

Modelling the hydrological impacts of catchment land use change on a valley peatland in the French Massif Central

Supplementary Materials

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Table 1. Literature review of crop coefficient values used in hydrological modelling or measured in contexts similar to the Dauges catchment.

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
Evergreen needle-leaved woodland							
conifer trees	max 10m high, well watered large forests	1	1	1	FAO tabulated value	subhumid climate	Allen et al. (1998)
conifer forest		1.01-1.34	1.29-1.38		ET (remote-sensing) / ETref FAO Penman-Monteith	southern Spain	Andreu et al. (2012)
<i>Pinus sylvestris</i>		0.71	0.97		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Belgium	Verstraeten et al. (2005)
<i>Pinus sylvestris</i>		1.07-1.17	1.13-1.18		ET Penman-Monteith/ETref FAO Penman-Monteith	Belgium	Meiresonne et al. (2003)
<i>Pinus sylvestris</i>			0.74		Tpot / ETref Penman grass (β parameter of HYLUC model calibrated against observed soil moisture)	Cairngorms, Scotland	Haria and Price (2000)
<i>Picea abies</i> plantation		0.7	1.1		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Denmark	Salazar et al. (2013)
<i>Picea abies</i> plantation			0.9		T (lysimetry) / ETref Penman grass	Plynlimon, UK	Calder (2003)
<i>Picea abies</i> plantation	29 year-old, 2343 stems/ha		0.7		T (sap flow) / ETref in the absence of water stress	Vosges, France	Biron (1994)
<i>Pseudotsuga menziesii</i> plantation		0.85	0.95		T (calibrated value from soil water balance model) / (ETref Makkink)	Belgium	Tiktak and Bouten (1994)
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 535 stems/ha		0.75		ET (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 1030 stems/ha		0.92		ET (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 2229 stems/ha		0.92		ET (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	11 year-old, 3086 stems/ha		0.94		ET (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 535 stems/ha		0.50		T (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 1030 stems/ha		0.63		T (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat, 1980)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
<i>Pseudotsuga menziesii</i> plantation	23 year-old, 2229 stems/ha		0.61		T (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i> plantation	11 year-old, 3086 stems/ha		0.72		T (water balance) / ETref Brochet Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
Deciduous broad-leaved woodland							
<i>Fagus sylvatica</i>		0.78	0.9		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Belgium	Verstraeten et al. (2005)
<i>Fagus sylvatica</i>	80 year old, 743 stems/ha		0.91		ET (water balance) / ETref Brochet-Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Fagus sylvatica</i>	80 year old, 743 stems/ha		0.76		T (water balance) / ETref Brochet-Gerbier	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Fagus sylvatica</i>	>80 year old, LAI=5		0.65		ET / ETref FAO Penman-Monteith – value from soil water balance model calibrated against observed ET (eddy covariance).	Denmark	Boegh et al. (2009)
<i>Fagus sylvatica</i>	120 year-old, 429 stems/ha		0.8		T (sap flow) / ETref in the absence of water stress	Vosges, France	Biron (1994)
<i>Fagus sylvatica</i> & <i>Quercus</i> <i>robur</i>		0.45	0.95		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Belgium	Verstraeten et al. (2005)
<i>Fagus sylvatica</i> & <i>Quercus</i> <i>robur</i>			0.61 (annual)		long-term ET (lysimetry)/ETref Penman	Germany	Harsch et al. (2009)
<i>Quercus petraea</i>	120 year old, LAI=4.38		0.83		ET (water balance) / ETref Penman-Van Bavel in the absence of water stress	Fontainebleau, France	Nizinski and Saugier (1989)
<i>Quercus petraea</i>		0 (before bud break)	0.8 (end of June)		T (soil water balance) / ETref Penman in the absence of water stress	Fontainebleau & Orsay, France	Nizinski et al. (1989)
<i>Quercus petraea</i>			0.8		T (sap flow)/ETref Penman in the absence of water stress	France	Bréda and Granier (1996)
<i>Quercus petraea</i>	32 year-old, LAI=6, 3644 stems/ha		0.6-0.9		T (sap flow & water balance) / ETref Penman in the absence of water stress	Lorraine, France	Bréda et al. (1993)
<i>Quercus robur</i>		0.75	0.86		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Belgium	Verstraeten et al. (2005)
