

2000 YEARS WOODLAND HISTORY IN UŽPELKIŲ TYRELIS PEAT BOG

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History of *Pinus sylvestris* growth dynamics was investigated in Užpelkių Tyrelis peat bog (north-west part of Lithuania, 47 km from the Baltic sea shore, latitude 56°05'N, longitude 21°50'E).

About 300 *Pinus sylvestris* timber samples (stumps and trunks) were collected from different layers of peat from the surface to the depth of 2.6 m. Dendrochronological and radiocarbon methods were used for the analysis of timber. Because of difficulties of bog pine ring series synchronization (short series, missing rings, eccentricity of rings etc.) less than half of samples were included into synchronic groups and used for further analysis.

Dendrochronological investigation revealed separate phases of bog afforestation in the past. Thirty timber samples found in the different depth were dated by radiocarbon. C¹⁴ dates were the basis to connect floating chronologies of crossdated samples to the time scale.

As it is known from the analysis of pollen and peat (N.Savukynienė, M.Grigelytė) the bog have turned to its oligotrophic phase in the end of Subboreal. The first afforestation phase have begun in the II century BC. Short - lived trees prevailed. Trace of an increase in a generation rate can be noticed in the middle of the I c. AD. Only few long-lived trees with depressed increment represent IV - VI centuries AD. A great peak of regeneration took place in the beginning of the VII c. This abundant afforestation phase lasted till the beginning of the IX c. The best represented woodland phase existed during the " little climatic optimum" in the X - XI Cs. The gap between these two forest phases with relatively good annual radial growth shows unsuitable conditions for pine in the bog in IX century. Unsuitable conditions for pine growth were also during " little ice age" in the middle of the II millennium AD.

Analysis of annual radial growth of reconstructed forest phases gives information about past climate changes. Periods with narrow tree-rings or gaps between afforestation phases correspond to glacier advance in Alps (H.Zumbuhl, H.Holzhauser, 1988) and periods characterized as cold and wet in other sources (K.Briffa, P.Jones et al., 1992; S.Barash, 1989) (VI c. AD, IX c. AD, second half of XII c., XVI-XVII Cs.); Periods with wider tree-rings confirm warm and dry conditions in the beginning of I millennium AD, VII-VIII Cs., XI c., XX c. AD.