(62P) EFFECTS OF SUMMER WEATHER ON FORAGE PRODUCTIVITY AND NUTRITION FOR CARIBOU. Elizabeth A. Lenart[1], Jay M. Ver Hoef[2], and R. T. Bowyer[1]. [1]Institute of Arctic Biology, University of Alaska, Fairbanks, AK 99775, USA [2]Alaska Dept. of Fish and Game, 1300 College Rd., Fairbanks, AK 99701, USA.

The Chisana Caribou Herd (*Rangifer tarandus*) has declined in both size and productivity during the early 1990s. Drought conditions may have adversely affected forage quality and availability. Thus, effects of summer temperature, precipitation, and variable sunlight on productivity and nutrition of forage for caribou within the summer range will be investigated. Five replicates of six treatments (including controls) to simulate different environmental conditions (a warm, dry summer; a warm, wet summer; a cloudy summer; and a cloudy, wet

summer) will be applied to a tundra-mat habitat and a willow shrub habitat. The treatments include: 1) unaltered control; 2) control with supplemental watering; 3) clear plastic tarp (drought),; 4) clear plastic tarp with supplemental watering; 5) a 50% shade tarp; and 6) a 50% shade tarp with supplemental watering. In the tundra-mat habitat, a $0.25m^2$ subplot will be clipped four times throughout summer 1994, and the four remaining subplots will be clipped in summer 1995. In the willow shrub habitat, approximately 30 annual shoots will be clipped from each plot during peak biomass in summer 1994 and 1995 and ten annual shoots also will be clipped four times throughout summer 1995. Forage samples will be determined for biomass, nutrient quality, and digestibility. Fecal pellets will be collected throughout summer to determine diet composition through microhistological analyses. Relationships between historical weather patterns (e.g. rainfall, temperature, snow depth) and population parameters (e.g. abundance, calf:cow ratio) of the Chisana caribou herd will be examined with multiple regression modeling. Preliminary results will be available at the conference.

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Abstracts

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