A syntaxonomical study of Pinus nigra subsp. salzmannii forests in the Iberian peninsula

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with 3 figures and 3 tables

Abstract. Pinus nigra subsp. salzmannii is a submediterranean conifer characteristic of the cold, continental Mediterranean mountains. It grows mainly on carbonate sedimentary rocks (dolomite and limestone) and represents the dominant overstorey species at the Supra-Mediterranean altitudinal zone, where two climatic climax communities are described: Lonicero xylostei-Pinetum salzmannii and Thalictrum tuberosi-Pinetum salzmannii. In the southernmost mountains of the Iberian peninsula Pinus nigra subsp. salzmannii also forms open forests with climax value at the Oro-Mediterranean altitudinal zone, at the timber-line. Pinus nigra subsp. salzmannii also defines several edaphic-climax communities in rocky and steep slopes of the Supra-Mediterranean altitudinal zone and, as a result of human disturbance, secondary communities in the Meso-Mediterranean altitudinal zone.

Keywords: Bioclimate level, Climax vegetation, Phytosociological community, Pinewood forests, Spain.

Nomenclature: Tutin et al. (1964–1980) and Bolós et al. 1990.

Introduction

Pinus nigra Arn. is a long-lived conifer species with several subspecies distributed all over the Mediterranean basin. The distribution range of the subsp. salzmannii (Salzmann pine) includes the eastern portion of the Iberian peninsula (Fig. 1), and a small part of southern France.

The first geobotanical references about the Iberian Salzmann pine forests were made by Willkomm in the middle of the last century (Willkomm 1844, 1896). He described several pristine and extensive forests in the Iberian and Baetic mountains, where 1000 year-old trees were frequently found. Later, Gaussen (1948, 1964) defined a potential zone of vegetation for the Pyrenees, headed by Pinus nigra subsp. salzmannii, and Rivas-Goday (1955) described the Pinetum laricionis zone of vegetation for the Iberian Range. In spite of this information, the potential role as a climax community of the Salzmann pine forests in Iberian peninsula were subsequently under-evaluated by phytosociologists.

Recently, several studies in western Europe have reevaluated the ecological and phytosociological importance of Pinus salzmannii communities (Quezel...