universität wien

DIPLOMARBEIT

Titel der Diplomarbeit

„Climate Change effects on greenhouse gas emissions from Northern European soils“

Verfasserin/ Verfasser

Denise Wagner

Angestrebter akademischer Grad

Magistra der Naturwissenschaften (Mag. rer. nat.)

Wien, 2009

Studienkennzahl lt. Studienblatt:	A 453
Studienrichtung lt. Studienblatt:	Diplomstudium Theoret. / Angewandte Geographie
Betreuerin/ Betreuer:	Univ. Doz. Dr. Sophie Zechmeister-Boltenstern

Inhaltsverzeichnis

1. Einleitung

Der globale Klimawandel beeinflusst eine Vielzahl an biologischen und chemischen Prozessen unserer Ökosysteme. Die Temperatur ist im letzten Jahrhundert im globalen Mittel um etwa 0.6℃ gestiegen und es wird eine Zunahme der Niederschläge in den mittleren und hohen Breiten der Nordhemisphäre festgestellt (IPCC, 2007). Die globale Erwärmung trifft vor allem Regionen nahe den Polkappen, da dort der Nettoverlust an infraroter Strahlung mit den einfallenden Sonnenstrahlen am Größten ist (Schlesinger, 1996). Um Zukunftsszenarien zu entwickeln, wird mit so genannten Globalen Klimamodellen (GCM) versucht, die gesamten Energieumwandlungen und Stoffflüsse der Atmosphäre, der Hydrosphäre und der Biosphäre so genau wie möglich zu rekonstruieren. Diese Studie soll vor allem das Treibhausgaspotential zwischen Boden und Erdatmosphäre in Nordeuropa und dessen Einfluss auf den Klimawandel erfassen. Das bedeutendste Treibhausgas ist Kohlendioxid (CO_2), aber auch Methan (CH_4), Lachgas (N_2O) und Stickstoffmonoxid (NO) tragen zur Erderwärmung bei (IPCC, 2007). Gasemissionen aus der Pedosphäre entstehen nicht nur durch anthropogene Eingriffe, wie Landnutzungsänderungen und landwirtschaftliche Managementpraktiken sondern auch durch natürliche mikrobielle Prozesse im Boden. CO_2 emittiert vorwiegend durch Bodenatmung: Einerseits durch heterotrophe Respiration durch Bakterien und Pilze der organischen Bodensubstanz, andererseits durch die autotrophe Respiration durch Wurzelwachstum und Mikroorganismen in der Rizosphäre (Smith et al., 2003). Änderungen der organischen Bodensubstanz durch Landnutzungsänderungen und Bodenmanagementpraktiken (wie z.B. durch Feldbau, Aufbringung von Düngemittel, organische Rückstände und Pestizide) führen zu einem erheblichen Anstieg des athmosphärischen CO_2-Gehaltes (IPCC, 2007).

CH_4 hat ein 23 mal höheres Treibhausgaspotential als Kohlendioxid und jenes von N_2O ist sogar fast 300 mal höher (Ramaswamy et al., 2001). Zu den Hauptquellen der CH_4 Produktion zählen der Reisanbau, die Verbrennung von Biomasse, Wiederkäuer, Müllhalden, natürliche Feuchtgebiete und die Viehzucht (IPCC, 2007). Die nordeuropäische Landschaftszone hat ein hohes Vorkommen an Mooren und Sümpfen, aber auch die auftauenden Permafrostböden können in Zukunft zu großen Methanquellen werden. In natürlichen Landschaftssystemen wird CH_4

vorwiegend durch Bakterien (Methanogene) durch die mikrobielle Zerlegung der organischen Substanz gebildet (Smith et al., 2003). Weniger kompakte und gut durchlüftete Böden können aber auch durch die Methanoxidation eine biologische Nettosenke des atmosphärisch angereicherten Methans bilden (Guckland et al., 2009). Die optimalen Bodenbedingungen der Methanogenese sind anaerobe Verhältnisse, jene der Oxidation sind die aeroben (gut durchlüfteten) Bodenbeschaffenheiten. Die Umwandlung von Wäldern in landwirtschaftliche Nutzflächen kann die Methanaufnahme um rund zwei Drittel reduzieren (Smith et al., 2003).

Lachgas entsteht im Boden vorwiegend durch 2 biologische Prozesse, der Nitrifikation und der Denitrifikation. Die Nitrifikation ist ein aerober Prozess, welcher das Ammonium (NH_4) zu Nitrat (NO_3) oxidiert (Davidson and A., 1993). Außerdem kann ein Teil des NH_4 zur Produktion von NO und N_2O weitergeleitet werden (Poth and Focht, 1985). Denitrifikation erfolgt durch eine Vielzahl von Bakterien, die eine anaerobe Reduktion von NO_3 zu N_2O und N_2 hervorrufen. NO kann sowohl durch biologische (Nitrifikation, Denitrifikation) aber auch durch chemische Prozesse (Chemodenitrifikation) gebildet werden (Venterea and al., 2003). Der Bodenwassergehalt und die Temperatur sind die wichtigsten Einflussfaktoren dieser Prozesse. Aber auch die Bodentextur und –struktur, sowie der Säuregehalt sind treibende Kräfte in der Produktion, der Aufnahme und des Weitertransportes aller Treibhausgase (Skiba et al., 1998). Die Kohlenstoff- und die Stickstoffkreisläufe werden vom Gehalt der organischen Substanz und vom organischen sowie vom anorganischen Stickstoff im Boden geregelt. Für eine Emissionsminderung ist daher ein besseres Verständnis der Auswirkungen des Klimawandels auf diese Kreisläufe wichtig. Dies gilt auch für die Methanogenese und die Methanoxidation.

Die vorliegende Studie ist ein Teil des NitroEurope Integrated Project (NEU) welches sich mit dem Stickstoffkreislauf und dessen Bedeutsamkeit in der Treibhausgasbilanz in Nordeuropa befasst. Wir bestimmten das Potential der N_2O-, NO-, CO_2- und CH_4-Flüsse von 13 Standorten mit unterschiedlicher Landnutzung. Zusätzlich analysierten wir deren Ammonium- und Nitrat-Konzentrationen, N-Mineralisierungsraten und Stickstoffkonzentrationen in der mikrobiellen Biomasse. Diese Analysen und Messungen führten zu Informationen über die Genese und Aufnahme der Gasemissionen.

Wir behaupten: Die wärmer und niederschlagsreicheren Klimabedingungen in Nordeuropa führen zu ansteigenden N_2O und CO_2 Werten und verringern die CH_4 Nettosenken. Anorganischer Stickstoff führt vor allem auf Grasflächen mit hohen mineralischen Stickstoffanreicherungen, durch Düngung und Beweidung, zu ansteigenden N_2O Emissionen. Das Ansteigen des Bodenwassergehaltes bewirkt eine erhöhte NO Aufnahmerate. Wärmere Temperaturen führen zu höheren N_2O Emissionen und geringeren NO Aufnahmen. Die Permafrostböden im Norden tauen auf und somit erhalten weite Areale feuchtere Bodenbedingungen, dies hat auf einer Seite eine höhere NO Aufnahmerate und auf der anderen eine Vermehrung der Methanogenese zur Folge. Die globale Erwärmung führt zu höheren Bodentemperaturen, welche zu einem Anstieg der Methanemission und zu einem Rückgang der Methanoxidation führt. Landnutzungsänderungen von Wäldern zu Ackerflächen bringen einen Rückgang der Methanoxidation und das wärmere und feuchtere Klima einen Anstieg der Methanproduktion mit sich.

Die Ergebnisse dieser Studie sollen als interdisziplinäre Brücke zwischen Wissenschaftler dienen, und können in Nährstoffkreislauf- und Klimamodelle eingebunden werden. In einem nächsten Schritt werden diese Daten mit Treibhausgasflussraten aus anderen Regionen Europas verbunden. Durch große Datenbestände werden somit auf regionaler und kontinentaler Ebene Modelle erstellt, welche erhebliche Fortschritte in der Erforschung der gegenwärtigen und künftigen Veränderung des globalen Klimas und dessen Auswirkungen auf das Treibhausgaspotential ermöglichen. In Zukunft können damit die wichtigsten ‚Hot Spots' der Kohlenstoff- und Stickstoffflüsse aufgedeckt werden.

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3. Manuscript

Climate Change effects on greenhouse gas emissions from Northern European soils

3.1. Abstract

Effects of climate change (i.e. temperature and precipitation changes) are supposed to alter the soil GHG fluxes in northern higher latitudes. Soil moisture and soil temperature strongly control the gas exchange between soils and the atmosphere. A laboratory investigation was performed to measure N_2O-, NO-, CO_2- and CH_4 fluxes from 13 Northern European soils with different land use types (cropland, forest, grassland and wetland). Twenty-four intact soil cores per site were collected in spring 2008 and incubated at four different temperatures (5°, 10°, 15° and 20°) and under four different soil moisture contents (20%, 40%, 60% and 80%). Furthermore GHG fluxes were measured from the 5 forest litter samples under 5-20℃ and under the ambient water content.

Bulk density, dry weight and pH were determined from each cylinder. Ammonium and NO_3-N concentration was analysed before (ambient water content) and after (the adjusted water content 20, 40, 60 or 80% WFPS) incubation experiments. Furthermore, gross N-mineralization rate and N-content in microbial biomass was measured on 3 extra soil cores for better understanding of the chemical and biological soil processes. Beside of standard statistical procedures, multiple regression analysis was conducted for acquiring information on the combined effects of soil temperature and soil moisture on N_2O-, NO-, CO_2- and CH_4 soil emission or uptake rates. Our results were site dependent and minor relations to landuse types were found. Highest flux rates of N_2O and NO were measured at forest and grassland sites. Positive relationships between N_2O emissions and inorganic N (NH_4 and NO_3) were found. At most sites NO_3-N and NH_4-N concentrations were significantly higher after incubating soil cores under wettest conditions.

Nitric oxide consumption rates of down to –11.8 µg N $m^{-2}h^{-1}$ were measured at the Scottish forest UK-Gri. Notable high atmospheric N-deposition rates of 40 kg $ha^{-1}yr^{-1}$ in the Netherlands may be the cause for resulted in high NO emission of up to 131.7 µg N m^{-2} h^{-1} at the site NL-Loo. Increasing CO_2 emission with increasing soil temperature and decreasing WFPS was observed. Organic matter content may play a crucial role for significantly enhanced high CO_2 emission of 337.8 mg C m^{-2} h^{-1} at the forest UK-Gri. We found a strong increase of CH_4 emission at the Finnish

grassland/wetland site FI-Kaa (CH_4 flux of 107.20 µg C m^{-2} h^{-1}) with increasing WFPS. Soil pH was a fundamental parameter in our study for determinig the origin of greenhouse gas emissions. Our results should also provide a bridge to interdisciplinary scientific research as they can be incorporated into nutrient cycle and climate models.

3.2. Introduction

Enhanced greenhouse gas emissions mostly affect the global warming and climatic change nowadays. Increasing carbon dioxide and trace gases in the atmosphere are not only made by human activity. Land use changes, especially the cultivation of formerly undisturbed soils, has been identified as one important reason for the increasing concentrations of atmospheric trace gases (IPCC, 2007). Gas exchange between soils and the atmosphere is an important factor to global change and to increasing release of greenhouse gases. The global temperature will rise up between 1.5 and 4.5℃, especially in the northern l atitudes in comparison to the rest of Europe (IPCC, 2007). Additionally the precipitation during summer will rise in the northern higher latitudes (IPCC, 2007). Wide areas of Northern Europe are effected by permafrost soils and wetlands which react very sensitive to changes in temperature and moisture.

The most important individual greenhouse gas after H_2O is carbon dioxide, CO_2, but the global warming is also driven by methane, CH_4, and nitrous oxide, N_2O. Carbon dioxide emissions from natural resources result from respiration of soil and vegetation. Soil respiration consists of two principal processes: Heterotrophic respiration is the release of CO_2 from soil organic matter of bacteria and fungi activity and soil fauna activity (Hansen et al., 2000). The autotrophic respiration is the release of CO_2 from the growth of the roots and rhizosphere microorganisms (Smith et al., 2003). The changes in soil organic C through changes in land use and soil management practices (tillage, use of fertilizers, organic residues, pesticides) play an essential role in increasing CO_2 emissions (IPCC, 2007).

The global warming potential of CH_4 is 25 times greater than of CO_2, while the warming potential of N_2O is nearly 296 times greater (IPCC, 2007). The main sources of CH_4 are emissions from rice agriculture, biomass burning, ruminant animals, landfills, natural wetlands and domestic livestock (IPCC, 2007). Methane is formed in soils by the microbial breakdown of organic compounds in anaerobic conditions, at a very low redox potential by methanogens, methane producing bacteria (Smith et al., 2003). Aerated soils present the only net biological sink for atmospheric CH_4 (Guckland et al., 2009). In contrast with methane production, methane consumption is mainly performed by methanotrophs. Thermodynamically, it is possible to oxidise methane anaerobically with the alternative electron acceptors that inhibit methane production (Le Mer and Roger, 2001). Conversion of forest soils to agriculture reduced methane uptake rates by about two-thirds (Smith et al., 2003). The key variables leading to N_2O emission are well understood and have been reviewed extensively (Davidson et al., 1993; Skiba and Smith, 2000; Smith et al., 1998). Two biological processes are the principal sources of N_2O: Nitrification is an aerobic process in which ammonium (NH_4) is oxidised to nitrate (NO_3) (Davidson et al., 1993). Some of the NH_4 is channelled into production of NO and N_2O (Poth and Focht, 1985).

The second process is denitrification. It is the anaerobic reduction of NO_3 to N_2O and N_2 (Davidson and A., 1993), through a wide range of bacteria, which are able to denitrify. The largest rates of N_2O emission tend to be associated with denitrification (Skiba and Smith, 2000).

A further contribution to global warming derives from trophospheric ozone. Ozone is produced in the trophosphere through photochemical processes involving oxides of nitrogen (NO_x = NO + NO_2) and volatile organic compounds (VOCs) (Roelle et al., 2001). The only known pathway for the production of ozone is the photolysis of NO_2 (Roelle et al., 2001). Nitric oxide, NO, is a natural product emitted from soil as well as from combustion (Smith et al., 2003). Production of NO in soil can occur both through biological (nitrification and denitirification) and chemical processes (chemodenitrification) (Venterea and al., 2003).

The production, consumption and transport of greenhouse gases are strongly influenced by changes in soil structure (Maag et al., 1996), temperature (Skiba et al., 1998; Smith et al., 1998) and in water content (Ball et al., 1999; Dobbie and Smith, 2001; Maljanen et al., 2003). In addition, nitrogen availability (Skiba and Smith, 2000), nitrogen deposition (Kitzler et al., 2006b), soil acidity (Yamulki et al., 1997), soil organic matter (Kitzler et al., 2006a), soil microbial activity (Castro et al., 1995; Dobbie et al., 1996) and the vegetation type (Papen and Butterbach-Bahl, 1999; Pilegaard et al., 2006) have a pronounced influence on various chemical, physical and biological soil properties, which lead to greenhouse gas exchange. Understandig these exchange dynamics is critical for the construction of regional trace gas models and for the prediction of trace gas fluxes under climate change scenarios.

The present study is part of the NitroEurope research programm on the nitrogen cycle across Europe. It contributes to a better understanding and modelling of the impact of climatic change in the future, especially for the Northern European part. We determined the potential N_2O-, NO-, CO_2- and CH_4-fluxes from 13 sites and from four different land-use types in Northern Europe. We measured NH_4-N and NO_3-N concentrations, gross N-mineralization rates and nitrogen concentration in microbial biomass to gain more information on the influences on the trace gas production or consumption. Links between carbon and nitrogen gas emissions from North European soils under different land use types and their reactions on soil temperature and soil moisture changes should be reported and worked out.

We hypothesize: Warmer and wetter climatic conditions in Northern European soils lead to higher N_2O and CO_2 emissions and lower CH_4 uptake rates. Inorganic nitrogen leads to higher N_2O emissions, especially at grassland sites with high mineral N content through fertilization and grazing. Although higher soil moisture influences NO emission negatively, thus leading to higher NO uptake rates, an increase in temperature may result in higher NO emissions or lower NO uptake rates. Permafrost soils in the North are melting thus areas with wetter soil conditions may lead to higher NO consumption rates in Northern Europe, but on the other hand may lead to higher CH_4 emissions. The global warming leads to increasing CH_4 emissions and decreases CH_4 oxidation rates. Land use changes from forest to cropland reduce methane uptake and warmer soil temperatures may result in optimal conditions for CH_4 production in wetter ecosystems.

3.3. Materials and methods

3.3.1.Study sites

For this study the 13 northernmost NitroEurope Level-1 and Level-2 sites which cover four different land uses cropland, grassland, forest and wetlands. were selected. The sites range from Finland (Kaamanen (FI-Kaa)) in the north to Belgium (Vielsalm (BE-Vie)) in the south and from Russia (Fyodorovskoebog (RU-Fyo)) in the east to Irland (Dripsey (IR-Dri)) in the west (Figure 1). In general, northern Europe has longer, colder winters and shorter, cooler summers. Mean annual temperature and precipitation are in the range of -1.3 - 10℃ and 398 – 1450 mm, respectively. Relevant site characteristics are summarized in Table 1.

On the humid oceanic influenced Danish cropland site Risbyholm (DK-Ris) bread wheat and oat is cultivated in rotation and under fertilization. The second cropland site Lonzee (BE-Lon), is cultivated for more than 70 years and occurred with 10℃ the warmest annual temperature over all sites. Past periods with a rotation of four years flashy taproots were planted.

The mixed forest (Pinus sylvestris/ Quercus robur) Brasschaat (BE-Bra) is 20 km northeast of Antwerp. It's a planted stand with traditional forest management and in 1993 all undergrowth was completely removed. It receives 35 kg ha^{-1}yr-1 (wet and dry) nitrogen deposition from the atmosphere. The soil type is a sandy podsol. The second Belgian forest Vielsalm (BE-Vie) is a more than 100 year old mixed forest with planted beeches, Scots pines, silver and Douglas firs under traditional management. The soil is a district cambisol which is mainly covered with mosses. On the Finnish evergreen needleleaf forest Sodankylä (FI-Sod) a pure Scots pine forest is growing on a sandy podsol soil. 16 km west of Apeldoorn, Netherlands, the forest site Loobos (NL-Loo) is planted with evergreen coniferous spruce on a sandy podsol which is managed traditionally.

Three grassland sites are cultivated with *Lolium* spp. (Lille Valby (BE-LVa), Dripsey (IR-Dri), Cabauw (NL-Cab)). Two are fertilized (Lille Valby (BE-LVa) and Cabauw (NL-Cab)) and only one site (NL-Cab) is grazed with cattle. The Irish site highest receives the highest amount of annual precipitation (1450 mm) and is characterized by a brown podsolic soil type. The northernmost site Kaamanen (FI-Kaa) is grassland on a peat with tundran climatic influence.

Two wetlands (Polwet (PL-wet), Fyodorovskoe bog (RU-Fyo)) are located in the eastern part of Northern Europe and is influenced by humid continental climate. The Russian site is a wet 150 years old spruce/birch forest. The undergrowth is dominated by *Vaccinium spp.* and *Sphaghum spp.* The forest is characterized by low nitrogen content and low pH. Further detailed soil characteristics are listed in Table 2.

3.3.2. Soil sampling and experimental setup

For each sampling site 24 undisturbed soil cores from the top 5 cm of the mineral soil were collected in spring 2008 after natural soil temperature had reached 8℃ for a couple of days. Each site was split into 6 plots.At each plot 4 PVC-cylinders (diameter: 9cm, height: 5cm) were pushed down in the uppermost 5cm of mineral soil horizon. At the five forest sites the litter layer inside the cylinders was collected and pooled per plot in plastic bags. The soil cylinders were excavated, sealed with plastic bags and sent directly to the laboratory at the BFW in Vienna in cooling boxes. After arriving in Austria, eighteen samples were moved into stainless steel cylinders (diameter: 7.2cm, height: 5cm) and stored, not longer than 5 days, under 5℃ until analysis started. Three soil cores were s ieved to 5 mm and prepared, extracted or fumigated for inorganic nitrogen (NO_3 and NH_4), nitrogen mineralization (N_{min}) and microbial nitrogen (N_{mic}) analysis. Three soil cores per site were oven dried at 105℃ for 24 hours to define the gravimetr ic moisture content. With this mean water contents the percentage of volumetric water contents for all left 18 soil samples was calcuated, by multiplying with the particle density (1.5 g cm^{-3} for wetlands and 2.65 g cm^{-3} for all other land uses) the water filled pore space (WFPS) was defined. After the gas flux measurements, the real WFPS [%] for all soil cores was determined by oven drying the cylinders at 105°C. In a two factorial experiment design, 18 undisturbed soil cores were incubated under different temperatures (5°, 10°, 15° and 20℃) and under different soil moistur e contents (ambient condition (=WFPS at sampling), 20%, 40% or 60% and 80% WFPS). For the first incubation 12 replicate soil cores at ambient WFPS were incubated for nine hours at 5℃ to measure the CO_2 and NO_x concentration continuously. The 6 rest samples were deposited in the incubator while measuring procedure, so that all site samples underlie the same temperature sequences. At the end (after 8 hours) N_2O and CH_4 was measured in a static system. Following the same procedure, gas fluxes were

measured accordingly at 10°, 15℃ and 20℃. After t he first circle six soil cores were adjusted to the specific WFPS [%] (either by drying or by watering the soil with deionized water), and incubated again at all 4 temperature states. The soil cores were adjusted to the target WFPS 3 days before incubation. A constant soil moisture content was maintained trough weighing the cylinders between the incubation runs.
Dry weight was measured gravimetrically. pH was determined in soil suspensions in 0.01 M $CaCl_2$ solution using a glass electrode.

3.3.3. Gas flux measurements (CO_2, NO_x, N_2O and CH_4)

Carbon dioxide and NO_x fluxes were measured with a fully automated laboratory measuring system which controlled the data collection by a computer program. Further system descriptions can be found in Schindlbacher et al. (2004). The measuring system was temperature-controlled and connetcted to a CO_2- and NO_x-analyzer. Thirteen modified Kilner jars (volume 685 cm³) were used as open test chambers. Twelve jars were filled with soil scores and one jar was empty to work as reference incubation chamber. The incubator was flushed with compressed air and a fan was responsible for stable air conditions inside the incubator. The air from inside the incubator and from the open chambers was sucked with a constant flow rate (1.1 ml min-1) to the analyzers. For CO_2 analysis a PP SYSTEMS WMA-2 and for NO determination a HORIBA APNA-360 NO_x-analyzer was used. The measuring time of the soil filled chambers was six minutes and for the reference chamber four minutes. For N_2O and CH_4 determination the open Kilnar jars were closed with rubber septa and at time 0 20 ml compressed air were injected to the jars to avoid underpressure at the subsequent samplings. At intervals of 0, 15min and 30min gas samples of 10 ml were taken with syringes and injected into pre-evacuated 10 ml glas vials. The gas samples were measured directly or sealed with silicon grease, stored in the refridgerator under 5℃ and analyzed with th e gas chromatography (AGILENT 6890N) connected to an automatic sample-injection system (DANI HSS 86.50, HEADSPACE-SAMPLER)) within 3 days. Nitrous oxide concentration was deteced with a ^{63}Ni-electron-capture detector and CH_4 with a flame ionization detector. For the 63Ni-electron-capture detector nitrogen was the carrier gas, while helium was the carrier gas for the flame ionization detector. Standard gases (Inc. Linde Gas) contained 1, 2.5 and 5 µl l^{-1} N_2O and 1, 2 and 4 µl l^{-1} CH_4. Further gas measurment details are described in Schaufler et al. (2009).

3.3.4. NH_4 and NO_3 analysis

Ammonium (NH_4) and nitrate (NO_3) concentrations were determined from the 3 sieved soil cylinders (see above) and from soil taken from the 18 soil cylinders (by pooling 2, resulting in 9 replicates) that were used for incubation according to Kandeler (1996). From these 9 replicates (3 per WFPS) concentrations were determined before and after the incubation experiment For concentrations before the incubation, the left-over soil was taken when soil was moved from plastic cylinders into steel-cylinders. For concentrations after the incubation a small soil core (xx cm^3) was taken from the cylinders before oven drying. We made nine extracts (soil samples from 2 cylinders were pooled) of 5g sieved soil (5 mm) with 50 ml 0.1 M KCl-solution per site and four replicates per extract. For NH_4 measurement we mixed 500 µl sample solution with 250 µl mixsolution, which consists of deionated water, 0.3 M NaOH and sodium salicylate with sodium nitroprusside-solution. Accordingly 100 µl of dichloroisocyanurate was added, and NH_4Cl standard was used in concentrations 0, 1, 1.5, 2, 2.5, 3.5 and 5 µg N ml^{-1}. For NO_3 determination we reduced 750 µl of the sample solution with 30µl of 10% sulfuric acid and 2 zincshots. KNO_3 standard was used in concentrations 0, 0.5, 1, 1.5, 2 and 2.5 µg Nml^{-1}. 250 µl of the liquid was measured with a µQuant mQx200 photometer at a wavelength of 660 nm for NH_4 determination and at a wavelength of 210 nm for NO_3 determination.

3.3.5. N_{mic} analysis

Nitrogen in microbial biomass was determined from the 3 sieved soil cylinders (see above) and was analysed with the chloroform fumigation (Öhlinger, 1996) with 11 g sieved soil per sample. For determining the total amount of nitrogen, we compared the soil to a nonfumigated sample extraction and measured the samples with a µQuant mQx200 photometer (Bio-Tek Instruments, Inc., Vermont, USA).

3.3.6. N_{min} analysis

For determining nitrogen mineralization (according to Kandeler (1996)), we made three replicates of 5 g sieved soil (5 mm) from the 3 sieved soil cylinders (see above). Two of the extracts were prepared with 15 ml distilled water, shaked and incubated for 7 days under 40℃. Afterwards, 15 ml 2M KCl were added to the diluted solution, shaked for 30 minutes and filtered. The same procedure without incubation was made for the blank sample. The released NH_4-N from organic nitrogen compounds was determined colorimetrically.

3.3.7.Statistical analysis

All measured parameters were tested for normal distribution and variance homogenity (SAS Enterpriseguide Version 2). The ANOVA, Wilcoxon, Kruskal-Wallis test was used to assess multiple comparisons between all sites. Multiple correlation analysis was used to define relationship between all gas fluxes with soil and site data. Pearson correlation method was used for normal distributed parameters and the Spearman rank correlation for inhomogeneous distributed data. With DataFit Version 8.0.32 (Oakdale Engineering) multiple regression analysis was used to create best fitted models, which were defined through equations that relate all gas fluxes with soil moisture and soil temperature (Figure 2). Not normally distributed gas data were logarithmized and a different value was added (N_2O = plus 100, NO = plus 50, CH_4 = plus 250) per gas to remove negative values. The correction factor for adjusting the logarithmic transformation bias was calculated by dividing the mean (over all temperatures and all WFPS) of measured flux per site by the mean of the inverse transformed modelled flux. All values are shown as arithmetic mean ± standard error (S.E.).

