



**Rocky Mountain National Park
Continental Divide Research Learning Center**

Moose Distribution and Population

The Question: What is the current population size and distribution of moose in Rocky Mountain National Park?

Moose (*Alces alces*) were locally extinct in Colorado until the Colorado Division of Wildlife began the reintroduction of moose to North Park, Colorado in 1978. In June of 1985 the first moose was discovered in Rocky Mountain National Park. Moose population has increased in the park since that time. Moose are known to have substantial effects on plant communities as they are large herbivorous ungulates. Park managers are concerned that moose may exceed natural population levels due to a lack of predators. Like an excess number of elk, an overpopulation of moose would likely have long-term negative effects on riparian and shrub communities—directly affecting plants and indirectly affecting animals that use the ecosystems for food and shelter.



A cow moose drinks from a pool on the west side of the park, which is home to the largest population in RMNP.

The Project: During the summers of 2003 and 2004 classify, individually identify, and observe moose along established transects.

Jason Dungan (University of Idaho) and field technicians observed and counted moose during the summers of 2003 and 2004 on both the east and west sides of the park. Upon sighting a moose along a transect, the investigators completed an identification chart which included sex, age class (calf, yearling, adult), and class of bulls based on antler growth. Researchers individually identified male moose by using photographs and antler descriptions. The researchers derived a conservative population estimate using male/female ratios and the number of individually identified males.



A bull moose forages on willows, a predominant food source for moose in the park.

The Results: There was an estimated 54-59 resident and 35-40 transient moose in the summer of 2003 and an estimated summer 2004 population of 37-43 resident and 47-53 transient moose.

Dungan recorded 223 observations of free-ranging moose during the two summers. Forty-five percent were male groups, 36 percent were female groups, and 19 percent were mixed groups. The great majority of observations of moose at high elevations (9850 feet) were made east of the Continental Divide. The study found that 72 percent of the moose observations were below 3000 meters with the majority along the Colorado River in the Kawuneeche Valley and adjoining creek drainages on the west side of the park. The study found that 73 percent of the total moose sightings were west of the Continental Divide with 27 percent of the sightings east of the Continental Divide.

Based on the observed ratio of 60.1 males/100 females, the researchers conservatively estimated the population of moose in the park to be 54-59 resident and 35-40 transient in the summer of 2003 and 37-43 resident and 47-53 transient in the summer of 2004. This study also suggests that male moose are leaving the lower elevation riparian willow habitat to find females at higher elevations during the rut (beginning in September).

The authors recommend that a more thorough study of moose home range, habitat use, and movement be carried out by radio collaring five to 10 male and female moose over a three year period as well as conducting winter aerial population surveys in order to develop a management plan.