

Interactive comment on “Impacts of impervious cover, water withdrawals, and climate change on river flows in the Conterminous US” by P. V. Caldwell et al.

Anonymous Referee #2

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This is an interesting topic, particularly in the context of water resources assessment, planning and management. The manuscript was well written compared to most manuscripts I have reviewed. A few review comments are summarized below: 1. Page 4266, line 27, change “a diverse domain” to “diverse domains”. 2. Page 4271, line 24: a comma is needed between “et al.” and “2009”. 3. Page 4272, line 6: “have” should be “has”. 4. Page 4298, Fig. 2: consider adding sentence indicating numbers from 1 to 18 correspond to 18 water resource regions in the Conterminous US. 5. Page 4279, line 5: should “2010 water withdrawals” be “2005 water withdrawals”? 6. Using 10 validation sites, the WaSSI model was validated. The bias greater than 20% is 40%

(i.e., 4 of the 10 sites), which is kind of high. Explanations should be provided what would be the major reasons for which the model calibration was not conducted? 7. Explanations should be provided on why two periods 1981-2000 and 2041-2060 were selected to be compared. 8. Consider introducing the concepts of water resource region and the 8-digit hydrologic unit and the association as part of the background information. It is probably common knowledge for hydrologists in the United States, but not so for international readers. If space allows, suggest a summary table providing the 18 WRRs and their associated information (name, drainage area, PPT, ET, etc.), which would support the discussions in section 3.2.1. 9. It is confusing about surface water withdrawals. In section 2.4.4, it was discussed the water use was remained at the 2005 levels from 2010 to 2060. However, in section 3.3, “2010 water withdrawals” was used. Some explanations may be considered to address the difference between the 2005 and 2010 water withdrawals?

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