



Fig. 63 **Fernland.** Taia, Chatham Island; blanket peat on almost flat land bounded by sand dunes and the coastal lagoon of Te Whanga: bracken fern (*Pteridium esculentum*) bog (with restiads, lichens, mosses; modified by fire and livestock); palustrine.



Fig. 64 **Reedland.** Pukepuke Lagoon, Manawatu; a small lake among lowland sand plains, with marginal vegetation of raupo (*Typha orientalis*) reedland, shallow water; lacustrine (right), and in the foreground Mercer grass (*Paspalum distichum*) grassland.



Fig. 65 **Reedland.** Lake Ngatu, Northland; a dune lake with erect, emergent-aquatic sedges (*Baumea juncea* in foreground; *Eleocharis sphacelata* in deeper water beyond). These can be classified as reedlands in the wetland class of shallow water; lacustrine.



Fig. 66 **Reedland.** Tom Bowling Bay, Northland; a tidal creek: *Schoenoplectus validus* reedland, shallow water; estuarine.



Fig. 67 **Rushland.** Tongariro River delta, Volcanic Plateau (see Fig. 106); a moist valley floor with mineral soil that receives fresh silt deposits with floods (see Fig. 135): *Juncus effusus* - *J. edgariae* (centre of photo) rush marsh; riverine.



Fig. 68 **Rushland.** Kumara, Westland; a lowland terrace where forest has been felled for podocarp timber, the induced wetter ground favouring growth of *Sphagnum* moss, which is harvested from such sites: *Juncus canadensis* / *Sphagnum cristatum* rush fen; palustrine.



Fig. 69 Restiad rushland. Dismal Swamp, south Westland; part of a large lowland mire on a coastal plain, where frequent fire erodes the scrub and forest margins. The flexuose and bristly stems of wire rush scramble among and cling to each other, forming self-supporting tufts: *Empodisma minus* restiad rush bog; palustrine.



Fig. 70 Restiad rushland. Kopuatai Peat Dome, Hauraki Plain, Waikato (see also Figs 140 and 141). Kopuatai is the largest of the remaining northern New Zealand peat domes dominated by the tallest native restiad, cane rush (*Sporadanthus ferrugineus*). The dome crest receives water only from rain and is therefore bog. The photo shows vegetation dominated by *Sporadanthus* 2.2 m tall and about 30% cover, over wire rush (1 m tall, 50% cover), tangle fern (10%), and the sedge *Schoenus brevifolius* (10%). This can be classified as *Sporadanthus* / *Empodisma* restiad rush bog; palustrine.



Fig. 71 Sedgeland. Red Lagoon, near Lake Ohau, Canterbury; a broad depression in a valley floor of glacial outwash gravels where peat has accumulated beside a tarn. The water table is mostly above the ground surface, and the presence of raupo (middle distance) is an indicator of relatively high nutrient status, so this is a swamp. In foreground: *Carex sinclairii* - *C. diandra* sedge swamp; palustrine.



Fig. 72 Sedgeland. Lake Waikaremoana, Hawkes Bay; a sheltered bay with deep inorganic sediment on a gentle slope of moderate drainage that is inundated when the lake level is high: a *Carex* spp. sedge marsh; lacustrine. The marsh is dominated by *Carex geminata* (left distance), *C. virgata* tussocks (centre), and *C. sinclairii* (right foreground).



Fig. 73 Grassland. Kopuatai, Hauraki Plain, Waikato; a fen, modified by drainage, increased fertility, and weed invasion, for example by grey willow (*Salix cinerea*; background), and in foreground: Yorkshire fog (*Holcus lanatus*) grass fen; palustrine.



Fig. 74 Grassland. New River Estuary, Southland; mudflats in a large estuary invaded by one of the naturalised cord grasses (*Spartina anglica*): spartina grass saltmarsh; estuarine.