could be descendants of the plants which inhabited the old coastline, and it is possible some of the fauna might trace their origins similarly.

As further evidence he cites the presence of case-moth species, *Scoriodyta suttonensis*, in Central Otago. Its larvae feed on algae on the conspicuous tors. The genus consists of seven species and is characteristic of coastal rocks. Four species are found around the South Island coast and two more in the Cook Strait areas. Since they have apterous females which never leave the larval case and the larvae feed on the same tor or group of tors, the species is effectively immobile and its occurrence in Central Otago may be the result of a marine transgression.

The sea retreated, the ranges rose up, and over time, the salts deposited in the sediments were borne by water to the surface by the process of capillarity.

Central Otago's saline soils represent a soil type now rare in New Zealand, and according to Mr Beecroft, one which will soon disappear if left unprotected.

He and fellow soil scientist Peter McIntosh are working in conjunction with DoC to produce a register of the best remaining sites, including descriptions of their soils and geology. This register will provide baseline data for future monitoring.

Only one site – Belmont, in the Maniototo, the glasswort refuge – is covenanted so far. But a management agreement for a site in the Upper Clutha Valley (Pisa Flats), has just been negotiated between DoC and the landowner Tom Gilmore. The agreement will ensure the site is not irrigated or cultivated, and grazed only sparingly.

At a third site, the Sutton Salt Lake near Middlemarch, the owners have put in fencing to keep stock out.

"By and large, farmers are supportive of conservation measures," says Mr Patrick, "because the areas in question are small – the biggest would amount to only 10 hectares even with a buffer zone – and they are not significant agriculturally.

"Farmers also know that sheep like to gnaw at salty outcrops, which is not good for them. It ruins their teeth and thus their productive capacity."

DoC is negotiating with the owners of several sites about formal protection.

In the case of two sites, at Galloway Station (Alexandra) and Patearoa in the Maniototo, Mr Patrick recommends interpretive signs be erected to emphasise the biological and historical importance of salty areas in the Central Otago landscape. Both sites are alongside roadways.

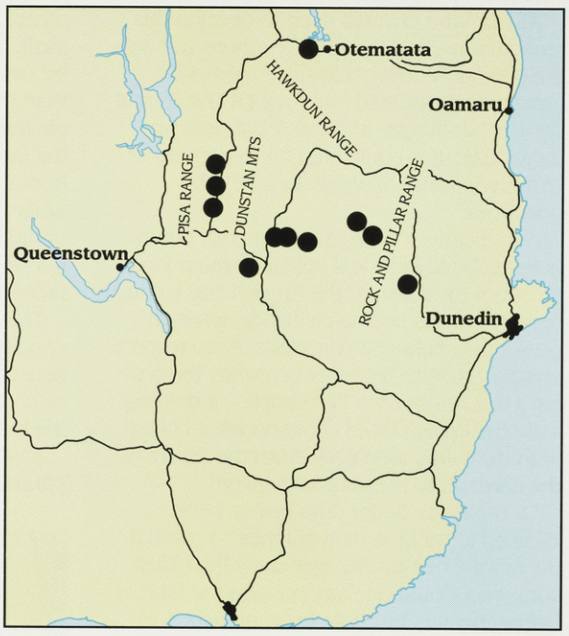
The Patearoa site contains healthy colonies of *Lepidium sisymbrioides, Cotula maniototo* and *Carmichaelia monroi*. Two other plants typical of saline areas also occur here – *Lepidium kirkii* and *Apium filiforme*.

Altogether, Mr Patrick has identified eight sites worthy of protection, with an additional two identified by the PNA scheme in the Upper Clutha that have salty soils but no native halophytes.

As far as natural and conservation values go overall, however, all of these places are clearly worth their salt!

Reference: Patrick, B.H. Lepitodptera of salt-pans of Central Otago. *Department of Conservation, Dunedin. 1989.*

Salt-tolerant survivor: Atriplex buchananii *on a parched saline area in the Manuherikia Valley near Alexandra.* Photo: Neville Peat



Michael Beattie points out a plant of Lepidium sisymbrioides, *in flower on his family's Patearoa farm, Maniototo Valley.* Photo: Neville Peat

The bright-yellow flowers of the cushion plant, Myosotis uniflora, *add colour to an expanse of Craspedia daisies next to the saline area on Tom Gilmore's Pisa Flats farm.* Photo: Neville Peat