SOILS

2.3 Map of the upper organic horizons thickness of terrestrial soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows arithmetic averages of the total upper organic horizons thickness of the soil profiles (1–5 profiles) that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols). White plots in the map marked as „wet plots" indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic. Measured was always the summarized thickness of all present organic horizons (e.g., L+F+H). The map reflects the rate of the accumulation and decomposition of organic matter.

Keywords: Soil, Thickness, Humus layer, Organic horizons, Organic matter, Terrestrial

2.4 Map of the upper organic horizons thickness of (semi-) hydromorphic soils in Žofíský Prales in 2008–2009 period

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows arithmetic averages of the total upper organic horizons thickness of the soil profiles (1–5 profiles) that were at particular plot classified as semihydromorphic or hydromorphic soils (Endogleyic Stagnosols, Stagnic or Histic or Haplic Gleysols, Gleyic or Haplic Fluvisols, Fibric or Hemic or Sapric Histosols). White plots in the map marked as „dry plots" indicate that the representation of (semi-) hydromorphic soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were terrestrial. Measured was always the summarized thickness of all present organic horizons (e.g., O, T). The map reflects the rate of the accumulation and decomposition of organic matter.

Keywords: Soil, Thickness, Humus layer, Organic horizons, Organic matter, Hydromorphic

2.5 Map of the organomineral (A) horizon thickness of terrestrial soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows arithmetic averages of organomineral A horizon thickness of the soil profiles (1–5 profiles) that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols). White plots in the map marked as „wet plots" indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic. Criteria for the determination of A horizon corresponds to the work o Němeček et al. (2001). The map reflects the depth of incorporation of the upper mineral soil with decomposing organic material at sites not influenced by water.

Keywords: Soil, Thickness, Organomineral, A horizon, Terrestrial

Němeček J., Macků J., Vokoun J., Vavříček D., Novák P., 2001. Taxonomický klasifikační systém půd České republiky. ČZÚ & VÚMOP, Praha.

2.6 Map of the organomineral (A) horizon thickness of (semi-) hydromorphic soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows arithmetic averages of organomineral A horizon thickness of the soil profiles (1–5 profiles) that were at particular plot classified as semihydromorphic or hydromorphic soils (Endogleyic Stagnosols, Stagnic or Histic or Haplic Gleysols, Gleyic or Haplic Fluvisols, Fibric or Hemic or Sapric Histosols). White plots in the map marked as „dry plots" indicate that the representation of (semi-) hydromorphic soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were terrestrial. Criteria for the determination of A horizon corresponds to Němeček et al. (2001). The map reflects the depth of incorporation of the upper mineral soil and the decomposed organic material at sites influenced by water. The organomineral horizons were considered also the cases of transitional horizons between the T-peat horizon and Gr-gleyed reductomorphic horizon of Histosols (="Organozem") that meet the criteria Němeček et al. (2001).

Keywords: Soil, Thickness, Organomineral, A horizon. Hydromorphic

Němeček J., Macků J., Vokoun J., Vavříček D., Novák P., 2001. Taxonomický klasifikační systém půd České republiky. ČZÚ & VÚMOP, Praha.

2.7 Map of the elluvial (Ep) horizon thickness of Spodosols in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows arithmetic averages of elluvial Ep horizon thickness of the soil profiles (1–5 profiles) that were at particular plot classified as Albic Podzols, and therefore had diagnostic, via podzolization bleached horizons (Ep), and also spodic horizons (Bs, Bhs, Bsh, Bh). White plots in the map include sites without Albic Podzols occurence. The map indicates the extend of podzolization processes development.

Keywords: Soil, Thickness, Podzols, Elluvial, Albic, Ep horizon

2.8 Map of the depth of pedogenetic processes influence of terrestrial soils (the lower depth of B horizon) in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map shows averaged depths of the pedogenetic processes influence in the soil profiles (1–5 profiles) that were at particular plot classified as terrestrial (Haplic Cambisols, Entic Podzols, Albic Podzols). White plots in the map marked as „wet plots" indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic soils. Measured was always from the soil surface to the lower limit of the B horizon (depending on soil types it was the Bv, Bs, Bvs, Bsv horizon), which passed into the substrate horizons (IIC Cr).

