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Open Access Earth System Science Data Discussions

Interactive comment on "An Explicit GIS-Based River Basin Framework for Aquatic Ecosystem Conservation in the Amazon" *by* Eduardo Venticinque et al.

Anonymous Referee #1

Received and published: 8 August 2016

This manuscript presents GIS data that was developed especially for the analysis, management and monitoring of various aspects of aquatic systems in the Amazon basin.

First of all, the article is mainly well written, and gives a good overview of the presented data. Nevertheless, I have several general and specific comments that need to be considered before publication can be recommended.

General comments:

- A new chapter describing the main characteristics of Amazon basin should be added.

- The coding of the generated sub-basins needs to be described in more detail.

- The generated river network and sub-basins show a large number of artefacts at the higher resolutions (see attached Figs. 1 to 3). This should be discussed in some detail.

- The DEM used for the analysis should also be made available, if possible.

- Many references are missing.

Specific comments:

L48: Check citation format.

L52: "The Amazon basin covers. . ."

L52-69: This paragraph does not well fit here. Instead it should be part of a separate chapter describing the Amazon basin.

L54-55: Check citation format.

L75-76: Define difference between "basin" and "watershed"

L79: Reference is missing.

L82: "local interpretation"? Explain in more detail.

L80: Verdin and Verdin (1999) applied this method only to North America.

L100: "spatially dynamic conservation. . ." sounds strange

L103: "help providing"

L113: "Amazon basin"

L129: "early rising water period"? Explain in more detail.

L158-166: Put this data into a table.

L177: Delete "units".

L181: Reference is missing.

L181-186: This is unclear. Please describe in greater detail.

L185: “according to” instead of “by”

L194-196: Was this done manually? How did you identify anomalies?

L197: Is this correct? In the other cases the Hydro Tools of ArcGis were used.

L224: What names? Did you still use the Pfafstetter Coding System?

L222: How did you derive the point shapefile for basin outlets?

L233-234: This is not correct. Actually, the floodplain is defined as the area adjacent to a river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high discharge. As such its areal extend is more or less constant in time. In addition it is unclear to which influence of the floodplain you are referring to (e.g. runoff generation?).

L235: The term “high water drainage patterns” is unclear. Explain in more detail.

L238-240: Explain in greater detail, how you derived the wetland mask for the radar imagery.

L258: Reference is missing.

L262: The method needs to be explained in greater detail incl. references to information sources and optical data. How does this classification compare to Sioli 1968?

L296-307: The conclusions chapter should be rewritten in a way that better presents the main outcomes of this work. Also some aspects are missing, e.g. river distance.

References need to be sorted alphabetically.

Figure 1: - “of the first” - “BL =” - increase fond size - add BL1, BL2 etc. to the sub panels

Figure 5: - A lot of confluence nodes seems to be missing

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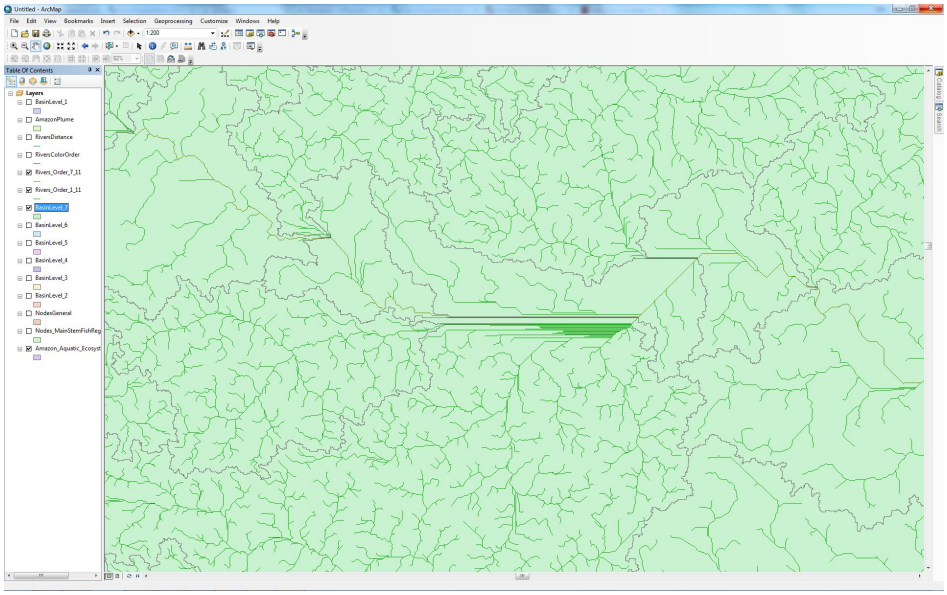


Fig. 1.

