
Session B2: Research for Sustainable Forest Management

Forest Water Use and National Water Reform

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There is strong evidence that forests use more water than other land covers. It is for this reason that forests are successful in the control of salinity. With an increasingly full allocation of water resources in river basins, there is a need to include significant water intercepting land uses such as plantations in formal water planning and accounting, to ensure the future security of water supply for all recognised users of water. The National Water Initiative recognises such a need. Nevertheless, the significance of forest water interception for other water users remains unresolved and tends to be overstated, to the detriment of investment certainty in both the forest and water industries.

Forest water interception has been expressed in terms of changes to mean annual water yield of local streams. To fully understand the consequences of plantation forestry, the changes in local streamflow need to be expressed as changes in supply to existing holders of water access entitlements. There is often a difference between reduction in local streamflow and reduction in water supply to downstream users because of the spatial and temporal patterns of water supply. Water supply is often highly seasonal and sourced from limited parts of river basins.

The differences between reduced water yield and impacts on water access entitlements are illustrated from an analysis of new plantation scenarios in the Murrumbidgee River catchment of NSW and the broader southern Murray-Darling Basin. Most water access entitlements in the Murrumbidgee River system are for the major irrigation areas of

the Riverine Plain. The water for irrigation is sourced from large reservoirs in the upper catchments. These store predominantly winter and spring flows and release them during the summer irrigation season. The majority of water to the reservoirs is sourced from mountainous catchments with native forest cover and small alpine areas.

Most plantation development in the Murrumbidgee River catchment is in unregulated tributaries downstream of the reservoirs. These tributaries yield a much smaller proportion of summer flow in the Murrumbidgee than is suggested by their mean annual water yield. Consequently the reduction in flow from the tributaries has very little impact on diversions of flow to irrigation areas. Water allocation rules preserve the diversions to the irrigation areas at the cost of flows downstream into the Murray River. Thus plantation expansion in the Murrumbidgee catchment has little impact on irrigators and a small impact on flows in the Murray River.

A second type of allocation is environmental water for the Living Murray icon floodplain forests. These floodplain forests have lost revitalising flood flows as a result of river regulation. To restore flows over the floodplains it is proposed to supplement high flows from unregulated tributaries with reservoir releases which will push flows overbank. There is little evidence that catchment vegetation cover influences flood volumes and as stated above there are few plantations in the Murray system in the reservoir catchments. Consequently



plantations will have little impact on floodplain watering. The area of most concern for plantation expansion is provision of minimum flow requirements to maintain in-stream ecosystems.

The National Water Initiative allows the negative impacts of plantations to be

considered with positive impacts such as reduction of salt loads. Complete analysis of all impacts should provide greater certainty and equity for both forestry and water industries.