ReSurveyEurope

Project Metadata Form

When contributing data to ReSurveyEurope, please fill in this form for each resurvey project and send it to Ilona Knollová (ikuzel@sci.muni.cz) together with the database. A resurvey project is understood as repeated sampling of a certain type of vegetation in a certain study area using specific methods.

- PROJECT NAME (identical with the Resurvey Project name given in the database):

  ManFor C.BD

- FULL PROJECT NAME (use if the full project name is longer than used in the database):

  Managing forests for multiple purposes: carbon, biodiversity and socio-economic wellbeing; LIFE09 ENV/IT/000078

- REFERENCE (publication or URL or DOI of the dataset if published online):

  /

- DATA OWNER: person(s), institution(s):

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- METHODS (description of sampling design and methods):

  Both datasets contain vegetation surveys in the Dinaric fir-beech forests of Slovenia, which belong to Natura 2000 Illyrian beech forests (*Aremonio-Fagion*). Three study sites were selected: Trnovo, Rog and Snežnik. Nine karst depressions (sinkholes) were randomly chosen at each site, i.e. 27 sinkholes in total.

  Dataset 1: Circular vegetation plots of 400 m^2 were established in the central/bottom part of the selected sinkhole. Each plot was sampled three times: in year 2012, 2014 and 2018. Thus, dataset 1 contains 81 relevés (27 x 3). In each vegetation plot, cover estimation of different vertical vegetation layers (tree, shrub, herb layer) and vascular plant species were assessed according to the modified ICP-Forests protocol (Canullo et al. 2011). The visual estimation of plant species cover was conducted using a modified Barkman's method (Barkman et al. 1964). Nomenclature of species names followed Mala Flora Slovenije (Martinčič et al. 2007) and Flora Europaea (Tutin et al. 1980, 1993). Detailed information regarding our sampling design and methods can be found in published papers:

Kutnar L., Eler K., Marinšek A. 2015. Effects of different silvicultural measures on plant diversity - the case of the Illyrian Fagus sylvatica habitat type (Natura 2000). iForest 9, 318-324. https://doi.org/10.3832/ifor1587-008
Kermavnar J., Eler K., Marinšek A., Kutnar L. 2019. Initial understory vegetation responses following different forest management intensities in Illyrian beech forests. Applied Vegetation Science 22, 48-60. https://doi.org/10.1111/avsc.12409
Eler K., Kermavnar J., Marinšek A., Kutnar L. 2018. Short-term changes in plant functional traits and understory functional diversity after logging of different intensities: a temperate fir-beech forest experiment. Annals of Forest Research 61, 223-241. 10.15287/afr.2018.1192
Kermavnar J., Eler K., Marinšek A., Kutnar L. 2021. Post-harvest forest herb layer demography: General patterns are driven by pre-disturbance conditions. Forest Ecology and Management 491, 119121. https://doi.org/10.1016/j.foreco.2021.119121

Dataset 2: At each karst sinkhole, we sampled forest vegetation in five circular plots with a radius of 2 m (12.57 m^2), resulting in 135 sampling plots in total (27 sinkholes x 5 plots within each sinkhole). One sampling plot was positioned in the centre/bottom of the sinkhole, and the other four were placed in the northern, eastern, southern and western side of the sinkhole. These were 12 m away from the centre of the sinkhole. Each plot was sampled twice: in 2012 and in 2014. Thus, dataset 2 contains 270 relevés (135 x 2). At each plot, we recorded all vascular plant species (woody and herbaceous species), and visually estimated their cover percentage according to the modified method of Londo (1976) in different vertical vegetation layers: tree (upper and lower), shrub and herb layer. Nomenclature of species names followed Mala Flora Slovenije (Martinčič et al. 2007) and Flora Europaea (Tutin et al. 1980, 1993).
Detailed description our sampling design and methods is provided in the published paper:
Kermavnar J., Marinšek A., Eler K., Kutnar L. 2019. Evaluating Short-Term Impacts of Forest Management and Microsite Conditions on Understory Vegetation in Temperate Fir-Beech Forests: Floristic, Ecological, and Trait-Based Perspective. Forests 10, 909. https://doi.org/10.3390/f10100909

- ENVIRONMENTAL DATA (list of environmental data measured):

In-situ measurements of plot-level air temperature, relative humidity, VPD. Results were published in: Kermavnar J., Ferlan M., Marinšek A., Eler K., Kobler A., Kutnar L. 2020. Effects of various cutting treatments and topographic factors on microclimatic conditions in Dinaric fir-beech forests. Agricultural and Forest Meteorology 295, 108186. https://doi.org/10.1016/j.agrformet.2020.108186
Measurements of plot-level soil properties: pH of organic and mineral soil layers, thickness and depth of organic and mineral soil layers (see Kermavnar J., Marinšek A., Eler K., Kutnar L. 2019. Evaluating Short-Term Impacts of Forest Management and Microsite Conditions on Understory Vegetation in Temperate Fir-Beech Forests: Floristic, Ecological, and Trait-Based Perspective. Forests 10, 909. https://doi.org/10.3390/f10100909)

- MANIPULATED PLOTS (description of the treatment if the plots were manipulated, e.g. mowing twice a year, fertilizing by NPK once a year, post-fire succession)

Our study includes tree cutting experiment and related post-cutting forest vegetation succession. To test the effects of forest management, three different cutting intensities were implemented in the selected plots in 2012. The treatment area was 0.4 ha in size and had a circular shape, with a centre at the bottom of each sinkhole. In one third of all plots (3 per site), all trees in the treatment area (100% of the growing stock) were cut. In another one third of all plots, 50% of the growing stock was cut, using a single-tree selection silvicultural system. No cutting was conducted in one third of the plots, and these plots were kept as control plots. For details about our experimental design, please see the cited papers.
Vegetation surveys on 27 larger plots (400 m^2, dataset 1) were made before cutting (in 2012) and two (2014) and six years (2018) after management disturbance. Vegetation surveys on smaller 135 plots (12.57 m^2, dataset 2) were made before cutting (in 2012) and two (2014) years after tree cutting.

Ljubljana, 27. 4. 2021

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