<i>Quercus robur</i> plantation		0.4	1		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	Denmark	Salazar et al. (2013)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
<i>Quercus robur</i> old forest			0.93-0.94		ET (calibrated value from soil water balance model) / ETref modified Penman - during relatively wet summers	Denmark	Ladekarl (1998)
<i>Quercus robur</i> old forest			0.73-0.76		T (calibrated value from soil water balance model) / ETref modified Penman - during relatively wet summers	Denmark	Ladekarl (1998)
<i>Quercus robur</i>	floodplain old forest (up to 100 year-old)		0.8		T (sap flow) / ETref (no detail) – in the absence of water stress	South Moravia	Čermák et al. (1982)
<i>Quercus robur</i>	60 year old, 360 trees/ha	0.82	0.99		Tpot / ETref modified Penman-Monteith grass (MORECS) - β parameter of HYLUC model calibrated against observed soil moisture	Nottinghamshire, UK	Calder et al. (2002)
Wet woodlands							
Wet woodland (<i>Salix</i>)		0.65	2.35		proposed model value	Germany	Tiemeyer et al. (2006)
<i>Salix alba</i>	2-3 year old, unfertilised	0.19	1.25-1.97	0.4	ET (lysimetry) / ETref FAO Penman-Monteith	Italy	Guidi et al. (2008)
<i>Salix viminalis</i>	2-5 year-old, 1.9-3.9m, LAI 4-7	0.7-1.0	1.2-1.6	2	ET (Bowen ratio) / ETref Penman open water	Sweden	Persson and Lindroth (1994)
willow (unspecified)		0.68	1.1-1.4	0.8	ET (lysimetry) / ETref (Hargreaves)	California, USA	Young and Blaney (1942 in Howes et al. 2015)
willow (unspecified)		0.55-0.81	0.86-1.07	0.86- 0.89	ET (remote-sensing) / ETref FAO Penman-Monteith	USA	Allen et al. 2005 in Howes et al, 2015)
hybrid poplar	1-3 yr-old	0.3-0.4	0.44-0.82	0.35- 0.57	ET (soil water balance) / ETref alfalfa-based Kimberly- Penman	USA	Gochis and Cuenca (2000)
<i>Fraxinus rotundifolia</i>		0.24	0.73	0.37	T (lysimetry under irrigation and negligible precipitation) / ETref (lysimetry in reference grass stand)	Australia	Mostafazadeh-Fard et al. (2009)
Pastures and meadows							
grazing pasture	extensive grazing, max 0.1m high	0.3	0.75	0.75	FAO reference value	subhumid climate	Allen et al. (1998)
rye grass hay	averaging cutting effects, max 0.3m high	0.95	1.05	1	FAO reference value	subhumid climate	Allen et al. (1998)
grassland		0.8	0.9	0.85	proposed model value	UK	Zhang and Hiscock (2010)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
grassland			0.5 (annual)		long-term ET (lysimetry)/ETref Penman	Germany	Harsch et al. (2009)
grassland			1		T (lysimetry) / ETref Penman grass	UK	Calder (2003)
oligotrophic acidic grassland	water table maintained at ground level	0.6 (April)	0.9-1.0		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. 1996)
oligotrophic acidic grassland	water table maintained 30cm below ground level	0.5 (April)	0.8-0.9		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. 1996)
unimproved grassland			0.75		ET / ETref Penman open water	The Netherlands	Jansen (1986)
improved grassland			0.8		ET / Eref Penman open water	The Netherlands	Jansen (1986)
improved hay meadow		0.98	0.88		ET / ETref modified Penman-Monteith grass (MORECS) - β parameter of HYLUC model calibrated against observed soil moisture (interception assumed to be null)	Nottinghamshire, UK	Calder et al. (2002)
irrigated mountain meadow			0.88-0.89		ET (remote-sensing) / ETref FAO Penman-Monteith	Portugal	Pôças et al. (2013)
non-irrigated mountain meadow			0.73-0.85		ET (remote-sensing) / ETref FAO Penman-Monteith	Portugal	Pôças et al. (2013)
mountain acidic grazing pastures			0.64-0.65		ET (remote-sensing) / ETref FAO Penman-Monteith	Portugal	Pôças et al. (2013)
<i>Molinia</i> grassland on mineral soil	water table maintained at ground level	0.7 (April)	1.0-1.2		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. 1996)
<i>Molinia</i> grassland on mineral soil	water table maintained 30cm below ground level	0.6 (April)	0.9-1.1		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. 1996)
Heathlands							
<i>Calluna-Deschampsia</i> heathland			1.13 (annual)		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	UK	Beier et al. (2009)
<i>Calluna-Deschampsia</i> heathland			0.63 (annual)		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	DK	Beier et al. (2009)
