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THE ALPINE ENVIRONMENT UNDER ATTACK

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In 1975 when I immigrated to New Zealand and began wandering in the central South Island mountains, the landscape faced ongoing manageable pressures. The exotic weed *Hieracium* was spreading everywhere, a scourge of the High Country. Introduced game animals, though numerous, were culled, controlled or captured from the ground and in the air. The term "global warming" was not an everyday phrase and our weather patterns were generally settled. Plant studies for me in those early days were enjoyable and rewarding. Now, 40 years later, the alpine environment is under duress. What has happened to change my opinion?

I can vividly remember the spring of 1982 in the Hooker Valley at Aoraki Mount Cook National Park. Then in November *Ranunculus lyallii* exploded into bloom like never before. Whole hillsides and little vales turned profusely white, the spectacle was unbelievable. Up and down the Main Divide, the scene was similar. A once in a lifetime display, sadly never repeated. Perhaps ideal climatic conditions prevailed then. Who knows? Then too, *Anisotome pilifera* formed large clumps near raging wild water at the Hooker River. The flower heads were as large as garden cauliflowers, magnificent and conspicuous. These days it is hard to spot a single specimen plant. Up from the Stocking Stream in shaded rocks beneath Te Waewae Glacier grew numerous *Myosotis macrantha.* Now only small plants exist at the mercy of the next deluge. Have more intense rainstorms over the intervening years caused mini-landslides to obliterate these fine plants? Have foraging animals also had an impact? Noticeable on the Stairway to Heaven up towards Sealy Tarns are more and more fresh possum droppings. Are these creatures gaining easy elevation aided by the wooden staircase in their quest for a tasty morsel? Other climbers have intimated to me a similar conclusion. Stoats too are regularly sighted on daily walks. Perhaps it is too difficult to implement a

satisfactory poisoning programme balanced against the dangers to human health.

Lake Ohau ski field near Twizel is another high rainfall area I frequently visit for the delights that grow there. In early December, the lakeside perimeter and nearby valleys are noted hotspots for red-flowering mistletoe on host beech trees. Years ago, large vivid clumps were visible from the approach road to Lake Ohau Lodge. These days only small patches are the norm and many are difficult to access. Obviously possum numbers have had an impact here too. In days gone by, *Ranunculus lyalii* used to grow by the rocky stream draining from the ski field. Now there are none. My latest visit there a few weeks ago disturbed my sense of wellbeing. In the late morning I enjoyed the flowers on view and close encounters with resident rock wrens. By mid-afternoon rocks from the eroding ridges above the tow suddenly began cascading downwards. Erosion at work? No. Up on the highest near-vertical slopes tahr were enjoying the sunny conditions. A set of binoculars trained on them, I realised a total of 21 females with young. Their agility was evident as they frolicked and jumped their descent to lower grassy slopes. There earlier in the day I had admired *Euphrasia, Forstera, Lobelia* and *Brachyglottis* spp. to name a few. It soon became obvious that this ecological niche would soon be depleted in a feeding frenzy. *Dolichoglottis* spp. with soft palatable foliage has greatly diminished at Ohau ski field. I have also been told that feral cats have been seen on the ski field. As in other alpine regions where these felines live and hunt, lizards, skinks and pipits would be a prime food source.

In high summer large tracts of alpine high country are a spectacular sight, carpeted in a sea of yellow daisies. This is an unnatural scene indeed. The smothering effect of the flatweed, *Hieracium pilosella* reduces light penetration and chokes the growth of less vigorous native plants. The amount of seed cast in the breezes to further colonise the landscape is beyond comprehension. A perennial problem beyond repair. The panoramic view north to Aoraki Mount Cook from the ski field access road is grand but tainted by a purple haze in the Dobson River estuary. An ever expanding area of Russell lupins is testament to this plant becoming more invasive and troublesome. Across the lake rises Ben Ohau Range where several uncommon plants grow. My visits there are to check the survival of a good specimen of the scree pea, *Montigena novae-zealandiae.* In past years it has remained unscathed, but vulnerable to attack by keen eyed hares. The purplish pink flowers are an instant giveaway to its location. Throughout mountain regions, hare droppings are commonplace, evidence of their ability to rove far and wide. Generally speaking, hares are nibblers and will feed on the most unpalatable of plants such as *Aciphylla dobsonii*, a dwarf species with sharp pointed rigid foliage. Sheep sorrel (*Rumex acetosella*), a creeping weed with fibrous

roots, is the only competition to this plant, so a few minutes weeding keeps it in check.

From my home in Oamaru, the Saint Mary's Range near Kurow is a more local recreational area. In the mid-1980s I discovered an extensive colony of scree buttercup there that created much interest in botanical circles. *Ranunculus acraeus,* as it is now known, flowers around Christmas time with a memorable display of hundreds of yellow chalices. In the 30 years of admiring the seasonal spectacle, I have noticed that those plants growing in a more open sunny aspect have deteriorated or died out. The colony now favours a more shaded location in rough rocky terrain. Perhaps this phenomenon is related to a rise in temperature or sun intensity associated with global warming. Above the colony, large lingering patches of snow would supply ample moisture in the growing season. Five years ago, a December visit to check the flowering progression had me gasping with horror at the sight before my eyes. All visible growth above ground was devoured, eaten by red deer. The year previous I had spotted four hinds on the high tops. Since that terrible disaster, the buttercups have been spared such ignominy but deer numbers in the region have increased, so in future years the problem could again occur.

Across the Waitaki River from Kurow on the Kirkliston Range resides another animal pest. In 1874, three red-necked wallabies (2 females and 1 male) were released near the Hunter Hills. Over time their numbers have increased to such an extent that since 1997 an annual cull programme is implemented. The food source of these animals are grasses and other native and exotic plants. With the recent opening of the new, modern bridges across the Waitaki River, the incidence of more wallabies venturing southwards is a real possibility.

This account has detailed my personal experiences in the mountains I frequently visit. In other regions, rats and mice and exotic plants such as wilding pines are a blight on the natural landscape. By the end of the 21st Century the disruptive influences affecting the New Zealand flora and fauna could have grave consequences for general public appreciation. It is up to us humans who in the first instance created such problems to implement careful strategies and control measures to ensure the survival of what we admire and cherish in the natural environment.