



Fig. 75 Grassland. Maniototo basin, central Otago; a wide inland basin where former river meanders are influenced by salty mineral soils, and in this example, by increased fertility from dairy farming and its effluent. The wet (green) grassland zone is dominated by creeping bent (*Agrostis stolonifera*) and the moist zone (right) by squirrel tail grass (*Critesion jubatum*): an indicator plant of salty sites. These are grass marshes; inland saline.



Fig. 76 Cushionfield. Mararoa Valley, northern Southland; a montane valley floor where bog peat has accumulated on an almost level terrace, and where the hummock-and-pool topography has been created by the dense cushions – or bolsters – of comb sedge: *Oreobolus pectinatus* cushion bog; palustrine.



Fig. 77 **Herbfield.** Lower Waikato Valley, Waikato; a lowland floodplain, sometimes flooded and afterwards ponded, where agriculture has raised fertility of the mineral soil. Many naturalised plants are co-dominant; this could be described as willow weed - buttercup - dock herb marsh; riverine. In the background is treeland of crack willow (*Salix fragilis*) and alder (*Alnus glutinosa*) upon the levee adjoining a river channel.



Fig. 78 **Herbfield.** Taupo Swamp, Wellington; a roadside ditch stream of high nutrient status: water celery (*Apium nodiflorum*) - starwort (*Callitriche stagnalis*) herbfield, shallow water; riverine.



Fig. 79 **Herbfield.** Aramoana, Otago Harbour; an estuary where mudflats of the low intertidal zone have a 'meadow' of seagrass (*Zostera novazelandica*); this can be classified as seagrass herb saltmarsh; estuarine.



Fig. 80 **Herbfield.** Aramoana, Otago Harbour; estuary sandfields of the upper intertidal zones: glasswort (*Sarcocornia quinqueflora*) herb saltmarsh, grading (at left) to saltgrass (*Puccinellia*) grass saltmarsh, then knobby clubrush (*Isolepis nodosa*) rush saltmarsh on higher ground; estuarine.



Fig. 81 Herbfield. Garvie Mountains, northern Southland; the mid-summer remnant of an alpine snowbank. Stony mineral soils, revealed by the sheep tracks, are flushed with seasonal snow melt yet well drained and dry at other times. The brighter green stripes are seepages that are permanently wet and more peaty. Numerous plant species are co-dominant in the various communities, but they are all basically herbfield; palustrine.



Fig. 82 Herbfield. Old Man Range, Otago; an alpine seepage which can be regarded as a flush, seen here in early summer being inundated by a shallow, flowing sheet of snow-melt water. This community could be named from the characteristic presence of white caltha (*Psychrophila obtusa*), which bears conspicuous flowers immediately after the complete melt of its winter snow blanket: caltha herb seepage; palustrine.



Fig. 83 Turf. Awarua Bay, Southland; upper intertidal zones in the sheltered part of an estuary where the herbfield is of such low stature that it can be referred to as turf: *Selliera radicans* - *Samolus repens* turf saltmarsh; estuarine.



Fig. 84 Turf. Glenmore, Lake Tekapo, Canterbury; a depression with mineral soil in undulating moraines, lacking any inflowing stream or surface outlet, which ponds in winter and spring when groundwater input is high, then dries in summer. Different periods of inundation produce concentric zones of plant communities of numerous plant species, where composition varies over very short distances: turf ephemeral wetland; palustrine.