<i>Calluna-Molinia</i> heathland			0.69 (annual)		ET (calibrated value from soil water balance model) / ETref FAO Penman-Monteith	NL	Beier et al. (2009)
wet heathland		0.6-0.7 (April)	0.8-0.9		ET (lysimetry) / ETref Penman open water	The Netherlands	Eggink and Vink (1989 in Spieksma et al. 1996)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
wet heathland	water table maintained 30cm below ground level	0.5 (April)	0.6		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. 1996)
wet heathland	water table maintained at ground level	0.6 (April)	0.7-0.75		ET (lysimetry) / ETref Penman open water	The Netherlands	Janssen (1994 in Spieksma et al. (1996)
wet heathland			0.75		ET (lysimetry) / ETref Penman open water	The Netherlands	Bakker (1984 in Spieksma et al. 1996)
dry heathland			0.6		ET (lysimetry) / ETref Penman open water	The Netherlands	Bakker (1984 in Spieksma et al. 1996)
wet heath (Calluna – Trichophorum)			0.55		Tpot / ETref Penman grass (β parameter of HYLUC model calibrated against observed soil moisture)	Cairngorms, Scotland	Haria and Price 2000)
heather-rich moorland			0.58-0.67		T (lysimetry & soil moisture balance) / ETref Penman grass	Scotland	Calder 1986)
heather-rich moorland			0.25-0.5		T (lysimetry) / ETref Penman grass	North York Moors, UK	Wallace et al. (1982 in Calder 1986)
heath			0.47		T (lysimetry) / ETref Penman grass	UK	Calder et al. (1983 in Calder 1986)
dry heathland		0.78	0.82		Tpot / ETref modified Penman-Monteith grass (MORECS) - β parameter of HYLUC model calibrated against observed soil moisture	Nottinghamshire, UK	Calder et al. (2002)
heath			0.6 (0.75 if evaporation from storage is included)		T / ETref Penman open water	The Netherlands	Jansen (1986)
dry heath			0.87		ET / ETref (presumably Penman open water)	UK	Wallace et al. (1982 in Spieksma et al. 1996)
dry heath			0.54-0.91, mean 0.76		ET / ETref Penman open water	The Netherlands	Meinardi (1994 in Spieksma et al. 1996)
Bogs and acidic fens							
wetland	short vegetation (max 0.3m high), no frost	1.05	1.1	1.1	FAO reference value	subhumid climate	Allen et al. (1998)
open water, <2m deep		NA	1.05	1.05	FAO reference value	subhumid climate	Allen et al. (1998)
<i>C. acutiformis</i> / <i>Sphagnum</i> fen			0.74		ET (lysimetry) / ETref Penman open water	The Netherlands	Koerselman and Beltman (1988)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
<i>Sphagnum</i> -dominated acidic fen			0.2		ET (calibrated value from soil water balance model) / ETref Penman	France	Binet et al. (2013)
<i>Molinia</i> & <i>Betula</i> dominated acidic fen			0.28		ET (calibrated value from soil water balance model) / ETref Penman	France	Binet et al. (2013)
raised bog			0.23		ET (Bowen ratio) / ETref Penman open water	New Zealand	Campbell and Williamson (1997)
shrub-dominated raised bog			0.52 (0.44-0.59)		ET (eddy covariance) / ETref modified Penman-Monteith	Canada	Lafleur et al. (2005)
moorland			0.25-0.5		T (lysimetry) / ETref Penman grass	UK	Calder (2003)
<i>Sphagnum</i> -dominated raised bog			0.74		ET (Bowen ratio) / ETref Penman open water	Sweden	Kellner (2001)
<i>Sphagnum</i> dominated acidic fen			1		ET (Bowen ratio) / ETref Penman open water	Minnesota, USA	Kim and Verma (1996)
<i>Molinia</i> -dominated raised bog			1		ET (lysimetry) / ETref Makkink	The Netherlands	Schouwenaars (1993)
grassland & small-sedge communities		1	1.1		proposed model value	Germany	Tiemeyer et al. (2006)
<i>Sphagnum</i> -dominated raised bog			0.72		ET (Bowen ratio) / ETref Penman open water	Belgium	Wastiaux (2000)
<i>Molinia</i> -dominated raised bog			0.98		ET (Bowen ratio) / ETref Penman open water	Belgium	Wastiaux (2000)
graminoid-dominated peatland			0.9		model value, chosen from literature (ETref Penman open water)		Heijmans et al. (2008)
ericoid-dominated peatland			0.7		model value, chosen from literature (ETref Penman open water)		Heijmans et al. (2008)
hummock <i>Sphagna</i>			1.4		model value, chosen from literature (ETref Penman open water)		Heijmans et al. (2008)
lawn <i>Sphagna</i>			1.3		model value, chosen from literature (ETref Penman open water)		Heijmans et al. (2008)
hollow <i>Sphagna</i>			1.2		model value, chosen from literature (ETref Penman open water)		Heijmans et al. (2008)
short fen vegetation			0.8		recommended value based on literature survey (ETref Penman open water)		Spieksma et al. (1996)

