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## ***Interactive comment on “Decreased summer drought affects plant productivity and soil carbon dynamics in Mediterranean woodland” by M. F. Cotrufo et al.***

**M. F. Cotrufo et al.**

cotrufo@nrel.colostate.edu

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We are again most pleased to hear that also referee 3 appreciated our work. This referee, while considered the work worth of publication, suggested several minor revisions and we report below our punctual response to each of the reviewer's suggestion. We like to thank this reviewer for the thorough job he/she did in revising our work, which significantly improved its readability.

Title: “a” was added. We like effective titles that communicate the major result of the study. Decreased precipitation did not affect the system – adding that result in the title would make it too long and losing effectiveness. We are however ready to revisit our

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decision if the editor asks for a new title.

Line10: this line was removed as explained in the response to remark 5960 line13.

Line 14: corrected

Line 15: corrected

Line 18: corrected

Line 21 and 23: corrected

5957 line 12: removed

5957 line 19: we substituted it here and elsewhere in the text where appeared better suited. Different words have slightly different meanings and we did not use precipitation all the times, when other terms (i.e. rainfall, throughfall, etc.) were more appropriate.  
5958 line 1-3: Rephrase. Now it reads: “In addition, precipitation changes may directly or indirectly affect many processes in terrestrial ecosystems, increasing the complexity of ecosystem responses to precipitation changes (Heisler and Weltzin, 2006)”.

5958 line4: done

5958 line6: done

5958 line12: done

5958 line14: changed as suggested

5958 line 14: changed as suggested

5958 line 19: corrected

5958 line28: corrected

5958 line29: corrected

5959 line 1: corrected

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5959 line 10: corrected

5959 line 19: corrected

5959 line20: changed

5960 line 4: corrected

5960 line 5: the questioned sentence was deleted.

5960 line6: removed

5960 line 13: The referee is right. The initial experimental design was a straight comparison between two extreme (dry and wet) soil moisture regimes (Ripullone et al., 2009). Later we realized the importance of the control – and included the control treatment to help explaining the interesting observed differences between the dry and wet treatments. Throughout the text we clearly report when data are compared to control, and focus our discussion on the years when all treatments were available. To avoid confusion, we now have removed the sentence at line 10 of the Abstract.

5960 line19: corrected

5960 line26: corrected

5961 line 6: corrected

5962 line 9: corrected

5962 line 10: Details on the weather station are now provided. The new text reads: “In addition, a weather station was set-up near the experimental site to measure air temperature and air humidity (HMP45AC, Vaisala), incoming solar radiation (CMP3, Kipp and Zonen), wind speed and direction (03002-L, Campbell scientific) and rainfall (Davis pluviometer). All variables were measured at 10 seconds interval (0.1 Hz) and then averaged to a half-hourly time step using a Campbell Scientific CR10X datalogger”.

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5962 line 12: The time interval is correct, 0.1 Hz, but for clarity we also added “at 10 seconds interval”.

5962 line 18: corrected to 2009

5962 line 18: corrected

5962 line 21: corrected

5962 line 23: The “25” is not in our text – it was the pag. number at the side. I am sorry if that generated confusion, but our text reads “for each of the experimental treatments”, which as the referee correctly notes are 3.

5962 line29: To avoid confusion, the sentence was replaced with: “For the determination of tree growth nine manual dendrometer”. Tree growth was measured between April 2009 and April 2010, thus it provides tree growth for the 2009 growing season, since negligible growth occurs during the first months of the year.

5963 line9: corrected

5963 line15: replaced

5963 line 16: we disagree here, once introduced the C4 soil, in our opinion does not need to go in between “..”. Thus, we did not change the text.

5963line17: removed

5963 line 18: corrected.

5963 line 20: corrected

5963 line 21: corrected

5963 line 28: corrected

5963 line 28: corrected

5964 line 16: corrected

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5964 line 16: corrected

5964 line 19: corrected

5964 line 23: corrected

5964 line 25: corrected

5965 line 6: corrected

5965 line 7: corrected

5965 line 20: corrected

5966 line 2: corrected

5966 line 3: corrected

5967 line 11: corrected

5967 line 24: corrected

5967 line24: corrected

5968 line 6 to line 11: this section was removed to respond to the comment of referee  
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5968 line 14: corrected

5968 line 15: corrected

5968 line 16: corrected

5968 line 18: corrected

5968 line 19: corrected

5968 line 20: removed

5968 line 24: corrected

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5968 line 24: corrected

5968 line 27: replaced

4. Discussion. Our discussion follows a logical flow and we would prefer not to separate it into specific sections. However, if the editors request us to break it into sections, we'll be happy to do so.

5969 line 1: corrected

5969 line 5-16: Also referee 1 suggested removing this paragraph. Given that both referees shared the same opinion, we removed the paragraph.

5969 line 17: corrected

5969 line 20: the referee is right; the presentation of results is not needed here and we removed these paragraph.

5970 line 8: The referee is right that these are results, but in this case they are functional to the discussion. Therefore we did not remove them. In our opinion it is actually good practice to briefly restate the main results from the study, when discussing them in the context of previous studies.

5970 line 15: corrected

5970 line 17: corrected

5970 line 20: corrected. The comparison is indeed between wet and dry.

5970 line 24: corrected

5970 line 27; corrected, with the exception of "leaf litter was reduced", because it is not a correct statement (see table 3)

5970 line 29: corrected

5971 line 6: corrected

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5971 line 9: corrected

5971 line 10: corrected

5971 line 14: corrected

5971 line 20: corrected

5971 line 20: corrected

5971 line 22: corrected

5971 line 24: corrected

5972 line 20: Again the referee is correct that these are results. But repeating them here is functional to the clarity of the discussions. Therefore we left this paragraph in but corrected it as suggested.

5972 line 26: corrected

5972 line 30: corrected

5973 line 2: corrected

5973 line 4: corrected

5973 line 6: corrected

5973 line 8: corrected

5973 line 9: the sentence reported by the referee is exactly as in the text. Therefore no changes were made.

5973 line 10: The correction suggested modify the meaning of the text, and is incorrect. All their sites was inundated (not only the wet treatment) and it also loses the comparison between “their moist” site and “our xeric” site. Therefore the text was not modified.

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5973 line 12: We corrected “did not” but did not replace “and” with “to”, since our original expression is the correct one in English.

5973 line 15: corrected

Table 1: The caption has been rephrased to: “Amounts and timing of water additions to the wet treatment by irrigation, and total water input (i.e., irrigation + rainfall) for the growing season (March to September), for the five years of the water manipulation experiment. For comparison, annual rainfall, rainfall during the growing season and long term means (LTM, 1980-2010) are also provided.”

Table 3: corrected

Table 4 was removed as the reviewer suggested and the sentence “estimated SPP was  $117 \pm 62$ ,  $82 \pm 29$  and  $190 \pm 13$  g C m<sup>-2</sup> yr<sup>-1</sup>, for the dry, control and wet treatments, respectively” was added in the result section.

Figure 2 was removed as suggested and all figure numbers in the text modified accordingly.

Figure 7 was removed as suggested by referee 1.

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Interactive comment on Biogeosciences Discuss., 8, 5955, 2011.

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