

## ***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 #1**

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This paper analyzes the patterns of fire occurrence outside Legal Amazonia, covering the Northwestern part of the Amazon basin. They studied the relation of fire activity and their proximity to roads, rivers and forest edge. The results obtained in this paper highlighted the differences in fire occurrence between North and South of the Equator and within the countries analyzed. They also found significant the relation of fire occurrence with roads, rivers and forest edge. The paper is well written and organized, although more information should be included in the methods section.

Major: - The data sources should be described in more detail. A brief explanation of how the databases of roads and rivers were built must be included in the text, as well as the last year they were updated and their spatial resolution. - The authors used

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static maps of roads and forest distribution representative of a certain year (which is not specified in the text) to analyze the patterns of fire activity. Roads and forest cover are very dynamic land covers. Deforestation is an important phenomenon in the study area in this paper, so the uncertainty of comparing fires occurred in 2003 with a forest cover map of 2010 is too high. How can you prove that those fires occurred outside of the forest? I suggest the authors to have a look at the Global forest change map developed by Hansen et al. (2013) as an indication of forest change within the timeframe of this study. - When the authors say “following the approach presented by Kumar et al (2014)” a short explanation of the method would help the reader follow better the methodology, specially when the work by Kumar et al. (2014) is being cited in the manuscript several times.

Minor: - Page 3, line 52-53 and page 4, line 66 and 67. The almost same sentence is repeated: “fires in the Amazon occur more frequently in previously fragmented forest and are largely associated with deforestation and forest edges” and “Fire is frequently used for clearing in fragmented forests and is largely associated with forest edges. - Page 4 line 75. “But see”? - Page 4 line 76. Add comma after “In this study” - Page 5 line 110. There is a typo: interannual it's repeated twice, I guess one of those should read intraannual. - Page 7, line 145. Add “However, “ at the beginning of the sentence: “ annual fire density ...” - Page 7, line 160. Add “their distance to” before “both roads and rivers” - Page 8, line 170. Add commas after “On the contrary” - Page 8, line 192. Define the acronym SST - Page 9, line 198. In my opinion the authors should choose one of the two: impacted or affected. - Page 9, line 211. Change “above” with “apart from” before “climate there are...” - Page 9, line 217. When the authors say “However and contrary to this study...”, which study are you referring to? - Page 10, line 225. “Departments”? - Page 10, line 239. “Armenteras and others” should read “Armenteras et al.” - Page 10, line 239-241. This sentence is repeated, the authors already give this information in lines 234-236. Please remove this sentence. - Page 11, line 255. Change “fires” with “fire occurrence” - Page 11, line 261. Define acronym REDD.

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