Vegetation	Stand characteristics	Kc ini (or Kc min / Kc winter)	Kc mid (or Kc max / Kc summer)	Kc end	Type of data	Location / climate	Source
sedge-dominated fen	average of vegetated and non-vegetated periods		0.9		ET (Bowen ratio) / ETref Penman open water	Ontario, Canada	Lafleur (1990)
sedge-dominated fen	non-vegetated period	0.85	1.02		ET (Bowen ratio) / ETref Penman open water	Ontario, Canada	Lafleur (1990)
<i>Shagnum</i> -dominated poor fen			0.73		ET (Bowen ratio) / ETref Penman open water	Ontario, Canada	Lafleur and Roulet (1992)
<i>Sphagnum</i> sp.			0.67		ET (lysimeter) / ETref Penman open water	The Netherlands	Wirdum (1991 in Spieksma et al. 1996)
<i>Polytrichum</i> sp.			0.45		ET (lysimeter) / ETref Penman open water	The Netherlands	Wirdum (1991 in Spieksma et al. 1996)
<i>Molinia</i> -dominated bog		0.40-0.45	0.75-0.85		ET (lysimeter) / ETref Penman open water	The Netherlands	Schouwenaars (1990, 1993 in Spieksma et al. 1996)
<i>Sphagnum</i> -dominated bog			1.2		ET (lysimeter) / ETref Penman open water	Ireland	Sijtsma and Veldhuizen (1992 in Spieksma et al. 1996)
<i>Eriophorum vaginatum</i> - dominated bog			1		ET (lysimeter) / ETref Penman open water	Ireland	Sijtsma and Veldhuizen (1992 in Spieksma et al. 1996)
<i>Erica tetralix</i> -dominated bog			1		ET (lysimeter) / ETref Penman open water	Ireland	Sijtsma and Veldhuizen (1992 in Spieksma et al. 1996)
<i>Narthecium</i> -dominated bog			0.9		ET (lysimeter) / ETref Penman open water	Ireland	Sijtsma and Veldhuizen (1992 in Spieksma et al. (1996)

