

STATUS OF A REMNANT BROWN BEAR POPULATION IN TRENTINO, ITALY: 1981-85

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The last known brown bears (*Ursus arctos* L.) in the Alps survive in Trentino (Fig. 1). Little is known about these bears. Preliminary population evaluations have been conducted by Barigozzi (1963), Stefenelli (1972), Daldoss (1981), and Osti (1980). Roth and Osti (1979) and Roth (1983) used radiotelemetry to study daily movements and activity patterns between 1976 and 1980. Here I report on work conducted from 1981 to 1985 to further evaluate the brown bear population status and distribution in Trentino. My objective was to identify areas particularly important to bears and their survival.

STUDY AREA

The study area lies in the northwest portion of Trentino in northern Italy (Fig. 1). It encompasses about 1,500 km² of the Brenta and Adamello-Prezanella mountains. Alder (*Alnus viridis*) and the rhododendron (*Rhododendron* spp.)-blueberry (*Vaccinium* spp.) complex are the dominant vegetation types above 1,800 m (Fenaroli 1971); however, bears are most frequently found at 600-1,600 m, a zone characterized by fir (*Abies alba*) and spruce (*Picea excelsa*) forests and an understory of mountain ash (*Sorbus* spp.), blueberry, and oxalis (*Oxalis aceto-*

sella). Lower elevations are characterized by a mix of pine (*Pinus sylvestris*), beech (*Fagus sylvatica*), and oak (*Quercus pubescens*). Agricultural lands and orchards, also found at lower elevations, provide an important autumn food source for the bears (Osti 1975, 1979).

The study area is largely undisturbed, and vehicle access is difficult. The human population density is about 70/km² (Roth 1983). Most people live in small villages scattered throughout the lowlands.

Climate is typically alpine with abundant precipitation January-April.

METHODS

We used systematic and traditional methods to collect information pertaining to brown bear distribution and population status in Trentino. We established 167 transects covering 579 km of trails to monitor bear activity. Transects in Valle di Non and Valle di Sole were monitored from 1980 to 1985; transects in Vale di Genova and Valle d'Algone were monitored in 1984 and 1985. Transects were monitored monthly, and evidence of bear presence (e.g., scats, tracks) was recorded.

From 1981 to 1985 we collected 297 reports, which we believe are valid, of bear sightings, tracks, scats, or hair from throughout Trentino.

RESULTS AND DISCUSSION

Most evidence of bear activity along trails was found in Spormaggiore, Valle di Tovel, and Valle di Sole (Table 1). These data indicate that the active

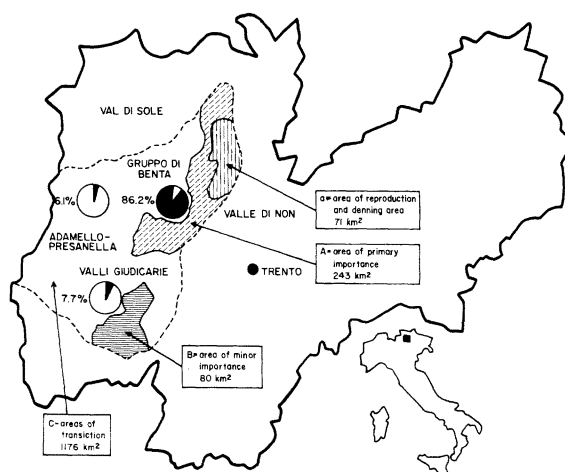


Fig. 1. Distribution of brown bears in Trentino, Italy, 1981-85.

Table 1. Five-year index of brown bear activity along monitored trails in Trentino, Italy, 1981-85.

Area	5-year index ^a
Spormaggiore	18.3
Val di Tovel	14.8
Val di Non	9.6
Val di Sole	3.6
Val di Genova	—
Vale di Algone	—

^a Number of observations or evidence of bear activity per kilometer of trail.

Table 2. Seasonal and elevational distribution of evidence of brown bear activity in Trentino, Italy, 1981–85.

Elevation (m)	Winter N = 5	Spring N = 104	Summer N = 119	Fall N = 69
0–500	—	—	1 ^a	4
500–1000	—	45	31	55
1000–1500	60	31	36	29
> 1500	40	26	31	12

^a Percent frequency.

period for these bears extends from mid-April through early November. Elevations below 500 m are rarely used, and most spring and fall activity occurred between 500–1,000 m (Table 2). Elevations between 1,000 m and 1,500 m were used during the summer. Bears denned above 1,500 m.

We collected 297 valid reports of bears or their sign between 1981 and 1985. These data provide our best overall bear distribution information. We identified about 1,500 km² of bear habitat (Fig. 1), about 243 km² of which is of primary importance to bears. It includes good foraging, security, and denning habitats. Most (68%) of the reports we collected were for this area.

Areas periodically occupied by bears include about 81 km² in Vale di Ledro, Valle di Concei, and Valli de Guidicarie. Val di Fumo, Val Daone, and Val di Genova are only occasionally occupied by bears.

It is important to manage the remaining bear habitat in Trentino with the well-being of the bear population in mind. Because the habitat is so restricted, any further habitat degradation threatens the bear population. Forest management policies should maintain or create suitable habitat, and vehicle access

should be carefully controlled so that bears are not displaced from preferred areas. Planting fruit trees, such as apple and pear trees, in forest openings could provide an important food source and thus help maintain the brown bear population in the Alps of Trentino.

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