

Payments for watershed services and the role of experimental catchment studies

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Abstract Forested catchments or watersheds provide a myriad of services of benefit to downstream users, yet in Australia these services often go unrecognised. For example, in eastern New South Wales (NSW) the majority of coastal catchments are used for domestic water supplies, agricultural production and recreational activities. It is no coincidence that the headwaters of these catchments are forested, thereby maximising water quality and naturally regulating the capture and release of precipitation. However, these *watershed services* are mostly taken for granted, except in cases where there is an infrequent, temporary threat to their provision, e.g. a wildfire or logging operation. Payments for watershed services (PWS) schemes operate to internalise these benefits (externalities) within an economic framework. The schemes involve the implementation of markets whereby buyers (e.g. downstream users) purchase watershed services from providers (e.g. forest managers) if these services are secured or improved. Case studies of successful PWS schemes operating for mutual benefit to forest managers and water users across a mix of public and private forest tenures in the USA are presented. Fundamental to the successful adoption of PWS schemes is the valuation of watershed services and establishment of appropriate units of exchange. It is demonstrated that experimental catchment studies are essential for the quantification and valuation of watershed services from forests and other land uses.

Key words ecosystem services; natural capital; market-based instruments; forest management; water supply