Geophysical Research Abstracts
Vol. 16, EGU2014-5741, 2014
EGU General Assembly 2014

Wild fire effects on floristic diversity in three thermo-Mediterranean vegetation types in a small islet of eastern Aegean sea

Eleni Abraham (1), Apostolos Kyriazopoulos (2), George Korakis (2), Zoi Parissi (1), and Dimitrios Chouvardas (1)

(1) Greece (eabraham@for.auth.gr)Laboratory of Range Science (236), Department of Forestry and the Natural Environment, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, (2) Department of Forestry and Management of the Environment and Natural Resources, Democritus University of Thrace, 193 Pantazidou str., 68200, Orestiada, Greece

Sclerophyllus scrub formations, the main vegetation type in many islands of the Aegean area, are characterized by their high biodiversity. Dominant shrub species of sclerophyllus formations are well adapted to dry season conditions by various anatomical and physiological mechanisms. As a result, their biomass acts as very flammable fine fuel, and consequently wild fires are very common in these ecosystems. Wildfire effects on vegetation and biodiversity in the Mediterranean basin have been studied and the results are diverse depending mainly on vegetation type and frequency of fire. The aim of this study was to evaluate the effects of wildfire on floristic diversity and species composition in three thermo-Mediterranean vegetation types 1) Sacropoterium spinosum phrygana, 2) low formations of Cistus creticus and 3) low formations of Cistus creticus in abandoned terraces. The research was conducted in Enoussa islet, which is located northeastern of Chios Island, in May 2013 (one year after the fire). Vegetation sampling was performed along five transects placed in recently burned and in adjacent unburned sites of each vegetation type. The plant cover and the floristic composition were measured, while diversity, evenness and dominance indices were determined for the vegetation data. Vegetation cover and the floristic diversity were significant lower and higher respectively in burned areas in comparison to the unburned. The woody species followed by the annual grasses and the annual forbs dominated in both burned and unburned areas. However, the woody species were significantly decreased in the burned areas in all vegetation types, while the annual grasses only in the burned areas of Sacropoterium spinosum phrygana and Cistus creticus in abandoned terraces. Inversely, the annual forbs significantly increased in the burned sites of Cistus creticus formations. The highest value of Morisita-Horn Index of similarity between burned and unburned sites (beta diversity) was observed for the Sacropoterium spinosum phrygana (0.83) indicating limited effect of fire on the species composition of this vegetation type.