3.4. Results

3.4.1. Mineral soil

3.4.1.1. N_2O emissions

Nitrous oxide emissions differed significantly between the sites (Kruskal-Wallis test). Highest mean emissions could be found at the forest soil BE-Vie, followed by the grassland site NL-Cab (156.3 and 108.7µg N m² h^{-1},respectively) (Table 3 and Figure 3). Lowest N_2O fluxes could be detected from the forest soils and the wetland soils (10.4 and 6.3±8.6 µg N m² h^{-1}, respectively). At most sites the emissions increased under increasing temperature conditions (Table 4) and under higher water saturation (Table 5). Seperated by temperatures (20 - 80%), the two sites BE-Vie and NL-Cab emitted the highest emissions, which are between 92.76 and 254.92 µg N m² h^{-1}; and between 58.44 and 179.86 µg N m² h^{-1} under all temperature conditions. BE-Bra, FI-Sod, UK-Gri and FI-Kaa had their lowest emission under 10℃ soil temperature. The grassland site IE-Dri an d the two wetland sites show a decrease with higher soil temperature. Especially RU-Fyo declined from 9.73 to 3.96 µg N m² h^{-1} with increasing temperature (5°-20℃). BE-Vie and NL-Cab had their maximum N_2O production at 80% WFPS (822.82 and 231.36 µg N m² h^{-1},respectively). Only the forest site BE-Bra recorded a decline with higher WFPS (from 31.74 to 5.98). The lowest mean N_2O emissions were produced at the wetland soil in Russia (RU-Fyo) (6.29 µg N m² h^{-1}) (Table 3 and Figure 3).

The Pearson rank correlation demonstrates that at nine sites soil temperature has a positive influence on N_2O emissions with an r ranging from 0.15 to 0.45 at BE-Vie and DK-Ris (Table 7). Only the two sites IE-Dri and RU-Fyo soil temperature has a negative influence on the N_2O fluxes. At the two forest sites FI-Sod and UK-Gri no significant effect could be seen.

For all samples an increase of N_2O production with increasing soil moisture could be observed. The mean correlation factor for N_2O emissions ranged from 0.15, at NL-Cab, up to 0.46, at DK-LVa site, (Table 7). One arable soil (BE-Lon) and one forest site (BE-Bra) showed no significant correlation between N_2O increase and increasing soil moisture.

Under using soil temperature and soil moisture as independent variables of N_2O fluxes, multiple regression analysis was applied for all 13 sites (Table 6). The regression analysis gives its best fit for N_2O production under using the following models (M):

M1	ln(y+100)=a*(x1)^b*c^(x2)
M2	ln(y+100)=a+b*(x1)+c*(x2)+d*(x2)^2+e
M3	ln(y+100)=a+b*(x1)+c*(x2)+d*(x2)^2

y is the logarithmized N_2O gas flux rate with an adittion of 100 , *x1* is the soil temperature in ℃, *x2* is the WFPS in %. The regression coefficients for M1 were (a-c), for M2 (a-e) and for M3 (a-d).
The regression model M1 explained the N_2O flux as a function of soil temperature and WFPS at the two Danish sites (Table 6) at best. Highest R^2 occurred at the cropland site DK-Ris (R^2 = 0.37) followed by the grassland site DK-LVa (R^2 = 0.34).

3.4.1.2. NO fluxes

The NO fluxes demonstrated significantly high differences between the sites (Kruskal-Wallis test). The highest mean NO production could be measured at NL-Loo (131.7 ± 237.3 µg N m² h^{-1}) followed by the two grasslands IE-Dri and NL-Cab (27.8 ± 51.2 and 23.2 ± 38.3 µg N m² h^{-1}, respectively). On five sites (the two Finnish sites, one forest (UK-Gri) and the two wetlands), NO was taken up, and highest uptake rates were measured at UK-Gri with –11.8 ± 12.9 3 µg N m² h^{-1} (Table 3). The wetland sites had a mean flux rate of –5.5 ± 8.4 µg N m² h^{-1}. Highest NO emissions (NL-Loo 232.17 µg N m² h^{-1}) occurred under driest soil conditions (20% WFPS) and highest NO uptake rates were recoded at 40% WFPS (UK-Gri –17.66 µg N m² h^{-1}).
Overall, there was a steady NO decrease with increasing wetness (Table 7) with correlation factors up to r=-0.63. Only at the two forest sites (FI-Sod and UK-Gri) soil moisture showed no significant effect on NO emissions. At the wetland sites we could find a positive influence of increasing wetness (PL-Pol r = 0.23; RU-Fyo: r = 0.52).
Highest NO production and lowest NO consumption rates were found by increasing soil temperature (Table 7). At 20℃ the NO flux rat e range from –5.68 to 214.61 µg

N m² h^{-1} at RU-Fyo and NL-Loo, respectively Over all four measured temperatures the highest uptake rate (-19.04 µg N m² h^{-1}) occurred at the forest site UK-Gri at 5℃ soil temperature, the site where most of the NO is taken up. Only the wetland soils had their lowest consumption and 15℃ soil temperat ure (Table 4).

Nitric oxide emissions are significantly positive correlated (Pearson) with temperature, with correlation coefficients ranged from 0.17 at NL-Cab up to 0.81 at FI-Sod.

For modelling NO emissions by using soil temperature and soil moisture as independent variables the multiple regression models M1 and M3 (see above) were used which gave regressions coefficients ranging from 0.13 at UK-Gri up to 0.66 at FI-Sod (Table 6).

3.4.1.3. CO_2 emissions

Carbon dioxide emissions differed significantly over all four ecosystem types (Kruskal-Wallis test). Comparing the sites within the same landuse types the two wetland sites and the two cropland sites showed similar respiration rates (mean: 242 and 95 mg C m^{-2} h^{-1}, respectively). However, differences within the the forest sites of nearly 300 mg C m^{-2} h^{-1} (Table 3 and Figure 4) were observed. Over all sites, highest mean respiration rates was measured at the forest sites UK-Gri (337.8 ± 209.1 mg C m^{-2} h^{-1}) and lowest mean emissions were found from the soil from the NL-Loo forest (44.3 ± 28.9 mg C m^{-2} h^{-1}).

Highest CO_2 emission rates occurred under driest soil conditions (20% WFPS) at the wetland site PO-wet (569.06 mg C $m^{-2}h^{-1}$) and at forest sites BE-Vie, FI-Sod and UK-Gri (Table 4). At seven sites (croplands: BE-Lon, DK-Ris, forests: BE-Bra, NL-Loo, grasslands: DK-LVa, FI-Kaa, IE-Dri and wetland: RU-Fyo) the highest CO_2 production was measured under wetter soil condition (40% WFPS). The values ranged from 58.61 up to 500.32 mg C m^{-2} h^{-1}. Only at the grassland site NL-Cab the optimum moisture for CO_2 emission was observed under wettest condition of 80% WFPS. Lowest CO_2 (27.10 mg C $m^{-2}h^{-1}$) was emitted under 80% WFPS from the forest soil in NL-Loo.

Regarding the effect of soil temperature on CO_2 emissions, all sites showed increasing CO_2 fluxes with increasing soil temperature (Table 5). A positive dependency of soil temperature on CO_2 emissions from r=0.17 up to r=0.51, were obtained. Lowest soil respiration rates were found at NL-Loo (35.51 mg C m^{-2} h^{-1}) at

5℃, and the highest rates were found at UK-Gri (458.27 mg C m^{-2} h^{-1}) at 20℃. Multiple regression analysis was used to show the dependency between CO_2 flux, temperature and soil moisture content (Table 6). At the grassland site IE-Dri the best relationship expressed as R^2 = 0.56 was found, followed by the grassland site NL-Cab with R^2 = 0.55.

3.4.1.4. CH_4 fluxes

Significant differences of CH_4 fluxes could be detected over all 13 sites (Kruskal-Wallis test). Methane fluxes ranged from highest uptake rate at the forest BE-Bra (-46.1 ± 51.9 µg C m² h^{-1}) (Table 3 and Figure 4) to highest emission at the wetland PL-wet (38.6 ± 181.7 µg C m² h^{-1}). All forest soils (expect for UK-Gri) took up methane at all WFPS and all temperature states. Only for UK-Gri a mean emission of 15.5 ± 30.7 µg C m² h^{-1} was measured. Low methane emissions were detected at the cropland sites, all other landuses no ecosystem specific trend could be observed. The methane fluxes for grasslands ranged from –30.8 up to 28.2 µg C m² h^{-1}. Nine soils had their highest emissions or lowest uptake rates under wettest soil conditions (80% WFPS) (Table 4). At the Finnish forest FI-Kaa 107,20 µg CH_4_C m² h^{-1} was produced (80% WFPS) and under driest (20%) conditions, ten times less CH_4 was emitted. Highest CH_4 consumption rate was observed at 40% water saturation at the Belgium forest BE-Bra (-55.97 µg C m² h^{-1}).
Contrary results CH_4 fluxes were found for the two wetland sites. Methane emissions for Polwet rised with increasing temperature, but the uptake of the Russian wetland acted converse. In this case, we measured lowest consumption at coolest and highest methane uptake rates at warmest soil temperature. Also NL-Cab had its highest consumption rate under warmest soil condition. For three sites the lowest methane flux rate occurred at 15℃ soil temperature. At some sites the methane fluxes were not normaly distributed. For these values we used a Spearman instead of a Pearson correlation. Methane fluxes of almost all soils were positively correlated with temperature and soil moisture (Table 7).
Although the influence of both soil temperature and soil moisture on CH_4 fluxes was not that strong than on other GHG (see above), at some sites the multiple regression (models: M1 and M4) gave reasonable results (Table 6):

M4 $$\ln(y+250) = a+b*(x1)+c(x1)^2+d(x2)+e*(x2)^2$$

We found no significant regression analysis for the forests BE-Bra, BE-Viel FI-Sod and UK-Gri, only for NL-Loo M1 obtained a significant level and a R^2 of 0,10. The lowest R^2 were measured for methane, they ranged from 0.10 to 0.28.
At some sites the methane fluxes were not normaly distributed. For this values we calculated a Spearman instead of a Pearson correlation. Methane fluxes of nearly all soils were positively correlated with temperature and soil moisture (Table 7). Only the consumption at wetland RU-Fyo showed a negative correlation (r= -0.27, $p<0.05$) with soil moisture.

3.4.1.5. NH_4-N and NO_3-N

The NH_4-N and NO_3-N concentrations were measured before and after the incubation experiments and the Kruskal-Wallis test showed differences between all land use sites. Except BE-Vie, UK-Gri and PL-wet, all other sites showed higher NH_4 concentrations before the incubation experiment (Table 8). Highest NH_4 concentration before the incubation was measured at the wetland PL-wet, whereas the lowest concentration was measured at the cropland BE-Lon. After incubation the arable BE-Lon had the lowest NH_4 rate, followed from DK-LVa. Overall, the grassland sites is the land use type with the highest NH_4 concentrations in the uppermost 5 cm of mineral soil with maximum values at FI-Kaa with 14,83 µg N/g/TSFor RU-Fyo we measured highest nitrate concentrations before incubation and for DK-Ris after incubation experiments (Table 8). FI-Sod exhibited lowest NO_3 contentrations (1,07 µg N/g/TS). A significant positive relationship (regression analysis) was found between N mineralization rate and mean NH_4 concentration (R^2 =0.55) and between mean inorganic nitrogen (NH_4 + NO_3) and mean N_2O emissions (R^2 =0.53) across all sites except the two wetland sites and FI-Kaa .
By applying a correlation analysis (Pearson) we determined the relationship between nitrogen mineralization rates and inorganic N and N_2O, NO- and CH_4 fluxes. A positive correlation (Pearson) was found between N_2O emissions and NH_4 concentration rates (before incubation) for DK-Ris (r= 0.44 p=<0.001), FI-Kaa (r= 0.37 p=0.0053), NL-Cab (r=0.70 p=<0.0001) and NL-Loo (r=0.27 p=<0.05). Ammonium concentration rates after incubation and N_2O emissions was only found for BE-Vie (r=0.40 p=<0.05) and a negative dependency was found for RU-Fyo (r=-0.25 p=<0.05).

Nitrate concentration (before and after incubation) and N_2O emissions correlated positively at BE-Vie (r=0.39 p=<0.001; r=0.39 p=<0.001), and negatively at RU-Fyo (r=-0.26 p=0.05; r=-0.26 p=<0.05).
A negative dependency was found between mean NO emissions and mean NH_4 concentration rates after the incubation experiment for BE-Bra (r=-0.48 p=<0.01), FI-Kaa (r=-0.29 p=<0.05), NL-Cab (r=-0.55 p=<0.001) and for RU-Fyo (r=-0.31 p=<0.05). A positive correlation was only found at IE-Dri site (r=0.37 p=<0.01).

3.4.1.6. N_{mic}

Nitrogen in microbial biomass differed significantly (Kruskal-Wallis test) between the sites and ranged from 959 up to 24 262 µg Ninhydrin-reactive-N cyl^{-1} (Table 2). Here we found a similar gradient as for the nitrogen mineralization rates. The forests NL-Loo and UK-Gri had the lowest N_{mic} concentration with values under 1000 µg Ninhydrin-reactive-N cyl^{-1}, croplands and wetlands are almost similar and the mixed forest BE-Vie had the highest nitrogen in the microbial biomass over all forest sites. Highest N_{mic} were measured for the two grasslands IE-Dri and NL-Cab (13 527 and 24 262 µg Ninhydrin-reactive-N cyl^{-1}).
A significant positive relationship (regression analysis) was found between mean N mineralization rate and mean N biomass (R^2 =0.93, p=<0,0001) across all sites (Figure 5).

3.4.1.7. N_{min}

Under ambient water content (=water content at soil sampling), N-mineralization rate had been measured for all sites (Table 2). With the Kruskal-Wallis test we detected significant differences of N_{min} between all sites. The grassland sites IE-Dri and NL-Cab, had the highest N mineralization rates with 122.34 and 180.08 µg NH_4-N cyl^{-1} (values are denoted per soil sample cylinder with a volume of 199.5 cm^3). Overall, the forest site NL-Loo had the lowest mineralization rate (3.53 µg NH_4-N cyl^{-1}), followed by croplands and wetlands. All N_{min} rates differed significantly relating to land use type.

3.4.2. Litter

3.4.2.1. Gas fluxes

Gas fluxes from all five forest sites were only measured at ambient water content (= water content directly after delivery).Dry matter was between 20 and 30% , allowing a comparison of the sites. No N_2O and CH_4 gas fluxes were measured from the forest site FI-Sod.

The highest N_2O emissions were produced in the litter assay from BE-Bra following by NL-Loo. (26.8 ±8.2; 15.6 ±15.6 µg N m² h^{-1}) (Figure 103). For BE-Vie and UK-Gri the lowest emissions, with 10.2 ±-1.8 and 9.8±1.8 µg N m² h^{-1}, were observed.

Nitric oxide fluxes differed significantly and ranged from –3.4 and 300.1 µg N m² h^{-1}. Highest emissions were observed at NL-Loo and BE-Bra (300.1 ± 84.7; 295.8 ± 51.0 µg N m² h^{-1}), followed from Belgium site BE-Vie (30.9 ± 13.7). The lowest NO fluxes were measured at FI-Sod and UK-Gri. For both sites we observed NO uptake rates from –8.1±1.6 and –3.4 ± 1.1 µg N m² h^{-1}, respectively

The respiration rates from litter samples were significantly different. Lowest rates were measured at the Finnish forest FI-Sod 53.0 ±11.1 mg C m² h^{-1} and highest rates were measured from BE-Vie with 520.9±68 mg C m² h^{-1}(Figure 10).

Methane consumption rates were only obsereved in BE-Bra and NL-Loo, they ranged from –23.5 ± 6.6 up to –12.1 ± 4.2 µg C m^2 h^{-1}. At BE-Vie and UK-Gri 18.7 ± 4.9 and 14.6 ± 2.7 µg C m^2 h^{-1} were emitted, respectively.

We compared the litter gas fluxes with the soil gas fluxes for all forest sites. At BE-Bra and NL-Loo higher NO and CO_2 were emitted and less CH_4 was taken up from the litter samples than from the soil cores. The mineral soil at the Finnish Scots pine forest FI-Sod emitted more NO and CO_2 than the litter layer did. At BE-Vie there were significantly higher N_2O and NO emissions from the mineral soil compared to litter layer emissions. We measured CH_4 emissions from litter samples but CH_4 consumption in mineral soil samples at BE-Vie. In comparison to mineral soil samples, higher CO_2 emission rate were measured in the litter layer. At UK-Gri we observed higher N_2O, NO, CO_2 and methane fluxes in the soil, than in the litter layer.

3.4.2.2. N_{min}, N_{mic}, NH_4 and NO_3

The highest nitrogen mineralization rate was found in the mixed forest litter from BE-Bra (22.23 µg NH_4-N cyl^{-1}). N_{mic} and NH_4 before and after incubation were only measured for two sites, at BE-Vie (mixed forest) and at NL-Loo (Scots pine). Nitrogen in microbial biomass ranged from 6164 and 1324 µg Ninhydrin-reactive-N cyl^{-1}. Highest NH_4 concentrations were observed after the incubation experiment for both sites. At the litter layer from NL-Loo very high NH_4 concentrations were found after the incubation (5994 µg NH_4-N cyl^{-1}). Nitrate concentrations in the litter samples were not as high as the NH_4 concentrations Highest NO_3 was measured after incubation experiment for NL-Loobos litter with 6 391 µg NH_4 –N cyl-1.

3.5. Discussion

3.5.1. Controlling factors of N_2O and NO fluxes

Many research studies have reported increases in N_2O emission rates with increasing temperature (Skiba et al., 1998; Smith et al., 1998). For 9 sites we also could find a positive correlation between N_2O fluxes and soil temperature. An increase in temperature leads to an increase in the size of anaerobic zones and thus leads to an increase in the rate of denitrification (Smith et al., 2003). Highest N_2O emissions, separated by land use type, were measured at our grassland sites. This is supported by laboratory studies of Schaufler et Al. (2009). Most of our grasslands were fertilized and grazed, which results in high mineral N soil content. The availability of mineral N as a substrate for nitrification and denitrification is an essential requirement for stimulating N_2O emission (Skiba and Smith, 2000). Application of mineral N fertilisers, excreta and urine of grazing animals increases N_2O emissions very rapidly (Skiba and Smith, 2000).

Over all sites, we found the highest N_2O rates at the Belgian mixed forest BE-Vie. Compared to all forests, we also found the highest NH_4 concentration, highest N-mineralization rates and highest amount of N in microbial biomass at this site. BE-Vie is the only mixed forest planted with beech. Higher rates of denitrification are found in deciduous forests than in coniferous forest, which leads to higher N_2O production (Pilegaard et al., 2006). Studies about tree species proved that N_2O formation is higher in soils under beech (Brüggemann et al., 2003; Kesik et al., 2005; Papen and Butterbach-Bahl, 1999). Papen and Butterbach-Bahl (1999) hypothesized that differences in litter quality (i.e. in the C/N ratio) are the main reason for there marked differences. Beech litter is easier to decompose and so higher microbial N turnover rates, which led in consequence to higher N_2O emission rates, could be observed (Papen and Butterbach-Bahl, 1999).

On the Russian wetland site lowest N_2O emissions were measured. This peat, which is cultivated with birch and Norway spruce, exhibited a very acid soil with a pH of 3.1. Mean fluxes of nitrous oxide decreased appreciably with increasing acidity (Yamulki et al., 1997).

We observed a positive correlation of N_2O with soil moisture for 11 from 13 sites. As soil WFPS increases, diffusion of O_2 into soil aggregates will decrease and hence much of the soil will become anaerobic. This causes increased N_2O emissions by denitrification (Dobbie and Smith, 2001). For 8 sites the moisture optima for nitrous oxide were at a WFPS of 80% and for 3 sites at 60%. This was also the optima range for N_2O production in many other studies (Davidson and A., 1993; Maljanen et al., 2003). Davidson (1993) developed a model of the relationship between the WFPS and N_2O emissions, which suggests that N_2O emissions are at their maximum at a WFPS of 60%. Dobbie et al. (1999) suggested that maximum N_2O production occur at a WFPS of 80-85%. The highest fluxes were induced by the loss of macro-pores due to compaction. Another study of Maag (1996) showed again, that the soil texture can influence the denitrification loss at different soil moisture contents.

For the forest site BE-Bra we found a decline of N_2O emissions with higher soil moisture content. This could be connected with the increasing NO_3 concentration by increasing WFPSFor Brasschaat's litter layer, mainly Scots pine needles, the highest N_2O emissions could be observed. This might be mainly influenced by the high atmospheric N deposition rates (35 kg ha^{-1} y^{-1}) and the long decomposition time of needles.

The NitroEurope project lists the Finnish site FI-Kaa as a grassland, but all our results show that the site fits better to wetlands. The low bulk density, low N_2O emissions, consumption of NO, high N mineralization rate and high N in microbial biomass caused us cite FI-Kaa for regression and correlation analyses as wetland. We observed a positive correlation of mean inorganic N (NH_4+NO_3) and mean N_2O emissions over all sites, except the two wetlands and FI-Kaa. Soil temperature was the most important regulator of N_2O emissions closey followed by soil moisture.

Nitric oxide fluxes of all sites showed an increase of emissions and a decrease of consumptions with increasing soil temperature. Many other reseaches came to the same result (Schindlbacher et al. 2004, Gasche and Papen, 1999). The major source of nitric oxide production is the aerobic process of nitrification (Smith et al., 2003). When the supply of O_2 is limitied the nitrifying bacteria can reduce nitrite to NO.

We found a negative correlation on NO fuxes with soil moisture. These correlation is identically with many other studies (Schaufler et al., 2009; (Davidson and A., 1993; Venterea and al., 2003). The optimum soil moisture content for NO production was found between 20% and 40% WFPS, supported by the study of Schaufler et al. (2009).

Separating the mean NO fluxes according to ecosystem type, we point out the same results as for N_2O emissions. Forest sites produced highest NO fluxes. Over all sites highest mean NO flux occurred for the Scots pine forest NL-Loo. This could be related with high atmospheric N deposition (40 kg ha^{-1} yr^{-1}) and the acidic soil conditions, supported by others (Kitzler et al., 2006b). The negative correlation of NO with N_{min} and $N_{mic,}$ at the NL-Loo site, is related with the low NO_3 and NH_4 concentrations per dry weight in the soil. This low organic matter content, which is verified by the low C_{org} content of 2.4, leads to marginal mineralization turnover rates. Over all sites, we found an R^2 of 0.93 between N_{mic} and N_{min}, which shows a significant relationship between high N content in the microbial biomass and high N mineralization rates (Figure 5). At NL-Loo we found a relation between high bulk density and the inorganic N content. An R^2 of 0.81 and 0.80 was calculated between bulk density and N_{mic} and N_{min} across all sites (Figure 6 and 7). On the other side, high NO production in acidic soils and with low organic compounds could result from chemical processes, especially through chemodenitrification (Rammon and Peirce, 2002; Stevens et al., 1998; Yamulki et al., 1997). Chemodenitrification is an important NO production mechanism. It is generated by abiotic decomposition of HNO_2 during nitrification (Venterea and al., 2003). Venterea (2003) found relations, between the important chemodenitrification factors, soil acidity and N losses in forests impacted by atmospheric deposition.

The two wetlands, PO-wet and RU-Fyo (and FI-Kaa) have the lowest bulk density. These soils produced very low N_2O emissions and took up NO. The low bulk density of the wetland and forest site influences gas diffusion (Smith et al., 2003).

For the mixed forest UK-Gri highest consumption of NO could be measured at 40% WFPS. This finding is supported by the laboratory study of Rammon and Peirce (2002). Their results showed an increase in net NO flux with WFPS between 45 and 60%, after which net NO flux decreases with WFPS. At lower soil moisture content water limitation decreases biological and chemical reactions that produce NO. At higher WFPS an overabundance of water limits gas diffusion, which allows further reduction of NO (Rammon and Peirce, 2002). Highest results for NO uptake rates could be observed when the soil has low nitrogen content (Rammon and Peirce, 2002). The 5 sites from our study, which exhibited NO consumption, are arranged in the northern districts of Northern Europe and have lowest N deposition rates (between 0.5 and 6 kg N $ha^{-1}yr^{-1}$). For the northern parts of Europe lower values of wet N deposition were measured and modelled in the N_2O and NO inventories study across European forest soils (Kesik et al., 2005).

3.5.2. Controlling factors of CO_2 and CH4 fluxes

The main source of CO_2 emissions from soils is a result of decomposition of organic material by microorganisms and root respiration (Ball et al., 1999). We observed a positive correlation with CO_2 and soil temperature and a negative correlation with carbon dioxide and soil moisture. On 11 sites, the respiration rate increased exponentially with soil temperature. This finding is in good agreement with other studies (Dong et al., 1998; Fang and Moncrieff, 2001; Kitzler et al., 2006a; Moureaux et al., 2006; Schindlbacher et al., 2008; Schaufler et al., submitted). Separated by land use types, highest mean CO_2 emissions occurred from wetlands, followed by grasslands. High carbon content in wetlands is an important factor for CO_2 production. Organic carbon is converted to CO_2 during mineralization processes. High soil temperature excites microbial activity thus highest mineralization of organic matter occurs in summer (Kitzler et al., 2006a).

In our laboratory experiment, we measured at 11 sites highest mean CO_2 emission between 20 – 40% WFPS. Wetter soil conditions reduce soil air filled pore space and respiration and increases anaerobism (Ball et al., 1999) Remarkeble are the highest and lowest CO_2 fluxes across all sites. Highest mean emission was found at the forest site UK-Gri at 20% WFPS. A low bulk density caused by many roots and thus high organic matter (C_{org} = 49 C kg ha^{-1} yr^{-1}) leads to this high results. Except for the two wetlands and FI-Kaa, we found a negative relation between bulk density and CO_2 emission (Figure 7). Compact soils emit lower amounts of CO_2. Lowest rates were measured from the forest soil at NL-Loo, with minimal C_{org} content in soil and lowest N_{min} rate. Furthermore, we observed highest CO_2 respiration at wettest soil conditions (80% WFPS) at the grassland site NL-Cab. Soil texture may influence soil respiration (Smith et al., 2003). Organism which respire CO_2 have different optimum soil moisture contents (Davidson et al., 1998). Schaufler et al. (2009) report better conditions for respiration for clayish soils between 60 – 80% WFPS, which supports the findings at our site NL-Cab. Moreover, optimum water content for sand and sandy loam ranged from 20 to 40% WFPS which was also found by Schaufler et al. (2009).

Comparisons between CO_2 fluxes from mineral soil and litter layer, show higher emissions from litter layer, except for FI-Sod and UK-Gri (Figure 10). Dong et al., (1998) for example found, that 20% of soil CO_2 emission was produced by the litter layer and humus. In the litter layer of UK-Gri compounds of dead wood, big spruce cones and needles prevailed. The incubated mineral soil cores (bulk density of 0.24) for UK-Gri were very humic, many roots were included and mineral particles were few. More humus in the soil led in this case to higher CO_2 emissions from the humic soil.

Methane is formed in soils under strictly anaerobic conditions (Smith et al., 2003). Our study reflects this information, while 9 sites had their highest CH_4 emission at the wettest soil moisture content. The highest emissions produced by methanogens in anoxic zones, was observed at the wetlands PO-wet and FI-Kaa (Dobbie et al., 1996; Le Mer and Roger, 2001; Smith et al., 2003). Best conditions for methane production is given in natural wetlands (Smith et al., 2003). The lower emissions at the two croplands BE-Lon, DK-Ris and the grassland DK-LVa resulted from the higher bulk densities, which influences gaseous diffusion from the soil (Smith et al., 2003).

