To the *Nature* Editorial Staff:

Please consider our manuscript, entitled “Climate change decouples drought from early winegrape harvests in France”, for publication in *Nature Climate Change*. Winegrapes are the worlds’ most valuable horticultural crop and are extremely sensitive to climate (Chuine et al 2004). Recent decades have seen winegrape harvest dates shift dramatically earlier in many parts of the globe, in step with warming trends. This has caused significant concern for the viability and productivity of many winegrape regions in the face of anthropogenic climate change (e.g., Hannah et al 2013, Jones et al 2005, Webb et al 2008, White et al 2006). Most research on this topic, however, has assumed relationships between climate and winegrape harvest dates are constant over time and thus may be assessed accurately from relatively short datasets (e.g., 10-30 years).

Here we provide a longer-term historical context to understanding how climate influences winegrape harvests, using over 400 years of harvest date records. We combine newly-available drought reconstructions for Western Europe, with additional paleo-climate records and instrumental climate datasets for the 20th century to show that the relationship between climate and winegrape harvests has changed dramatically in recent decades alongside climate warming.

We show that from 1600 and 1980, high temperatures and dry conditions during spring and summer are consistent predictors of early harvests across France and Switzerland. After 1980, however, drought controls on harvest dates effectively disappear, even as temperature remains significant. We offer evidence that the disappearance of the drought signal post-1980 is likely due to anthropogenic warming that has 1) largely decoupled regional drought from growing season temperatures and 2) made it easier for the region to reach the high heat thresholds necessary for early harvests without drought. Further, we show for two major wine producing regions (Bordeaux and Burgundy) that wine quality is closely connected to harvest date, and that quality ratings show a similar change in their relationship with drought. Importantly, our main findings are consistent whether we restrict our analyses to the instrumental climate data (1901-2012) or use the full paleoclimate reconstructions of seasonal temperature and drought available back to 1600.

Our work provides a novel perspective on winegrapes and climate, suggesting climate change may have significantly altered the large-scale drivers of winegrape harvests across France and Switzerland. By closing the connections between winegrape phenology, climate, and wine quality, we provide evidence for changes in the environmental constraints on wine that are relevant for viticulture management. Our results suggest that understanding viticulture responses to climate will require considerations of how winegrape phenology, and its underlying climate controls, will shift with warming, something that is already being explored for other agriculture systems (e.g., Brown et al 2012, Xia et al 2015).

Thank you for your consideration. If there are any questions, please do not hesitate to contact us.

Kind Regards,

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