

NOTES ON WINTER FEEDING HABITS OF THE PINE MARTEN  
*MARTES MARTES* L. IN VAL GRESSONEY  
(WESTERN ITALIAN ALPS)

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**ABSTRACT** – A first report on the feeding habits of a mainland population of the pine marten (*Martes martes*) in Italy is presented here. The winter food of this carnivore in Western Alps (altitude 1800-2500 m a.s.l.) is described, using stomach analysis. Both volume and frequency of occurrence of different food items were quantified. Mammals and wild fruits represent the main food categories. The presence of the small mammal species in the diet is discussed.

**Key words:** *Martes martes*, Winter diet, Western Alps.

**RIASSUNTO** – *Note sulla dieta invernale della martora Martes Martes L. in Val Gressoney (Alpi occidentali italiane)* – Le abitudini alimentari della martora (*Martes martes*) nell'Italia peninsulare vengono descritte per la prima volta sulla base del contenuto stomacale di 9 esemplari provenienti dalle Alpi occidentali (fascia altitudinale compresa tra i 1800 e 2500 m s.l.m.). I dati raccolti si riferiscono al periodo invernale e sono stati espressi come frequenza percentuale e volume percentuale stimato. I mammiferi e i frutti selvatici costituiscono le principali categorie alimentari. La presenza delle specie di micromammiferi rinvenuti viene discussa.

**Parole chiave:** *Martes martes*, Dieta invernale, Alpi occidentali.

## INTRODUCTION

No studies are available on the feeding habits of the pine marten (*Martes martes*) in Italy, except for insular habitat (Murgia et al., in this volume; De Marinis & Masseti, 1993). In Europe few research was carried out in mountain habitat: Jura - Switzerland (Marchesi & Mermod, 1989), Pyrenean Mountains - Spain (Garzon et al., 1980; Ruiz-Olmo & Martin, in press) and Cantabrian Mountains - Spain (Braña & del Campo, 1982; Clevenger, 1993; Guitian Rivera & Callejo Rey, 1983). A first report is presented here on the winter diet of the pine marten in alpine habitat.

## MATERIAL AND METHODS

The study was carried out on stomach contents of the pine marten housed in the Florence Natural History Museum, collected in Val Gressoney, Aosta county, Western Italian Alps (altitude 1800-2500 m a.s.l.) during the years 1972-1979, from November to February. For a description of vegetation of the study area see De Giovanni (1969) and Peyronel et al. (1988). The contents of 9 stomachs, 5 males and 4 females, were examined following the standard techniques (Korschgen, 1980). The percentage of marten's stomachs in which a food item occurred (F%) and the percentage of estimated volume (V%) of each item in the diet (Kruuk & Parish, 1981) were calculated.

## RESULTS AND DISCUSSION

Mammals were the most important feeding resource for the pine marten and occurred in 50% of the stomachs with an overall percentage of 66% in estimated volume (Fig. 1). Rodents were the most common prey (33% in F%, 54% in V%) and were represented by the bank vole (*Clethrionomys glareolus*), rats (*Rattus* sp.), squirrel (*Sciurus vulgaris*) and alpine marmot (*Marmota marmotu*). Insectivores (*Sorex* sp.) and lagomorphs were occasionally preyed on.

Fruit contribution to the winter diet was 33% in F% and 31% in V%, due to the exclusive consumption of *Sorbus aucuparia*.

Birds and insects (Coleoptera, Carabidae) were scarcely preyed on (less than 1% in overall bulk).

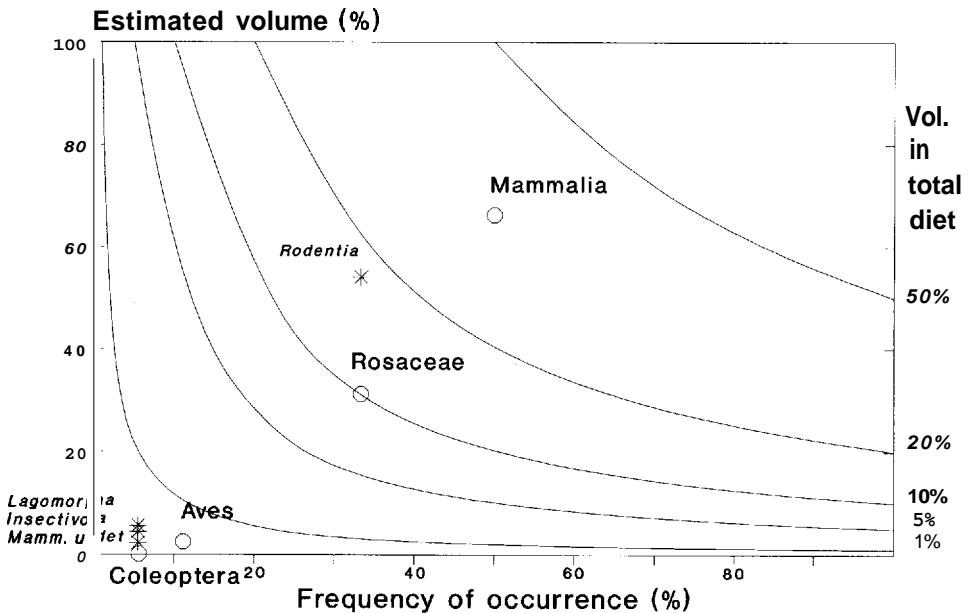


Fig. 1 - Estimated volume vs. frequency of occurrence of the same food item. Isopleths connect points of equal relative volume in the overall diet of the pine marten.

Fruit (mainly *Sorbus* sp.) represents the dominant feeding resource of the pine marten in European mountain habitats in winter and mainly in autumn, when it is abundant and easily obtainable (Clevenger, 1993; Braña & del Campo, 1982; Marchesi & Mermod, 1989). However seasonal sample sizes may affect the general pattern of the autumn/winter diet. On the other hand in our study fruit was replaced by mammalian prey. Generally the feeding habits of the pine marten reflect seasonal food availability (Clevenger, 1993; Marchesi & Mermod, 1989).

Among mammals, voles and wood mice are the main food item on the European mountains (Braña & del Campo, 1982; Garzon et al., 1980; Marchesi & Mermod, 1989) whereas rats are not a common prey for this carnivore (Marchesi & Mermod, 1989) because they occur inside and around villages, usually not explored for food by the pine marten. In our case voles were taken as well as rats. In Val

Gressoney, above 2000 m, the winter feeding resources are probably scarce in wild habitat and the pine marten may move closer to the villages.

The squirrel, always considered as the typical prey of the pine marten, shows a low frequency of occurrence in our study, in accordance with what was reported by Clevenger (1993) in Cantabrian mountains.

Alpine marmot is an unusual prey of the pine marten and in our case could have been eaten as carrion.

The present study gives an approximate picture of the winter diet of the pine marten in Western Alps, because a very small sample has been examined.

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