

Interactive comment on “Field-based observations of regional-scale, temporal variation in net primary production in Tibetan alpine grasslands” by Y. Shi et al.

Anonymous Referee #2

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Shi et al. report on a study on grassland above-ground NPP in the Tibetan plateau. They conducted a repeated survey of 40 sites during four study years and quantified above-ground biomass during the maximum of vegetation development (proxy for NPP), species richness and air temperature and precipitation. Their main findings are that (i) NPP reacted in a coordinated manner to inter-annual variations in weather across their study sites, (ii) that precipitation was important for driving NPP than temperature, and (iii) that the inter-annual variability in NPP correlated negatively with plant species richness.

Overall the paper is concise and well-written, although there are problems with English style and the use of tenses. The results are original and will be of interest to the
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readers of Biogeosciences. I recommend acceptance provided the minor issues below are tackled:

Detailed comments: p. 16845 l. 2: I wouldn't call NPP a "property", but rather a "process" l. 9: "weather" instead of "climate" – 4 years are too short to draw conclusions about climate variability – note that this applies throughout the paper! l. 18: "correlated" instead of "correlates" – use past tense throughout the ms l. 22: gross photosynthesis is the primary step of carbon acquisitions p. 16847, l. 24: objective #3 is not introduced at all in the preceding introduction – this should be changed p. 16848 l. 15-18: would it be possible to add two pictures of typical alpine steppe and meadow sites to the auxiliary material in order to give readers a better impression of these two vegetation types? l. 24-26: so three plots were established along the diagonal line within the 10x10m area; how large were these plots? Within each plot you randomly selected a 1x1m square for biomass and vegetation analysis – so the plots must be larger – right? That means that at each site you took three replicate measurements during any year? This section could be formulated a bit clearer. p. 16849 l. 8: any data from the area that would support the use of July/August biomass as a proxy for above-ground NPP? l. 12-13: MAT and MAP are more common acronyms for mean annual temperature and precipitation (and in fact are used in Table 1) l. 23: how large was the inter-annual variability in species richness? p. 16858, l. 23-25: this raises the question why the authors did not investigate other metrics than species richness?! p. 16870, caption of Table 3: replace "extreme" with "highly" p. 16874: in the caption the range of the longterm climate data is 1979-2009, while in the figure 1980-2009 is given – which is correct?

Interactive comment on Biogeosciences Discuss., 10, 16843, 2013.