

# Weight-carrying Ability and Caching Behavior of Gray Jays, *Perisoreus canadensis*: Adaptations to Boreal Winters

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During 16 August to 21 September 1984, I determined how Gray Jays (*Perisoreus canadensis*) carried flight-loads of different weights. Three individually identifiable Gray Jays weighing 60, 68, and 80 grams, used their bills to carry flight-loads weighing up to 33 percent of bodyweight but transferred heavier flight-loads from their bills to their feet 1-2 meters after takeoff. They had difficulty carrying flight-loads over 57 percent of bodyweight, and none attempted to carry flight-loads over 66 percent of bodyweight. By using their feet to bring heavy flight-loads closer to the center of lift, Gray Jays can carry heavier loads of meat, relative to body weight, than can Common Ravens (*Corvus corax*) which compete with Gray Jays at carcasses in winter and which do not carry objects with their feet. During 1969-2003, year-round observations near the southern edge of the Gray Jay range in northeastern Minnesota showed that caching behavior begins in August, continues over-winter, and ends at the onset of insect activity and green-up in early May. Gray Jays' propensity to approach larger animals, including people, may not indicate unwariness but rather a superior ability and willingness to assess risks and food benefits. In the boreal forest in winter, risk of starvation is greater and risk of predation is lower than in relatively food-rich ecoregions farther south.

**Key Words:** *Perisoreus canadensis*, scavenging, food cache, flight-load, feet, competition, boreal forest, risk assessment, saliva, survival strategy, Minnesota.