



Supplement of

Assessing the impact of forest management and climate on a peatland under Scots pine monoculture using a multidisciplinary approach

Mariusz Bąk et al.

Correspondence to: Mariusz Bąk (mariusz.bak@amu.edu.pl)

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Historical background regarding forest management in the Tuchola Pinewoods

In 1772, the area of Gdansk Pomerania with the Tuchola Pinewoods was included in the borders of the Kingdom of Prussia as a result of the First Partition of Poland (Wilson, 2012). At that time, some of the first legal regulations for planned forest management in the area appeared (Jaszcak, 2008a). Nevertheless, in 1775, Frederick II the Great (1740-1786) issued a decree regarding government forests in Prussia, and later state forests in Poland. It proposed the division of the forest into districts consisting of 50 man-made clearings. However, this method of forest management worked well in the area of small forests in western Prussia, but not for large forest complexes like the Tuchola Pinewoods. In 1782 Frederick II the Great issued a special decree "On the development of the Tuchola Forest," in which it was written that the area of the Tuchola Pinewoods was to be divided into eight districts of about 6000 hectares and 60 cutting areas in each district. Only one man-made clearing in each district was provided for economic use, so no more than 100 hectares of forest per district (Jaszcak, 2008b). However, despite the introduction of many regulations relating to forest management, the first decades of the 19th century brought devastating and predatory deforestation on a large scale. For most of the 19th century, progressive deforestation was a problem in the region, making the already poor conditions for agricultural development much worse (Wilson, 2012). With each successive partition of Poland (1772, 1793, 1795), the Prussian government took over the state forests, first the royal table estates (in Polish: dobra stołowe), and then also royal land (in Polish: królewszczyzny). After the second partition, state forests were separated from agricultural land and transferred to separate administrations (Nienartowicz, 2012). In 1810, the Prussian government issued the so-called Secularization Act, under which forests were removed from churches and monasteries and attached to state forests. A law had been in effect in Prussia since 1713, which prohibited the selling of state-owned property, but the approach was different in Prussia.

To carry out the fastest possible Germanization of these lands, the local state property was sold off to the Prussian nobilities, inviting them to settle in the area. Prussia's defeat of Napoleon's forces at the Battle of Jena-Auerstedt in 1806 and the contribution Napoleon imposed in 1808 also contributed to the selling off of the state forests. In December 1808, the government in Berlin passed an edict (published in November 1809) allowing the sale of state land, including forests, to cover the national debt (Broda, 2000; Kozikowski, 1911). Only large, compact forest complexes of a protective nature and economic importance were excluded from this regulation (Broda, 2000). An additional reason for the loss of state forest area was the need to redeem the servitude rights vested in peasants when selling property. The government compensated the peasants for their rights to use the forest by transferring other forests without looking at area losses. The peasants most often cut down all the forest given to them and turned the land into agricultural land. The cause for such action was provided by the 1807 edict that removed state supervision of private forests, which was later extended in 1811 (Broda, 2000; Kozikowski, 1911). Private forests could be freely managed from then on, including dividing into smaller parcels, converting to agricultural land and selling.

This period was also a time of intense social and economic change, marked by the collapse of feudalism in favour of a capitalist economy. The end of these transformations in Prussia was the enfranchisement of peasants in 1811-1823. Economic development entailed a considerable demand for timber, and this, in turn, became the basis for the robbery economy in forests. The selling off of state forests slowed down only in the 1830s largely due to the efforts of G.L. Hartig, the general director of state forests in Prussia, and stopped entirely in 1860.

Exploited forest areas were restored mainly with pine and spruce, either artificially or naturally. Because of this, deciduous admixture species with entirely different life requirements began to disappear over time (Broda, 2000). The introduction of easier-to-maintain coniferous species was driven by the growing demand for wood in industry. The trend toward introducing pine monocultures intensified from the 1830s onward. Since forest management in Prussia's state forests served mainly fiscal purposes, the concept of monoculture plantations did well for several more decades. This situation persisted until the 1860s when a devastating pest infestation occurred (Broda, 2000). At that time, the first steps were taken regarding the introduction of admixtures into restoration.

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