Table 2. Literature review of leaf area index (LAI) values used in hydrological modelling or measured in contexts similar to the Dauges catchment.

Vegetation class	Max LAI	Min LAI (winter)	No. of studies reviewed	Location	Type of data	Source
Evergreen needle-leaved woodland						
-	5		NA	global	proposed model parameter	Asensio (1998)
-	6	0.5	NA	global	proposed model parameter	Dickinson et al. (1993)
-	5.3		1	Germany	measured	Leuschner (2002)
-	5.5		215	temperate zone	measured	Asner et al. (2003); Scurlock et al. (2001)
-	2.65	2.65	NA	UK	proposed model parameter	Rochester (2010)
<i>Pseudotsuga menziesii</i>	8.1		16	temperate zone	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Pseudotsuga menziesii</i>	9.65 (min: 5.1, max: 15.5)		8	temperate zone	measured	Breuer et al. (2003)
<i>Pseudotsuga menziesii</i>	6		NA	France	measured	Bréda and Roman-Amat (2002)
<i>Pseudotsuga menziesii</i> (25 year-old)	7.6		1	The Netherlands	measured	Bartelink (1998)
<i>Pseudotsuga menziesii</i> (74 year-old)	5.1		1	The Netherlands	measured	Bartelink (1998)
<i>Pseudotsuga menziesii</i> (26 year-old)	7.8		1	Canada	measured	Chen and Black (1991)
<i>Pseudotsuga menziesii</i> plantation	13	9	1	The Netherlands	measured	Klaassen et al. (1998)
<i>Pseudotsuga menziesii</i> plantation	11		1	The Netherlands	measured	Tiktak and Bouten (1994)
<i>Pinus sylvestris</i>	8.7		12	Europe	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Pinus sylvestris</i>	3.8 (min: 1.1, max: 7.2)		14	temperate zone	measured	Breuer et al. (2003)
<i>Pinus spp.</i>	4		NA	France	measured	Bréda and Roman-Amat (2002)
young birch-pine forest	4		1	Germany	measured	Leuschner (1993)
Deciduous broad-leaved woodland						
-	4	0	NA	UK	proposed model parameter	Rochester (2010)
-	6	1	NA	global	proposed model parameter	Dickinson et al. (1993)
-	5.1		187	temperate zone	measured	Asner et al. (2003); Scurlock et al. (2001)
closed canopy	6		NA	global	proposed model parameter	Asensio (1998)
open canopy	4		NA	global	proposed model parameter	Asensio (1998)

Vegetation class	Max LAI	Min LAI (winter)	No. of studies reviewed	Location	Type of data	Source
<i>Quercus</i> & <i>Fagus</i> mature forest	5.3		1	Germany	measured	Leuschner (2002)
<i>Quercus</i> & <i>Fagus</i> forest	5.3		1	Germany	measured	Leuschner and Rode (1999)
<i>Quercus</i> & <i>Fagus</i> forest	4.5		1	Germany	measured	Leuschner (1993)
<i>Quercus robur</i>	5.2		4	Europe	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Quercus robur</i>	4.6		1	temperate zone	measured	Breuer et al. (2003)
<i>Quercus robur</i> forest	3.9	1.5	1	Hungary	measured	Móricz et al. (2012)
<i>Quercus robur</i> forest	4.7		1	Denmark	measured	Rosenqvist et al. (2010)
<i>Quercus</i> spp.	4.5		NA	France	measured	Bréda and Roman-Amat (2002)
<i>Quercus robur</i> & <i>petraea</i> old forest	4		1	Denmark	measured	Ladekarl et al. (2005)
<i>Quercus robur/petraea</i> (mature)	5.5		1	France	measured	Le Dantec et al. (2000 in Breuer and Frede 2003)
<i>Quercus petrea</i> (35 year-old, thinned)	3.3		1	France	measured	Bréda and Granier (1996)
<i>Quercus petrea</i> (35 year-old, unthinned)	6		1	France	measured	Bréda and Granier (1996)
<i>Fagus sylvatica</i> forest		1.1	NA	temperate zone	measured	Breuer et al. (2003)
<i>Fagus sylvatica</i>	5.4		11	temperate zone	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Fagus sylvatica</i>	6.4 (min: 4, max: 10)		16	temperate zone	measured	Breuer et al. (2003)
<i>Fagus sylvatica</i>	5.5-6		NA	France	measured	Bréda and Roman-Amat (2002)
<i>Fagus sylvatica</i> (62 year-old)	7.4		1	The Netherlands	measured	Bartelink (1998)
<i>Fagus sylvatica</i> (47 year-old)	6.8		1	Italy	measured	Cutini et al. (1998)
<i>Fagus sylvatica</i> (47 year-old, thinned)	5.9		1	Italy	measured	Cutini et al. (1998)
<i>Fagus sylvatica</i> (90 year-old)	4.9		1	Italy	measured	Cutini et al. (1998)
<i>Fagus sylvatica</i> (30 year-old)	6.0		1	Alsace, France	measured	Granier et al. (2000)
<i>Castanea sativa</i>	5.6		1	temperate zone	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Castanea sativa</i>	5		NA	France	measured	Bréda and Roman-Amat (2002)
<i>Castanea sativa</i> (40yr, thinned)	4.1		1	temperate zone	measured	Breuer et al. (2003)
Mixed woodland						
-	5		NA	global	proposed model parameter	Asensio (1998)