Keywords: Soil, Upper solum, Pedogenesis, B horizon, Genetic depth

2.9 Map of the depth reaching the gleyic horizon of (semi-) hydromorphic soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T., Houška J.

The map refers obout the averaged depth, measured from the soil surface, at which the reductomorphic Gr horizon was reached in the soil profiles (1–5 profiles) that were at particular plot classified as semihydromorphic or hydromorphic soils (Endogleyic Stagnosols, Stagnic or Histic or Haplic Gleysols, Gleyic or Haplic Fluvisols, Fibric or Hemic or Sapric Histosols). White plots in the map marked as „dry plots" indicate that the representation of (semi-) hydromorphic soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were terrestrial soils. In the case of soil without peat horizon this walue represents the depth, within which were determined oxidative processes in soil.

Keywords: Soil, Water table, Gleyization, Gr horizon

2.10 Map of oxidizable C content in organomineral (A) horizon of terrestrial soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.

The map shows oxidizable carbon (Cox) contents in organomineral A horizons of terrestrial soils. From 1–5 profiles that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols), were taken from the depths of 0-10 cm composite samples. These were analyzed in laboratory – Cox was evaluated spectrophotometrically after oxidation H_2SO_4+$K_2Cr_2O_7$ according to Anonymous (1995). White plots in the map marked as „wet plots" indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic soils.

Keywords: Soil properties, Carbon, Cox content, A horizon

Anonymus, 1995. ISOIDIS 14235. Soil Quality. Determination of Organic Carbon in Soil by Sulfochromic Oxidation. International Organization for Standardization, Berlin, Vienna, and Zurich.

2.11 Map of oxidizable C content in organomineral (A) horizon of (semi-) hydromorphic soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.

The map shows oxidizable carbon (Cox) contents in organomineral A horizons of semihydromorphic and hydromorphic soils. From 1–5 profiles that were at particular plot classified as semihydromorphic or hydromorphic soils (Endogleyic Stagnosols, Stagnic or Histic or Haplic Gleysols, Gleyic or Haplic Fluvisols, Fibric or Hemic or Sapric Histosols), were taken from the depths of 0-10 cm composite samples. These were analyzed in laboratory – Cox was evaluated spectrophotometrically after oxidation $H_2SO_4+K_2Cr_2O_7$ according to Anonymous (1995). White plots marked as „dry plots" indicate that the representation of (semi-) hydromorphic soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were terrestrial soils.

Keywords: Soil properties, Carbon, Cox content, A horizon

Anonymus, 1995. ISOIDIS 14235. Soil Quality. Determination of Organic Carbon in Soil by Sulfochromic Oxidation. International Organization for Standardization, Berlin, Vienna, and Zurich.

2.12 Map of oxidizable C content in B horizon of terrestrial soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.

The map shows oxidizable carbon (Cox) contents in B horizons of terrestrial soils (according to Němeček et al. 2001 marked as Bs, Bv, Bsv, Bvs, sporadicaly Bhs, Bsh). From 1–5 profiles that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols), were taken from the depth of 30 cm composite samples. These were analyzed in laboratory – Cox was evaluated spectrophotometrically after oxidation $H_2SO_4+K_2Cr_2O_7$ according to Anonymous (1995). White plots in map marked as „wet plots" indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic soils.

Keywords: Soil properties, Carbon, Cox content, B horizon

Anonymus, 1995. ISOIDIS 14235. Soil Quality. Determination of Organic Carbon in Soilby Sulfochromic Oxidation. International Organization for Standardization, Berlin, Vienna, and Zurich.
Němeček J., Macků J., Vokoun J., Vavříček D., Novák P., 2001. Taxonomický klasifikační systém půd České republiky. ČZÚ & VÚMOP, Praha.

2.13 Map of the exchangable soil reaction value in organomineral (A) horizon of terrestrial soils in Žofíský Prales in period 2008–2009

Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.

