Major comments

1. The authors provide a valuable service to the hydrologic modeling community. Firstly, simply listing the major differentiating features of these spatial climatic datasets can assist researchers in evaluating their own methods (for example, I was not aware that there was such a degree of variability in latency). Secondly, this summary of available modern datasets can facilitate an improved dataset selection and justification process in future studies.
2. At several points the manuscript resembles a laundry list of findings derived from a review of data sources or other studies. This is partly unavoidable due to the nature of the analysis, but the authors can assist a reader by inserting additional summary text before and/or after the paragraphs in which the resources or findings are listed (see minor comments for line 274, 291, and 295).
3. As a reader I found the use of example research applications very grounding, since much of the paper is, by necessity, composed of high-level summarizing. I have noted some places where I think additional concrete examples or context would be useful.

Minor comments

Line No.	**Comment**
93	Make sure column headers are included on each page where Table 1 appears.
119	Make sure column headers are included on each page where Table 2 appears.
130	Rephrase with semicolons: "Reanalysis systems use various models, observational datasets, and assimilation methods; can generate many climate variables with inter-dependent variable consistency; and provide near-real-time datasets with latency periods from hours to months."
140	Make sure column headers are included on each page where Table 3 appears.
149	"merging other data sources" - consider specifying that they are other data sources with complimentary advantages or disadvantages.
152	How do they estimate accuracy and bias (i.e., do they train the predictions on a training set and leave out certain ground stations or satellite observations as a test set for calculating error)?
164	Consider rephrasing: "Many characteristics of gridded datasets influence the best product for a given application or research question."
175	In this paragraph, consider adding a sentence describing what fraction of datasets include a single variable (e.g., P) versus multiple variables.
186	Consider adding another example: calculations of the recurrence interval of a flood of a given severity.

Line No.	Comment
218-220	I find these example research applications helpful and would recommend adding at least one of to each of the subsections in Section 3, Considerations for Use. Alternatively, you could put several different example applications and what features they might prioritize somewhere earlier in Section 3.
247	Make sure column headers are included on each page where Table 4 appears.
274	This paragraph is a bit of a laundry list of different findings. To some extent this is unavoidable with this type of review work, but additional summarizing could help the reader. Consider this revision of the topic sentence: "Accuracy and agreement of gridded datasets of air temperature (T) at 2 m above ground (Table 4), about crop canopy height, were dependent on many factors, including spatial region of interest and topography."
279	Does the author define "adequate"?
291	This summary statement is helpful. Would recommend adding the number of studies ("consensus from these X studies") to this sentence.
295	The laundry list problem again - consider adding another summary statement to this section (at the top or bottom). One option would be to frame it from the perspective of a reader looking for the best dataset for their application (i.e., factors X, Y and Z have the biggest impact on dataset accuracy/are most important when choosing a data product).
335	Adequate for Q simulation at what river scale?
357	"detecting" - unclear word choice. Possibly mean representing?
368	Could use another summary statement for this section.
388	The Hydrologic Coherence Test sounds interesting! Consider including a brief example of how it would be used.
400	"similar climatic setting and hydrologic objectives" - similar to what? Similar to the reader's own research project? Or is this a recommendation to pay more attention to studies that have higher similarity within the datasets they consider?
420	This is a long and useful list of considerations. Consider adding "especially in areas of high topographic relief" after "derived from ground-based observations".
425	Consider adding vertical lines to Table A1 to visually separate columns. The word "Data" in "Network Common Data Form" runs into the descriptive text to its right.