We observed a negative correlation between methane oxidation rates and WFPS. On four forests, one grassland and one wetland methanotrophic bacteria consumed the produced methane, either in the oxic top layer or in the oxic rhizosphere (Dobbie et al., 1996; Le Mer and Roger, 2001; Smith et al., 2003). The mixed forest BE-Bra had the highest mean consumption rate (-45.1 µg C $m^{-2}h^{-1}$) at driest soil condition. Noteworthy, over all methane oxidation rates, highest uptake rates were found between 20 and 40% WFPS. Soil water had the strongest influence on CH_4 uptake rates, increasing as WFPS declined (Tate et al., 2007).

In the study of Dobbie (1996), the methane oxidation rate in woodland soils was significantly higher than in the arable or grassland soils. We observed methane oxidation on 4 from 5 forests, which sustains rapid oxidation rate in coarse-textured forest soils with well-developed soil structure and a surface organic layer (Smith et al., 2003). Our forest soil BE-Bra had a high root content and on the root surface, methane oxidation is very high. This is reflected by the relatively high number of methanotrophic bacteria in rhizosphere soil (Gilbert and Frenzel, 1998). Root-associated methane oxidation may be controlled by root oxygen release (Calhoun and King, 1997). Remarkable is the positive correlation of methane fluxes with soil pH (R^2= 0.37) (Figure 9). Optimum activity of methanogens is usually around neutral soil conditions (Le Mer and Roger, 2001), and methane oxidation can occur at a lower pH (Jang et al., 2006). Our study showed methane consumption in acid soils and CH_4 production in nearly neutral soils.

The effect of soil temperature on methane fluxes is not that important as soil moisture, but Dobbie and Smith (1996) observed inhibited microbial activity as soils become very dry, supported by the study of Castro et al. (1995). We determined a positive correlation for CH_4 emissions and soil temperature at almost all sites. For seven sites, highest emission and lowest consumption rates could be observed at 20℃ and for 3 sites at 15℃ soil temperature.

Comparisons between CH_4 fluxes in soils and litter, showed us higher consumption or emission in mineral soil (Figure 6), except at the mixed forest BE-Vie. The litter layer can reduce soil CH_4 uptake by acting as a diffusion barrier (Dong et al., 1998). Litter decomposition can reduce substantially the entry of atmospheric CH_4 into the soil (Smith et al., 2003). Noteworthy, BE-Vie is the only forest mixed with beech. Guckland et al. (2009) measured approximately two to three times higher litter accumulation and higher soil acidity under beech stand, thus leading to higher CH_4 uptake rates. These soil conditions, which can constrain CH_4 uptake, may determine our methane emission in the litter layer and the consumption in the mineral soil.

3.6. Conclusion

Our findings demonstrate that the combination of laboratory experiments from intact soil samples with multiple regression analysis could be a powerful tool to predict N_2O-, NO-, CO_2- and CH_4 fluxes from various land use types. These simple models can be included in process-oriented GHG models for predicting C and N emissions/deposition under different climate change scenarios. Driving key factors for greenhouse gas exchange are soil temperature and soil moisture content. Results of the different fluxes were site dependent but varied significantly between different land-use types. For Northern European soils we located high N_2O and NO emissions in forests and grasslands, but forest and wetland soils could also act as a sink for NO emissions. Nitric oxide consumption was significantly influenced by soil texture and compaction. In addition, chemodenitrification may serve as an important conduit for NO production. Furthermore, a relationship between emitted N_2O and soil acidity, especially in forest soils under beech, was detected. Bulk density, organic carbon content and root activity play an important role for respiration rates, especially at forest and wetland sites. We determined optimum conditions for methane uptake in acidic soils with low soil moisture content. Climate predictions indicate a future increase of precipitation over large parts of Scandinavia, which would lead to enhanced soil moisture. In future northern soils may therefore act as a source for CH_4 due to less methane uptake. Comparisons of gas exchange between soil and litter layer show remarkable differences, especially for N_2O and CH_4 fluxes. In a further step, our data can be linked with potential GHG fluxes from other regions in Europe and actual and future hot spots of soil C and N gas fluxes in Europe can be detected.

3.7. Acknowledgements

This reserarch was supported bei NitroEurope project, compound 1 (fluxes) activity 5 (bioassays). We would like to thank P. van den Bulk, T. Laurila, H. Soegaard, K. Pilegaard, R. Clement, G. Kiely, E. Moors, J. Neirynck, B. Heinesch, R. Juszczak and A. Varlagin for helping with site data and soil sample collection. Many thanks to B. Schraufstädter for helping with the laboratory work and to M. Pfeffer for technical support.

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3.9. Tables

Table 1 Sampling sites with information on ecosystem, geographical location, long-term average annual temperature and precipitation.

Table 2 Soil characteristics and management of the 13 sampling sites.

Table 3 Mean (± S.E.) flux rates of N_2O, NO, CO_2 and CH_4 observed over all temperature and moisture conditions at the 13 different study sites and at the different land use types.

Table 4 Mean flux of the investigated gases N_2O, NO, CO_2 and $CH_{4,}$, separated by WFPS (%).

Table 5 Mean fluxes of the investigated gases N_2O, NO, CO_2 and $CH_{4,}$, separated by temperature (℃).

Table 6 Used modes (M1-4) and model parameters (R^2, significance level, regression coefficients (M1:a-c, M 2: a-e, M 3: a-d, M 4 a-e)) of multiple regression analysis (Equ. 2-5) of N_2O or $\ln N_2O+100$, NO or lnNO+50, CO_2 and $\ln CH_4$ or CH_4+250 and CO_2 fluxes. Independent variables are soil temperature (x1) and WFPS (x2). Corr. Fact.= factor for adjusting the logarithmic transformation bias.

Table 7 Pearson or Spearman (bold) correlation factors (r), significance level (p), and number of observations (n), between N_2O, NO, CO_2 and CH_4 fluxes and the two independent factors soil temperature (Temp. [℃] from 5-20℃) and soil moisture ([WFPS %] from 20-80%) at the 13 sites.

Table 8 Mean NH_4 and NO_3 concentration related to the cylinder before and after the incubation experiment at the 13 sites.

Table 1 Sampling sites with information on ecosystem, geographical location, long-term average annual temperature and precipitation.

Land use	Site	Sitecode	Vegetation	Location	Ave T [°C]	Prec. [mm]
Cropland	Lonzee, BE	BE-Lon	*Beta vulgaris*	50°33'N 4°44'E	10.0	800
	Risbyholm, DK	DK-Ris	*Triticum/ Avena sativa*	55°53'N 12°09'E	9.0	575
Forest	Braschaat, BE	BE-Bra	*Pinus sylvestris/ Quercus robur*	51°30'N 4°52'E	9.8	750
	Vielsalm, BE	BE-Vie	*Fagus sylvatica/ Pseudotsuga menziesii/ Picea abies*	50°30'N 5°99'E	7.5	1000
	Sodankylä,FI	FI-Sod	*Pinus sylvestris*	67°36'N 26°63'E	-1.0	499
	Loobos, NL	NL-Loo	*Pinus sylvestris*	52°16'N 5°74'E	9.8	786
	Griffin, UK	UK-Gri	*Picea sitkensis/ Pseudotsuga menziesii/ Betula pendula*	56°60'N -3°79'E	8.2	1200
Grassland	Lille Valby, DK	DK-Lva	*Lolium perenne*	55°41'N 12°07'E	9.1	690
	Kaamanen, FI	FI-Kaa	*Sphagnum*	69°14'N 27°29'E	-1.3	398
	Dripsey, IE	IE-Dri	*Lolium*	51°98'N -8°75'E	9.5	1450
	Cabauw, NL	NL-Cab	*Lolium*	51°58'N 4°55'E	9.8	786
Wetland	POLWET, PL	PL-wet	*Menyantho-Sphagnetum*	52°76'N 16°30'E	8.1	550
	Fyodorovskoe bog, RU	RU-Fyo	*Picea abies/ Betula pubescens/ Sphagnum/ Vaccinium myrtillus*	56°27'N 32°55'E	3.9	711

Table 2 Soil characteristics and management of the 13 sampling sites.

Land use	Site	N dep.	C_{org}	N_{tot}	C/N	soil type	Soil texture	$pHCaCl_2$	Fert.	Graz.	bulk density	N_{min}	N_{mic}
		$kg\ N\ yr^{-1}$	$kg\ m^{-2}$	%	%						$g\ cm^{-3}$	$\mu g\ NH4\text{-}N\ cyl^{-1}$	μg Ninhydrin-reactive $N\ cyl^{-1}$
Cropland	BE-Lon		4.67	0.8	9.40	luvisol	clayic silt	6.6	yes	no	1.31	14.74 ± 0.13	5220 ± 44.61
	DK-Ris							5.7	yes	no	1.11	33.80 ± 0.25	4019 ± 29.83
Forest	BE-Bra	35.0	8.99	0.10	88.00	haplic podzol	loamy	3.3	no	no	1.14	24.13 ± 0.22	4172 ± 38.17
	BE-Vie		16.00			dystric cambisol		3.4	no	no	0.46	89.57 ± 4.40	9523 ± 467.54
	FI-Sod	1.0	3.10	0.60	42.00	sandy podsol	sandy	3.3	no	no	1.03	25.49 ± 0.51	3768 ± 75.21
	NL-Loo	40.0	2.43	0.10	26.51	sandy podsol	sandy	3.4	no	no	1.46	3.53 ± 0.03	959 ± 8.20
	UK-Gri	6.0	49.00			humic gley/stagnohumic		3.3	no	no	0.24	27.87 ± 1.19	751 ± 32.17
Grasslan	DK-Lva	13.0			9.40	loamy umbrisol	sandy silt	5.7	yes	no	1.27	31.22 ± 0.19	3852 ± 23.03
	FI-Kaa	0.6				peat		5.4	no	no	0.16	29.94 ± 0.80	4436 ± 117.86
	IE-Dri					brown podzolic		6.1	yes	yes	0.92	122.34 ± 1.51	13527 ± 166.99
	NL-					river clay over peat		4.8	yes	yes	0.60	180.08 ± 1.14	24262 ± 154.18
Wetland	PL-wet					peat		4.9	no	no	0.09	17.99 ± 0.23	3316 ± 42.63
	RU-Fyo					peat		3.1	no	no	0.15	44.19 ± 0.29	5690 ± 37.86

Table 3 Mean (±S.E.) flux rates of N_2O, NO, CO_2 and CH_4 observed over all temperature and moisture conditions at the 13 different study sites and at the different land use types.

Land use	Site	N_2O	NO	CO_2	CH_4
		$\mu g N m^{-2} h^{-1}$		$mg C m^{-2} h^{-1}$	$\mu g C m^{-2} h^{-1}$
Cropland	BE-Lon	15.1 ± 15.6	5.2 ± 15.6	94.5 ± 53.1	2.1 ± 46.2
	DK-Ris	63.0 ± 116.2	3.8 ± 11.9	95.3 ± 56.6	10.1 ± 18.9
Forest	BE-Bra	17.7 ± 26.7	8.4 ± 17.8	68.8 ± 45.9	-46.1 ± 51.9
	BE-Vie	156.3 ± 412.4	17.9 ± 31.5	205.1 ± 118.4	-24.4 ± 34.5
	FI-Sod	10.6 ± 15.9	-5.1 ± 5.8	85.2 ± 47.3	-19.6 ± 36.4
	NL-Loo	13.6 ± 10.6	131.7 ± 237.3	44.3 ± 28.9	-11.0 ± 41.4
	UK-Gri	10.4 ± 8.4	-11.8 ± 12.9	337.8 ± 209.1	15.5 ± 30.7
Grassland	DK-Lva	28.5 ± 59.8	3.5 ± 8.7	106.7 ± 66.4	0.5 ± 35.9
	FI-Kaa	11.7 ± 17.5	-2.6 ± 6.7	124.6 ± 67.6	28.2 ± 50.6
	IE-Dri	30.1 ± 30.9	27.8 ± 51.2	279.9 ± 149.4	24.0 ± 65.5
	NL-Cab*	108.7 ± 241.9	23.3 ± 38.3	243.0 ± 231.9	-30.8 ± 37.5
Wetland	PL-wet	13.5 ± 23.7	-2.3 ± 2.9	269.4 ± 242.8	38.6 ± 181.7
	RU-Fyo	6.3 ± 8.6	-6.1 ± 7.1	214.7 ± 128.5	-28.4 ± 33.0

* mean only over 40-80% WFPS

Table 4 Mean fluxes of the investigated gases N_2O, NO, CO_2 and CH_4, separated by WFPS (%).

		N2O				NO				CO2				CH4			
Land use	Site	20%	40%	60%	80%	20%	40%	60%	80%	20%	40%	60%	80%	20%	40%	60%	80%
Cropland	BE-Lon	11.92	16.23	9.11	26.42	20.35	3.84	0.12	-1.38	105.82	130.25	81.53	80.24	-26.35	1.02	11.39	15.64
	DK-Ris	12.60	46.46	103.08	125.95	9.07	15.52	-3.46	-1.68	107.40	109.23	84.09	75.85	14.24	3.29	12.40	11.08
Forest	BE-Bra	31.74	20.78	1.56	5.98	18.02	7.65	16.53	0.94	53.76	124.55	64.91	59.75	-55.28	-55.97	-49.72	-35.49
	BE-Vie	28.47	78.01	103.20	822.82	31.55	2.73	18.01	-0.70	229.65	205.45	158.20	143.02	-28.66	-27.45	-35.33	-13.86
	FI-Sod	9.29	7.06	8.39	24.27	-6.50	-3.42	-4.04	-4.96	111.38	66.18	103.84	79.25	-28.07	-32.87	-14.71	0.85
	NL-Loo	8.93	10.64	23.90	16.01	232.17	63.61	42.43	34.66	45.76	58.61	34.84	27.10	-28.66	-13.45	-6.85	-9.03
	UK-Gri	6.43	11.08	11.44	15.00	-15.68	-17.66	-9.89	-5.53	416.16	260.30	262.67	195.39	6.30	11.43	8.16	31.54
Grassland	DK-Lva	8.16	6.89	15.17	97.74	7.20	2.18	1.06	-1.62	68.46	146.24	138.81	91.16	-17.91	1.20	4.10	7.29
	FI-Kaa	5.18	10.45	28.76	31.48	-2.92	-0.19	-0.26	-7.02	142.82	153.64	53.15	50.73	10.58	23.14	14.98	107.20
	IE-Dri	15.11	11.76	28.54	38.75	89.60	55.31	-0.47	2.30	272.13	500.32	178.97	259.50	-8.40	-4.62	32.74	35.22
	NL-Cab	n.m.	14.34	34.53	231.36	n.m.	58.53	74.88	59.72	n.m.	186.41	498.31	593.21	n.m.	-28.16	-37.63	-23.45
Wetland	PL-wet	4.45	4.39	15.53	26.90	-3.95	-1.97	-2.61	-0.66	569.06	146.00	202.90	174.33	-31.62	6.07	16.06	56.82
	RU-Fyo	1.41	4.92	10.19	8.67	-8.44	-14.52	-11.32	-1.08	221.16	308.40	288.18	187.41	-21.89	-32.08	-39.89	-22.46

Table 5 Mean fluxes of the investigated gases N_2O, NO and CO_2, separated by temperature (℃).

		N2O				NO				CO2				CH4			
Land Use	Site	5°C	10°C	15°C	20°C	5°C	10°C	15°C	20°C	5°C	10°C	15°C	20°C	5°C	10°C	15°C	20°C
Cropland	BE-Lon	10.32	10.97	18.29	21.60	-2.62	2.32	4.22	16.87	76.44	75.95	85.83	139.71	-28.35	8.34	7.53	21.03
	DK-Ris	15.86	16.42	94.82	149.23	-4.66	3.41	6.27	10.39	70.36	77.74	121.34	112.33	-0.60	6.58	16.62	21.16
Forest	BE-Bra	13.39	4.95	19.51	33.66	0.59	5.49	10.46	16.77	57.50	58.68	73.33	85.87	-40.18	-42.96	-39.80	-61.85
	BE-Vie	92.76	89.94	194.21	254.92	8.30	8.91	17.99	36.57	158.02	142.78	203.62	316.07	-23.04	-21.80	-32.77	-20.01
	FI-Sod	13.46	3.33	11.23	13.89	-12.72	-5.35	-2.44	0.09	86.61	65.69	84.12	104.59	-30.75	-5.18	-23.68	-16.46
	NL-Loo	10.26	12.24	15.06	16.37	60.40	90.99	160.89	214.61	35.51	39.44	46.40	55.65	-11.44	-19.63	-12.02	-1.17
	UK-Gri	11.01	8.74	11.80	10.25	-19.04	-9.38	-13.37	-5.58	229.90	296.16	366.77	458.27	12.51	22.31	11.85	15.16
Grasslanc	DK-Lva	8.80	16.44	32.37	57.08	-2.66	2.32	8.35	6.86	90.33	78.83	104.12	153.49	-4.52	-2.17	-7.14	15.83
	FI-Kaa	7.78	5.18	25.30	9.43	-8.49	-3.27	-0.31	0.18	80.50	110.82	137.93	169.07	13.25	17.44	58.04	25.12
	IE-Dri	53.89	25.35	29.71	20.61	6.95	28.40	31.41	44.31	207.73	223.91	289.02	398.89	15.43	15.73	20.35	44.62
	NL-Cab*	58.44	76.70	116.95	179.86	11.18	22.56	30.33	28.28	246.59	207.04	219.89	298.60	-26.45	-40.15	-20.33	-38.83
Wetland	PL-wet	10.87	3.52	5.59	34.20	-3.49	-3.44	-0.67	-1.77	268.37	210.93	267.02	331.18	-5.75	13.52	57.27	89.21
	RU-Fyo	9.68	6.73	4.77	3.96	-8.59	-7.60	-0.33	-5.68	167.24	159.99	199.00	324.72	-16.68	-24.49	-26.85	-45.28

* mean only from 40-80% WFPS

Table 6 Used models (M 1-4) and model parameters (R^2, significance level, regression coefficients (M 1:a-c, M 2:

a-e, M 3: a-d, M 4 a-e)) of multiple regression analysis (Equ. 2-5) of N_2O or lnN_2O+100, NO or lnNO+50, CO_2 and $lnCH_4$ or CH_4+250 and CO_2 fluxes. Independent variables are soil temperature (x1) and WFPS (x2). Corr. Fact.= factor for adjusting the logarithmic transformation bias.

		N_2O or ln N_2O+100									NO or lnNO+50							
Land use	Site	M	R^2	sign.	a	b	c	d	e	Corr. Fact.	M	R^2	sign.	a	b	c	d	Corr. Fact.
Cropland	BE-Lon	2ln	**0.12**	**	4.2E+00	6.5E-03	3.7E-02	-8.2E-04	5.6E-06	1.01	1ln	**0.45**	***	3.8E+00	4.9E-02	1.0E+00		1.02
	DK-Ris	1ln	**0.37**	***	6.73E-01	4.12E-01	1.01E+00			1.10	1	**0.42**	***	3.0E-01	1.9E+00	9.6E-01		
Forest	BE-Bra	2ln	**0.21**	***	4.3E+00	1.1E-02	3.2E-02	-7.5E-04	4.7E-06	1.01	1ln	**0.25**	***	3.9E+00	4.2E-02	1.0E+00		1.03
	BE-Vie	1ln	**0.29**	***	3.9E+00	4.9E-02	1.0E+00			1.43	1ln	**0.31**	***	3.9E+00	5.3E-02	1.0E+00		1.05
	FI-Sod	1ln	**0.10**	**	4.6E+00	2.0E-03	1.0E+00			1.01	3	**0.66**	***	-1.86E+01	8.27E-01	1.37E-01	-1.2E-03	
	NL-Loo	1ln	**0.11**	**	4.6E+00	9.7E-03	1.0E+00			1.00	1ln	**0.21**	***	4.5E+00	8.1E-02	1.0E+00		1.42
	UK-Gri	1ln	**0.14**	***	4.6E+00	1.1E-03	1.0E+00			1.00	3	**0.13**	***	-3.4E+00	3.7E-01	-5.6E-01	5.6E-03	
Grassland	DK-Lva	1ln	**0.34**	***	4.2E+00	3.6E-02	1.0E+00			1.04	1	**0.59**	***	1.6E-01	2.1E+00	9.4E-01		
	FI-Kaa	1ln	**0.15**	***	4.5E+00	1.0E-02	1.0E+00			1.01	1	**0.62**	***	-3.2E+00	-2.8E+00	1.1E+00		
	IE-Dri	1ln	**0.21**	***	4.9E+00	-2.3E-02	1.0E+00			1.01	1ln	**0.65**	***	3.7E+00	4.1E-02	1.0E+00		1.06
	NL-Cab	3ln	**0.20**	***	1.5E+00	2.0E-02	9.5E-02	-6.2E-04		1.07	1ln	**0.47**	***	5.0E+00	2.9E-02	1.0E+00		1.05
Wetland	PL-wet	1ln	**0.17**	***	4.4E+00	1.7E-02	1.0E+00			1.00	1	**0.16**	***	3.4E+00	1.8E-02	1.0E+00		
	RU-Fyo	3ln	**0.16**	***	4.46E+00	-3.51E-03	8.4E-03	-6.2E-05		1.00	1	**0.31**	***	-8.1E+01	-5.9E-01	9.8E-01		

		CO_2								CH_4 or $lnCH_4$+250								
Land use	Site	M	R^2	sign.	a	b	c	d	e	M	R^2	sign.	a	b	c	d	e	Corr. Fact.
Cropland	BE-Lon	2	**0.28**	***	-1.2E+02	3.7E+00	1.5E+01	-3.4E-01	0E+00	4ln	**0.26**	***	1.7E+02	-5.5E+00	2.3E-01	-4.9E+00	3.7E-02	1.02
	DK-Ris	2	**0.15**	***	1.3E+02	3.4E+00	-2.8E+00	2.1E-02	0E+00	4ln	**0.26**	***	4.6E+00	5.4E-02	-1.5E-03	1.7E-02	-1.3E-04	1.00
Forest	BE-Bra	3	**0.21**	***	1.7E+02	1.5E+00	-2.8E+00	1.4E-02		4ln	**n.s.**		5.0E+00	3.9E-02	-2.0E-03	3.9E-03	-1.3E-05	1.13
	BE-Vie	2	**0.29**	***	-9.4E+01	9.1E+00	1.7E+01	-3.8E-01	0E+00	1ln	**n.s.**		5.3E+00	1.0E-03	1.0E+00			1.01
	FI-Sod	3	**0.14**	**	1.2E+02	1.6E+00	-3.0E+00	6.3E-02		1ln	**n.s.**		5.3E+00	7.1E-03	1.0E+00			1.01
	NL-Loo	3	**0.15**	***	3.0E+01	1.3E+00	4.1E-01	-7.9E-03		1ln	**0.10**	**	5.3E+00	6.0E-03	1.0E+00			1.00
	UK-Gri	2	**0.33**	***	1.8E+02	1.5E+01	7.9E+00	-2.8E-01	0E+00	1ln	**n.s.**		5.5E+00	-5.4E-04	1.0E+00			1.01
Grassland	DK-Lva	3	**0.31**	***	-6.1E+01	4.3E+00	6.5E+00	-6.8E-02		4ln	**0.13**	***	5.4E+00	-1.9E-02	9.4E-04	7.2E-03	-6.3E-05	1.01
	FI-Kaa	3	**0.45**	***	5.0E+01	5.9E+00	2.2E+00	-4.0E-02		4ln	**0.10**	**	5.4E+00	3.0E-02	-1.1E-03	-5.5E-04	2.7E-05	1.01
	IE-Dri	2	**0.56**	***	-5.5E+02	1.1E+01	6.1E+01	-1.4E+00	9E-03	1ln	**0.21**	***	5.3E+00	9.1E-03	1.0E+00			0.98
	NL-Cab	3	**0.55**	***	-1.8E+03	4.6E+00	6.4E+01	-4.6E-01		4	**0.11**	***	1.7E+02	-5.5E+00	2.3E-01	-4.9E+00	3.7E-02	
Wetland	PL-wet	2	**0.37**	***	1.0E+03	-2.6E+01	1.2E+00	-2.6E+01	2E-01	1ln	**0.28**	***	4.7E+00	3.6E-02	1.0E+00			1.08
	RU-Fyo	3	**0.33**	***	-2.9E+01	1.1E+01	6.1E+00	-6.0E-02		4ln	**0.11**	**	5.7E+00	6.6E-03	-6.6E-04	-1.0E-02	8.7E-05	1.02

n.s = not significant, Used models (Equ. 2-4): 1) lnY = a*(x1)^b*c^(x2); 2) lnY = a+b*(x1)+c*(x2)+d*(x2)^2+e*(x2)^3; 3) lnY=a+b*(x1)+c*(x2)+d*(x2)^2; 4) lnY = a+b*(x1)+c(x1)^2+d(x2)+e*(x2)^2

Table 7 Pearson or Spearman (bold) correlation factors (r), significance level (p), and number of observations (n), between N_2O, NO, CO_2 and CH_4 fluxes and the two independent factors soil temperature (Temp. [℃] from 5-20℃) and soil moisture ([WFPS %] from 20-80%) at the 13 sites.

		N_2O (µg N m^{-2} h^{-1})			NO (µg N m^{-2} h^{-1})			CO_2 (mg C m^{-2} h^{-1})			CH_4 (µg C m^{-2} h^{-1})		
site	**factor**	**r**	**p**	**n**	**r**	**p**	**n**	**r**	**p**	**n**	**r**	**p**	**n**
BE-Lon	Temp (°C)	0.2965	0.0022	104	0.4349	<.0001	120	0.4219	<.0001	120	0.358	<.0001	120
DK-Ris		0.4534	<.0001	104	0.4534	<.0001	111	0.3372	0.0002	115	0.446	<.0001	108
BE-Bra		0.3131	<.0001	154	0.3414	<.0001	155	0.2439	0.0014	168	**0.151**	**0.053**	**165**
BE-Vie		0.1592	0.0850	118	0.3352	0.0003	112	0.5074	<.0001	120	**0.165**	**0.072**	**120**
FI-Sod			n.s.		0.8066	<.0001	120	0.1741	0.0582	119		n.s.	
NL-Loo		0.2183	0.0291	100	0.2519	0.0055	120	0.2616	0.0039	120		n.s.	
UK-Gri			n.s.		0.3170	0.0004	120	0.4058	<.0001	120	**0.192**	**0.038**	**117**
DK-LVa		0.3005	0.0009	118	0.4578	<.0001	108	0.3633	<.0001	120	0.175	0.056	120
FI-Kaa		0.1767	0.0687	107	0.4515	<.0001	112	0.4862	<.0001	120	**0.187**	**0.049**	**111**
IE-Dri		-0.2934	0.0032	99	0.2522	0.0055	120	0.4799	<.0001	120	0.158	0.085	120
NL-Cab		0.1874	0.0235	146	0.1678	0.0363	156		n.s.			n.s.	
PL-wet		0.3459	0.0002	109	0.3023	0.0012	112		n.s.		0.203	0.026	120
RU-Fyo		-0.2465	0.0098	109	0.2469	0.0148	97	0.4838	<.0001	107		**n.s.**	
site	**factor**	**r**	**p**	**n**	**r**	**p**	**n**	**r**	**p**	**n**	**r**	**p**	**n**
BE-Lon	WFPS (%)		n.s.		-0.4611	<.0001	120	-0.2997	0.0009	120	0.3725	<.0001	120
DK-Ris		0.3238	0.0008	104	-0.5088	<.0001	111	-0.2127	0.0225	115	0.1827	0.059	108
BE-Bra			n.s.		-0.2985	0.0002	155	-0.2523	0.0010	168		**n.s.**	
BE-Vie		0.4030	<.0001	118	-0.4252	<.0001	112		n.s.			**n.s.**	
FI-Sod		0.3709	0.0005	85		n.s.		-0.2762	0.0024	119		n.s.	
NL-Loo		0.2256	0.0241	100	-0.3488	<.0001	120	-0.2654	0.0034	120	0.2839	0.003	111
UK-Gri		0.3858	0.0001	96		n.s.		-0.4109	<.0001	120		**n.s.**	
DK-LVa		0.4582	<.0001	118	-0.4458	<.0001	108		n.s.		0.2024	0.027	120
FI-Kaa		0.3688	<.0001	107	-0.2093	0.0268	112	-0.3978	<.0001	120	**0.2784**	**0.003**	**111**
IE-Dri		0.3519	0.0004	99	-0.5765	<.0001	120		n.s.		0.3553	<.0001	120
NL-Cab		0.1537	0.0641	146	-0.6279	<.0001	156	-0.3000	<.0001	168		n.s.	
PL-wet		0.3243	0.0006	109	0.2305	0.0145	112	-0.3805	<.0001	120	0.4217	<.0001	120
RU-Fyo		0.1578	0.1012	109	0.5173	<.0001	97	-0.2644	0.0059	107	**-0.2698**	**0.003**	**119**

n.s.=not significant.

