Editor in Chief of Journal of Ecology

INSERT ADDRESS HERE

5th June, 2014

Dear Dr. David Gibson,

Please find enclosed our manuscript **“Hydrological conditions predict wood density in riparian plants of south-eastern Australia”**, which we have submitted for consideration as a Standard Paper in *Journal of Ecology*.

Wood density provides a window into the ecological strategy of riparian plants.

As such, variability in hydrology among river systems represents a strong environmental gradient over which .

In Australia, where hydrological variability is the highest of any continent in the world,

Riparian plants must employ some ecological strategy to contend with periodic flooding disturbance and variability in soil moisture availability associated with the riparian environment. For woody plants, the execution of this strategy is often hinted at by the woody stem.

In our manuscript, we show that wood density in riparian plants varies strongly along a single axis of hydrological variability. This axis integrates flood intensity and frequency with metrics of hydrological unpredictability, and can be conceptualised as a gradient of environmental harshness, with higher stem wood density associated with harsher conditions.