**Knowledge gaps**

1. Future floodplain inundation events should be carefully monitored and results used to further **validate blackwater models**.

2. **The effect of changed inundation patterns on riverine productivity**.

3. **Further trials of the rapid assessment of bioavailability of riverine DOC, namely three-dimensional fluorimetry**. Further trials with a broader range of carbon sources and a selection of natural samples from across the southern Basin is required to allow development of this technique for field application (from Whitworth et al 2013).

4. **Effect of persistent hypoxic conditions on aquatic fauna** (Baldwin et al 2011).

5. The **tolerance thresholds of various life cycle stages and the survival strategies of various species and size classes** require further investigation so that future poor water quality events can be managed to maximise the survival of aquatic biota (Whitworth et al 2011).

6. The **sub-lethal effects of hypoxia and extremely high DOC concentrations on stream and floodplain biota** of the Murray-Darling Basin requires further investigation (Williams et al 2012).

7. Research effort is needed to **assess and quantify the aggregated risks associated with multiple-site watering events** (Ning et al. 2014).

8. **Leaf litter characteristics of DOC-generating trees other than red gum**. Little is known about the leaf litter characteristics of other potential DOC-generating trees such as black box and the temperature-dependent rate of DOC leaching from these leaves (Ning et al. 2014).

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