Table 8 Mean NH_4 and NO_3 concentration related to the cylinder before and after the incubation experiment at the 13 sites.

		NH_4 (µg N cyl^{-1})		NO_3 (µg N cyl^{-1})	
Land use	site	before	after	before	after
Cropland	BE-Lon	0.96 ± 0.12	0.78 ± 0.17	6.22 ± 0.79	9.16 ± 1.18
	DK-Ris	11.20 ± 3.56	2.51 ± 0.45	63.81 ± 12.09	73.14 ± 15.01
Forest	BE-Bra	4.13 ± 0.60	3.80 ± 0.96	2.89 ± 0.64	3.15 ± 1.52
	BE-Vie	37.21 ± 11.83	67.48 ± 20.94	4.57 ± 1.10	6.17 ± 1.74
	FI-Sod	2.28 ± 0.46	1.98 ± 0.44	1.07 ± 0.36	2.34 ± 1.04
	NL-Loo	3.84 ± 0.40	1.79 ± 0.76	1.19 ± 0.25	1.43 ± 0.46
	UK-Gri	2.45 ± 0.95	3.38 ± 1.10	20.42 ± 4.39	32.51 ± 7.36
Grasslan	DK-Lva	1.85 ± 0.60	1.60 ± 0.11	7.49 ± 2.21	13.52 ± 2.36
	FI-Kaa	58.81 ± 14.83	50.27 ± 10.37	9.47 ± 2.24	12.30 ± 1.97
	IE-Dri	9.48 ± 1.22	3.73 ± 0.23	3.77 ± 0.60	7.91 ± 0.57
	NL-Cab	26.96 ± 9.03	17.44 ± 8.22	1.32 ± 0.29	25.17 ± 7.97
Wetland	PL-wet	160.28 ± 13.43	122.26 ± 31.04	39.23 ± 9.04	22.55 ± 6.18
	RU-Fyo	5.33 ± 2.09	14.95 ± 5.72	94.07 ± 24.31	11.35 ± 0.85

3.10. Figures

Fiugre1 Map of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe, separated by land use type (cropland, forest, grassland, wetland).

Figure 2 Effects of WFPS [%] and soil temperature [℃]: A) o n N_2O emissions at DK-Ris (Model 1ln, R^2=0,37***); B)NO fluxes at FI-Sod (Model 3, R^2= 0,66***); C) CO_2 emissions at IE-Dri (Model 2, R^2=0,56***); D) CH_4 fluxes at PL-wet (Model 1ln, R^2=0,28***).

Figure 3 Mean flux rates N_2O and NO observed over all temperature and moisture conditions at the 13 different sites and at different land use types.

Figure 4 Mean flux rates CO_2 and CH_4 observed over all temperature and moisture conditions at the 13 different sites and at different land use types.

Figure 5 Plot of N_{min} against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

Figure 6 Plot of bulk density against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

Figure 7 Plot of bulk density against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

Figure 8 Plot of bulk density against CO_2 fluxes in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

Figure 9 Plot of CH_4 fluxes against pH in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

Figure 10 Mean flux rates of N_2O, NO, CO_2 and CH_4 observed at ambient moisture condition over all 4 temperatures at the 5 forest mineral soil and litter samples.

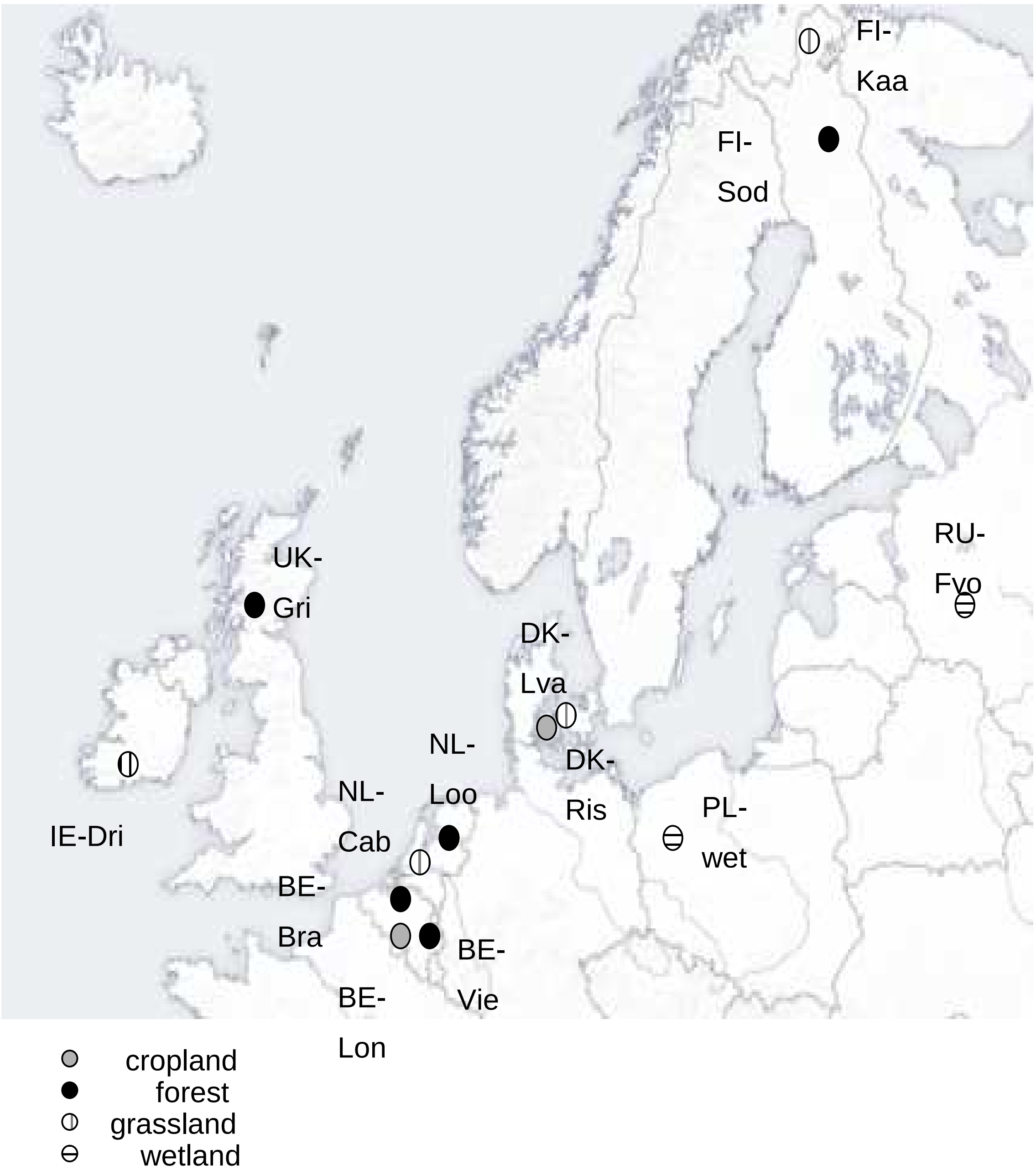


Figure 1 Map of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe, separated by land use type (cropland, forest, grassland, wetland).

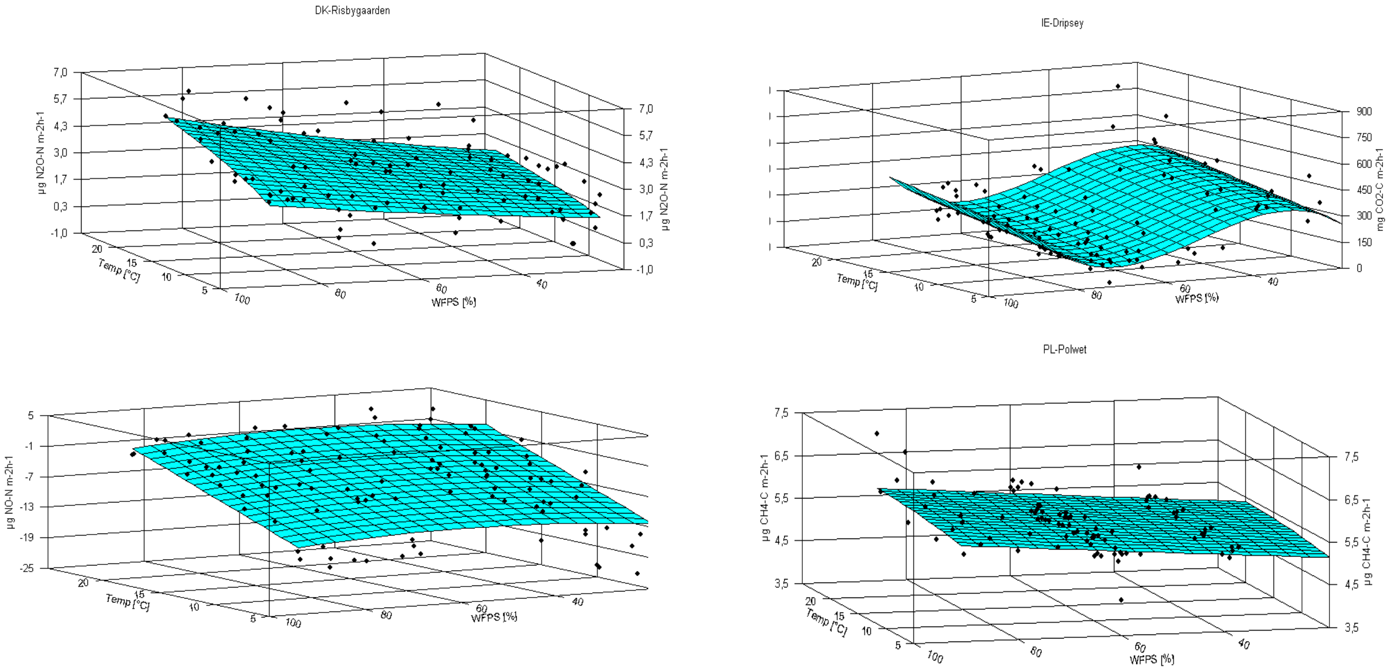


Figure 2 Effects of WFPS [%] and soil temperature [℃]: A) o n N_2O emissions at DK-Ris (Model 1ln, R^2=0,37***); B)NO fluxes at FI-Sod (Model 3, R^2= 0,66***); C) CO_2 emissions at IE-Dri (Model 2, R^2=0,56***); D) CH_4 fluxes at PL-wet (Model 1ln, R^2=0,28***).

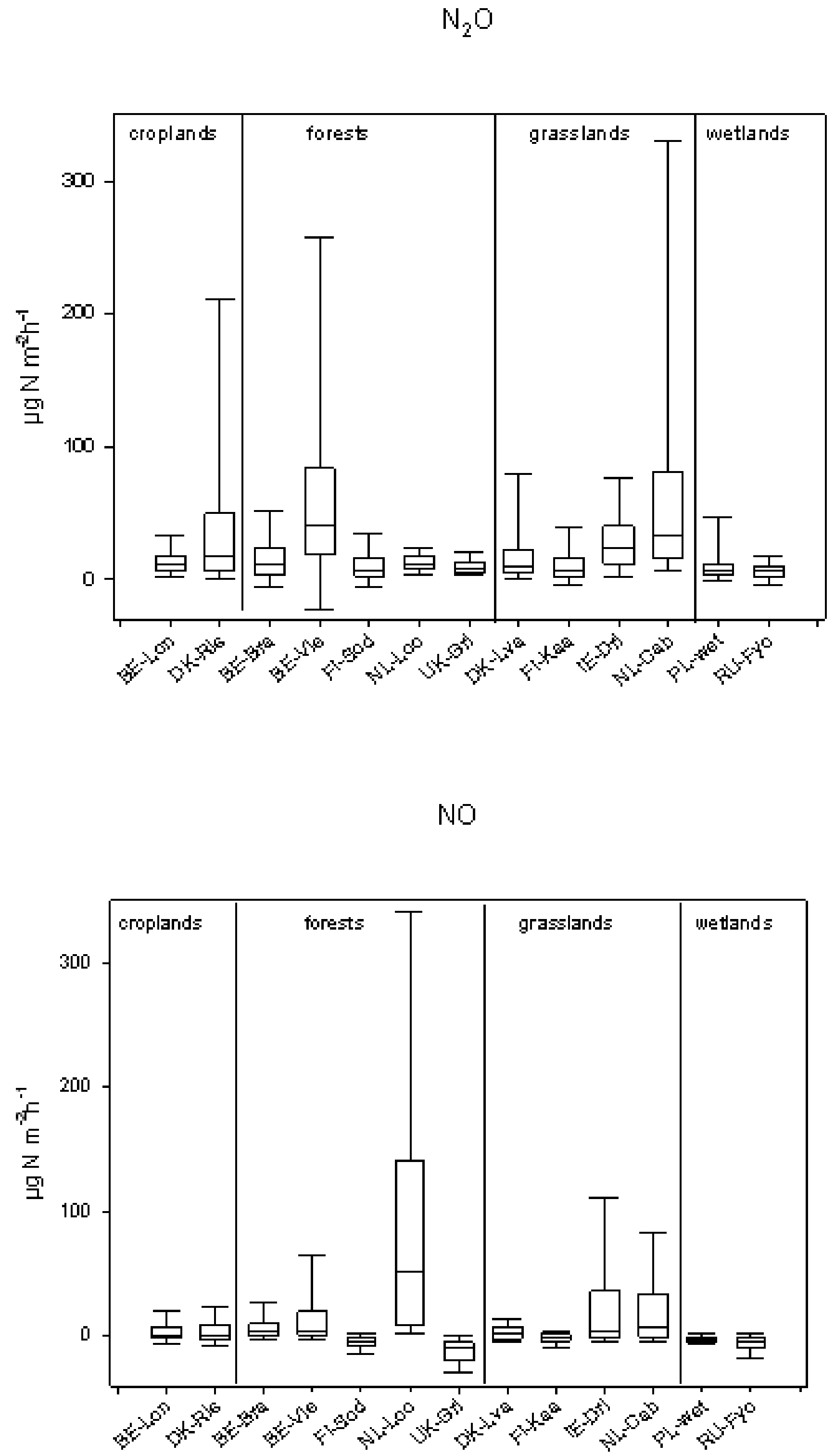
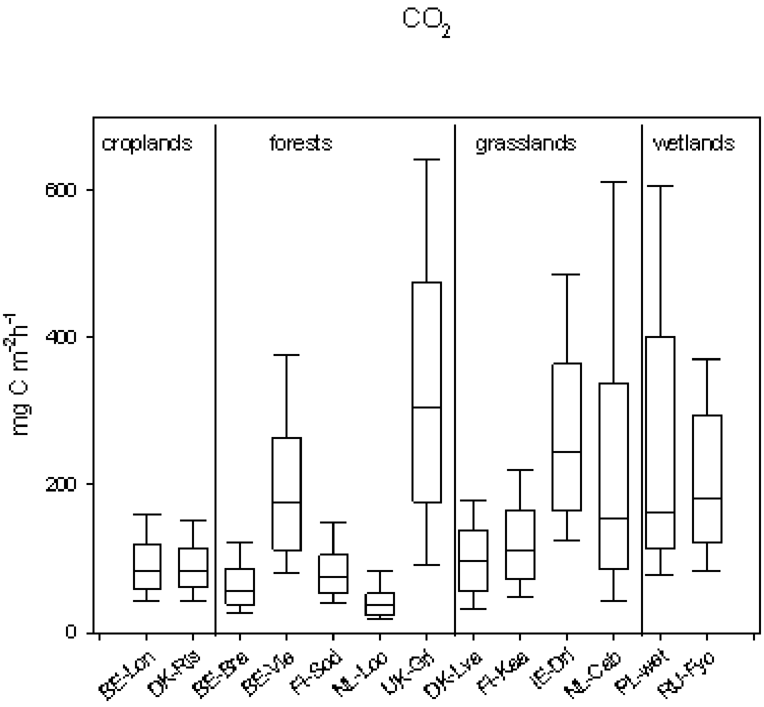


Figure 3 Mean flux rates N_2O and NO observed over all temperature and moisture conditions at the 13 different sites and at different land use types



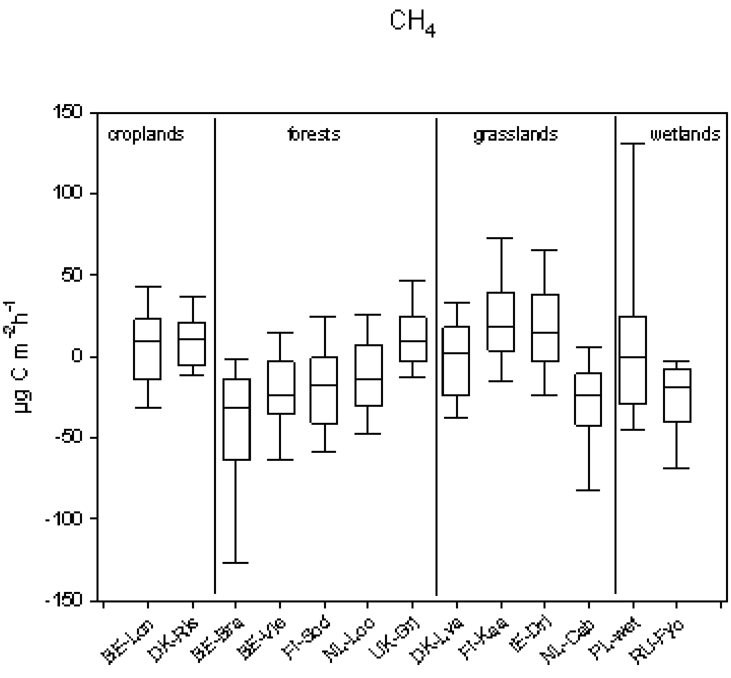


Figure 4 Mean flux rates CO_2 and CH_4 observed over all temperature and moisture conditions at the 13 different sites and at different land use types.

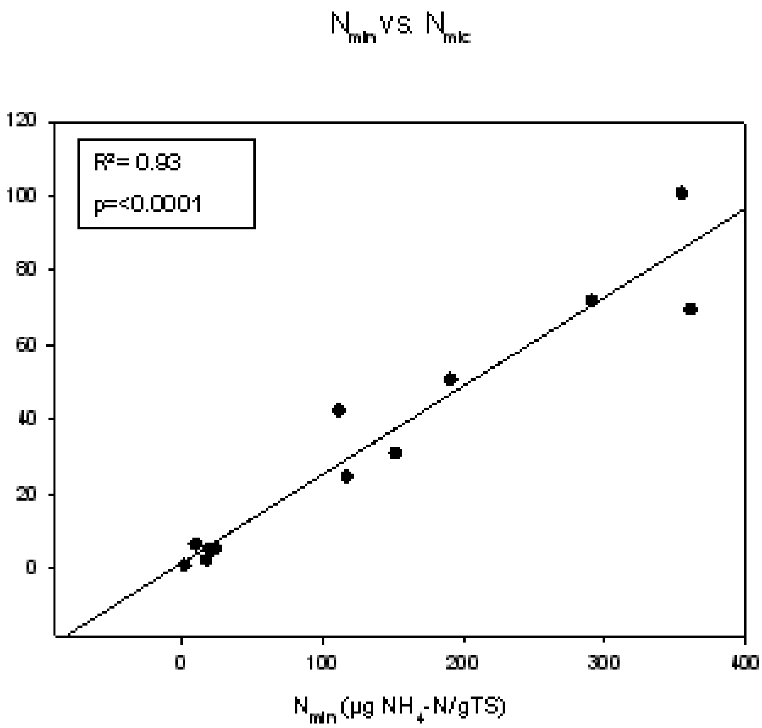


Figure 5 Plot of N_{min} against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

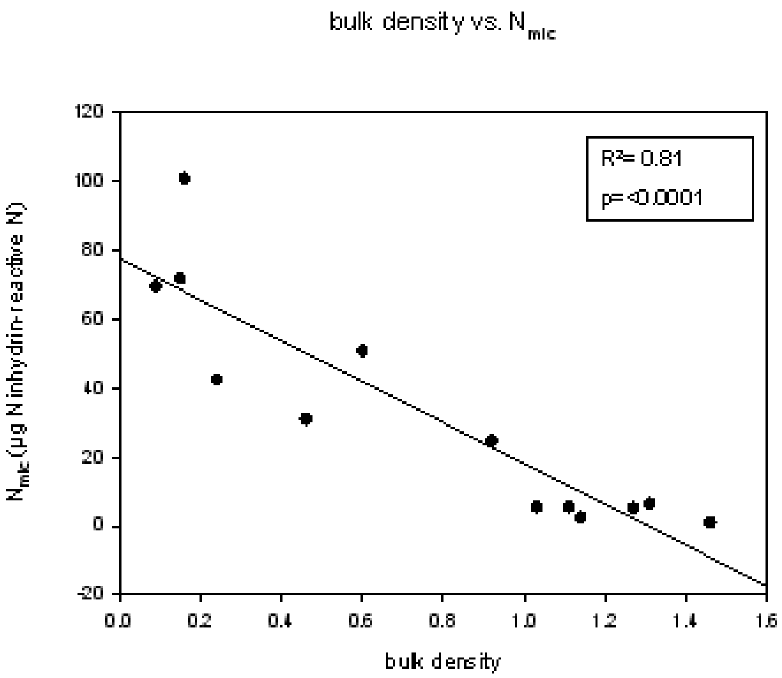


Figure 6 Plot of bulk density against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

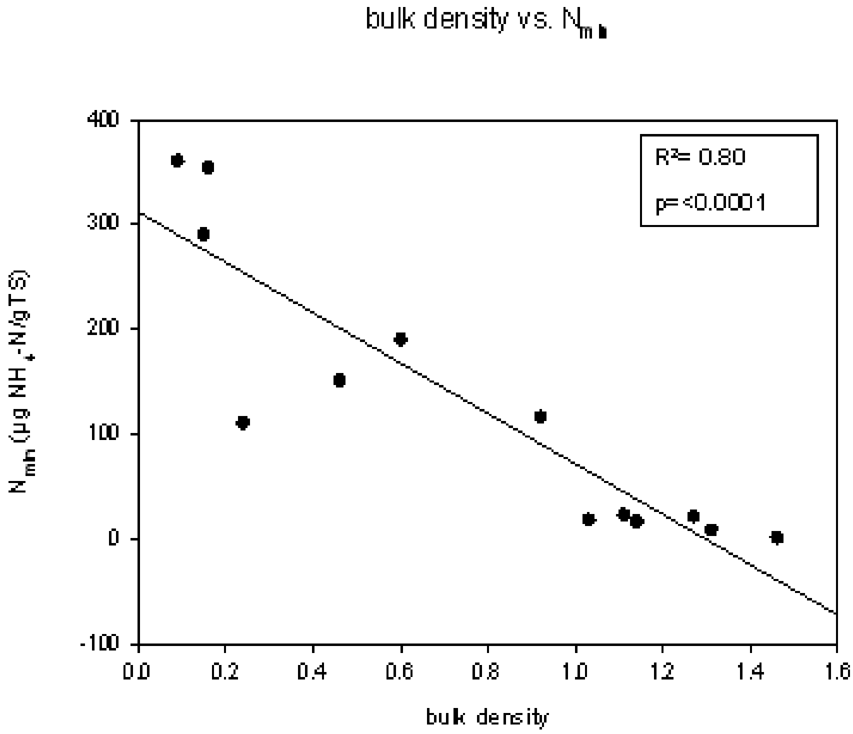


Figure 7 Plot of bulk density against N_{mic} in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

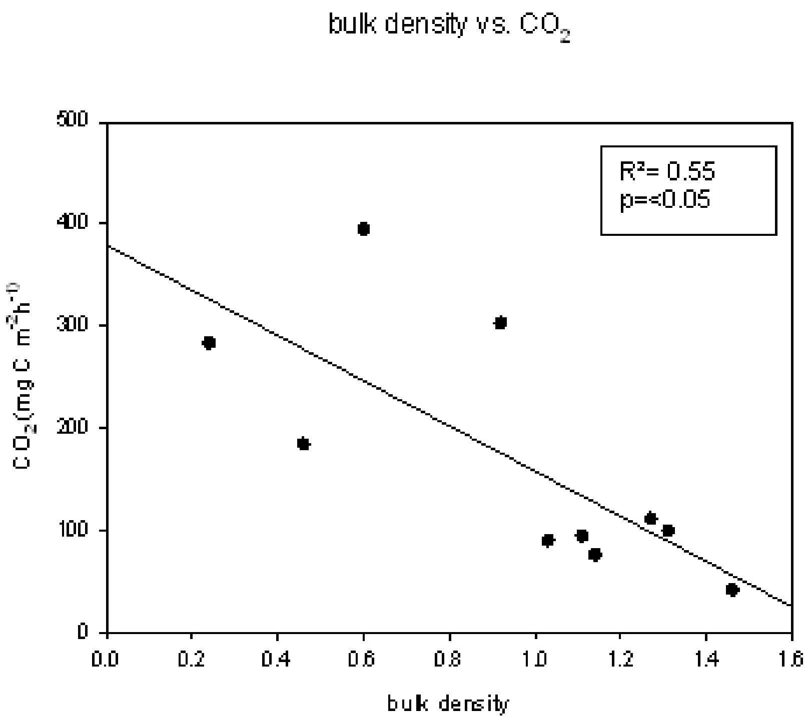


Figure 8 Plot of bulk density against CO_2 fluxes in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

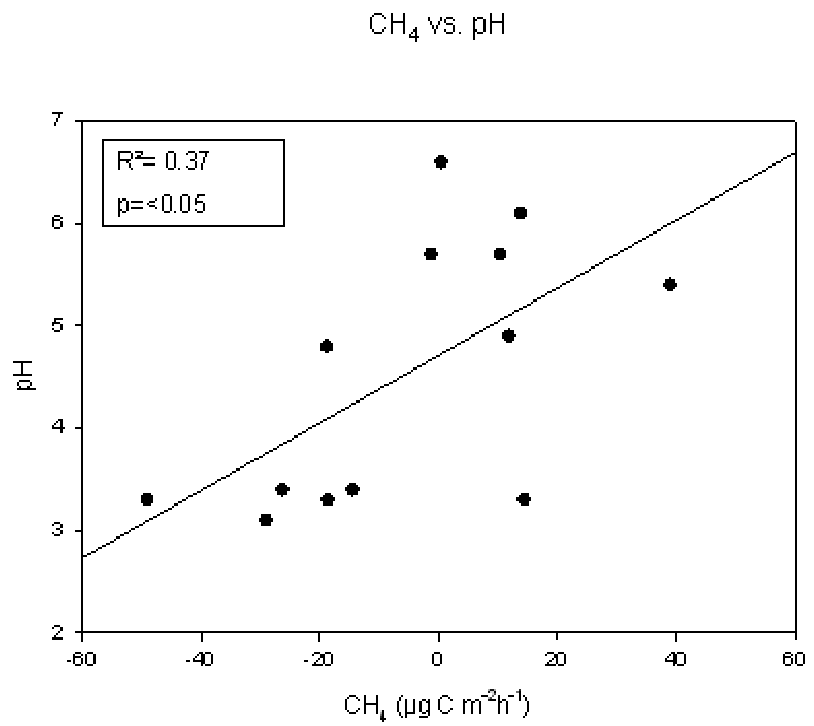


Figure 9 Plot of CH_4 fluxes against pH in mineral soil of the investigated 13 NitroEurope Level 1 and Level 2 sites in Northern Europe.