The map shows values of soil reaction in organomineral A horizons of terrestrial soils. From 1–5 profiles that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols), were taken from the depths of 0-10 cm composite samples. These were analyzed in laboratory – 0.2 M KCl. Analyses of composite samples were carried out always 3x, the resulting value displayed in the map is the arithmetic mean of these values (difference between 3 values usually do not exceed the level of 0.01–0.02 pH).Poslech
White plots in the map marked as „wet plots“ indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic soils.

Keywords: Soil properties, Acidity, pH, A horizon

2.14 Map of the exchangable soil reaction value in organomineral (A) horizon of (semi-) hydromorphic soils in Žofíský Prales in period 2008–2009
Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.
The map shows values of soil reaction in organomineral A horizons of terrestrial soils. From 1–5 profiles that were at particular plot classified as semihydromorphic or hydromorphic soils (Endogleyic Stagnosols, Stagnic or Histic or Haplic Gleysols, Gleyic or Haplic Fluvisols, Fibric or Hemic or Sapric Histosols), were taken from the depths of 0-10 cm composite samples. These were analyzed in laboratory – 0.2 M KCl.
White plots in the map marked as „dry plots“ indicate that the representation of (semi-) hydromorphic soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were terrestrial soils.

Keywords: Soil properties, Acidity, pH, A horizon

2.15 Map of the exchangable soil reaction value in B horizon of terrestrial soils in Žofíský Prales in period 2008–2009
Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.
The map shows values of soil reaction in B horizons of terrestrial soils (according to Němeček et al. 2001 marked as Bs, Bv, Bsv, Bvs, sporadicaly Bhs, Bsh). From 1–5 profiles that were at particular plot classified as terrestrial soils (Haplic Cambisols, Entic Podzols, Albic Podzols), were taken from the depth of 30 cm composite samples. These were analyzed in laboratory – 0.2 M KCl. White plots in the map marked as „wet plots“ indicate that the representation of terrestrial soils within the circle with a diameter of 23 m does not exceed 10 % of the area, i.e. all the 5 soil profiles evaluated at particular plot were (semi-) hydromorphic soils.

Keywords: Soil properties, Acidity, pH, B horizon

Němeček J., Macků J., Vokoun J., Vavříček D., Novák P., 2001. Taxonomický klasifikační systém půd České republiky. ČZÚ & VÚMOP, Praha.

2.16 Map of the windthrow microtopographical shapes occurence in Žofíský Prales in period 2008–2009
Šamonil P., Valtera M., Šebková B., Adam D., Hort L., Janík D., Král K., Unar P., Vrška T.
The map reflects the actual occurrence of windthrows at the 353 circular plots (d = 23 m) of square grid. As windthrows smoothly disappear in time, it was necessary to determine whether particular microtopographical windthrow shape will still be included. The height/depth of shape 0.2 m was determined the threshold value. Proportions (heigth, depth, length, width) of all the windthrows, which center (inflection point of transition between pith and mound of windthrow) was taken in the circle, were measured. In the case of incomplete windthrow shapes - just mound or just pith – the top/bottom of the mound/pith was considered as the center. In the calculation of windthrow pith/mound area, the shape of windthrow was approximated by an elipse. Pie charts show the proportional area (%) of specific microhabitats (mound, pith, undisturbed place) within the circle, the number inside indicates the count of windthrows. The map points out differences in windthrow disturbance history of soil in Žofínský Prales.

Keywords: Windthrow, Pith-mound, Soil, Disturbance

DENDROMETRY

3.8 Map of density of living trees in the Žofín natural forest in 2008
Průša E., Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.
The map of density of living trees was derived from the vector stem position map of the Zofin forest measured in 1975. This data set consisting of more then 18 000 living trees with DBH ≥ 10 was the essential input for further processing: Using a circular focal density filter in ArcGIS 9.3 Spatial Analyst software the local densities were calculated in a whole Zofin natural forest. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real density of living trees in circular neighborhood area of about 700 m2 for every square meter of the forest. The density is calculated in pieces per 1 hectare (pcs/ha).