Vegetation class	Max LAI	Min LAI (winter)	No. of studies reviewed	Location	Type of data	Source
-	6	0.5	NA	global	proposed model parameter	Dickinson et al. (1993)
Wet woodland						
<i>Betula pubescens</i>	1.57		1	Greenland	measured	Asner et al. (2003); Scurlock et al. (2001)
<i>Betula pubescens</i>	3.0		1	Sweden	measured	Johansson (1999)
<i>Betula pendula</i> (18 year-old)	5.3		1	Russia	measured	Rauner (1976 in Breuer and Frede 2003)
<i>Betula pendula</i>	2.9		1	Sweden	measured	Johansson (1999)
Pastures and meadows						
-	1.1	1.1	NA	UK	proposed model parameter	Rochester (2010)
-		0.3-2	NA	temperate zone	measured	Breuer et al. (2003)
Tall grass	6	0.5	NA	global	proposed model parameter	Dickinson et al. (1993)
Short grass	2	0.5	NA	global	proposed model parameter	Dickinson et al. (1993)
<i>Dactylis glomerata</i>	6.4		1	New Zealand	measured	Brougham (1960)
<i>Lolium perenne</i>	6		1	New Zealand	measured	Brougham (1960)
<i>Festuca rubra</i> , <i>Alopecurus pratensis</i> , <i>Poa pratensis</i> (fertilised)	3		1	Germany	measured	Geyger (1977 in Breuer and Frede 2003)
<i>Festuca rubra</i> , <i>Alopecurus pratensis</i> , <i>Poa pratensis</i> (fertilised)	6		1	Germany	measured	Geyger (1977 in Breuer and Frede 2003)
<i>Nardus</i> -dominated grassland	3.7		1	Italy	measured	Wohlfahrt et al. (2001 in Breuer and Frede 2003)
Heathlands						
-	1	1	NA	UK	proposed model parameter	Rochester (2010)
-	2		NA	Europe	proposed model parameter	MIKE SHE default
-	2.5		1	Denmark	measured	Ladekarl et al. (2001)
-	1.7		1	Germany	measured	Leuschner (2002)
-	1.3		1	Germany	measured	Leuschner (1993)
-	2.5		1	Denmark	measured	Ladekarl et al. (2005)
Calluna-dominated heathland	1.7		1	Germany	measured	Leuschner and Rode (1999)
<i>Calluna vulgaris</i>	2.6		1	Austria	measured	Asner et al. (2003); Scurlock et al. (2001)