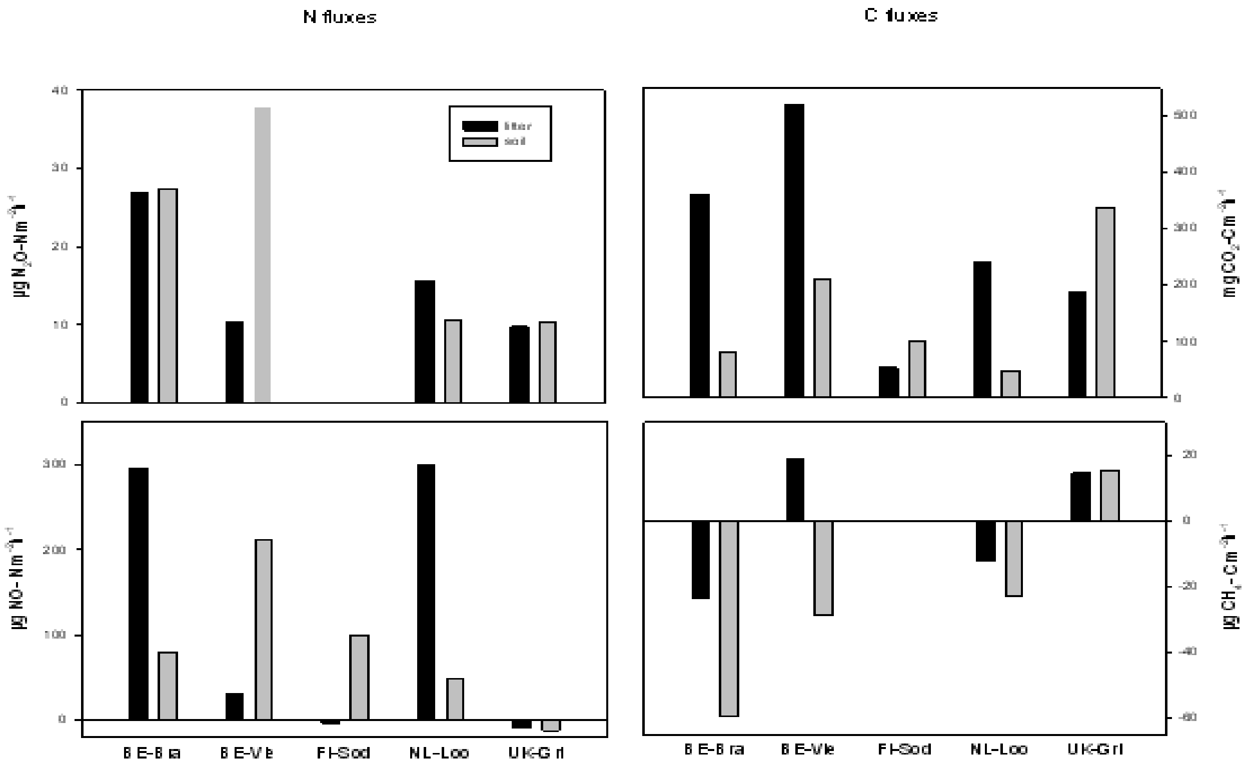


Figure 10 Mean flux rates of N_2O, NO, CO_2 and CH_4 observed at ambient moisture condition over all 4 temperatures at the 5 forest mineral soil and litter samples.

4. Anhang

4.1.Zusammenfassung

Auswirkungen des Klimawandels (vor allem Temperatur- und Niederschlagsänderungen) führen zu Änderungen der Bodentreibhausgase in Nordeuropa. Der Wassergehalt und die Temperatur des Bodens beeinflussen den Gasaustausch zwischen Boden und Atmosphäre stark. Ein Laborversuch zur Messung der N_2O- NO- , CO_2- und CH_4-Flüsse aus 13 nordeuropäischen Böden, mit unterschiedlichen Landnutzungsarten (Acker, Wald, Wiese und Feuchtgebiet), wurde durchgeführt. Im Frühjahr 2008 wurden an jedem Standort 24 ungestörte Bodenproben genommen und 4 unterschiedlichen Temperaturen (5°, 10°, 15° und 20°C) und Wassergehalten (20%, 40%, 60% und 80%) au sgesetzt. An den 5 Waldstandorten wurden zusätzlich die Treibhausgasflussraten der Streuproben (5-20°C) bestimmt.

Die Bodendichte, das Trockengewicht und der pH-Wert wurden von jedem Zylinder bestimmt. Ammonium- und Nitratkonzentrationen wurden, sowohl vor als auch nach dem Inkubationsversuch, analysiert. Um bessere Zusammenhänge zwischen den chemischen und biologischen Bodenprozessen erkennen zu können, wurden zusätzlich die N-Mineralisierungsrate und der N-Gehalt in der mikrobiellen Biomasse aus je 3 Zylindern pro Standort bestimmt. Zwecks genauerem Verständnis über die Auswirkungen von Bodentemperatur und Bodenfeuchte auf die Gasraten, wurden neben den statistischen Standardtests Multiple Regressionsanalysen berechnet.

Die Ergebnisse waren stark standortabhängig und nur geringe Zusammenhänge innerhalb der einzelnen Ökosysteme konnten aufgedeckt werden. Die höchsten N_2O und NO Emissionen wurden für die Wald- und Wiesenstandorte festgestellt. Die NO Flüsse waren von der Bodentextur und der Bodenverdichtung stark beeinflusst. Außerdem stellt die Chemodenitrifikation einen weiteren wichtigen NO Produzenten dar. Wir fanden positive Zusammenhänge zwischen anorganischem Stickstoff (NH_4 und NO_3) und Lachgasemissionen. Die meisten Standorte wiesen höhere Ammonium- und Nitratwerte nach der Inkubation und bei feuchteren Bodenverhältnissen auf. Für den schottischen Standort Griffin konnten NO Aufnahmeraten von bis zu -11.8 µg N $m^{-2}h^{-1}$ verzeichnet werden. Am niederländischen Standort Loobos führten bemerkenswert hohe atmosphärische

Stickstoffeinträge von 40 kg ha-1yr-1 zu NO Werte von bis zu 131.7 µg N $m^{-2}h^{-1}$. Mit ansteigender Temperatur und sinkendem Feuchtegehalt wurde ein Zuwachs der CO_2 Emissionen festgestellt. Für Griffin ist vor allem die organische Substanz für die hohe CO_2 Produktion (337.8 mg C $m^{-2}h^{-1}$) verantwortlich. Speziell an den Wald- und Wiesenstandorten konnte die Bodendichte, der organische Kohlenstoff und die Wurzelaktivität als entscheidender Parameter zur Entstehung der CO_2 Respiration nachgewiesen werden. Das finnische Wiesen-/Feuchtgebiet Kaamanen verzeichnete, mit ansteigendem Wassergehalt, einen Zuwachs an emittierendem Methan und gleichzeitig einen Rückgang der Methanoxidationsrate. Saure Böden mit geringem Feuchtegehalt stellen optimale Bedingungen für die Methanogenese dar. Der pH - Wert diente als fundamentaler Parameter um den genaueren Ursprung der wichtigsten Treibhausgase rekonstruieren zu können. In Zukunft werden die nördlichen Böden, unter dem Einfluss der Klimaänderungen, vermehrt als Methanquelle dienen. Vergleiche der Gasflussraten zwischen Boden- und Streuproben ergaben bemerkenswerte Unterschiede, speziell bei den N_2O und CH_4 Flüssen.

4.2. Datentabelle

landuse	sitecode	soil/litter	zylinder	WFPS group	temperature	bulk density	CH_4 µg C $m^{-2}h^{-1}$	N_2O µg N $m^{-2}h^{-1}$	NO µg N $m^{-2}h^{-1}$	CO_2 mg C $m^{-2}h^{-1}$	N_{min} µg NH_4-N/gTS	N_{mic} µg Ninhydrin-reactive N	NH_4-before µg N g/TS	NH_4-after µg N g/TS	NO_3-before µg N g/TS	NO_3-after µg N g/TS
Arable	BE-Lon	S	1	30	5	1.12	-205.47		6.38	71.18	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	30	10	1.12	-36.90	9.06	16.65	61.32	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	30	15	1.12	9.79	32.84	10.18	26.98	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	30	20	1.12	-11.00		59.81	94.65	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	40	5	1.12	-17.88	9.35	0.80	63.77	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	40	10	1.12	34.60	0.56	-5.78	68.23	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	40	15	1.12	-8.35	11.89	0.89	52.66	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	1	40	20	1.12	16.50	15.42	5.78	81.82	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	20	5	1.20	-192.91		-0.17	90.78	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	20	10	1.20	-5.24	18.05	16.26	71.43	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	20	15	1.20	6.92		7.92	59.89	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	20	20	1.20	-11.33	11.08	50.76	134.56	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	50	5	1.20	-44.10	0.78	2.27	57.30	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	50	10	1.20	10.05	4.66	1.31	65.12	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	50	15	1.20	43.30	21.57	0.51	70.45	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	2	50	20	1.20	21.08	16.21	2.12	101.50	0.06	20.26	0.89	1.38	3.84	8.81
Arable	BE-Lon	S	3	20	5	1.27	-56.83	14.31	7.29	117.56	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	20	10	1.27	24.15	11.79	15.23	87.27	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	20	15	1.27	38.19		22.74	98.39	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	20	20	1.27	0.54	20.01	44.39	199.16	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	60	5	1.27	-31.04	7.77	-2.60	66.92	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	60	10	1.27	34.29	13.53	-0.54	48.14	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	60	15	1.27	4.67	15.54	6.99	147.90	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	3	60	20	1.27	16.18	35.54	1.33	135.55	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	20	5	1.21	-104.37		-3.80	51.25	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	20	10	1.21	-31.01	13.12	6.72	64.95	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	20	15	1.21	17.71		9.44	55.55	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	20	20	1.21	-0.64	7.50	60.69	133.49	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	50	5	1.21	-29.36	13.94	0.69	61.42	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	50	10	1.21	4.17	25.28	-1.87	59.45	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	50	15	1.21	-62.07		-0.64	72.42	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	4	50	20	1.21	14.26	16.68	4.87	70.32	0.06	20.26	0.96	1.38	7.53	11.20
Arable	BE-Lon	S	5	30	5	1.18	-75.46	21.90	-9.53	100.11	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	30	10	1.18	-4.40	12.80	11.61	70.31	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	30	15	1.18	0.15		15.53	98.63	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	30	20	1.18	18.69	17.57	57.09	198.85	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	60	5	1.18	-31.69	3.63	3.22	13.52	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	60	10	1.18	24.92	14.47	-0.71	26.93	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	60	15	1.18	22.32	11.71	4.70	64.18	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	5	60	20	1.18	24.63	4.99	3.65	60.98	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	20	5	1.34	-104.55		-0.28	133.09	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	20	10	1.34	-26.38	1.10	26.35	97.70	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	20	15	1.34	13.09		10.96	71.26	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	20	20	1.34	11.86		96.22	177.00	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	60	5	1.34	-5.35	8.13	-0.47	40.23	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	60	10	1.34	32.48	7.00	-1.57	90.56	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	60	15	1.34	46.32	19.14	-1.72	62.76	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	6	60	20	1.34	12.19	4.34	3.00	68.17	0.06	20.26	1.08	1.16	7.64	9.01
Arable	BE-Lon	S	7	20	5	1.45	-98.17	12.14	-8.69	120.89	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	20	10	1.45	-26.58	13.45	6.95	85.83	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	20	15	1.45	25.81	0.68	13.69	101.60	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	20	20	1.45	-7.25	19.81	24.29	164.76	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	80	5	1.45	18.64	13.47	2.32	51.87	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	80	10	1.45	39.45	33.14	2.42	71.57	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	80	15	1.45	27.19	8.86	-0.90	86.70	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	7	80	20	1.45	17.93	102.64	4.93	138.39	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	40	5	1.20	-15.63	11.63	-10.49	177.18	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	40	10	1.20	18.81	5.88	1.14	82.70	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	40	15	1.20	-0.14		18.39	152.27	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	40	20	1.20	0.99		6.31	99.94	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	50	5	1.20	55.30	10.87	0.13	32.12	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	50	10	1.20	34.72	22.19	0.24	81.60	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	50	15	1.20	19.07	58.47	0.56	119.20	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	8	50	20	1.20	19.67	58.65	-3.69	161.29	0.06	20.26	0.64	1.45	8.27	11.95
Arable	BE-Lon	S	9	40	5	1.28	-25.80	17.28	-16.76	116.77	0.06	20.26	0.87	0.23	5.58	10.64
Arable	BE-Lon	S	9	40	10	1.28	-14.16	9.69	7.79	148.82	0.06	20.26	0.87	0.23	5.58	10.64
Arable	BE-Lon	S	9	40	15	1.28	49.80	74.67	10.17	108.79	0.06	20.26	0.87	0.23	5.58	10.64

Arable	BE-Lon	S	14	50	10	1.44	28.09	7.29	-8.56	44.50	0.06	20.26	1.07	0.34	6.24	5.34
Arable	BE-Lon	S	14	50	15	1.44	-26.05	4.36	-0.82	56.62	0.06	20.26	1.07	0.34	6.24	5.34
Arable	BE-Lon	S	14	50	20	1.44	35.98	8.53	3.65	108.29	0.06	20.26	1.07	0.34	6.24	5.34
Arable	BE-Lon	S	15	50	5	1.65	34.04		0.43	24.91	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	15	50	10	1.65	18.58	17.56	-4.16	37.14	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	15	50	15	1.65	-16.00	5.37	-1.65	59.84	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	15	50	20	1.65	80.22	22.42	-4.27	13.32	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	16	80	5	1.23	14.14	35.82	-7.81	35.76	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	16	80	10	1.23	-25.64	6.60	-3.90	55.00	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	16	80	15	1.23	-5.65	1.72	-6.89	87.39	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	16	80	20	1.23	39.03	9.12	-1.24	115.26	0.06	20.26	0.96	0.43	5.58	8.60
Arable	BE-Lon	S	17	70	5	1.31	24.63	12.32	-3.15	59.67	0.06	20.26	0.76	0.43	5.58	9.74
Arable	BE-Lon	S	17	70	10	1.31	43.69	7.13	-1.05	55.09	0.06	20.26	0.76	0.43	5.58	9.74
Arable	BE-Lon	S	17	70	15	1.31	-18.22	16.56	-0.32	116.77	0.06	20.26	0.76	0.43	5.58	9.74
Arable	BE-Lon	S	17	70	20	1.31	91.89	31.91	-2.90	115.54	0.06	20.26	0.76	0.43	5.58	9.74
Arable	BE-Lon	S	18	70	5	1.29	18.15	9.23	-3.37	51.10	0.06	20.26	0.76	0.43	5.15	9.74
Arable	BE-Lon	S	18	70	10	1.29	5.75	3.35	-3.82	41.74	0.06	20.26	0.76	0.43	5.15	9.74
Arable	BE-Lon	S	18	70	15	1.29	-15.16	5.91	-3.65	58.05	0.06	20.26	0.76	0.43	5.15	9.74
Arable	BE-Lon	S	18	70	20	1.29	54.09	10.36	1.31	47.85	0.06	20.26	0.76	0.43	5.15	9.74
Arable	DK-Ris	S	1	40	5	1.25	-8.31	65.89		29.92	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	40	10	1.25	16.08	63.30		102.01	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	40	15	1.25	10.63	188.88		327.73	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	40	20	1.25	46.16	203.69		127.96	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	60	5	1.25	-11.52	68.64		73.51	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	60	10	1.25	-20.16	68.36		67.74	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	60	15	1.25	10.00	348.60		83.98	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	1	60	20	1.25	-4.05	273.96		83.61	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	30	5	1.10	-22.24	1.50	-9.68	58.75	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	30	10	1.10	-3.33	6.92	-5.81	112.74	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	30	15	1.10	8.87	10.93	-0.69	371.18	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	30	20	1.10	37.99	20.68	17.14	137.89	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	50	5	1.10	-5.84	6.97	-7.17	39.35	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	50	10	1.10	-13.22	6.00	-3.71	56.93	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	50	15	1.10	17.81	23.66	2.12	73.58	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	2	50	20	1.10	19.80	19.87	2.55	110.83	0.14	16.92	22.20	5.39	131.10	127.92
Arable	DK-Ris	S	3	20	5	1.10	-7.41	10.40	-1.42	40.08	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	20	10	1.10	11.17	-2.08	8.65	79.02	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	20	15	1.10	16.91	3.74	0.00	244.73	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	20	20	1.10	12.39	6.85	32.25	132.08	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	40	5	1.10	-33.06	-4.41	-6.50	68.08	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	40	10	1.10	-14.85	11.75	2.42	72.02	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	40	15	1.10	16.61	23.57	-0.13	97.71	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	3	40	20	1.10	28.47	12.99	8.54	103.80	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	20	5	1.11	-5.02	3.09	-7.51	35.37	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	20	10	1.11	15.34	3.79	6.67	93.81	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	20	15	1.11	56.66	24.85	0.43	274.44	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	20	20	1.11	0.34	11.46	14.89	140.39	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	50	5	1.11	-21.57	25.81	-2.27	61.46	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	50	10	1.11	-10.06	17.36	3.33	63.06	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	50	15	1.11	24.21	88.70	-0.11	77.59	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	4	50	20	1.11	38.82	38.15	-2.06	118.17	0.14	16.92	4.08	3.11	70.68	89.83
Arable	DK-Ris	S	5	20	10	1.04	47.00	35.25	9.33	50.99	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	20	15	1.04	22.37	3.23	-11.22	210.27	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	20	20	1.04	39.29	24.33	27.70	26.73	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	30	5	1.04	-7.69	1.49	-5.88	40.25	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	50	5	1.04	-27.52	3.34	-3.67	22.24	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	50	10	1.04	-15.34	16.77	-1.80	26.19	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	50	15	1.04	7.34	17.81	2.08	44.39	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	5	50	20	1.04	18.11	15.19	2.72	53.01	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	20	5	1.10	-7.70	-4.10	-5.60	52.50	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	20	10	1.10	15.43	14.40	8.86	66.55	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	20	15	1.10	11.54	0.33	23.13	86.80	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	20	20	1.10	16.47	13.68	28.71	108.18	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	50	5	1.10	-4.75	11.66	-3.63	71.02	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	50	10	1.10	-31.87	5.72	-0.84	55.96	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	50	15	1.10	19.88	17.63	3.95	59.58	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	6	50	20	1.10	10.20	12.86	12.68	113.11	0.14	16.92	2.68	3.24	102.13	118.94
Arable	DK-Ris	S	7	20	5	1.13	-10.41	32.00	-8.35	70.78	0.14	16.92	7.90	1.81	33.93	38.28
Arable	DK-Ris	S	7	20	10	1.13	21.13	-8.06	5.92	90.56	0.14	16.92	7.90	1.81	33.93	38.28
Arable	DK-Ris	S	7	20	15	1.13			12.04	114.54	0.14	16.92	7.90	1.81	33.93	38.28
Arable	DK-Ris	S	7	20	20	1.13			19.72	148.69	0.14	16.92	7.90	1.81	33.93	38.28
Arable	DK-Ris	S	7	60	5	1.13	-8.39	13.68	-8.82	63.28	0.14	16.92	7.90	1.81	33.93	38.28
Arable	DK-Ris	S	7	60	10	1.13	-8.05	2.44	-3.33	62.08	0.14	16.92	7.90	1.81	33.93	38.28

Arable	DK-Ris	S	11	40	10	1.11	-2.14	-7.77	36.79	94.81	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	40	15	1.11			49.37	85.15	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	40	20	1.11				242.81	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	80	5	1.11	-9.16	10.16	-5.92	145.91	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	80	10	1.11	-8.78	-4.84	-1.31	41.63	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	80	15	1.11	17.11	289.85	3.90	60.30	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	11	80	20	1.11	35.06	431.75	7.10	86.16	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	30	5	1.17	-20.86	5.03	16.13	73.54	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	30	10	1.17	-1.67	17.46	27.50	68.65	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	30	15	1.17			33.34	129.26	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	30	20	1.17			29.74	167.19	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	70	5	1.17	25.43	-9.38	-7.51	165.98	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	70	10	1.17	24.38	13.25	-3.69	60.54	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	70	15	1.17	13.55	28.18	9.29	173.58	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	12	70	20	1.17	15.36	69.56	4.05	138.72	0.14	16.92	5.85	2.05	74.69	121.89
Arable	DK-Ris	S	13	70	5	1.19	1.84		-3.18	121.80	0.14	16.92	16.78	1.52	45.41	121.89
Arable	DK-Ris	S	13	70	10	1.19	-6.59		0.09	133.65	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	13	70	15	1.19	9.94		2.55	106.25	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	13	70	20	1.19	27.59		0.72	83.46	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	14	90	5	1.13	28.13	25.89	-5.54	53.36	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	14	90	10	1.13	5.43	36.97	-2.87	98.34	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	14	90	15	1.13	19.65	179.44	-0.43	65.06	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	14	90	20	1.13	24.63	503.31	1.82	114.10	0.14	16.92	16.78	1.52	45.41	50.44
Arable	DK-Ris	S	15	90	5	1.07	60.88	39.75	-4.44	102.46	0.14	16.92	21.56	1.79	47.45	50.44
Arable	DK-Ris	S	15	90	10	1.07	23.22	37.53	-6.26	97.60	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	15	90	15	1.07	1.79	43.59	0.79	94.86	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	15	90	20	1.07	1.42	169.66	0.09	73.25	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	16	80	5	1.10	13.77	27.18	-3.20	66.81	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	16	80	10	1.10	9.97	-8.71	0.47	156.10	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	16	80	15	1.10	7.83	290.27	1.03	51.62	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	16	80	20	1.10	16.34	725.34	0.32	92.99	0.14	16.92	21.56	1.79	47.45	43.50
Arable	DK-Ris	S	17	90	5	1.16	2.56	34.33	-8.09	65.27	0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	17	90	10	1.16	35.42	33.77	-3.30	71.45	0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	17	90	15	1.16	14.33	245.23	-1.82	29.97	0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	17	90	20	1.16	25.97	219.89	-4.38		0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	18	80	5	0.96	18.35	48.03	-11.22		0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	18	80	10	0.96	-0.97	15.32	-3.90		0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	18	80	15	0.96	14.03	21.78	0.45		0.14	16.92	10.13	0.81	27.65	33.51
Arable	DK-Ris	S	18	80	20	0.96	9.64	63.57	0.17		0.14	16.92	10.13	0.81	27.65	33.51
Forest	BE-Bra	L	1	2	5		-66.62	153.23	204.18	394.54	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	1	2	10		-5.99	3.20	231.81	299.12	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	1	2	15				270.38	396.78	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	1	2	20		-17.92	10.52	309.80	402.68	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	2	2	5		-13.08	12.09	394.56	315.20	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	2	2	10		-11.71	3.15	299.67	217.06	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	2	2	15		-40.23		412.00	249.58	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	2	2	20		-21.47	25.67	500.29	260.97	0.94	67.75	81.25	157.65	21.20	20.21
Forest	BE-Bra	L	3	2	5		38.87	14.07	418.37	387.31	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	3	2	10		-1.57	6.50	219.69	178.58	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	3	2	15		-21.13		397.58	637.53	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	3	2	20		-16.61	15.90	230.20	657.66	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	4	2	5		-56.35	35.42	1231.22	435.30	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	4	2	10		-32.30	13.19	544.95	204.55	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	4	2	15		-27.13		497.17	378.22	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	4	2	20		-5.65	16.59	145.99	458.04	0.94	67.75	66.04	139.37	10.18	56.86
Forest	BE-Bra	L	5	2	5		-109.46	45.60	162.34	353.09	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	5	2	10		-21.22	6.07	72.43	151.41	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	5	2	15		-23.39		120.91	304.44	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	5	2	20		8.40	21.18	137.73	276.94	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	6	2	5		-76.74	37.33	69.64	358.37	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	6	2	10		-25.44	8.84	58.23	200.05	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	6	2	15		-15.63		93.30	543.66	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	L	6	2	20		22.82	53.50	76.18	590.04	0.94	67.75	78.37	115.96	8.03	37.60
Forest	BE-Bra	S	1	50	5	1.17	-48.45	18.02	9.90	117.24	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	5	1.17	-3.71	16.23	-0.62	46.70	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	10	1.17	-35.29	3.93	34.58	69.83	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	10	1.17	-12.43	0.36	-0.62	46.70	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	15	1.17	-23.90		49.97	43.39	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	15	1.17	-45.75	2.87	-0.04	106.49	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	20	1.17	-33.81	13.05	81.90	76.08	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	1	50	20	1.17	-50.58	17.95	2.15	120.27	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	2	40	5	1.05	-22.30	19.70	5.49	113.37	0.10	17.85	7.26	9.00	4.53	5.78
Forest	BE-Bra	S	2	40	10	1.05	-26.67	2.79	5.49	136.62	0.10	17.85	7.26	9.00	4.53	5.78

