conditions, the tahr herd has an altitudinal rhythm, moving upwards at daybreak, browsing as they go. Eventually they rest to ruminate and sleep on snow, rock ledges or ridge tops, often well above the vegetation limits. In mid afternoon, the herd will descend to feed.

There are two observable groupings within the herd. The basic unit is the family group of a nanny and her last offspring, while the second grouping is an association of these families. These associations, which appear flexible, aggregate to form the herd.

Although the males generally separate from the herds in spring and do not re-unite until mating the following autumn, they spend the winter and early spring together with the nanny-kid association.

Observation of tahr herd behaviour suggests herds remain in a specific area, and only the younger animals and unattached bulls wander away from their home range. The exception to this behaviour would seem to occur when herds are pushed into unoccupied areas due to shooting. As a result migration is probably hastened in many instances.

In 1965, in the Upper Rangitata Catchment I found the small Carneys Creek to contain 710 tahr in an area of about 2200ha. The two largest herds contained 69 and 62 animals and half the herds had more than 30 animals. Following helicopter hunting and meat shooting the numbers have been drastically reduced. A recount in 1977 gave a population of only 48 tahr — a 93% reduction. The largest herd was only 7 animals. (Tustin and Challies, 1978.) In the Mount Cook National Park, between 1956 and 1976, about 20,800 tahr were killed. In the first 25 years of Government control operations up to 1961 24,000 tahr were killed, but between 1971 and 1976 an estimated 36,000 tahr were shot, principally for the export game meat market. (Tustin 1980.)

Grazing behaviour and vegetation damage

Tahr graze the alpine grasslands and scrub zones. Their grazing of snow-bare areas in winter, or tracking in the scrub, kills the snowgrass and scrub species.

The first major biological study of tahr was undertaken by J. A. Anderson and J. B. Henderson of the New Zealand Deer Stalkers Association Research Group in 1961.

Anderson and Henderson drew attention to the localised tahr damage to vegetation which results from restricted animal movement after times of heavy snowfalls.

"Under these conditions the animals 'work' small patches of snow utilising any vegetable material uncovered. Such patches are easily discernible following the thaw and require considerable time to revegetate. The big snow tussock grass is most vulnerable to this type of usage and seldom recovers."

Hugh Wilson, writing in his book on the "Vegetation of the Mount Cook National

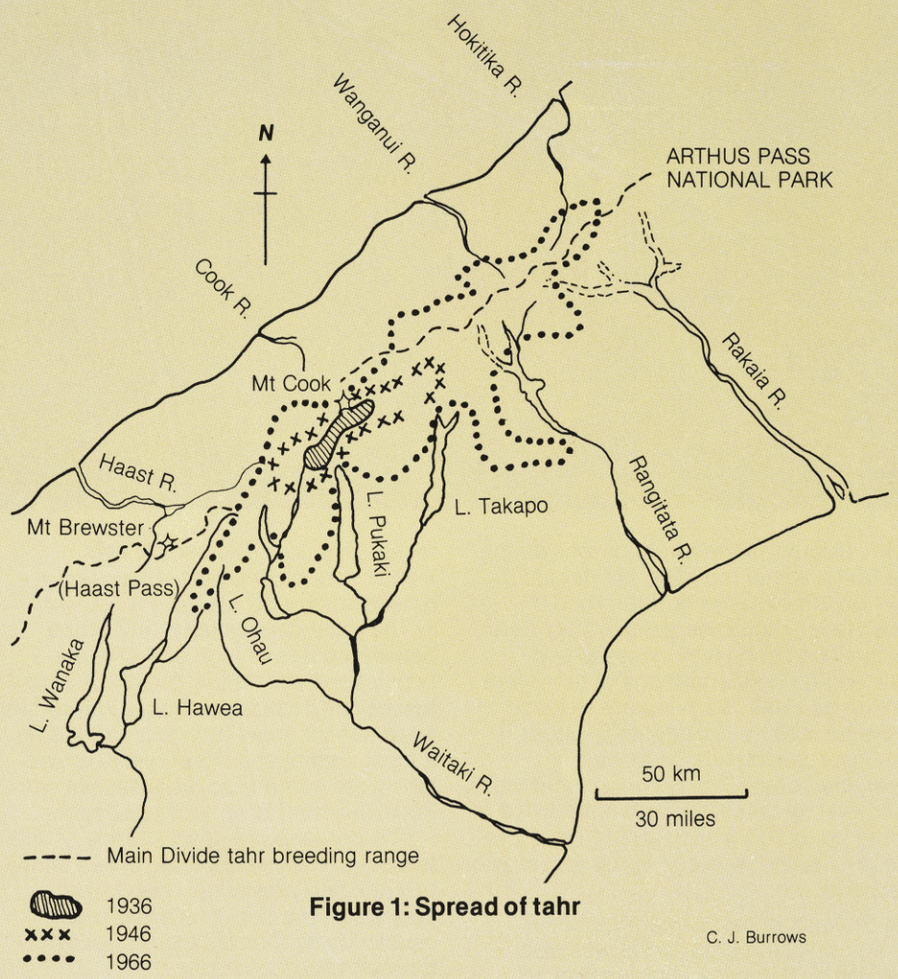
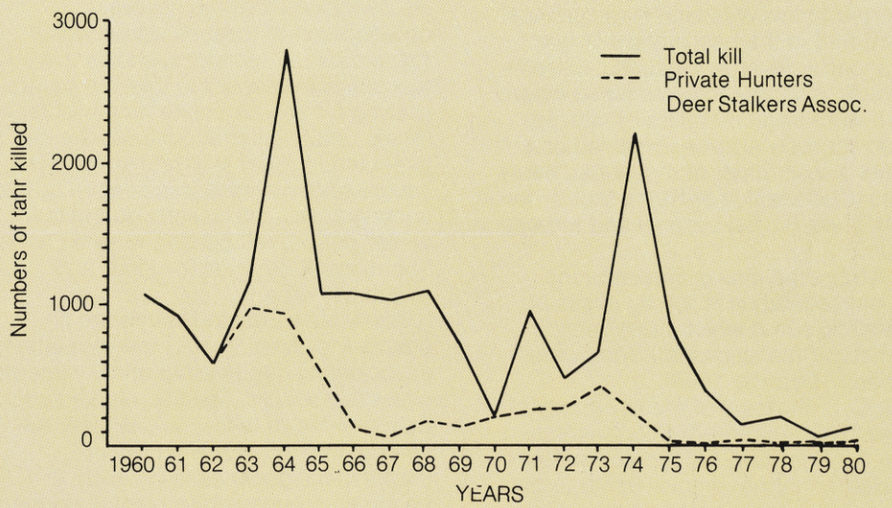


Figure 1: Spread of tahr

C. J. Burrows

Figure 2: Mount Cook National Park Tahr Control



Tahr control in the Mount Cook National Park, showing the total number of animals killed (17,926) compared to the kill by the Deer Stalkers' Association and private hunters (7,054) for the years ended 31 March 1960 until 31 March 1980. (The total kill figure is affected by the extent of control exercised by the Forest Service. For the control years ended 1960, 1961, 1962 and 1970 there were no control operations, and for 1972 and 1973 operations were limited to the burn area on the Liebig Range.)