

**FIRE PARADOX – GFMC Prescribed Burning Demonstration Network Inventory Sheet**

Prescribed Burning Demonstration Sites - Site Description and Objectives -		Local Site Name:
Country: <b>POLAND</b>	Region: <b>PODLASIE</b>	Location: <b>Biele Suchowolskie</b>
Unit No./Admin. Unit:	Owner: <b>Biebrza National Park</b>	Site area (ha): <b>3400</b>
UTM zone:	UTM (x): <b>23°03' E</b> UTM (y): <b>53°36' N</b>	Map / Aerial photo : <input type="radio"/> <b>Yes (Please attach)</b> <input type="radio"/> No
First established:	Area(s) burnt (ha): <b>1030 in yr. 2002, 870 ha in yr. 1965 (25-30% overlap)</b>	Fire return interval (or time since last burn, or next burn planned): <b>30 yr. in the same spot, fires are happening in the national park every year on the over-drained and dried meadows and peatlands</b>
Number of plots (in case of an array of sub-plots for experimental repetitions, particular site differences or high number of operationally burned sites):		
Special remarks: <b>Not a prescribed burning!</b>		
<p><b>It is a peatland area, with deep peat deposits, which was drained and the top organic soil layer is degraded and in summer often over-dried. Due to changes in the hydrology and soil characteristics, the species-rich natural or semi-natural vegetation is disappearing.</b></p> <p><b>This site can be considered as example of negative or at least controversial effect of fire on the natural ecosystems.</b></p>		

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<b>Purpose of Treatment:</b>		
<p>Specific Treatment Objectives:</p> <p><b>This was spontaneous, deep peat fire – not a prescribed burning.</b></p> <p>The fire was not a treatment for the site. The burnt area was used partly as hay meadows and partly abandoned.</p> <p>The main goal:</p> <ul style="list-style-type: none"> <li>the recognition of natural consequences of the plant and peat-deposit fire</li> </ul> <p>The detailed objectives leading to this goal are connected with the fire consequences in a range:</p> <ul style="list-style-type: none"> <li>→ size of the loss of organic matter</li> <li>→ changes in a formation and altitude of peatland surface</li> <li>→ changes of physical and hydrological parameters of the soil</li> <li>→ changes of the chemical properties of the soil</li> <li>→ ability of different plant species to survive fire</li> <li>→ vegetation succession, taking into account the factors determining its initial stages</li> <li>→ animal diversity and succession</li> <li>→ changes in PAHs profile in comparison to a natural content of these compounds</li> </ul>		<p>Objectives reached?</p> <ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul> <p>Specify: In the post-fire spot we were investigated the impact of fire on the peatland ecosystem, the development of vegetation, changes in nutrients in the soil, contamination with poliaromatic carbon compounds (dangerous for animals and humans).</p>
<b>Desired burn conditions to reach objectives (optional or if necessary as general prerequisite)</b>		
Wind speed (m/s): -	Wind direction: -	
Relative humidity (%): -	Soil moisture: -	
Air temperature (°C): -	Burn period (time of year): -	
What problems do occur? -		
<b>Site description</b>		
<p>Vegetation type: four types of plant communities inside the burnt area: <i>Salicetum pentandro-cinerea</i> → deep seated fire areas</p> <p><i>Carici canescentis –Agrositetum caninae</i> → not burnt area</p> <p>Mosaic vegetation with <i>Epilobium sp.</i>, <i>Lypopus sp.</i></p> <p><i>Calamagrostis sp.</i> → surface fire and mosaic vegetation with <i>Urtica dioica</i> → medium seated fire.</p>	<p>Annual mean precipitation (mm/a):</p> <p><b>550-700 mm</b></p>	<p>Mean precipitation during time of burn (mm): <b>0</b></p>



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Fuel load (t ha <sup>-1</sup> ): <b>apart from the litter (not estimated), the main fuel for fire was dry, organic soil. It was calculated that about 5.5% of peat deposits (of the burnt area) was lost, and it was mainly surface layer, down to 80 cm.</b>		Annual mean temperature (°C): <b>7</b>	Mean temperature during time of burn (°C): <b>25-30 (max. day temperature)</b>	
Fuel description: mainly dry, peaty organic soil.				
Topography:	Slope (%)	Aspect:	Altitude (m a.s.l.):	Soil conditions: over-dried
Other: rather flat area				

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Burn team specifications		
<p>Parties involved:</p> <p>Warsaw University Faculty of Biology Institute of Botany: prof B. Wilkomirski, dr M. Malawska Institute of Zoology: prof M. Kozakiewicz, dr M. Brzeziński</p> <p>Institute for Land Reclamation and Grassland Farming, Dep. Of Nature Protection in Rural Areas: prof. W. Dembek, J. Kania, dr.J. Kamiński, A. Klimkowska MSc</p> <p>Biebrza National Park: (director) A. Sieńko</p>	<p>Specific expertise or training:</p> <ul style="list-style-type: none"> <li><input type="radio"/> <b>Yes</b></li> <li><input type="radio"/> <b>No</b></li> </ul> <p>Please specify: In the staff of a project there are specialists on ecotoxicology and biogeochemistry (Bogusław Wilkomirski, Małgorzata Malawska as well as plant and animal ecology and environmental protection (Wiesław Dembek, M. Kozakiewicz, M. Brzeziński and J. Kamiński, Adam Sieńko).</p>	
Documentation of demonstration site		
<p>Management plan:</p> <ul style="list-style-type: none"> <li><input type="radio"/> <b>Detailed management plan</b></li> <li><input type="radio"/> Simple management plan</li> <li><input type="radio"/> None</li> </ul>	<p>Burn protocol:</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> <b>No</b></li> </ul>	<p>Monitoring of</p> <ul style="list-style-type: none"> <li><input type="radio"/> Weather data</li> <li><input type="radio"/> Hydrological and soil condition of peat deposit</li> <li><input type="radio"/> Plant and animal biodiversity and succession after a fire</li> <li><input type="radio"/> PAHs profiles</li> </ul>
<p>Presentations: <b>yes</b></p>		
<p>Photos/ videos: <b>yes</b></p>		
<p>Publications:</p> <ol style="list-style-type: none"> <li>1. Kania J. Malawska M. Gutry P. Kamiński J., Wilkomirski B (2006) Natural changes of fen caused by deep-seated fire – <i>Water, Environment, Rural Areas, edited by LRGF, Warsaw</i> (in press)</li> <li>2. Mętrak M., Malawska M., Kamiński J., Wilkomirski B (2006) Changes of chemical parameter of hydromorphic soil and plant succession on peatland after deep-seated fire – Conference Abstract « Mires and water ecosystems » Białowieża.</li> <li>3. Eliava Gyorgi, The influence of fire on rodent community changes on the area of burnt fen in Biebrza National Park., BSc thesis, Warsaw University</li> </ol>		