Forest	BE-Bra	S	5	50	15	1.14	-1.06	20.23	0.71	3.53	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	5	50	20	1.14	23.84	24.23	25.36	42.66	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	5	50	20	1.14	-21.46	7.01	-4.48	25.84	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	50	5	1.19	-11.64	12.94	-0.75	116.09	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	50	10	1.19	-20.10		-0.75	106.08	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	50	15	1.19	-9.34		16.58	106.49	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	50	20	1.19	-30.87		1.54	126.67	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	60	5	1.19	-9.86	4.93	-0.39	46.21	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	60	10	1.19	-20.97	1.20	9.46	70.23	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	60	15	1.19	-19.47	2.60	10.23	91.59	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	6	60	20	1.19	-21.77	19.56	34.15	68.83	0.10	17.85	2.41	2.35	1.69	0.28
Forest	BE-Bra	S	7	50	5	1.14	-93.34	17.97	8.67	52.54	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	50	10	1.14	-80.35	47.43	39.79	78.39	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	50	15	1.14	-121.36	1.18	64.16	139.90	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	50	20	1.14	-215.05	71.72	87.36	120.62	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	60	5	1.14	-87.07	8.91	23.94	15.96	0.10	17.85				
Forest	BE-Bra	S	7	60	10	1.14	-117.33	-16.70	19.48	85.25	0.10	17.85				
Forest	BE-Bra	S	7	60	15	1.14	-78.72		56.12	113.53	0.10	17.85				
Forest	BE-Bra	S	7	60	20	1.14	-83.75	6.33	88.08	139.70	0.10	17.85				
Forest	BE-Bra	S	7	80	5	1.14	-48.89	-4.21	-8.67	108.85	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	80	10	1.14	-38.93	12.99	14.62	42.16	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	80	15	1.14	-16.28	7.32	10.84	100.19	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	7	80	20	1.14	-31.40	52.27	18.51	109.81	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	50	5	1.21	-30.38	5.76	27.23	75.71	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	50	10	1.21	-49.77	5.18	-3.30	76.52	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	50	15	1.21	-39.56	12.89	1.50	59.65	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	50	20	1.21	-199.20	128.23	2.53	90.98	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	60	5	1.21	-70.09	9.98	3.63	80.84	0.10	17.85				
Forest	BE-Bra	S	8	60	10	1.21	-42.35	-12.75	2.15	51.32	0.10	17.85				
Forest	BE-Bra	S	8	60	15	1.21	-45.27	-2.26	19.44	46.30	0.10	17.85				
Forest	BE-Bra	S	8	60	20	1.21	-28.59	5.13	28.71	40.03	0.10	17.85				
Forest	BE-Bra	S	8	80	5	1.21	-20.49	13.70	-12.77	32.23	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	80	10	1.21	-25.67	0.88	-0.92	63.35	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	80	15	1.21	-25.43	8.79	3.30	48.95	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	8	80	20	1.21	-49.18	10.42	4.16	51.06	0.10	17.85	2.85	3.06	3.24	5.98
Forest	BE-Bra	S	9	50	5	1.24	-38.47	-1.84	0.21	79.30	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	50	10	1.24	-1.63	11.82	3.75	49.26	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	50	15	1.24	-86.36		4.08	70.08	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	50	20	1.24	-129.34	86.44	7.79	54.23	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	60	5	1.24	-22.55	1.25	5.60	74.96	0.10	17.85				
Forest	BE-Bra	S	9	60	10	1.24	-39.18	-1.37	3.52	56.73	0.10	17.85				
Forest	BE-Bra	S	9	60	15	1.24	-33.81	-8.81	11.20	32.49	0.10	17.85				
Forest	BE-Bra	S	9	60	20	1.24	-17.52	7.58	9.08	93.10	0.10	17.85				
Forest	BE-Bra	S	9	80	5	1.24	-0.39	2.72	-6.41	31.27	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	80	10	1.24			0.19	39.25	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	80	15	1.24	-26.70	10.20	11.67	70.58	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	9	80	20	1.24	-9.04	12.16	9.55	48.51	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	50	5	1.24	-58.59	-13.90	1.20	31.35	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	50	10	1.24	-44.53	24.65	4.10	30.89	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	50	15	1.24	-135.61	103.18	7.79	83.83	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	50	20	1.24	-183.96	158.21	10.17	60.41	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	60	5	1.24	-135.02	10.24	0.11	64.68	0.10	17.85				
Forest	BE-Bra	S	10	60	10	1.24	-51.80	-6.89	-0.21	52.81	0.10	17.85				
Forest	BE-Bra	S	10	60	15	1.24	-19.54	-7.12	2.30	30.81	0.10	17.85				
Forest	BE-Bra	S	10	60	20	1.24		7.82	4.05	42.82	0.10	17.85				
Forest	BE-Bra	S	10	80	5	1.24	-14.41	20.85	-14.27	66.52	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	80	10	1.24	-152.50		-1.63	52.87	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	80	15	1.24	-67.52	13.44	2.87	54.03	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	10	80	20	1.24	-50.18	5.36	-0.49	43.41	0.10	17.85	3.03	3.05	3.33	3.39
Forest	BE-Bra	S	11	50	5	1.18	-17.62	4.07	3.69	58.46	0.10	17.85				
Forest	BE-Bra	S	11	50	5	1.18	-11.03	-16.13	17.55	34.31	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	50	10	1.18	-25.51	7.17	0.56	35.69	0.10	17.85				
Forest	BE-Bra	S	11	50	10	1.18	25.92	13.16	5.11	29.06	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	50	15	1.18	-49.79	-6.61	6.46	37.78	0.10	17.85				
Forest	BE-Bra	S	11	50	15	1.18	115.60	43.24	6.50	38.59	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	50	20	1.18	-15.05	8.14	7.98	30.96	0.10	17.85				
Forest	BE-Bra	S	11	50	20	1.18	-184.95	69.68	2.60	24.24	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	70	5	1.18	-10.44	-9.70	-12.98	38.19	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	70	10	1.18	-114.32	-37.82	0.97	34.51	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	70	15	1.18	-8.53	9.69	7.17	51.54	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	11	70	20	1.18	32.99	6.24	8.39	39.71	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	12	50	5	1.31	-68.00	5.22	4.93	124.83	0.10	17.85	2.81	2.55	2.12	0.26
Forest	BE-Bra	S	12	50	10	1.31	-110.45	3.21	0.24	55.77	0.10	17.85	2.81	2.55	2.12	0.26

Forest	BE-Vie	S	9	70	10	0.26	-3.98	27.60	-1.42	143.39	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	9	70	15	0.26	14.58	106.42	-4.36	201.66	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	9	70	20	0.26	-9.87	157.41	3.43	534.36	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	20	5	0.31	12.75	37.48	-5.36	100.12	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	20	10	0.31	-106.53	-78.70	-2.27	113.00	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	20	15	0.31	-47.59	-58.64	6.89	167.63	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	20	20	0.31	-12.13	-54.47	9.25	210.51	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	60	5	0.31	-56.44	64.29	-3.05	127.99	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	60	10	0.31	-23.25	38.77	-3.52	125.07	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	60	15	0.31	-36.65	28.41	1.39	161.34	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	10	60	20	0.31	29.25	225.57	2.21	255.71	0.90	96.05	68.39	98.41	4.03	5.29
Forest	BE-Vie	S	11	20	5	0.14	-25.30	34.58	0.64	173.72	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	20	10	0.14	23.77	11.66	2.02	214.87	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	20	15	0.14	-80.34	146.56	2.47	298.59	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	20	20	0.14	11.72	136.16	4.81	553.21	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	70	5	0.14	28.76	53.15	3.58	280.91	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	70	10	0.14	-20.63	56.27	0.02	269.45	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	70	15	0.14	12.35	377.58	-1.48	312.00	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	11	70	20	0.14	-7.05	227.27	-5.64	465.95	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	60	5	0.90	-28.58	18.59	16.20	95.76	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	60	10	0.90	-60.48	-8.17	26.00	161.31	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	60	15	0.90	-98.42	10.89	20.90	206.12	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	60	20	0.90	-114.29	22.48	34.07	317.85	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	70	5	0.90	25.08	24.72	3.45	152.55	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	70	10	0.90	-55.66	68.89	1.93	82.35	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	70	15	0.90	-53.74	52.80	13.30	153.41	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	12	70	20	0.90	-4.98	49.05	30.74	207.16	0.90	96.05	26.06	43.18	6.30	1.91
Forest	BE-Vie	S	13	40	5	0.40	-11.07	23.12	0.88	146.24	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	40	10	0.40	-34.70	87.75	-3.11	135.39	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	40	15	0.40	-30.36	81.50	-0.60	216.38	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	40	20	0.40	-26.01	33.01	4.25	325.13	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	90	5	0.40	4.30	88.04	-1.92	181.15	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	90	10	0.40	-54.95	63.22	-6.15	107.45	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	90	15	0.40	-32.64	173.51	0.63	79.32	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	13	90	20	0.40	-24.03	19.71	2.63	184.78	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	20	5	0.28	-20.84	26.64	-0.17	26.89	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	20	10	0.28	-31.33	20.21	1.93	43.93	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	20	15	0.28	-30.27	18.77	6.80	89.88	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	20	20	0.28	11.18	58.73	9.27	291.80	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	80	5	0.28	10.14	82.17	-0.56	306.94	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	80	10	0.28	-9.38	51.19	0.28	203.12	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	80	15	0.28	-30.50	99.90	-6.31	190.19	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	14	80	20	0.28	-44.00	52.93	1.42	262.22	0.90	96.05	38.89	89.58	3.45	4.31
Forest	BE-Vie	S	15	30	5	0.19	-147.41	-3.49	1.44	171.66	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	30	10	0.19	-20.15	-42.10	4.87	153.21	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	30	15	0.19	-29.82	-39.10	3.37	262.15	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	30	20	0.19	-20.86	55.74	11.48	436.57	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	90	5	0.19	6.00	168.59	1.93	249.49	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	90	10	0.19	-29.54	145.11	-0.79	216.40	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	90	15	0.19	-26.13	1144.38	5.13	215.85	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	15	90	20	0.19	-13.92	2288.67	4.59	267.26	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	60	5	0.89	-51.17	19.34	10.21	140.46	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	60	10	0.89	-9.85	100.92	5.75	94.73	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	60	15	0.89	-32.44	93.73	44.60	198.94	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	60	20	0.89	-0.40	-52.50	61.40	222.76	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	80	5	0.89	-7.89	342.26	2.00	70.16	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	80	10	0.89	7.89	443.57	3.28	53.35	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	80	15	0.89	-0.42	817.17	1.74	66.26	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	16	80	20	0.89	-18.22		3.39	131.56	0.90	96.05	59.64	56.03	3.12	3.21
Forest	BE-Vie	S	17	50	5	0.66	-1.19	34.15	-1.09	222.89	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	50	10	0.66	-45.15	75.55	3.22	148.65	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	50	15	0.66	-24.25	70.17	11.95	284.79	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	50	20	0.66	-22.16	-33.91	24.52	443.23	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	80	5	0.66	7.46	1560.80	-2.40	114.75	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	80	10	0.66	-25.12	1326.63	-7.59	106.47	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	80	15	0.66	-24.46	1643.94	-1.37	56.62	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	17	80	20	0.66	-31.83	2630.45	-2.27	154.63	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	30	5	0.76	-99.88	6.67	13.26	96.83	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	30	10	0.76	-15.35	35.16	13.71	90.10	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	30	15	0.76	-8.71	32.65	50.22	173.78	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	30	20	0.76	-16.86	30.87	81.18	200.54	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	70	5	0.76	-4.35	44.57	-4.14	107.02	0.90	96.05	13.77	13.79	3.82	6.15
Forest	BE-Vie	S	18	70	10	0.76	-2.07	15.48	-1.61	87.21	0.90	96.05	13.77	13.79	3.82	6.15

Forest	BE-Bra	S	15	50	10	1.18	-56.83	7.10		17.68	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	50	15	1.18	-135.02	26.91	4.08	10.82	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	50	20	1.18	-94.83	23.73	20.85	23.53	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	100	5	1.18	-154.31	46.00	-4.25	25.96	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	100	10	1.18	-39.66	12.64		17.46	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	100	15	1.18	-14.07	9.31	-2.72	16.13	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	15	100	20	1.18	-17.22	19.66	4.25	42.66	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	40	5	1.04	-61.46	13.30	-5.64	69.57	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	40	10	1.04	-135.20	20.66	3.73	65.74	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	40	15	1.04	-114.66	35.81	3.86	199.88	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	40	20	1.04	-131.57	61.40	7.44	74.92	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	90	5	1.04	-176.89	43.52	-8.54	42.27	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	90	10	1.04	-16.23	14.19	-2.47	46.06	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	90	15	1.04	-23.02	5.12	-0.75	98.84	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	16	90	20	1.04	-0.80	26.46	1.97	48.21	0.10	17.85	4.17	3.01	2.17	2.12
Forest	BE-Bra	S	17	40	5	1.02	13.79	4.79	-2.79	28.00	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	40	10	1.02	-7.47	5.04		73.06	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	40	15	1.02	-19.42	46.71	2.87	76.98	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	40	20	1.02	-63.08	54.67	5.00	77.83	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	100	5	1.02	-181.14	36.25	-4.72	32.95	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	100	10	1.02	-0.39	10.58	0.02	54.28	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	100	15	1.02	-9.22	22.55	1.39	92.60	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	17	100	20	1.02	31.84	36.05	1.03	53.71	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	30	5	1.00	-11.12	23.11	-0.24	11.33	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	30	10	1.00	-2.56	5.17		38.45	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	30	15	1.00	-8.56	46.89	0.69	34.03	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	30	20	1.00	-66.10	6.81	2.38	45.01	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	100	5	1.00	-76.44	23.38	-6.89	21.15	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	100	10	1.00	-43.44	22.54	0.15	33.37	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	100	15	1.00	-6.05	36.90	-1.37	55.82	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Bra	S	18	100	20	1.00	-23.10	17.65	-2.83	19.83	0.10	17.85	5.26	4.54	1.47	3.00
Forest	BE-Vie	L	1	8	5		0.62	9.56	-6.97	261.85	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	1	8	10		7.50	6.77	-9.07	370.01	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	1	8	15		0.69	-2.05	-1.95	497.47	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	1	8	20		28.94	8.26	10.93	1128.86	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	2	8	5		10.77	11.35	37.61	383.74	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	2	8	10		12.77	2.12	55.39	360.73	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	2	8	15		12.03	5.81	153.70	592.15	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	2	8	20		96.40	11.03	291.11	1092.92	1.17	631.73	66.03	97.90	57.59	30.90
Forest	BE-Vie	L	3	4	5		-10.38	10.27	-4.70	335.58	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	3	4	10		3.82	8.22	-2.06	187.61	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	3	4	15		15.94	8.83	-1.46	268.53	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	3	4	20		43.86	17.33	12.49	554.00	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	4	4	5		2.48	-4.08	-1.89	404.63	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	4	4	10		16.90	-0.30	-8.80	409.10	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	4	4	15		-11.28	7.87	7.55	704.57	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	4	4	20		37.47	32.30	8.11	1257.00	1.17	631.73	97.00	153.12	82.95	44.59
Forest	BE-Vie	L	5	8	5		2.02	8.97	0.54	175.47	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	5	8	10		15.31	26.04	33.17	162.76	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	5	8	15		32.36	30.85	21.20	200.30	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	5	8	20		55.70	12.32	96.65	736.08	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	6	8	5		-0.01	7.40	-6.97	261.85	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	6	8	10		12.23	10.71	4.16	299.42	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	6	8	15		16.53	6.55	22.20	758.04	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	L	6	8	20		45.37	9.58	30.85	1099.71	1.17	631.73	80.63	56.25	67.01	29.21
Forest	BE-Vie	S	1	20	5	0.26	14.15	12.50	6.04	165.87	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	1	20	10	0.26	66.02	35.65	9.50	181.57	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	1	20	15	0.26	3.66	21.65	29.21	266.65	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	1	20	20	0.26	28.30	5.48	104.75	424.34	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	2	20	5	0.57	-34.52	16.51	3.67	94.57	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	2	20	10	0.57	-50.77	49.50	8.86	177.25	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	2	20	15	0.57	-90.27	23.53	4.85	248.42	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	2	20	20	0.57	-96.18	34.18	10.75	369.11	0.90	96.05	24.48	93.02	2.74	4.04
Forest	BE-Vie	S	3	20	5	0.36	14.21	56.36	44.11	294.34	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	3	20	10	0.36	-36.47	9.18	40.83	176.94	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	3	20	15	0.36	-55.43	5.27	66.70	243.46	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	3	20	20	0.36	-64.19	57.09	107.57	359.25	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	4	10	5	0.68	-27.06	37.88	16.99	80.40	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	4	10	10	0.68	-3.04	5.31	36.15	123.95	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	4	10	15	0.68	-27.87	49.99	70.97	150.40	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	4	10	20	0.68	17.51	15.10	94.48	104.56	0.90	96.05	35.76	47.80	5.57	11.57
Forest	BE-Vie	S	5	20	5	0.31	-10.95	25.17	0.19	71.92	0.90	96.05	48.43	124.12	1.60	10.01
Forest	BE-Vie	S	5	20	10	0.31	-31.86	26.56	9.33	79.14	0.90	96.05	48.43	124.12	1.60	10.01

Forest	FI-Sod	S	14	90	10	1.01	35.82	11.55	-4.40	41.55	0.12	17.85	2.38	4.34	0.93	0.96
Forest	FI-Sod	S	14	90	15	1.01			-2.81	44.00	0.12	17.85	2.38	4.34	0.93	0.96
Forest	FI-Sod	S	14	90	20	1.01	-48.73	51.79	1.87	68.96	0.12	17.85	2.38	4.34	0.93	0.96
Forest	FI-Sod	S	15	90	5	1.16	-10.18	81.52	-14.35	54.34	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	15	90	10	1.16	-24.83	-7.64	-6.82	33.41	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	15	90	15	1.16			0.13	54.12	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	15	90	20	1.16	-57.36	37.30	-0.62	100.73	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	16	90	5	0.96	-70.97		-12.72	55.53	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	16	90	10	0.96	-19.83	-3.34	-4.14	18.27	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	16	90	15	0.96			-2.25	64.64	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	16	90	20	0.96	-44.74	26.94	-0.79	39.94	0.12	17.85	3.56	3.74	0.65	0.80
Forest	FI-Sod	S	17	90	5	1.27	15.38	22.29	-16.26	39.09	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	17	90	10	1.27	-4.38	6.98	-9.63	13.21	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	17	90	15	1.27			-1.39	43.45	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	17	90	20	1.27	-30.77	19.48	-0.88	92.18	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	18	90	5	1.26	-19.30	39.07	-14.61	40.95	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	18	90	10	1.26	-90.21	-5.16	-3.09	34.93	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	18	90	15	1.26			-4.89	78.88	0.12	17.85	1.62	0.95	1.63	4.10
Forest	FI-Sod	S	18	90	20	1.26	-1.49		1.54	76.17	0.12	17.85	1.62	0.95	1.63	4.10
Forest	NL-Loo	L	1	3	5		5.97	9.33	21.56	126.15	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	1	3	10		-42.05	10.93	54.24	212.39	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	1	3	15		5.29	19.84	96.24	276.90	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	1	3	20		18.61		168.95	399.47	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	2	3	5		-24.23	17.86	28.62	154.59	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	2	3	10		10.10	11.96	69.19	184.80	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	2	3	15		13.60	17.12	143.29	274.16	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	2	3	20		-19.84	34.57	228.38	309.85	1.17	109.00	164.86	365.75	31.67	26.41
Forest	NL-Loo	L	3	3	5		-40.70	19.38	-0.06	7.25	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	3	3	10		-52.02	16.78	18.09	6.36	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	3	3	15		-16.96	13.45	19.61	12.89	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	3	3	20		-44.39	29.42	71.78	20.88	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	4	3	5		-8.44	3.08	6.18	168.70	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	4	3	10		12.40	9.66	5.19	254.48	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	4	3	15		-1.15		26.26	437.49	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	4	3	20		-36.02	22.33	91.93	700.37	1.17	109.00	148.24	603.19	31.51	40.59
Forest	NL-Loo	L	5	3	5		-3.02	9.68	83.95	189.30	1.17	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	5	3	10		-30.79		339.42	270.88	1.17	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	5	3	15		2.38	32.78	689.87	406.25	1.17	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	5	3	20		-9.34		1016.53	570.93	1.17	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	6	3	5		-19.15	8.08	567.11	127.22	0.01	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	6	3	10		13.42	7.72	978.92	173.92	0.01	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	6	3	15		-14.08	2.06	1303.46	234.94	0.01	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	L	6	3	20		-10.31		1173.90	268.22	0.01	109.00	126.88	328.68	42.32	56.72
Forest	NL-Loo	S	1	90	5	1.08	-10.75	9.33	139.84	22.46	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	1	90	10	1.08	-30.63	10.93	188.73	26.38	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	1	90	15	1.08	-4.89	19.84	191.78	17.48	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	1	90	20	1.08	290.24		195.57	16.35	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	2	80	5	1.48	-18.01	17.86	12.61	38.92	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	2	80	10	1.48	-46.67	11.96	27.57	50.03	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	2	80	15	1.48	-21.15	17.12	17.74	16.59	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	2	80	20	1.48	40.71	34.57	33.19	47.33	0.01	3.24	3.28	5.22	1.14	2.19
Forest	NL-Loo	S	3	80	5	1.45	-8.11	19.38	-1.54	17.00	0.01	3.24	3.87	1.27	1.14	0.53
Forest	NL-Loo	S	3	80	10	1.45	-14.70	16.78	1.14	7.89	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	3	80	15	1.45	16.32	13.45	5.90	15.30	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	3	80	20	1.45	63.65	29.42	8.43	18.67	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	4	80	5	1.45	-1.91	3.08	18.00	25.48	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	4	80	10	1.45	-45.75	9.66	18.32	31.86	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	4	80	15	1.45	-24.53	0.90	120.83	35.63	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	4	80	20	1.45	8.83	22.33	68.76	21.08	0.01	3.24	3.87	1.27	0.69	0.53
Forest	NL-Loo	S	5	80	5	1.46	-52.52	9.68	48.70	46.34	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	5	80	10	1.46	-28.38	1.24	48.79	27.32	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	5	80	15	1.46	-41.13	32.78	89.48	29.95	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	5	80	20	1.46	28.91		36.64	4.14	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	6	90	5	1.59	-3.11	8.08	1.74	41.44	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	6	90	10	1.59	-14.50	7.72	-3.65	37.25	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	6	90	15	1.59	-26.90	2.06	5.30	48.31	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	6	90	20	1.59	4.78	23.22	4.05	17.22	0.01	3.24	3.19	0.66	1.43	0.41
Forest	NL-Loo	S	7	20	5	1.39			154.78	87.66	0.01	3.24	5.10	1.05	1.49	0.67
Forest	NL-Loo	S	7	20	10	1.39	-20.04	7.60	237.88	112.09	0.01	3.24	5.10	1.05	1.49	0.67
Forest	NL-Loo	S	7	20	15	1.39	-53.20		380.74	125.99	0.01	3.24	5.10	1.05	1.49	0.67
Forest	NL-Loo	S	7	20	20	1.39	-19.61	14.23	568.42	141.57	0.01	3.24	5.10	1.05	1.49	0.67
Forest	NL-Loo	S	7	60	5	1.39	-21.16	22.53	-5.29	16.63	0.01	3.24	5.10	1.05	1.49	0.67
Forest	NL-Loo	S	7	60	10	1.39	-25.39	32.99	2.40	41.30	0.01	3.24	5.10	1.05	1.49	0.67

Forest	FI-Sod	S	1	10	10	0.93	-14.95		-5.21	52.07	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	10	15	0.93	-0.11	0.39	1.77	80.82	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	10	20	0.93	-29.51	-11.69	0.26	55.18	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	40	5	0.93	-52.75		-6.84	54.93	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	40	10	0.93	-25.39	-4.44	-6.29	92.66	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	40	15	0.93	-18.07	15.90	-3.82	46.72	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	1	40	20	0.93	-45.23		-1.72	79.04	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	30	5	0.64	-7.12	15.59	-12.59	200.03	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	30	10	0.64	-30.05	-4.35	-6.97	134.15	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	30	15	0.64	-18.20	4.25	-3.99	241.53	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	30	20	0.64	5.13	5.16	0.26	55.18	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	60	5	0.64	1.11		-3.18	88.55	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	60	10	0.64	-40.28	-8.59	-6.82	107.96	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	60	15	0.64	-23.34	7.08	-1.27	73.52	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	2	60	20	0.64	14.06		2.70	205.90	0.12	17.85	1.47	1.14	0.57	4.37
Forest	FI-Sod	S	3	20	5	1.05	-49.09	-10.37	-10.25	108.40	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	20	10	1.05	-14.97	9.01	-1.65	88.66	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	20	15	1.05	-42.48	13.01	-0.60	133.12	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	20	20	1.05	-32.24	-3.48	-4.78	250.85	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	40	5	1.05	28.97		-8.24	65.78	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	40	10	1.05	-1.82	6.11	-3.54	112.01	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	40	15	1.05	-10.23	-3.33	-2.92	88.08	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	3	40	20	1.05	-24.28		-0.56	143.26	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	30	5	1.25	6.09	-3.78	-13.34	104.80	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	30	10	1.25	3.29	3.95	-4.70	74.15	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	30	15	1.25	10.99	2.21	-2.17	111.88	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	30	20	1.25	32.56	23.27	0.90	157.30	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	60	5	1.25	-34.10	-6.24	-4.61	34.21	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	60	10	1.25	-3.77	3.19	-1.61	63.61	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	60	15	1.25	-11.17	18.13	-6.44	53.35	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	4	60	20	1.25	-12.57		0.47	112.98	0.12	17.85	2.38	1.37	1.75	1.39
Forest	FI-Sod	S	5	20	5	0.95	-37.61		-18.60	72.88	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	20	10	0.95	-20.31	9.32	-9.08	50.60	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	20	15	0.95	-11.88	3.00	-1.85	113.79	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	20	20	0.95	-47.46		0.15	149.42	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	40	5	0.95	-42.91	5.42	-7.32	41.26	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	40	10	0.95	-22.74	5.87	-1.44	46.82	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	40	15	0.95	-25.25	2.64	1.39	28.92	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	5	40	20	0.95	-8.05		4.76	65.78	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	30	5	1.29	-66.51	-15.90	-19.52	42.18	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	30	10	1.29	-35.92	0.31	-5.08	43.10	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	30	15	1.29	-14.60	9.10	-6.99	69.51	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	30	20	1.29	-39.44	-14.80	2.00	115.61	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	50	5	1.29			-5.73	52.00	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	50	10	1.29	-6.11	15.03	-3.05	76.41	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	50	15	1.29	-5.70	3.71	-0.84	75.75	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	6	50	20	1.29	-10.83		1.59	102.63	0.12	17.85	3.36	1.48	0.72	1.28
Forest	FI-Sod	S	7	40	5	1.22		15.42	-13.97		0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	40	10	1.22			-2.64	31.33	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	40	15	1.22	-97.20	2.36	-4.68	17.48	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	40	20	1.22	-115.22	24.67	3.05	78.60	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	80	5	1.22	-56.29	3.63	-15.62	101.79	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	80	10	1.22			-3.66	46.23	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	80	15	1.22			-3.58	46.97	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	7	80	20	1.22	35.28		0.51	40.03	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	20	5	1.07	-18.00	18.06	-16.37	69.07	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	20	10	1.07			-9.10	63.94	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	20	15	1.07	-44.05	6.23	-0.19	66.41	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	20	20	1.07	-6.55	4.56	-1.33	31.40	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	60	5	1.07	27.02	14.18	-15.00	242.26	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	60	10	1.07			-6.76	79.23	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	60	15	1.07	23.43	39.15	-3.28	96.72	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	8	60	20	1.07	-56.36	-5.36	2.68	123.17	0.12	17.85	1.76	1.84	1.55	1.76
Forest	FI-Sod	S	9	30	5	1.06	-104.55	21.42	-12.42	74.43	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	30	10	1.06	138.45	-6.69	-5.66	104.43	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	30	15	1.06	-12.95	0.55	-5.38	104.30	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	30	20	1.06	-9.34	-4.17	-3.80	69.46	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	70	5	1.06	-34.24	6.70	-15.10	135.87	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	70	10	1.06			-4.31	50.55	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	70	15	1.06	-15.62	4.72	0.43	64.97	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	9	70	20	1.06	-31.84	9.08	-5.79	77.46	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	10	20	5	0.89	-57.40	17.99	-21.90	92.75	0.12	17.85	1.57	1.29	0.25	4.79
Forest	FI-Sod	S	10	20	10	0.89		16.59	-6.82	96.56	0.12	17.85	1.57	1.29	0.25	4.79

