

Supplementary Materials

Appendix S1. Ecosystem classifications based on Patterson and Cole (2013) assigned to LCDB V4.1 (2015) land use classes across Pāmu Landcorp farms. Note this classification assumes that alpine grass/herbfield, gorse and/or broom, matagouri or grey scrub, mixed exotic shrubland, and tall tussock grassland include a mix of exotic species that are grazed by stock.

Ecosystem Classification	Description	Pāmu Landcorp Classifications
1. Horticulture and cropping	Land used for growing arable crops such as apples, kiwifruit, grapes, and vegetables.	Orchard, vineyard or other perennial crop Short-rotation cropland
2. Agriculture	Land used primarily for pastoral farming and does not include land with fragments of other types of vegetative cover.	Depleted grassland High producing exotic grassland Low producing grassland
3. Exotic forest	Land covered with exotic forestry or harvested exotic forest species / regenerating shrublands.	Exotic forest Forest - harvested
4. Intermediate agric-scrub	Marginal land covered with exotic and indigenous scrub/fern mixed with tracts of exotic grasses. Excluded from productive land as most of the ecosystem services provided are supporting (e.g. nutrient cycling, erosion control, pollination) and regulating (e.g. waste treatment) rather than direct provisioning values (e.g. food production and raw materials such as wool).	Alpine grass/herbfield Gorse and/or broom Matagouri or grey scrub Mixed exotic shrubland Tall tussock grassland
5. Scrub	Exclusively native scrub communities such as mixed broadleaf shrubs, mānuka, kānuka, bracken, and ferns.	Fernland Mānuka and/or kānuka Sub-alpine shrubland
6. Forest	Note that Patterson & Cole (2013) include both mature indigenous forest (podocarp, broadleaved, beech) and exotic commercial forest in this category. Exotic forest used for timber production should be valued separately for services such as raw materials in any more detailed analysis given the commercial nature of the service.	Broadleaved indigenous hardwoods Deciduous hardwoods Indigenous forest
7. Wetlands	Freshwater wetlands.	Flaxland Herbaceous freshwater vegetation
8. Estuaries	Tidal saltmarshes.	Herbaceous saline vegetation
9. Mangroves	Mangrove (<i>Avicennia marina</i> var. <i>australasica</i>) areas in the upper North Island.	Mangroves
10. Lakes	Natural and artificial bodies of standing water.	Lake or pond
11. Rivers	Natural flow of freshwater along a definite course (as opposed to drainage channels).	River
12. 'Productive' land (1–3)	Ecosystem classifications 1-3 (horticulture and cropping, agriculture, and exotic forest).	-
13. 'Unproductive' land (4–11)	Ecosystem classifications 4-11 (intermediate agric-scrub, scrub, forest, wetlands, estuaries, mangroves, lakes and rivers).	-
14. Non-assigned land	Covers land not readily classifiable into one of the categories above. For instance, Molesworth Station has 27 965.5 ha of 'gravel or rock' land.	Built-up area (settlement) Gravel or rock Landslide Sand or gravel Surface mine or dump Transport infrastructure Urban parkland/open space