C5

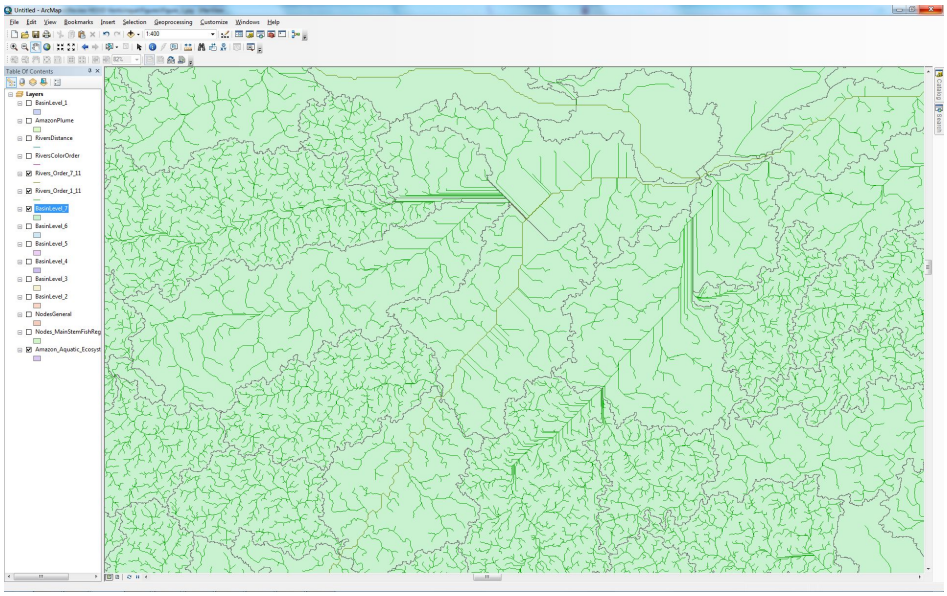
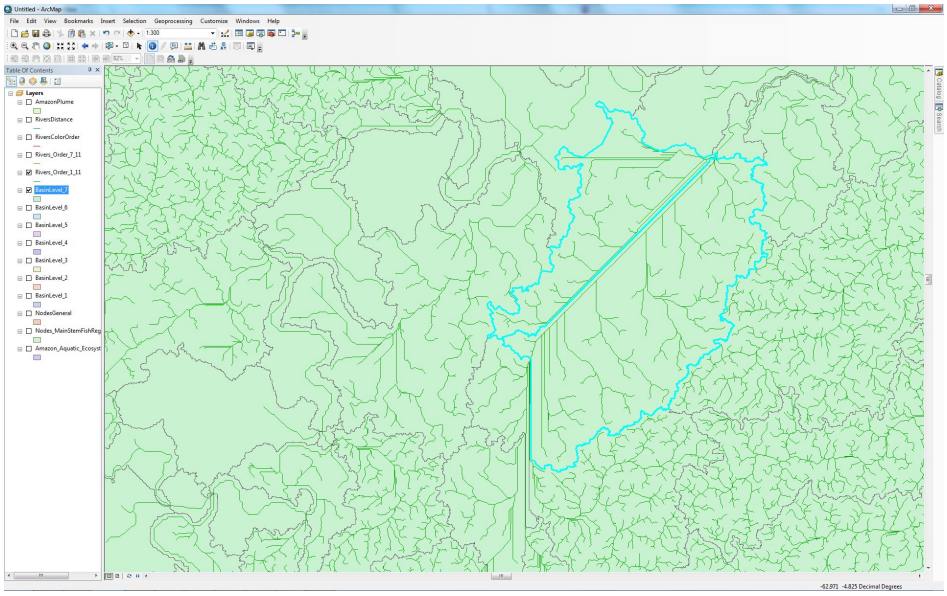


Fig. 2.

C6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-62.071 -4.825 Decimal Degrees

Fig. 3.