Forest	UK-Gri	S	2	20	15	0.09	30.42	5.20	-35.50	620.61	0.66	17.85	7.33	8.26	46.69	29.67
Forest	UK-Gri	S	2	20	20	0.09	-13.89	17.36	0.17	593.37	0.66	17.85	7.33	8.26	46.69	29.67
Forest	UK-Gri	S	2	20	20	0.09	71.94	12.67	-9.12	802.45	0.66	17.85	7.33	8.26	46.69	29.67
Forest	UK-Gri	S	3	20	5	0.26	5.36	8.74	-22.61	375.94	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	20	10	0.26	-11.44	3.69	-5.17	428.55	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	20	15	0.26	-13.32		3.52	549.27	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	20	20	0.26	-21.42	0.92	-2.68	716.87	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	40	5	0.26	-15.45	6.56	-42.66	391.15	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	40	10	0.26	35.19	10.61	-20.87	441.39	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	40	15	0.26	35.34	11.27	-25.99	199.33	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	3	40	20	0.26	-5.93	13.75	-8.25	741.24	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	20	5	0.22	27.72		-13.24	375.61	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	20	10	0.22	-8.76	2.81	-12.61	484.41	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	20	15	0.22	-12.88	11.50	2.40	541.94	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	20	20	0.22	-21.94	6.96	-2.10	613.99	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	50	5	0.22	-1.43	24.67	-35.67	378.96	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	50	10	0.22	15.72	5.59	-23.63	622.21	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	50	15	0.22	22.00	11.41	-30.82	915.67	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	4	50	20	0.22	95.80	39.37	-8.64	816.77	0.66	17.85	1.52	3.23	22.28	18.61
Forest	UK-Gri	S	5	10	5	0.20	16.45	5.29	0.84	633.10	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	10	10	0.20	19.01	11.86	4.96	436.81	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	10	15	0.20	-13.67	4.52	8.67	794.04	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	10	20	0.20	-5.31	9.06	1.52	691.95	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	20	5	0.20	-2.82	7.73	-46.49	144.20	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	20	10	0.20	2.08	11.34	-26.55	235.77	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	20	15	0.20	8.85	5.72	-37.09	323.68	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	5	20	20	0.20	6.82	9.49	-9.26	546.99	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	10	5	0.41	-11.65	3.76	0.21	224.14	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	10	10	0.41	0.46	3.68	17.55	126.08	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	10	15	0.41			24.78	339.53	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	10	20	0.41	2.25	6.34	28.23	468.26	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	60	5	0.41	-3.21		-20.40	218.29	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	60	10	0.41	12.11		-8.23	125.03	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	60	15	0.41	-2.67		-13.29	392.07	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	6	60	20	0.41	-3.61		-5.06	375.50	0.66	17.85	1.23	1.00	23.00	11.85
Forest	UK-Gri	S	7	20	5	0.16	-5.81	1.25	-38.90	157.63	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	20	10	0.16	-5.39	4.23	-22.85	276.27	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	20	15	0.16	112.15		-29.74	404.40	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	20	20	0.16	-0.17	1.07	-10.23	334.05	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	60	5	0.16	17.48	13.01	-6.72	156.43	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	60	10	0.16	22.27	12.42	-5.61	221.01	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	60	15	0.16	-0.56	24.51	-9.84	206.98	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	7	60	20	0.16	30.23	16.61	-11.33	206.88	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	5	0.57	25.66		-20.62	52.78	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	5	0.57	14.27		-33.45	177.14	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	10	0.57	4.34	7.62	-8.28	139.91	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	10	0.57	13.23	5.71	-26.53	246.92	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	15	0.57	1.23	15.34	-24.01	165.33	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	15	0.57	8.26	1.85	-26.98	255.65	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	20	0.57	-20.77	6.88	-14.65	198.08	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	8	40	20	0.57	8.24	5.89	-7.48	225.63	0.66	17.85	1.06	4.47	16.46	23.47
Forest	UK-Gri	S	9	20	5	0.17	17.33	2.88	0.11	32.56	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	20	10	0.17	16.07	6.07	1.93	29.74	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	20	15	0.17	10.83	8.06	-22.08	31.20	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	20	20	0.17	22.69	2.34	-5.15	540.83	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	60	5	0.17	10.07	5.03	-10.02	156.17	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	60	10	0.17	10.42	3.11	-4.83	317.02	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	60	15	0.17	-6.89	18.90	-10.15	195.76	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	9	60	20	0.17	4.32	6.91	-11.65	384.18	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	30	5	0.18	34.83	11.81	-33.30	386.85	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	30	10	0.18	32.30	3.74	-23.83	522.07	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	30	15	0.18	1.07	9.83	-25.28	730.37	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	30	20	0.18	33.70	8.82	-10.33	698.62	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	60	5	0.18	27.11	7.14	-13.39	99.19	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	60	10	0.18	-23.29		-5.54	262.17	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	60	15	0.18	9.33	20.30	-14.03	247.45	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	10	60	20	0.18	6.39	2.90	-6.35	290.86	0.66	17.85	2.17	2.60	14.51	42.23
Forest	UK-Gri	S	11	10	5	0.22	21.88	3.37	-23.81	209.21	0.66	17.85	2.64	4.10	8.58	27.48
Forest	UK-Gri	S	11	10	10	0.22	20.29	2.92	-23.94	453.42	0.66	17.85	2.64	4.10	8.58	27.48
Forest	UK-Gri	S	11	10	15	0.22	24.21	17.23	-28.74	643.71	0.66	17.85	2.64	4.10	8.58	27.48
Forest	UK-Gri	S	11	10	20	0.22	76.89	6.84	-9.92	528.64	0.66	17.85	2.64	4.10	8.58	27.48
Forest	UK-Gri	S	11	50	5	0.22		13.99	-14.44	83.88	0.66	17.85	2.64	4.10	8.58	27.48
Forest	UK-Gri	S	11	50	10	0.22	136.70	41.15	-5.21	45.60	0.66	17.85	2.64	4.10	8.58	27.48

Forest	UK-Gri	S	17	80	10	0.19	121.76	15.07	-1.52	205.38	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	17	80	15	0.19	24.44		-0.04	240.99	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	17	80	20	0.19	3.12	16.07	-3.15	273.83	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	18	80	5	0.16	11.48	29.09	-5.56	168.92	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	18	80	10	0.16	75.84	13.73	-2.47	203.36	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	18	80	15	0.16	7.93	18.26	-6.91	206.34	0.66	17.85	2.34	3.15	15.69	67.56
Forest	UK-Gri	S	18	80	20	0.16	12.03	1.15	-5.06	353.46	0.66	17.85	2.34	3.15	15.69	67.56
Grassland	DK-Lva	S	1	10	5	1.17	-5.59	-0.38	6.09	48.05	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	10	10	1.17	-34.30	6.64	19.59	92.24	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	10	15	1.17	-71.40	9.09		102.84	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	10	20	1.17	3.02	7.03		90.65	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	30	5	1.16	113.73	21.50	-2.80	122.63	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	30	10	1.17	103.68	33.81	7.32	139.65	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	30	15	1.17	29.20	9.69	7.29	155.50	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	1	30	20	1.17	15.24	16.14	11.04	223.63	0.13	16.44	1.24	1.17	2.42	8.45
Grassland	DK-Lva	S	2	10	5	1.17	-13.30	2.73	-6.24	76.76	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	10	10	1.17	-28.48	7.88	12.81	79.52	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	10	15	1.17	-30.18	7.71	22.83	180.29	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	10	20	1.17	9.99	6.33		307.20	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	30	5	1.17	103.18	8.37	-2.38	158.07	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	30	10	1.17	-12.90	24.05	2.25	167.10	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	30	15	1.17	-14.50	-4.33	5.71	237.44	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	2	30	20	1.17	24.11	5.90	13.67	366.13	0.13	16.44	1.24	1.17	3.86	8.45
Grassland	DK-Lva	S	3	20	5	1.17	-23.70	6.28	-2.32	42.33	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	20	10	1.17	-89.99	16.46	9.95	59.86	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	20	15	1.17	-8.71	15.26	28.28	48.49	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	20	20	1.17	61.14	36.86		37.31	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	40	5	1.17	-24.02	17.95	0.17	149.77	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	40	10	1.17	5.72	3.29	0.21	136.18	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	40	15	1.17	25.92	6.08	8.62	168.85	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	3	40	20	1.17	25.74	11.49	12.87	312.92	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	10	5	1.18	-2.03	2.47	-2.92	38.22	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	10	10	1.18	-24.57	15.01	2.30	34.14	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	10	15	1.18	-18.12	45.51	16.56	58.37	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	10	20	1.18	40.54	30.19		49.78	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	30	5	1.18	4.49	5.26	-4.66	82.48	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	30	10	1.18	5.92	19.85	1.63	127.42	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	30	15	1.18	9.11	5.69	0.21	163.86	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	4	30	20	1.18	8.10	4.46	9.63	235.16	0.13	16.44	1.21	1.33	3.86	10.19
Grassland	DK-Lva	S	5	10	5	1.94	-5.21	4.04	-4.05	30.59	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	10	10	1.94	-33.00	-8.14	12.40	25.15	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	10	15	1.94	-30.95	66.32	28.75	63.76	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	10	20	1.94	-20.24	9.02		52.08	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	50	5	1.94	13.35	10.95	1.39	107.65	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	50	10	1.94	6.52	32.74	9.53	11.31	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	50	15	1.94	25.09	3.28	3.26	95.99	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	5	50	20	1.94	10.60	7.19	9.74	119.42	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	10	5	1.94	-1.37	6.34	-2.32	21.21	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	10	10	1.94	-57.15	3.50	5.21	32.17	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	10	15	1.94	-60.36	29.38	23.08	63.13	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	10	20	1.94	31.40	10.67		146.90	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	40	5	1.94	22.45	11.15	-5.47	55.87	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	40	10	1.94	-46.29	15.62	1.44	105.97	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	40	15	1.94	-5.39	10.31	2.27	110.81	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	6	40	20	1.94	3.71	3.23	9.95	220.83	0.13	16.44	2.36	1.40	7.32	10.14
Grassland	DK-Lva	S	7	20	5	1.29	-11.23	12.51	-3.05	16.02	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	20	10	1.29	9.52	4.94	6.56	26.14	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	20	15	1.29	-16.84	6.31	24.65	45.20	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	20	20	1.29	9.12	6.11		61.07	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	60	5	1.29	18.87	8.43	-0.21	169.14	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	60	10	1.29	-55.31	6.89	0.28	92.07	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	60	15	1.29	-1.59	5.29	7.08	135.99	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	7	60	20	1.29	19.38	87.66	8.02	158.51	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	20	5	1.23	-29.87	9.41	-5.15	9.62	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	20	10	1.23	-24.49	2.72	2.32	7.47	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	20	15	1.23	-35.92	13.90	16.93	54.47	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	20	20	1.23	15.98	-8.84	31.11	131.43	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	40	5	1.23	16.69	-9.09	-4.27	162.34	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	40	10	1.23	20.13	12.68	-2.70	61.59	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	40	15	1.23	-53.45	-7.80	6.61	89.29	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	8	40	20	1.23	23.15	7.75	-3.54	180.49	0.13	16.44	4.33	1.79	11.74	14.62
Grassland	DK-Lva	S	9	20	5	1.24	-37.55	-19.47	5.00	30.13	0.13	16.44	0.86	1.64	15.24	26.73
Grassland	DK-Lva	S	9	20	10	1.24	-32.65	13.52		21.89	0.13	16.44	0.86	1.64	15.24	26.73

Grassland	DK-Lva	S	12	60	10	1.23	4.25	4.38	-2.96	94.38	0.13	16.44	1.42	1.46	5.51	11.96
Grassland	DK-Lva	S	12	60	15	1.23	-1.51	0.58	4.89	118.41	0.13	16.44	1.42	1.46	5.51	11.96
Grassland	DK-Lva	S	12	60	20	1.23	10.62	18.75	-2.75	169.42	0.13	16.44	1.42	1.46	5.51	11.96
Grassland	DK-Lva	S	13	80	5	1.12	-14.38	13.78	5.64	62.23	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	13	80	10	1.12	12.72	59.95	-3.24	118.57	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	13	80	15	1.12	-26.73	78.96	-2.15	101.56	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	13	80	20	1.12	12.61	360.83	-3.24	120.54	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	14	80	5	1.09	-21.40	6.68	-0.15	121.74	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	14	80	10	1.09	38.21	22.37	-2.45	17.71	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	14	80	15	1.09	42.24	149.14	0.13	33.52	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	14	80	20	1.09	28.59	375.47	1.29	101.95	0.13	16.44	1.42	2.20	5.11	17.02
Grassland	DK-Lva	S	15	80	5	1.27	-10.82	7.75	-1.44	34.99	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	15	80	10	1.27	20.24	10.98	-3.48	102.26	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	15	80	15	1.27	33.46	6.34	0.21	70.32	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	15	80	20	1.27	15.98	45.79	-0.19	83.33	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	16	80	5	1.25	-25.33	22.06	-5.28	34.67	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	16	80	10	1.25	18.42	52.18	0.82	76.32	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	16	80	15	1.25	29.74	88.05	-0.39	52.83	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	16	80	20	1.25	-0.51	195.58	1.29	103.38	0.13	16.44	1.40	1.82	4.46	12.11
Grassland	DK-Lva	S	17	80	5	1.16	-25.74	44.79	-6.99	156.69	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	17	80	10	1.16	14.21	47.76	-3.33	134.91	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	17	80	15	1.16	-13.17	107.67	-5.32	95.99	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	17	80	20	1.16	3.78	194.65	0.73	147.79	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	18	80	5	1.17	-5.15	4.86	-7.98	74.04	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	18	80	10	1.17	7.37		-1.46	126.13	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	18	80	15	1.17	7.42	193.64	-0.32	90.39	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	DK-Lva	S	18	80	20	1.17	33.31	158.75	-1.54	126.06	0.13	16.44	2.44	1.58	11.72	10.49
Grassland	FI-Kaa	S	1	20	5	0.16	-46.69	0.94	-7.12	68.50	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	20	10	0.16	-27.04	-7.70	-2.26	125.45	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	20	15	0.16	5.83	0.01	-1.14	165.36	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	20	20	0.16			0.74	298.61	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	30	5	0.16	15.64	5.92	3.83	146.13	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	30	10	0.16	70.15	6.32	-3.86	165.51	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	30	15	0.16	12.51	-5.27	-0.57	180.17	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	1	30	20	0.16	38.07	22.50	0.80	196.61	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	20	5	0.13	19.09	5.80	-13.09	78.09	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	20	10	0.13	-17.62	-3.44	-4.66	110.55	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	20	15	0.13	1.17	0.40	-2.04	121.00	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	20	20	0.13			-0.45	188.75	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	40	5	0.13	20.32	0.89	1.63	89.49	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	40	10	0.13	-20.94	4.86	1.52	182.94	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	40	15	0.13	27.40	18.16	2.12	151.43	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	2	40	20	0.13	53.31	-13.41	3.37	162.80	2.11	312.63	11.52	7.41	6.97	4.54
Grassland	FI-Kaa	S	3	20	5	0.14	17.91	7.13	-15.23	116.31	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	20	10	0.14	-14.57	6.28	-6.56	150.07	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	20	15	0.14	22.14	9.05	-4.68	163.57	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	20	20	0.14			-2.72	213.09	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	30	5	0.14	38.95	-4.88	5.19	111.27	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	30	10	0.14	38.10	-8.14	-4.59	192.41	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	30	15	0.14	20.57	5.29	-0.34	217.39	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	3	30	20	0.14	50.70	8.14	0.75	248.19	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	20	5	0.16	17.90	6.04	-6.33	66.98	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	20	10	0.16	-14.87	13.59	-9.80	135.53	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	20	15	0.16	36.59	12.67	-5.90	139.23	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	20	20	0.16			-0.99	285.80	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	50	5	0.16	-1.97	4.32	1.50	117.73	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	50	10	0.16	6.64	-2.07	-1.52	124.88	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	50	15	0.16	21.89	1.65	0.28	187.15	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	4	50	20	0.16	22.07	38.38	1.89	151.87	2.11	312.63	8.34	19.60	4.67	3.63
Grassland	FI-Kaa	S	5	20	5	0.12	17.78	4.67	-4.05	47.22	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	20	10	0.12	8.22	-0.46	-2.57	56.14	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	20	15	0.12	11.87	1.25	1.93	161.60	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	20	20	0.12			2.06	110.24	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	30	5	0.12	27.32	-3.21	1.37	46.48	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	30	10	0.12	19.21	-1.72	0.26	112.21	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	30	15	0.12	-0.72	-5.70	4.12	116.24	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	5	30	20	0.12	-38.44	-1.66	5.32	108.90	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	20	5	0.14	13.36	2.37	-7.94	83.83	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	20	10	0.14	-22.62	1.53	-9.01	170.56	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	20	15	0.14			-4.48	167.03	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	20	20	0.14	73.67	5.12	-0.11	216.77	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	40	5	0.14	3.06	8.22		119.64	2.11	312.63	5.88	6.55	3.26	4.52
Grassland	FI-Kaa	S	6	40	10	0.14	11.05	9.36	-1.31	156.80	2.11	312.63	5.88	6.55	3.26	4.52

Grassland	FI-Kaa	S	10	50	5	0.16	18.43	18.97		56.90	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	10	0.16	21.28	21.24	-2.23	60.02	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	10	0.16	7.70	4.79	4.16	58.48	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	15	0.16	267.38	69.82	-0.71	58.94	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	15	0.16	177.20	11.14	3.35	86.53	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	20	0.16	35.39	7.64	0.15	74.63	2.11	312.63	90.41	53.22	12.50	19.09
Grassland	FI-Kaa	S	10	50	20	0.16	50.61	18.57	2.32	73.52	2.11	312.63	90.41	53.22	12.50	20.46
Grassland	FI-Kaa	S	11	40	5	0.13	0.37	2.85	-2.00	79.36	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	40	10	0.13	-23.20	-5.76	-1.16	74.67	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	40	15	0.13	75.78	10.02	2.40	106.19	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	40	20	0.13	-1.24	4.21	-3.09	71.98	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	60	5	0.13	0.32	10.17		48.08	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	60	10	0.13	6.35	6.85	-2.32	51.17	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	60	15	0.13	23.69	80.51	1.61	49.10	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	11	60	20	0.13	29.58	17.51	-0.06	64.24	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	5	0.14	12.02	-8.22		113.53	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	5	0.14	-3.67	9.87	3.50	138.22	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	10	0.14	45.84	17.39	-5.06	153.41	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	10	0.14	30.72	16.36	-2.38	127.81	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	15	0.14	5.37	52.78	-2.87	230.71	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	15	0.14	95.28	11.85	1.87	173.96	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	20	0.14	38.52	6.04	-2.57	202.99	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	12	50	20	0.14	10.88	5.63	2.64	233.32	2.11	312.63	92.74	53.25	9.24	20.46
Grassland	FI-Kaa	S	13	70	5	0.17	-9.51	7.22	-26.17	59.10	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	13	70	10	0.17	93.46	24.55	-2.81	46.23	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	13	70	15	0.17	-29.11		-3.35	57.71	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	13	70	20	0.17	32.39	11.13	0.43	81.55	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	14	70	5	0.17	-30.82	44.31	-23.86	78.62	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	14	70	10	0.17	39.66	-7.47	-6.82	86.81	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	14	70	15	0.17	51.39	15.31	-3.11	55.61	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	14	70	20	0.17	23.15	16.19	-4.81	97.60	2.11	312.63	119.64	98.04	15.33	13.13
Grassland	FI-Kaa	S	15	80	5	0.15	15.79	38.59	-26.24	36.79	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	15	80	10	0.15	49.72	14.06	-1.39	43.82	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	15	80	15	0.15	322.72	46.60	0.58	43.82	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	15	80	20	0.15	15.87	26.68	-3.45	77.70	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	16	70	5	0.21	15.59	23.25	-24.80	78.79	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	16	70	10	0.21	111.03	16.77	1.54	97.97	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	16	70	15	0.21	-36.66		0.34	137.74	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	16	70	20	0.21	37.38	6.91	2.90	177.82	2.11	312.63	118.62	125.57	20.07	21.20
Grassland	FI-Kaa	S	17	70	5	0.17	-10.71	9.91	-27.93	25.24	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	17	70	10	0.17	58.03	6.56	-6.82	30.63	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	17	70	15	0.17	30.17	73.21	-3.09	31.00	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	17	70	20	0.17	4.50		-2.15	45.80	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	18	80	5	0.14	131.90		-24.31	49.81	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	18	80	10	0.14			1.42	38.22	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	18	80	15	0.14			-2.45	38.04	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	FI-Kaa	S	18	80	20	0.14			-0.32	77.66	2.11	312.63	72.80	51.14	7.95	12.95
Grassland	IE-Dri	S	1	20	5	0.94	14.27		37.63	202.53	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	20	10	0.94	-8.18	12.87	167.37	196.02	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	20	15	0.94	-20.73	38.12	129.58	268.89	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	20	20	0.94	1.88	14.29	139.88	297.58	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	80	5	0.94	23.37	51.50	0.94	157.51	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	80	10	0.94	23.93	34.03	7.49	163.69	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	80	15	0.94	42.84	114.64	6.24	153.66	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	1	80	20	0.94	64.09	29.67	13.30	181.18	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	20	5	0.92	22.85		-1.82	174.95	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	20	10	0.92	-12.01	6.48	44.20	208.69	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	20	15	0.92	-17.23	15.55	51.85	257.01	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	20	20	0.92	14.23	12.45	91.03	367.94	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	70	5	0.92	-12.13	111.71	3.86	228.54	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	70	10	0.92	-12.42	14.91	1.07	263.07	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	70	15	0.92	15.41	37.03	11.99	322.80	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	2	70	20	0.92	95.08	55.42	6.59	387.25	0.70	76.97	8.25	2.87	5.18	5.30
Grassland	IE-Dri	S	3	30	5	0.78	12.32		-11.03	286.39	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	30	10	0.78	-28.48	18.24	20.38	285.49	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	30	15	0.78	-19.71	6.87	24.24	474.50	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	30	20	0.78	27.89	26.32	35.55	539.84	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	80	5	0.78	39.16	67.65	-5.30	186.73	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	80	10	0.78	40.11		2.92	148.19	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	80	15	0.78	65.67	34.88	0.69	269.41	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	3	80	20	0.78	102.85	-9.06	0.73	364.61	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	4	10	5	0.89	2.87		37.63	202.53	0.70	76.97	12.03	2.39	2.78	8.20
Grassland	IE-Dri	S	4	10	10	0.89	-26.68	17.71	160.86	287.72	0.70	76.97	12.03	2.39	2.78	8.20

Grassland	IE-Dri	S	7	50	10	0.76	33.10	3.78	3.95	261.41	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	7	50	15	0.76	3.32		3.41	333.21	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	7	50	20	0.76	26.96	39.65	3.65	442.58	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	50	5	0.79	1.05		2.90	169.36	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	50	10	0.79	5.51	11.56	38.27	498.80	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	50	15	0.79	-19.59	14.56	21.82	478.27	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	50	20	0.79	6.64	27.30	27.38	408.50	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	80	5	0.79	10.93	4.03	0.75	320.61	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	80	10	0.79	11.55	13.53	2.30	397.74	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	80	15	0.79	23.77	40.96	3.58	483.22	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	8	80	20	0.79	63.96	94.55	4.83	691.03	0.70	76.97	5.68	3.48	4.65	13.12
Grassland	IE-Dri	S	9	40	5	0.93	-2.94		45.93	473.60	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	40	10	0.93	4.54	13.53	83.03	412.01	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	40	15	0.93	-52.84	-11.88	102.68	508.93	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	40	20	0.93	22.68	23.10	149.98	865.36	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	70	5	0.93	8.81	100.66	0.00	286.10	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	70	10	0.93	9.31	45.21	0.69	360.28	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	70	15	0.93	43.72	98.81	0.54	483.27	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	9	70	20	0.93	45.92		-4.48	586.23	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	30	5	0.89	21.33		15.79	542.97	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	30	10	0.89	30.66		17.08	299.38	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	30	15	0.89	-86.72		7.32	299.62	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	30	20	0.89	17.18		24.95	523.67	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	50	5	0.89	14.91	53.76	-0.97	152.79	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	50	10	0.89	15.77		-1.52	195.12	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	50	15	0.89	25.37	46.15	-2.77	255.52	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	10	50	20	0.89	184.12	18.94	3.50	421.52	0.70	76.97	10.45	4.28	3.37	13.09
Grassland	IE-Dri	S	11	20	5	1.15	23.39		72.81	385.72	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	20	10	1.15	-15.14	9.20	135.65	350.57	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	20	15	1.15	-8.81	8.35	223.64	486.20	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	20	20	1.15	-89.65	-19.33	229.19	672.32	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	90	5	1.15	35.47	52.80	-3.33	257.60	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	90	10	1.15	37.50	34.10	-4.27	244.75	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	90	15	1.15	39.88	69.23	-3.82	333.91	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	11	90	20	1.15	115.12	41.31	5.43	534.36	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	20	5	1.11	8.66		36.45	149.26	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	20	10	1.11	31.50	21.19	66.72	167.39	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	20	15	1.11	-43.44	16.03	80.09	213.58	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	20	20	1.11	-20.36	11.37	124.35	332.12	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	60	5	1.11	44.15	31.66	-2.27	139.12	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	60	10	1.11	46.67	18.37	1.95	164.89	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	60	15	1.11	38.19	-20.76	7.51	244.97	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	12	60	20	1.11	18.28	-12.47	8.45	363.71	0.70	76.97	7.32	3.57	3.29	11.92
Grassland	IE-Dri	S	13	60	5	1.09	-58.75	159.10	-5.84	190.37	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	13	60	10	1.09	40.42	18.30	-1.22	185.88	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	13	60	15	1.09	19.56	14.00	-4.91	230.16	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	13	60	20	1.09	87.62	35.18	-0.19	323.97	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	14	20	5	1.03	-16.35	46.50	-2.00	23.90	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	14	70	10	1.03	-5.98	26.94	-1.52	226.53	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	14	70	15	1.03	7.81	14.49	0.19	174.90	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	14	70	20	1.03	56.18	3.75	0.94	340.71	0.70	76.97	11.57	5.39	3.62	3.55
Grassland	IE-Dri	S	15	60	5	0.85	5.57	39.74	-6.97	97.51	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	15	60	10	0.85	14.90	39.74	-8.54	99.31	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	15	60	15	0.85	4.14	20.99	0.13	123.26	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	15	60	20	0.85	9.47	-9.09	-2.64	143.74	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	16	80	5	0.93	-33.60	38.99	-3.97	111.75	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	16	80	10	0.93	29.20		-1.57	122.49	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	16	80	15	0.93	4.34	2.44	-0.13	167.98	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	16	80	20	0.93	51.32	24.72	4.01	232.14	0.70	76.97	9.01	4.53	3.44	5.14
Grassland	IE-Dri	S	17	70	5	0.84	-11.75		-1.16	152.37	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	17	70	10	0.84	9.67	18.47	-2.47	103.49	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	17	70	15	0.84	11.69	40.06	-2.15	212.61	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	17	70	20	0.84	15.82	35.63	1.37	308.67	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	18	70	5	0.90	-3.09	28.78	-1.16	129.32	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	18	70	10	0.90	21.98	58.41	-4.70	123.04	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	18	70	15	0.90	-6.08	13.96	-0.11	187.43	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	IE-Dri	S	18	70	20	0.90	59.46	26.35	-2.10	201.35	0.70	76.97	8.60	4.85	5.10	4.63
Grassland	NL-Cab	S	1	40	5	0.54	-9.44	31.24		221.94	1.17	157.88	8.83	18.49	2.02	11.45
Grassland	NL-Cab	S	1	40	10	0.54	-23.70	17.43	71.48	240.57	1.17	157.88	8.83	18.49	2.02	11.45
Grassland	NL-Cab	S	1	40	15	0.54	12.87	8.67	103.61	234.38	1.17	157.88	8.83	18.49	2.02	11.45
Grassland	NL-Cab	S	1	40	20	0.54	-72.57	27.81	138.82	102.62	1.17	157.88	8.83	18.49	2.02	11.45
Grassland	NL-Cab	S	1	100	5	0.54	-15.71	86.97	-3.69	73.43	1.17	157.88	8.83	18.49	2.02	11.45
Grassland	NL-Cab	S	1	100	10	0.54		19.32	-0.60	62.18	1.17	157.88	8.83	18.49	2.02	11.45

