

Interactive comment on “Changing patterns of fire occurrence in proximity to forest edges, roads and rivers between NW Amazonian countries” by Dolores Armenteras et al.

Anonymous Referee #3

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This paper reports and discusses distributions of distances between MODIS Satellite active fire detection locations to roads, rivers and forest edges in NW Amazonia. Differences in the distribution patterns by political boundaries and geographical locations are reported. The information presented is topical, important and relevant. I have major concerns in the data/analysis and results sections. Listed below are my comments.

Major

Data sources and analyses section is missing details. For eg. Was the distances computed from pixel edge or center/centroid? This has consequences as the native MODIS Active fire pixel has varying sizes depending on the scan angle (Wolfe et al. 1998; Kumar et al. 2011) and have varying confidence levels (Giglio 1999; Freeborn

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et al. 2011). Can distances less than half a nominal 1km pixel dimensions like 300m and 500m as quoted for river networks be meaningfully interpreted? A separate figure that shows river network and fire locations will be helpful.

Data section (line 105-106) states that road data was not available for Venezuela, however Figure 4 B seems to show CDF curves for roads in Venezuela. Result shown in Figure 4 C is very hard to reconcile with. It's hard to believe that all 5 countries have the exact same spatial distribution of rivers (Line 169-170). An illustrative figure will help.

Minor

Abstract could include findings mentioned in line 195,218.

All figures need better resolutions. Need same scale for figures that are compared eg Figure 4 A-C and B-D.

Line 20 this a 15 or 12 ? year study. Data used spans from 2003-2015 as mentioned in data sources and analyses.

Line 64 – 65 Barber et al. 2104 and Cochrane & Barber 2009 are only Amazonian studies need more citations to include the whole of tropics if this is true.

Figure 1 is not clear. A separate study region showing political boundaries, rivers and roads only, and one separately with hotspots overlaid will be easier to comprehend.

Figure 3 is in duplicate on P16 and 17.

Line 101 incorrect terminology for detection confidence (0-100 split into low-confidence, nominal confidence and high confidence (<https://earthdata.nasa.gov/c5-mcd14dl>)).

Line 104 “CIESIN (Center for International Earth Science Information Network, Columbia University)”?

Line 126 and associated paragraph possible typo CDF instead of CFD? Figures seems

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to carry this typo as well.

More discussion on the rationale for formulation of questions and inclusion of a question wise answer in conclusion will be helpful.

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