Keywords: natural forest, tree density

3.9 Map of local basal area of living trees in the Žofín natural forest in 1975
Průša E., Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.
The map of local basal area of living trees was derived from the digital stem position map of the Zofin forest measured in 1975. This data set consisting of more then 18 000 living trees with recorded DBH was the essential input for further processing: Using a circular focal filter in ArcGIS 9.3 Spatial Analyst software the local basal areas of living trees were calculated in a whole Zofin natural forest. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real basal area of living trees in a circular neighborhood area of about 700 m2 for every square meter of the forest. The basal area is calculated in square meters per 1 hectare (m2/ha).

Keywords: natural forest, basal area

3.10 Map of local volume of living trees in the Žofín natural forest in 1975

Průša E., Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local volume of living trees was derived from the digital stem position map of the Zofin forest measured in 1975. This data set consisting of more then 18 000 living trees with recorded DBH was the essential input for further processing. A volume of wood was calculated in a PraleStat software for each tree of the digital map. Consequently, the local volume of living trees was calculated using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. Since the diameter of the filter was set-up at 30 m and the computation step was 1m, the map displays a real volume of living trees in a circular neighborhood area of about 700 m2 for every square meter of the Zofin natural forest. The volume is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume

3.11 Map of local volume of living and dead trees in the Žofín natural forest in 1975

Průša E., Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local volume of all trees was derived from the digital stem position map of live and dead trees in the Zofin forest measured in 1975. This data set consisting of more then 20 200 trees (more then 18 000 living and ca 2 200 dead trees) with recorded DBH was the essential input for further processing. A volume of wood was calculated in the PraleStat software for each tree of the digital map. Consequently, the local volume of all trees was calculated using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real total volume of trees in a circular neighborhood area of about 700 m2 for every square meter of the Zofin natural forest. The volume is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume

3.12 Map of local proportion of deadwood from total volume in the Žofín natural forest in 1975

Průša E., Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local proportion of deadwood from the total volume was derived from the digital stem position map of live and dead trees in the Zofin forest measured in 1975. This data set consisting of more then 20 200 trees (more then 18 000 living and ca 2 200 dead trees) with recorded DBH was the essential input for further processing. A volume of wood was calculated in a PraleStat software for each tree of the digital map. Consequently, the local volume of live trees and deadwood were calculated separately using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. From these two datasets the local proportion (%) of deadwood was calculated in the whole Zofin natural forest.

Keywords: natural forest, tree volume, deadwood

3.13 Map of density development of living trees in the Žofín natural forest between years 1975 – 1997

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of density development of living trees between years 1975 and 1997 was derived from the tree density maps from particular years. These were calculated from vector stem position maps using a circular focal density filter in ArcGIS 9.3 Spatial Analyst software. The map displays for every square meter of Zofin natural forest a real density difference of living trees in circular neighborhood area of about 700 m2. The density differences are calculated in pieces per 1 hectare (pcs/ha).

Keywords: natural forest, density difference

3.14 Map of basal area development of living trees in the Žofín natural forest between years 1975 – 1997

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local basal area development of living trees between years 1975 and 1997 was derived from the particular basal area maps from both years. These were calculated from digital stem position maps of the Zofin forest using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. The map displays for every square meter of the study area a real local basal area difference of living trees in a circular neighborhood of about 700 m2. The basal area difference is calculated in square meters per 1 hectare (m2/ha).

Keywords: natural forest, basal area development

3.15 Map of volume development of living trees in the Žofín natural forest between years 1975 – 1997

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local volume development of living trees between years 1975 and 1997 was calculated by subtraction of the particular local volume maps from both years. These were calculated from digital stem position maps of the Zofin forest using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. The map displays for every square meter of the study area a real local volume difference of living trees in a circular neighborhood of about 700 m2. The volume difference is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume development

3.16 Map of volume development of living and dead trees in the Žofín natural forest between years 1975 – 1997

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of total volume development (i.e. volume development of all living and dead trees) between years 1975 and 1997 was calculated by subtraction of the particular total volume maps from both years. These were calculated from digital stem position maps of the Zofin forest using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. The map displays for every square meter of the study area a real total volume difference of living and dead trees in a circular neighborhood of about 700 m2. The volume difference is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume development

3.17 Map of development of local proportion of deadwood from total volume in the Žofín natural forest between years 1975 – 1997

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of development of local proportion of deadwood from the total volume between years 1975 and 1997 was calculated by subtraction of the particular deadwood proportion maps from both years. These were calculated from digital stem position maps of the Zofin forest using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. The map displays for every square meter of the study area a real deadwood volume proportion difference in a circular neighborhood of about 700 m2. The deadwood volume proportion difference is calculated in percents (%).