Grassland	NL-Cab	S	5	40	10	0.59	-6.96	2.99	22.40	104.72	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	40	15	0.59	-59.28	7.08	18.17	64.86	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	40	20	0.59	-23.11	19.61	40.81	111.46	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	100	5	0.59	-10.44	80.37	-0.60	61.00	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	100	10	0.59		98.10	-0.43	98.01	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	100	15	0.59	-16.23	208.93	8.15	69.24	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	5	100	20	0.59	-23.16	192.38	11.24	76.67	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	40	5	0.53	7.81	20.59		427.78	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	40	10	0.53	-31.30	14.20	84.23	367.89	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	40	15	0.53	-12.71	10.36	124.82	308.69	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	40	20	0.53	-122.44	8.80	123.94	225.58	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	100	5	0.53	-26.37	28.58	1.89	71.74	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	100	10	0.53		54.77	-1.72	102.35	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	100	15	0.53	-8.16	73.06	7.55	33.70	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	6	100	20	0.53	41.31	43.97	-1.20	96.02	1.17	157.88	12.02	15.51	1.40	20.05
Grassland	NL-Cab	S	7	50	5	0.67	-16.85	34.88		403.73	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	50	10	0.67	-15.12	21.64	148.91	227.11	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	50	15	0.67	-17.62	33.48		209.28	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	50	20	0.67	-41.54	38.97		239.65	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	100	5	0.67	-30.14		2.23	150.03	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	100	10	0.67		468.96	-0.77	127.07	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	100	15	0.67	-11.83	1323.17	4.46	132.08	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	7	100	20	0.67	79.16	2077.22	9.44	162.32	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	60	5	0.59	-59.24	26.06	43.62	585.86	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	60	10	0.59	-17.77	45.46	62.26	305.50	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	60	15	0.59	-40.90	21.83	100.19	219.73	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	60	20	0.59	-49.39	51.73	121.75	350.42	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	100	5	0.59	3.93	63.14	-0.34	75.57	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	100	10	0.59		36.22	3.69	89.84	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	100	15	0.59	44.64	102.55	12.79	87.49	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	8	100	20	0.59	3.99	58.20	0.09	106.47	1.17	157.88	73.54	63.86	1.95	43.06
Grassland	NL-Cab	S	9	60	5	0.59	-36.95	23.03	96.91	872.79	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	60	10	0.59	-60.39	27.24	69.08	384.24	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	60	15	0.59	-23.77	20.73	159.70	608.19	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	60	20	0.59	-30.74	62.37		680.93	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	100	5	0.59	-29.89	-4.77	-2.23	16.33	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	100	10	0.59		25.75	0.94	120.30	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	100	15	0.59	-109.49	22.97	13.82	93.45	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	9	100	20	0.59	-25.65	13.80	-1.20	132.00	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	60	5	0.55	-25.71	45.48	82.28	1318.65	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	60	10	0.55	-24.77	60.02	90.15	818.94	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	60	15	0.55	-29.02	54.74	153.65	657.95	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	60	20	0.55	-82.69	101.14		726.47	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	100	5	0.55	-93.27	-27.16	-0.26	163.64	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	100	10	0.55		20.97	-0.26	83.29	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	100	15	0.55	0.82	20.12	12.79	93.67	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	10	100	20	0.55	4.24	14.78	-5.66	163.94	1.17	157.88	89.85	14.91	1.53	36.89
Grassland	NL-Cab	S	11	50	5	0.69	-72.63	12.16	0.90	136.51	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	50	10	0.69	-37.02	5.08	-0.30	124.26	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	50	15	0.69	-38.52	15.63	2.36	193.77	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	50	20	0.69	-86.11	12.20	3.24	281.06	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	100	5	0.69	-14.48	2.43	1.63	100.29	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	100	10	0.69		51.76	-6.26	84.98	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	100	15	0.69	-5.83	24.49	6.26	62.91	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	11	100	20	0.69	-32.65	25.97	-1.29	100.22	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	60	5	0.67	-15.79	6.15	11.84	198.24	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	60	10	0.67	1.68	-5.54	10.45	79.62	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	60	15	0.67	-24.49	6.79	17.64	74.96	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	60	20	0.67	-82.11	5.23	28.86	90.45	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	100	5	0.67	14.66	-6.52	0.77	122.14	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	100	10	0.67		41.99	3.69	90.94	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	100	15	0.67	-29.20	40.53	9.53	84.25	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	12	100	20	0.67	-64.72	6.26	-2.49	87.49	1.17	157.88	8.11	6.52	1.66	6.64
Grassland	NL-Cab	S	13	80	5	0.54	-11.48	79.08	79.32	690.67	1.17	157.88				
Grassland	NL-Cab	S	13	80	10	0.54	-30.69	122.08	80.97	435.26	1.17	157.88				
Grassland	NL-Cab	S	13	80	15	0.54	-30.91	228.63		431.57	1.17	157.88				
Grassland	NL-Cab	S	13	80	20	0.54	-36.54	499.13		638.77	1.17	157.88				
Grassland	NL-Cab	S	13	100	5	0.54	-15.95		-4.59	76.38	1.17	157.88	14.97	9.81	1.43	50.84
Grassland	NL-Cab	S	13	100	5	0.54	-9.82	42.58	4.46	101.03	1.17	157.88	14.97	9.81	1.43	50.84
Grassland	NL-Cab	S	13	100	10	0.54	-128.56		8.13	78.91	1.17	157.88	14.97	9.81	1.43	50.84
Grassland	NL-Cab	S	13	100	10	0.54	-14.22	41.12	17.91	254.56	1.17	157.88	14.97	9.81	1.43	50.84
Grassland	NL-Cab	S	13	100	15	0.54	-11.38		18.28	241.67	1.17	157.88	14.97	9.81	1.43	50.84
Grassland	NL-Cab	S	13	100	15	0.54	2.28	91.06	-5.49	43.88	1.17	157.88	14.97	9.81	1.43	50.84

Grassland	NL-Cab	S	16	80	10	0.56	-45.43	32.57	35.55	512.28	1.17	157.88				
Grassland	NL-Cab	S	16	80	15	0.56	-20.34	61.83	63.91	597.03	1.17	157.88				
Grassland	NL-Cab	S	16	80	20	0.56	-40.80	99.10	83.33	794.70	1.17	157.88				
Grassland	NL-Cab	S	16	100	5	0.56	-26.23		-5.60	147.38	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	5	0.56	8.29	11.25	-10.81	79.47	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	10	0.56	-13.87		7.36	178.65	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	10	0.56	-101.85	17.00	-2.23	25.46	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	15	0.56	-32.50		14.14	294.08	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	15	0.56	-10.83	19.57	-1.22	7.10	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	20	0.56	-0.80		15.64	341.71	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	16	100	20	0.56	-39.12	28.86	1.82	173.06	1.17	157.88	11.06	16.08	0.93	23.20
Grassland	NL-Cab	S	17	70	5	0.57	-63.22	377.39	11.91	677.09	1.17	157.88				
Grassland	NL-Cab	S	17	70	10	0.57	-73.80	222.22	13.39	525.75	1.17	157.88				
Grassland	NL-Cab	S	17	70	15	0.57	-25.88	461.01	16.52	724.84	1.17	157.88				
Grassland	NL-Cab	S	17	70	20	0.57	-28.87	644.43	21.71	763.61	1.17	157.88				
Grassland	NL-Cab	S	17	90	5	0.57	-30.67	366.40	-9.50	132.26	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	5	0.57	-71.03	4.09	-4.66	15.45	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	10	0.57	-54.12	812.79	-0.30	279.16	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	10	0.57	-19.79	8.48	-0.19	22.52	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	15	0.57	9.67	348.38	1.85	263.71	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	15	0.57	-19.27	16.59	-4.33	13.63	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	20	0.57	32.16	608.57	-0.13	472.29	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	17	90	20	0.57	-93.31	32.44	0.64	114.47	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	70	5	0.61	7.51	80.93	18.79	502.00	1.17	157.88				
Grassland	NL-Cab	S	18	70	10	0.61	-47.16	36.78	46.28	469.83	1.17	157.88				
Grassland	NL-Cab	S	18	70	15	0.61	-18.48	96.40	75.43	505.94	1.17	157.88				
Grassland	NL-Cab	S	18	70	20	0.61	-3.72	323.76	97.21	635.68	1.17	157.88				
Grassland	NL-Cab	S	18	90	5	0.61	-24.31		-9.98	96.96	1.17	157.88				
Grassland	NL-Cab	S	18	90	10	0.61	-9.42		10.34	152.53	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	90	15	0.61	-21.73		11.97	288.18	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	90	20	0.61	-23.33		20.83	315.97	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	100	5	0.61	-117.70	37.63	-0.79	15.91	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	100	10	0.61	-18.20	31.89	-0.79	22.98	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	100	15	0.61	14.01	77.85	-4.55	28.07	1.17	157.88	12.77	6.21	0.65	28.97
Grassland	NL-Cab	S	18	100	20	0.61	-15.11	138.78	3.00	98.84	1.17	157.88	12.77	6.21	0.65	28.97
Wetland	PL-wet	S	1	20	5	0.12	-38.38	11.66		596.51	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	20	10	0.12	-59.96	-30.21		608.56	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	20	15	0.12	-0.72			1028.50	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	20	20	0.12	-43.63	34.29		1453.87	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	90	5	0.12	383.62	22.74	1.26	507.85	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	90	10	0.12	732.40	11.14	-3.38	428.70	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	90	15	0.12	1118.77	7.80	-1.20	441.75	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	1	90	20	0.12	1261.92	42.93	-2.43	444.94	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	20	5	0.10	-54.58	13.93		655.29	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	20	10	0.10	-34.55	-3.45		504.87	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	20	15	0.10	-0.37			564.98	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	20	20	0.10	-62.28	-11.94		990.74	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	80	5	0.10	63.11	119.26	-0.19	643.86	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	80	10	0.10	63.46	6.76	-0.41	383.08	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	80	15	0.10	126.24	1.70	-3.67	268.57	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	2	80	20	0.10	244.96	46.95	-1.95	254.37	1.17	215.95	314.47	366.79	65.64	36.79
Wetland	PL-wet	S	3	20	5	0.08	-4.80	16.25	-5.66	528.73	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	20	10	0.08	-12.71	-6.15	-5.32	308.58	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	20	15	0.08	-0.25		-2.30	537.04	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	20	20	0.08	-26.71		0.88	652.97	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	60	5	0.08	156.11	8.86	-3.99	577.09	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	60	10	0.08	122.29	4.20	-3.00	420.34	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	60	15	0.08	97.22	7.43	0.79	341.25	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	3	60	20	0.08	194.85	51.33	-4.08	331.66	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	20	5	0.11	-29.86	3.84	-8.54	728.45	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	20	10	0.11	-215.77		-3.82	426.03	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	20	15	0.11	-0.36		-1.20	675.02	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	20	20	0.11	-6.62		-2.27	878.95	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	60	5	0.11	-32.59	4.07	-3.69	766.13	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	60	10	0.11	7.42	8.94	-4.72	504.72	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	60	15	0.11	-2.09	7.23	2.68	407.12	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	4	60	20	0.11	127.29	57.68	-6.52	328.00	1.17	215.95	218.54	286.54	57.74	38.46
Wetland	PL-wet	S	5	20	5	0.10	-21.10	6.55	-4.91	553.92	1.17	215.95	303.94	108.04	13.41	7.18
Wetland	PL-wet	S	5	20	10	0.10	-26.78	-7.97	-9.31	322.92	1.17	215.95	303.94	108.04	13.41	7.18
Wetland	PL-wet	S	5	20	15	0.10	-0.35		-1.87	528.03	1.17	215.95	303.94	108.04	13.41	7.18
Wetland	PL-wet	S	5	20	20	0.10	-19.65		2.57	662.94	1.17	215.95	303.94	108.04	13.41	7.18
Wetland	PL-wet	S	5	60	5	0.10	-32.76	3.32	-5.04	295.46	1.17	215.95	303.94	108.04	13.41	7.18
Wetland	PL-wet	S	5	60	10	0.10	9.93	0.10	-4.91	200.27	1.17	215.95	303.94	108.04	13.41	7.18

Wetland	PL-wet	S	9	40	10	0.09	1.59	-2.96	-0.54	125.84	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	40	15	0.09	16.24	2.36	0.90	124.79	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	40	20	0.09	21.33	10.84	-2.25	178.36	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	60	5	0.09	-34.99	10.05	-3.26	144.07	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	60	10	0.09	-11.32	10.68	-1.74	128.76	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	60	15	0.09	96.65	3.03	2.83	87.25	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	9	60	20	0.09	132.09	94.29	-3.65	115.28	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	40	5	0.10	-14.38	6.10	-5.90	114.07	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	40	10	0.10	8.85	8.43	-3.60	170.67	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	40	15	0.10	23.67	14.51	-8.00	274.31	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	40	20	0.10	14.03	8.44	-1.31	358.41	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	60	5	0.10	5.47	7.13	-2.19	149.37	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	60	10	0.10	7.42	5.17	-5.90	160.83	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	60	15	0.10	26.66	5.37	-0.39	219.97	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	10	60	20	0.10	156.49	102.28	-1.05	265.94	1.17	215.95	73.41	37.08	10.44	28.08
Wetland	PL-wet	S	11	40	5	0.08	-15.29	3.62	-2.51	4.84	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	40	10	0.08	-34.55	3.51	-2.47	57.15	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	40	15	0.08	-11.71	-7.55	-3.33	190.57	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	40	20	0.08	18.63	4.30	1.22	85.13	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	60	5	0.08	58.15	4.43	-1.65	157.39	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	60	10	0.08	21.86	4.49	-3.35	94.44	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	60	15	0.08	-4.80	10.51	-1.50	135.81	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	11	60	20	0.08	171.94	98.93	1.85	246.09	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	40	5	0.09	-50.09	10.26	-5.36	51.32	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	40	10	0.09	-42.07	21.76	-8.47	135.11	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	40	15	0.09	110.98	-8.86	3.33	137.28	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	40	20	0.09	291.86	6.33	-1.72	200.76	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	80	5	0.09	5.04	3.08	-2.38	116.15	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	80	10	0.09	6.16	7.54	0.09	79.48	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	80	15	0.09	14.43	17.29	1.31	90.52	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	12	80	20	0.09	135.77	87.83	-1.85	82.30	1.17	215.95	88.06	52.53	13.06	23.43
Wetland	PL-wet	S	13	60	5	0.08	-22.04	4.53	-3.97	50.18	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	13	60	10	0.08	-18.74	10.20	-2.10	89.42	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	13	60	15	0.08	9.63	4.08	4.12	208.18	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	13	60	20	0.08	-34.17	8.71	-2.47	187.67	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	14	60	5	0.08	-29.93	4.16	-4.85	80.92	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	14	60	10	0.08	-11.38	5.43	-5.04	99.31	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	14	60	15	0.08	36.27	5.85	-0.02	125.34	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	14	60	20	0.08	-74.82	6.76	-2.49	190.26	1.17	215.95	122.26	82.64	52.05	25.52
Wetland	PL-wet	S	15	60	5	0.08	-175.12		-4.66	66.61	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	15	60	10	0.08	-20.15	1.30	-5.38	116.73	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	15	60	15	0.08	37.47	0.86	-1.20	153.47	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	15	60	20	0.08	-4.32	24.60	-5.28	193.75	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	16	60	5	0.07	-28.64	5.25	-4.76	54.28	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	16	60	10	0.07	-37.55	3.28	-2.64	86.82	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	16	60	15	0.07	-25.79	8.19	-7.72	113.92	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	16	60	20	0.07	-38.06	7.96	-4.68	146.30	1.17	215.95	111.17	50.70	74.32	16.35
Wetland	PL-wet	S	17	60	5	0.08	-62.30	2.88	-3.00	47.50	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	17	60	10	0.08	-52.95	7.76	-5.00	93.23	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	17	60	15	0.08	-31.73	12.80	-0.09	114.32	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	17	60	20	0.08	-44.82	7.83	-0.36	176.61	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	18	60	5	0.08	-24.47	2.25	-3.11	127.66	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	18	60	10	0.08	-13.78	9.14	-0.84	159.67	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	18	60	15	0.08	13.98	1.24	-2.27	155.36	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	PL-wet	S	18	60	20	0.08	-42.12	3.81	-6.72	233.38	1.17	215.95	130.81	82.99	47.34	17.34
Wetland	RU-Fyo	S	1	20	5	0.13	-8.92	2.86	-17.94	114.53	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	20	10	0.13	-6.52	1.52	-8.39	152.44	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	20	15	0.13	-14.10		-4.46	211.41	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	20	20	0.13	-40.64	-6.36	-8.11	310.77	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	80	5	0.13	-20.66	22.85	-4.95	124.77	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	80	10	0.13	-7.70	18.07	0.97	129.26	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	80	15	0.13	-14.10	15.61	5.49	229.89	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	1	80	20	0.13	-19.97	17.71	3.46	268.67	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	20	5	0.16	-41.78	12.07	-14.57	140.92	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	20	10	0.16	-36.44	7.73	-5.32	200.41	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	20	15	0.16	-50.72	7.09	-1.12	205.60	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	20	20	0.16	-94.34	-6.25	-3.90	335.34	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	80	5	0.16	-18.54	10.93	-7.70	190.88	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	80	10	0.16	-28.35	7.05	-6.20	163.11	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	80	15	0.16	-50.72	2.07	2.49	315.84	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	2	80	20	0.16	-7.29	5.59	4.08	411.66	1.73	222.82	3.54	56.10	85.25	7.65
Wetland	RU-Fyo	S	3	20	5	0.17	-0.10	3.74	-21.20	146.39	1.73	222.82	4.96	21.28	169.80	8.92
Wetland	RU-Fyo	S	3	20	10	0.17	-16.74	0.39	-3.65	199.46	1.73	222.82	4.96	21.28	169.80	8.92

Wetland	RU-Fyo	S	6	90	10	0.13	-49.93	5.68	-9.01	93.52	1.73	222.82	4.93	9.00	111.24	10.77
Wetland	RU-Fyo	S	6	90	15	0.13	-20.82	0.04	-0.92	202.71	1.73	222.82	4.93	9.00	111.24	10.77
Wetland	RU-Fyo	S	6	90	20	0.13	-62.37	-1.20	1.52	239.67	1.73	222.82	4.93	9.00	111.24	10.77
Wetland	RU-Fyo	S	7	40	5	0.16	-3.40		-18.05	282.15	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	40	10	0.16	-17.18		-9.70	219.56	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	40	15	0.16	-31.01				1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	40	20	0.16	-3.62			327.53	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	80	5	0.16	-9.03	-4.22	-1.29	85.00	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	80	10	0.16	-37.64	4.86	-3.67	120.86	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	80	15	0.16	-31.01	-3.17	-2.00	233.49	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	7	80	20	0.16	-12.49	21.75	-0.04	322.04	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	40	5	0.16	-0.59	-2.08			1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	40	10	0.16	-4.69	13.72	-15.34	405.94	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	40	15	0.16	-9.75	8.99			1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	40	20	0.16	-68.94	21.80		626.86	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	80	5	0.16	-20.66	9.43	-4.12	0.72	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	80	10	0.16	-70.57	-3.23	-5.32	19.61	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	80	15	0.16	-9.75	12.58	-0.02	137.47	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	8	80	20	0.16	-0.91	0.80	1.57	245.32	1.73	222.82	2.11	3.90	65.22	8.97
Wetland	RU-Fyo	S	9	40	5	0.16	-5.94	1.91		181.98	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	40	10	0.16	-9.28	3.62	-21.37	289.35	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	40	15	0.16	-56.05	-4.20			1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	40	20	0.16	-173.47	5.18		667.15	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	90	5	0.16	-42.62	15.45	-3.90	129.61	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	90	10	0.16	-9.68	9.94	-4.85	141.81	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	90	15	0.16	-56.05	7.63	-2.23	29.95	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	9	90	20	0.16	-18.65	-3.39	0.39	44.98	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	50	5	0.15	-5.99	16.43		100.49	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	50	10	0.15	-1.95	6.23	-18.84	153.52	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	50	15	0.15	-0.81	6.53			1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	50	20	0.15	-116.07	5.79		294.06	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	90	5	0.15	-8.54	6.15	-6.03	104.06	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	90	10	0.15	-27.95	13.15	-8.02	139.67	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	90	15	0.15	-0.81	6.59	-1.59	262.70	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	10	90	20	0.15	-9.84	0.05	0.32	356.02	1.73	222.82	7.39	6.55	142.66	9.12
Wetland	RU-Fyo	S	11	40	5	0.14	-9.21		-8.92	159.63	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	40	10	0.14	-15.11	-6.43	-6.61	87.58	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	40	15	0.14	-57.74	-6.25			1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	40	20	0.14	-63.85	-4.29		75.46	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	100	5	0.14	-13.42	2.16	1.33	73.49	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	100	10	0.14	-8.64	11.70	-3.60	59.71	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	100	15	0.14	-57.74	-6.27	3.37	101.30	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	11	100	20	0.14	-8.78	8.21	0.79	135.55	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	40	5	0.13	-5.21	20.05	-20.77	371.25	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	40	10	0.13	-7.71	9.67	-15.40	198.35	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	40	15	0.13	-24.33	5.92			1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	40	20	0.13	-74.51	6.12		424.83	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	90	5	0.13	-22.27	1.71	-4.87	131.45	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	90	10	0.13	-24.33	0.97	-4.23	81.55	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	90	15	0.13	-14.23	8.39	1.52	211.36	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	12	90	20	0.13	-4.04	-2.90		324.91	1.73	222.82	3.83	5.56	57.22	5.96
Wetland	RU-Fyo	S	13	60	5	0.16	-4.12	10.59	-8.80	367.11	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	13	60	10	0.16	11.19	-4.84	-6.56	103.40	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	13	60	15	0.16	-9.80				1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	13	60	20	0.16	-127.64	4.43	-15.70	235.77	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	14	60	5	0.17	-32.23	36.07	-9.33	332.73	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	14	60	10	0.17	-69.25	23.62	-9.57	173.81	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	14	60	15	0.17	-154.34	19.45			1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	14	60	20	0.17	-138.96	5.61	-23.81	508.75	1.73	222.82	3.26	13.90	63.97	17.78
Wetland	RU-Fyo	S	15	60	5	0.17	-4.67	9.53	2.87	78.77	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	15	60	10	0.17	-9.52	6.45	-4.74	367.00	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	15	60	15	0.17	-28.32	-6.73			1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	15	60	20	0.17	-21.58	6.63	-12.06	568.17	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	16	60	5	0.14	-72.21	19.66	-13.15	361.41	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	16	60	10	0.14	-91.35	30.55	-12.68	273.98	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	16	60	15	0.14	42.19	10.28			1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	16	60	20	0.14	-42.39	3.42	-23.92	459.82	1.73	222.82	2.39	6.25	110.83	15.69
Wetland	RU-Fyo	S	17	60	5	0.14	-22.54		-19.61	99.26	1.73	222.82	15.55	11.99	40.48	17.24
Wetland	RU-Fyo	S	17	60	10	0.14		9.04	-7.59	147.66	1.73	222.82	15.55	11.99	40.48	17.24
Wetland	RU-Fyo	S	17	60	15	0.14	-32.29	2.07			1.73	222.82	15.55	11.99	40.48	17.24
Wetland	RU-Fyo	S	17	60	20	0.14	-43.96			305.08	1.73	222.82	15.55	11.99	40.48	17.24
Wetland	RU-Fyo	S	18	60	5	0.15	-6.20	8.49	-0.26	332.38	1.73	222.82	15.55	11.99	40.48	17.24
Wetland	RU-Fyo	S	18	60	10	0.15	-7.35	9.87	-6.41	161.27	1.73	222.82	15.55	11.99	40.48	17.24

LEBENSLAUF

Name	**Denise Maria Wagner**

Allgemeines

Geburtsdatum:	14.02.1980
Geburtsort:	Wr. Neustadt
Familienstand:	ledig

Ausbildung

Volksschule Forchtenstein	1986-1990
Gymnasium Mattersburg	1990-1994
HLA für wirtschaftliche Berufe Wr. Neustadt, mit Matura abgeschlossen	1994-2000
Universität Wien	seit WS 2001

Diplomstudium „Theoretische und Angewandte Geographie“ am Institut für Geographie und Regionalforschung mit Schwerpunktsetzung „Landschaftsökologie und Naturraumanalyse“

Praxis und Arbeitserfahrung

- Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft, Wien — Juli 08 – Sept. 08
  Abteilung: Waldökologie und Boden/ Bodenbiologie
  Praktikum im Ausmaß von 240 Stunden
  Freilandaufnahmen, Messungen von Treibhausgasen, Bestimmung von Ammonium und Nitrat, Datenauswertung

- Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft, Wien — Juli 09 – Sept. 09
  Abteilung: Waldökologie und Boden/ Bodenbiologie
  Projektmitarbeiterin im Ausmaß von 40 Stunden/ Woche
  Freilandaufnahmen, Messungen von Treibhausgasen, Bestimmung von Ammonium und Nitrat, Datenauswertung