



Subsequent wildfires affecting the Rio Toro basin (Chile): large wood recruitment, dynamics, and budgeting.

Lorenzo Picco (1,2,3), Cordelia Sculari (1), Lorenzo Faes (1), Andrés Iroumé (4), and the picco

(1) University of Padova, Department of Land, Environment, Agriculture and Forestry, Legnaro, Italy (lorenzo.picco@unipd.it), (2) Universidad Austral de Chile, Rina – Natural and Anthropogenic Risks Research Center, Valdivia, Chile, (3) Universidad Austral de Chile, Faculty of Engineering, Valdivia, Chile, (4) Universidad Austral de Chile, Facultad de Ciencias Forestales y Recursos Naturales, Instituto de Conservación, Biodiversidad y Territorio. Valdivia, Chile

Large disturbances, as wildfires, can suddenly change the stability and the equilibrium of an ecosystem, rapidly changing the dynamics and interactions between its distinct components. Looking at a watershed scale, wildfire generates burned wood that can turn in large wood (LW) once it is recruited into the channel network. In that way, after the disturbance, fluctuations in LW budget and subsequent wood transport can be observed. The Rio Toro basin (Southern Chile) was affected by two subsequent wildfires, in 2002 and 2015, respectively. These wildfires were different in terms of severity and extensions. The main aim of the present study was to analyse changes in both, wood load and budgeting before and after these two large disturbances. Moreover, analysis related to the displacement of LW were carried out. During the summer 2018 and 2019, the already analysed (i.e. from 2006 to 2013) 2 km-long reach, was re-surveyed considering both its morphological settings and the fluvial wood. Moreover, nine 10x10 m plots were analysed to detect changes in forest cover characteristics in the surrounding area of the channel (i.e. floodplains, and hillslopes). This has been done considering various parameters as structure, composition, presence of disturbs and soil settings. Preliminary results showed that there was a significant increase in the number of LW pieces and the number of burned LW, compared to the historical dataset demonstrating that the recruitment from hillslopes has already started. In addition, thanks to the highly detailed morphological survey, has been possible improving the knowledge on preferential depositing sites. These promising preliminary results will permit to better understand the mechanisms of recruitment after such kind of large disturbances, permitting to define improved management plans in terms of both, risks management and restoration purposes.