

Response to comments of reviewer 1

Sl No.	Comment and Response
1	Abstract: need to mention which of the 11 GCMs were used
	Referred relevant table in Table 2 which presents a summary of the GCMs used in this study.
2	high rainfall events?
	"high rainfall" has been replaced with "high rainfall events"
3	areas which will experience a reduction in water supplies in the future
	Changed as follows: areas which will experience a reduction in surface water supplies in the future
4	where most of Perth's water supply catchments are located
	Location of Perth's water supply catchments has been described in a separate sentence as follows: Perth's surface water catchments are located in the Darling Ranges in SWWA.
5	this study is from 2005 so perhaps this statement isn't quite relevant for 2013.. i.e. climate change impact studies on hydrology aren't new anymore
	Suggestion incorporated as follows: Though climate change impact studies on hydrologic regime are relatively new until last decade (Dibike and Coulibaly, 2005), there are numerous studies carried out in a wide variety of environment across the world recently (Kundzewicz et al., 2007; Bates et al., 2008).
6	this sentence doesn't make sense maybe.. "..there is a prevailing research gap regarding the probable climate change impact on..."
	This sentence has been corrected as suggested.
7	Perhaps the aim of this study should be explained earlier on in the introduction
	The objective of this study has been explained briefly in the abstract as follows: In this paper, hydrologic impact of climate change on Murray Hotham catchment in SWWA has been investigated using multi-model ensemble approach through projection of rainfall and runoff for mid (2046-2065) and late (2081-2100) this century. Also the objective of the study has been briefly explained in the first paragraph in the introduction as follows: In this study, climate change impact on rainfall and runoff during mid and late this century in Murray Hotham catchment of SWWA has been assessed for A2 and B1 emission scenarios.
8	include locations for ease of reading (Marradong and Saddleback)
	Locations included as suggested: Marradong and Saddleback
9	(Yarragil)
	Location included as suggested: Yarragil
10	The R2 values don't relate to how well the model fits the observed data so these numbers are misleading.. i.e. for Figure 5b, $y = 0.85x$, which implies that the model is overpredicting the observed data (i.e. if it fitted perfectly well, the equation would be $y = x$) it needs to be plotted against the 1:1 line to be a true representation of how well the model is predicting the observed
	This figure (Fig. 5) has been removed as suggested by other reviewer. But the discussion

	on R ² value has been kept which shows that value varies within 0.83-0.94.
11	At Baden Powell
	The location has been added in the description
12	to me it looks like low and medium rainfall drops the most.. perhaps compare the absolute values
	At Saddleback Road Bridge, reduction in Q90 and Q50 rainfall are 13% and 16% while reduction in Q10 rainfall is 8% for A2 scenario during mid this century (Table 4).
13	at Baden Powell
	The location has been added in the description
14	which catchment? Baden Powell?
	The location has been added in the description
15	10%
	Has been corrected to 10 th percentile
16	similarly (64% is a large decrease!)
	Corrected accordingly as follows in section 4.4.1: During mid this century, mean annual runoff from contributing catchment at Yarragil Formation are projected to decrease significantly compared to observe past for both scenarios, A2 and B1
17	in the table this value is 34%, not 21%
	Corrected accordingly to 34% (section 4.4.1)
18	include figure numbers to help the reader understand - 11 c) and 11 d)
	Figure numbers included in the text describing runoff spatial variation. (section 4.4.2)
19	include figure numbers - 11e) and 11 f)
	Figure numbers included in the text describing runoff spatial variation. (section 4.4.2)
20	Figure 12 graphs should be in mm so that you can compare fairly between sites.
	All thorough the paper, runoff when it is measured at the gauging stations has been presented in Giga Litre (GL). Runoff changes are presented as %. For describing spatial variability of runoff we have used mm unit.
21	is this result believable? considering that rainfall in the area is predicted to decrease?
	Earlier comparison was made with observed recent (1981-2000) but now the sentence has been changes as follows which make better sense: At Yarragil, high annual flows projected to increase compared to the observed recent (1981-2000) but projected to decrease compared to observed past (1961-1980) under both the scenarios during mid this century (Fig. 12g). (section 4.4.3)
22	on the graph it ranges from 12 to 20%
	Corrected accordingly from 12 to 20% (section 4.5)
23	would be good if both Figure 13 graphs used the same x axis so that you could compare the A2 and B1 results easily
	We have tried to plot both the graphs with the same x axis. Problem arises due to overlapping or close positioning of the points for scenarios B1 as the changes in rainfall and runoff during mid and late this century are similar for scenario B1.