

Vegetation composition, structure, and biomass of two unpolluted watersheds in the Cordillera de Piuchué, Chiloé Island, Chile

Battles, John J.

Armesto, Juan J.

Vann, David R.

Zarin, Daniel J.

Aravena, Juan Carlos

Pérez, Cecilia

Johnson, Arthur H.

Research in pristine forests provides a necessary reference of energy and nutrient cycling in absence of anthropogenic influence. Therefore two unpolluted watersheds in the Cordillera de Piuchué of southern Chile (42°30' S) were chosen for detailed ecosystem analysis. The goals of this study were to quantify the distribution of the living biomass in the research watershed and to document topographic gradients in the vegetation. Across a small spatial gradient from ravine bottom to ridgetop (approximately 60 m in elevation and < 300 m in length) in the Cordillera de Piuchué watersheds, there were significant shifts in vegetation composition, structure, and biomass. Based on sampling in 18, 100 m² plots, we identified three distinct community associations: a Fitzroya forest at the bottom of the watershed, a mid-slope Pilgerodendron-Tepualia transition zone, and a ridgetop moorland community. The Fitzroya forest was dominated by a cohort of approximately 400 year-old *Fitzroya cupressoides*