonmigratory and winter primarily in these same areas.

Flyway Management Plans and Population Goals

The Atlantic, Mississippi, Central, and Pacific Flyway Councils are administrative bodies established to cooperatively deliver migratory bird management under the flyway system. The Councils, which are comprised of representatives from each member State and Province, make recommendations to the Service on matters regarding migratory game birds. The Flyway Councils work with the Service and the Canadian Wildlife Service to manage populations of Canada geese that occur in their geographic areas. Since there are large numbers of resident Canada geese in each Flyway, the Councils developed and prepared cooperative Flyway management plans to address these populations and establish overall population goals and associated objectives/strategies. A common goal among the plans is the need to balance the positive aspects of resident Canada geese with the conflicts they can cause. While the Service does not formally adopt Flyway management plans, because of the cooperative nature of migratory bird management under the Flyway Council system, and the fact that the Flyway Councils and States are the most knowledgeable sources of information regarding the establishment of goose population goals and objectives under their purview, we believe incorporation of these management plans into the formulation of our overall resident Canada goose management help define the objectives for acceptable resident Canada goose population reduction and management. Thus, we have attempted to incorporate the goals and objectives of the Flyways' resident Canada goose management plans and their associated population objectives into the formulation of this proposed rule. A more detailed discussion of the Flyway management plans, their specific goals and objectives, is