Keywords: natural forest, tree volume development, deadwood

3.18 Map of density of living trees in the Žofín natural forest in 2008

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of density of living trees was derived from the vector stem position map of the Zofin forest measured in 2008. This data set consisting of more then 15 200 living trees with DBH >10 was the essential input for further processing: Using a circular focal density filter in ArcGIS 9.3 Spatial Analyst software the local densities were calculated in a whole Zofin natural forest. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real density of living trees in circular neighbourhood area of about 700 m2 for every square meter of the forest. The density is calculated in pieces per 1 hectare (pcs/ha).

Keywords: natural forest, tree density

3.19 Map of local basal area of living trees in the Žofín natural forest in 2008

Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local basal area of living trees was derived from the digital stem position map of the Zofin forest measured in 2008. This data set consisting of more then 15 200 living trees with recorded DBH was the essential input for further processing: Using a circular focal filter in ArcGIS 9.3 Spatial Analyst software the local basal areas of living trees were calculated in a whole Zofin natural forest. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real basal area of living trees in a circular neighborhood area of about 700 m2 for every square meter of the forest. The basal area is calculated in square meters per 1 hectare (m2/ha).

Keywords: natural forest, basal area

3.20 Map of local volume of living trees in the Žofín natural forest in 2008
Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.
The map of local volume of living trees was derived from the digital stem position map of the Zofin forest measured in 2008. This data set consisting of more then 15 200 living trees with recorded DBH was the essential input for further processing. A volume of wood was calculated in a PraleStat software for each tree of the digital map. Consequently, the local volume of living trees was calculated using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. Since the diameter of the filter was set-up at 30 m and the computation step was 1m, the map displays a real volume of living trees in a circular neighborhood area of about 700 m2 for every square meter of the Zofin natural forest. The volume is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume

3.21 Map of local volume of living and dead trees in the Žofín natural forest in 2008
Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.
The map of local volume of all trees was derived from the digital stem position map of live and dead trees in the Zofin forest measured in 2008. This data set consisting of more then 23 700 trees (more then 15 200 living and ca 8 500 dead trees) with recorded DBH was the essential input for further processing. A volume of wood was calculated in a PraleStat software for each tree of the digital map. Consequently, the local volume of all trees was calculated using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. Since the diameter of the filter was set-up at 30 m and the computation step was 1 m, the map displays a real total volume of trees in a circular neighborhood area of about 700 m2 for every square meter of the Zofin natural forest. The volume is calculated in cubic meters per 1 hectare (m3/ha).

Keywords: natural forest, tree volume

3.22 Map of local proportion of deadwood from total volume in the Žofín natural forest in 2008
Král K., Adam D., Hort L., Janík D., Šamonil P., Unar P., Vrška T.

The map of local proportion of deadwood from the total volume was derived from the digital stem position map of live and dead trees in the Zofin forest measured in 2008. This data set consisting of more then 23 700 trees (more then 15 200 living and ca 8 500 dead trees) with recorded DBH was the essential input for further processing. A volume of wood was calculated in a PraleStat software for each tree of the digital map. Consequently, the local volume of live trees and deadwood were calculated separately using a circular focal filter in ArcGIS 9.3 Spatial Analyst software. From these two datasets the local proportion (%) of deadwood was calculated in the whole Zofin natural forest.

Keywords: natural forest, tree volume, deadwood

CANOPY GAPS

5.1 Map of canopy gaps in beech dominated part of the Žofín natural forest in 1971
Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.
The map of canopy gaps in 1971 is based on photo-interpretation of ortho-rectified historical aerial photograph, which was found in military archive in Dobruška (Czech Republic). The mapping of canopy gaps was carried-out only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The canopy gaps cover approximately 9% of the inquired area; mean gap size is about 100 m2.

