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## Extreme aridity in the south-eastern part of Romania

Viorica Nagavciuc<sup>1,2</sup>, Monica Ionita<sup>2</sup>, and Cătălin-Constantin Roibu<sup>1</sup>

<sup>1</sup>Forest Biometrics Laboratory – Faculty of Forestry, “Stefan cel Mare” University of Suceava, Suceava, Romania

<sup>2</sup>Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany

Drought is one of the most complex phenomena which may have a strong impact on agriculture, society, water resources, and ecosystems. In Romania, drought has a very strong impact on agriculture and affects 7.1 million ha, which represent 48% of the total agricultural land. The south, southeast, and eastern parts of Romania, including the Dobrogea region, are the most affected areas. During extremely dry years the average yields of various crops represent only 35% ÷ 60% of the potential yields. By employing three different drought indices (e.g. the Standardized Precipitation Index (SPI), the Standardized Precipitation Evapotranspiration Index (SPEI) and the Palmer Drought Severity Index (PDSI), we show that there is a significant trend towards aridity especially from the 1980's up to present in the south-eastern part of Romania. The Standardized Precipitation-Evapotranspiration Index (SPEI) at Sulina station (situated in the Dobrogea region) for 12 months (SPEI12) indicates that over the last 30 years, this region was continuously affected by prolong droughts and there is a statistically significant shift towards dryer periods over the last 30 years compared to the period 1877 – 1990, thus indicating a critical situation for this region. Over the last 30 years, the long-term drought variability (SPI12, SPEI12, and PDSI) has increased both in duration and intensity up to maximum rates. The driest summers on record, over the region, are 2001, 2003 and 2007. These extremely dry summers are unprecedented throughout the observational record (~145 years). The history of drought in Dobrogea includes also many dry years, of which are to be mentioned: 1894, 1888, 1904, 1918, 1934, 1945.