

## **The activity of European spruce bark beetle *Ips typographus* (L.) inside the Žofín natural forest core area and in adjacent forests after the Kyrill wind disturbance**

Specialized map set

### **1. Žofín natural forest and surrounding forests – species structure**

Main map displays the beech dominance in Žofín natural forest core area and several southern forest stands. Beech prevails mainly in mixtures (with spruce and fir). But spruce dominates nearly all the stands around the core, particularly in mixtures. Only minor parts represent other species (fir, sycamore maple). Minor map (left) illustrates the same topic just in core area at regular grid (size of 50m). Data have origin in stem position map. Beech dominates in the center and southern part of the core. Spruce dominates at water affected areas as well as in the center part (former spruce belt). Minor map (below right) shows spruce proportion on total standing stems volume at the same regular grid. High values of spruce proportion fit to spruce dominance displayed in the previous minor map. Small southwest part of core area (5 ha) was not evaluated due to data absence (the largest area of disturbance – impossible to survey).

Key words:

Žofín natural forest, core area, dominance, spruce, beech

### **2. Žofín natural forest surroundings – forest stands registered damages by wind and European spruce bark beetle (2006–2011)**

Set of six maps represent six years of both wind and bark beetle damage registry. Carthograms were constructed to display total timber volume of salvage cutting caused by wind. Carthodiagrams show show total timber volume of felling caused by bark beetle. Three colors of diagram distinguish kinds of felling – primarily affected trees, secondarily affected windfallen trees, horizontal traps. Wind damages culminated in 2007, (2008) and then decreased. Damages by bark beetle peaked in 2009, in 2010 (horizontal traps) respectively. Appended graphs (below) show three types of bark beetle damages and their development through years 2005–2014.

Key words:

Žofín natural forest surroundings, wind, bark beetle, timber volume

### **3. Žofín natural forest core area – wind disturbance location and European spruce bark beetle dispersion (2008–2011)**

Stem position map was created as a result of census in 2008 (inside 74ha of core area). All bark beetle affected individual trees are displayed. Color distinguishes year when tree was attacked (2008–2011) and graph (below left) helps to read total number of affected spruce individuals. Map user can differentiate appr. three clusters and oblong central shape (corresp. former spruce belt) of affected spruces. Minor map (below right) brings information about recalculated lying spruce timber volume across regular grid (size 10m) in

2008. Only stems with decomposition level „hard“ were evaluated as the possible convenient environment for bark beetle. Small southwest part of core area (5 ha) was not evaluated due to data absence (the largest area of disturbance – impossible to survey).

Key words:

Žofín natural forest core area, spruce, bark beetle, affected tree