Vegetation class	Max LAI	Min LAI (winter)	No. of studies reviewed	Location	Type of data	Source
<i>Calluna vulgaris</i>	1.6-1.7 (+dead leaves 0.3-0.4)		1	UK	measured	Calder et al. (1984)
<i>Calluna</i> & <i>Vaccinium</i> dominated clear-cut in sub-boreal forest, with 2 year old pine-birch growth	1.3-1.6		1	Estonia & Sweden	measured	Kuusk et al. (2004)
<i>Vaccinium myrtillus</i>	2		1	Austria	measured	Vareschi (1951 in Breuer and Frede 2003)
<i>Pteridium aquilinum</i>	1.63		1	UK	measured	Leyton et al. (1967 in Breuer and Frede 2003)
Bogs and acidic fens						
<i>Carex rostrata</i> (fertilised, 33 kg N/ha)	2.1		1	The Netherlands	measured	Aerts and de Caluwe (1994)
<i>Narthecium</i> -dominated bog	1.4	0	4	Ireland	measured	Sijtsma and Veldhuizen (1992)
<i>Sphagnum</i>	1.02		1	Estonia & Sweden	measured	Kuusk et al. (2004)
<i>Sphagnum</i> -dominated bog	0.25-0.4	0.05-0.15	1	France	measured (read from graph)	Bortoluzzi et al. (2006)
<i>Sphagnum</i> -dominated open fen	0.4-0.7		NA	Minnesota	measured	Kim and Verma (1996)
bog hollows (<i>Sphagnum</i> + sedges)	1.3-2		1	Michigan	measured	Moore et al. (2013)
bog hummocks (<i>Sphagnum</i> + chamaephytes)	1.5-2.7		1	Michigan	measured	Moore et al. (2013)
<i>Sphagnum-Eriophorum</i> bog	1.2	0.7	4	Ireland	measured	Sijtsma and Veldhuizen (1992)
<i>Sphagnum</i> , <i>E. vaginatum</i> & <i>C. vulgaris</i> raised bog	0.3		1	Sweden	measured	Kellner (2001)
<i>E. vaginatum</i> -dominated bog	0.6-0.9	0	1	France	measured (read from graph)	Bortoluzzi et al. (2006)
<i>Eriophorum vaginatum</i>	2.7		1	Japan	measured	Kimura et al. (1999 in Breuer and Frede 2003)
Tussocky, <i>Molinia</i> -dominated peat bog	1.7	0	1	The Netherlands	measured	Nieveen et al. (1998)
<i>Molinia coerulea</i>	2.4		1	UK	measured	Leyton et al. (1967 in Breuer and Frede 2003)
<i>Molinia</i> -dominated raised bog	3	0	1	The Netherlands	measured	Spieksma et al. (1997)
<i>Molinia</i> -dominated raised bog	5	0	1	Belgium	measured	Wastiaux (2000)

Table 3. Literature review of rooting depth values used in hydrological modelling or measured in contexts similar to the Dauges catchment.

Vegetation class	Root depth	No. of studies reviewed	Location	Type of data	Source
Evergreen needle-leaved woodland					
-	2	NA	UK	proposed model parameter	Zhang and Hiscock (2010)
-	1.5	NA	global	proposed model parameter	Dickinson et al. (1993)
-	1.5	NA	global	proposed model parameter	Walter (2012)
-	0.6	NA	global	proposed model parameter	Asensio (1998)
-	2	NA	UK	proposed model parameter	Zhang and Hiscock (2010)
-	1	NA	UK	proposed model parameter	Rochester (2010)
-	3.9 +/- 0.4 m	NA	temperate zone	measured	Canadell et al. (1996)
-	2.1 ± 1.3	NA	temperate zone	measured	Breuer et al. (2003)
<i>Pinus sylvestris</i>	1.74 (min: 1.4, max: 2.5)	5	temperate zone	measured	Breuer et al. (2003)
<i>Pinus sylvestris</i>	2.7	1	UK	measured	Canadell et al. (1996)
Deciduous broad-leaved woodland					
-	2	NA	UK	proposed model parameter	Zhang and Hiscock (2010)
-	2	NA	global	proposed model parameter	Dickinson et al. (1993)
-	1.5	NA	global	proposed model parameter	Walter (2012)
-	1	NA	UK	proposed model parameter	Rochester (2010)
-	2.9 +/- 0.2 m	NA	temperate zone	measured	Canadell et al. (1996)
-	1.9±1.8	NA	temperate zone	measured	Breuer et al. (2003)
closed canopy	1	NA	global	proposed model parameter	Asensio (1998)
open canopy	2	NA	global	proposed model parameter	Asensio (1998)
<i>Fagus sylvatica</i>	1.75 (min: 0.6, max: 3.4)	6	temperate zone	measured	Breuer et al. (2003)
<i>Quercus robur</i>	1.4 (min: 1.3, max: 1.6)	3	temperate zone	measured	Breuer et al. (2003)
Mixed woodland					
-	2	NA	global	proposed model parameter	Dickinson et al. (1993)
-	1.5	NA	global	proposed model parameter	Walter (2012)