Keywords: canopy gaps, aerial photograph

5.2 Mapa porostních světlin („gaps") v bukové části Žofínského pralesa v roce 1983
Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.
Map of canopy gaps in beech dominated part of the Žofín natural forest in 1983
Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.
The map of canopy gaps in 1983 is based on photo-interpretation of ortho-rectified historical aerial photograph, which was found in military archive in Dobruška (Czech Republic). The mapping of canopy gaps was carried-out only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The canopy gaps cover approximately 9% of the inquired area, i.e. equal proportion as in 1971. Mean gap size slightly decreased at about 90 m2.

Keywords: canopy gaps, aerial photograph

5.3 Map of canopy gaps in beech dominated part of the Žofín natural forest in 1991
Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps in 1991 is based on photo-interpretation of ortho-rectified historical aerial photograph, which was found in military archive in Dobruška (Czech Republic). The mapping of canopy gaps was carried-out only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The canopy gaps cover approximately 9,5 % of the inquired area, i.e. slight increase compared to years 1971 and 1983. On contrary, the mean gap size slightly decreased at about 88 m2.

Keywords: canopy gaps, aerial photograph

5.4 Map of canopy gaps in beech dominated part of the Žofín natural forest in 2004
Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps in 2004 is based on photo-interpretation of ortho-rectified historical aerial photograph, which was found in military archive in Dobruška (Czech Republic). The mapping of canopy gaps was carried-out only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The canopy gaps cover approximately 10,5 % of the inquired area, i.e. continuous slight increase since 1971. Also the mean gap size increased at about 95 m2.

Keywords: canopy gaps, aerial photograph

5.5 Map of canopy gaps development in beech dominated part of the Žofín natural forest from 1971 to 1983

Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps development between years 1971 and 1983 is based on maps of canopy gaps from both particular years. These were carried-out by photo-interpretation of ortho-rectified historical aerial photographs, which were found in military archive in Dobruška (Czech Republic). The development of canopy gaps was studied only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). Almost 50% of canopy gaps (ca 2,8 ha) were enduringly open in the period. New opening gaps and closed gaps covered equally about 1,5 ha (i.e. 25% of the area).

Keywords: canopy gaps development, aerial photograph

5.6 Map of canopy gaps development in beech dominated part of the Žofín natural forest from 1983 to 1991

Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps development between years 1983 and 1991 is based on maps of canopy gaps from both particular years. These were carried-out by photo-interpretation of ortho-rectified historical aerial photographs, which were found in military archive in Dobruška (Czech Republic). The development of canopy gaps was studied only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). About 2,5 ha of canopy gaps were enduringly open in the period. New opening gaps covered about 2 ha (i.e. 32 %); closing gaps covered about 1,7 ha.

Keywords: canopy gaps development, aerial photograph

5.7 Map of canopy gaps development in beech dominated part of the Žofín natural forest from 1991 to 2004

Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps development between years 1991 and 2004 is based on maps of canopy gaps from both particular years. These were carried-out by photo-interpretation of ortho-rectified historical aerial photographs, which were found in military archive in Dobruška (Czech Republic). The development of canopy gaps was studied only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The area of enduringly open canopy gaps was about 2,5 ha (i.e. about 36 %). New opening gaps covered also about 2,5 ha; closing gaps covered about 2 ha (i.e. about 28 %).

Keywords: canopy gaps development, aerial photograph

5.8 Map of canopy gaps development in beech dominated part of the Žofín natural forest from 1971 to 2004

Kenderes K., Král K., Vrška T., Adam D., Hort L., Janík D., Šamonil P., Unar P.

The map of canopy gaps development between years 1971 and 2004 is based on maps of canopy gaps from all particular years, i.e. 1971, 1983, 1991 and 2004. These were carried-out by photo-interpretation of ortho-rectified historical aerial photographs, which were found in military archive in Dobruška (Czech Republic). The development of canopy gaps was studied only in the most preserved, beech dominated part of the Žofín natural forest (ca 48 ha). The area of enduringly open canopy gaps was about 1 ha. The total gap area was slightly increasing during the period (from about 9 % in 1971 to about 10.8% in 2004).

Keywords: canopy gaps development, aerial photograph