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Stellenbosch University*

THE ENDEMIC PLANTS OF THE FIRE-PRONE MEDITERRANEAN ENVIRONMENTS OF GREECE: ECOLOGICAL PROFILE AND IMPLICATIONS FOR CONSERVATION.

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Fire is one of the major ecological factors that shaped the Mediterranean ecosystems of the world in the course of their evolution. Greece, a significant part of which is typical Mediterranean, has a particularly rich and diverse endemic flora. The total number of Greek endemics comprises approximately 1 300 taxa, 50% of which occur mainly in the Mediterranean environments of Greece. By excluding the habitats not prone to fire (e.g. maritime cliffs, coastal sand dunes, and small islets), a smaller fraction of 293 taxa is derived, appearing exclusively in the fire-prone ecosystems of Greece. The latter is the group of interest for the present work. Two hypotheses were tested: a) do all plant families have equal representation in this group of taxa and b) are Mediterranean endemics a random assemblage of taxa or does this group show common trends concerning their biological attributes? To assess the above hypotheses a list of plant attributes was selected. These attributes were expected to indicate traits that these plants possess, in order to face the action of fire (e.g. regeneration mode) or other characteristics concerning their ecological profile (e.g. life form, growth form). Each attribute was given a value corresponding either to a certain size class (e.g. small: 0-10cm, for the attribute: height) or to a selected category (e.g. resprouter, for the attribute: regeneration mode). The formation of the classes was based on expert's opinion. Data required for filling the classes or the categories selected, were obtained both from knowledge rules based on expert's opinion and from the available literature in existing Floras (Flora Hellenica, Flora Europaea, Red Data Book of Rare and Threatened Plants of Greece, etc.) as well as on existing relevant electronic databases (e.g. "Chloris", see same volume). The collected information was entered in an electronic database called MEDENDEM, by applying the Access Microsoft software. The main outputs of this survey can be summarized as follows: The families with the highest contribution to the endemic flora of the fire-prone Mediterranean environments of Greece are those of Compositae, Caryophyllaceae and Liliaceae. The majority of the taxa have a herbaceous growth form. The most common life forms are the hemicryptophytes followed by the chamaephytes and the geophytes. Most of the taxa employ both regeneration modes (resprouting and seeding). Chasmophytic Mediterranean habitats, where wildfires are rather rare, demonstrate the highest probability of supporting endemic taxa compared to the other fire-prone habitats. Considering that the above-mentioned traits could describe the 'ecological profile' of the endemic plants in the fire-prone Mediterranean environments, it would be possible to generate management tools for endemic population conservation, given the constantly increasing human pressure.