Vegetation class	Root depth	No. of studies reviewed	Location	Type of data	Source
-	0.8	NA	global	proposed model parameter	Asensio (1998)
Wet woodland					
<i>Betula verrucosa</i>	1.8 (min: 0.5, max: 4)	14	temperate zone	measured	Breuer et al. (2003)
Pastures and meadows					
-	1	NA	UK	proposed model parameter	Zhang and Hiscock (2010)
-	0.6	NA	global	proposed model parameter	Walter (2012)
-	0.1	NA	UK	proposed model parameter	Rochester (2010)
-	0.9 ± 0.6	NA	temperate zone	measured	Breuer et al. (2003)
-	2.6 +/- 0.2m	NA	temperate zone	measured	Canadell et al. (1996)
Heathlands					
-	0.2	NA	UK	proposed model parameter	Rochester (2010)
-	0.4	NA	Europe	proposed model parameter	MIKE SHE default
-	0.6	1	Denmark	measured	Ladekarl et al. (2001)
Bogs and acidic fens					
<i>Eriophorum vaginatum</i>	0.6	1	Alaska	measured	Canadell et al. (1996)
<i>Eriophorum vaginatum</i>	0.6	1	-	measured	Boggie et al. (1958 in Wastiaux 2000)
<i>Eriophorum vaginatum</i>	0.3-0.4	1	-	measured	Metsävaio, (1931 in Wastiaux 2000)
<i>Calluna vulgaris</i> & <i>Erica tetralix</i>	0.1-0.2	1	-	measured	Boggie et al. (1958 in Wastiaux 2000)
<i>Andromeda polifolia</i>	0.1-0.15	1	-	measured	Metsävaio (1931 in Wastiaux 2000)

Table 4. Literature review of mean leaf resistance (r_l) values used in hydrological modelling or measured in contexts similar to the Dauges catchment.

Vegetation class	Mean leaf resistance ($s.m^{-1}$)*	Minimum leaf resistance ($s.m^{-1}$)*	Location	Type of data	Source
Evergreen needle-leaved woodland					
-		200		proposed model parameter	Dickinson et al. (1993)
<i>Pseudotsuga menziesii</i>		120-300		tabulated	Allen et al. (1996)
<i>Pseudotsuga menziesii</i>		300	USA	measured	Running (1976)
<i>Pseudotsuga menziesii</i>		330		measured	Jarvis (1976)
<i>Pseudotsuga menziesii</i>	588		USA	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Pseudotsuga menziesii</i> (seedlings)	303			measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Pseudotsuga menziesii</i>	434		USA	measured	Zhang et al. (1993)
<i>Pseudotsuga menziesii</i>	374		Canada	measured	Warren et al. (2003)
<i>Pseudotsuga menziesii</i>		59	Canada	measured	McNaughton and Black (1973 in Kelliher et al. 1995)
<i>Pseudotsuga menziesii</i>		63	Canada	measured	Price and Black (1990 in Kelliher et al. 1995)
<i>Pseudotsuga menziesii</i> (seedlings)		417		measured	Johnson and Ferrell (1983)
<i>Pinus sylvestris</i> (1 yr old needles)	667		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Pinus sylvestris</i> (current needles)	625		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Pinus sylvestris</i> (1 yr old needles)	588		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Pinus sylvestris</i>	194			measured	Sandford and Jarvis (1986 in Breuer and Frede 2003)
<i>Pinus sylvestris</i>	135			measured	Sandford and Jarvis (1986 in Breuer and Frede 2003)
<i>Pinus sylvestris</i>		43	Sweden	measured	Cienciala et al. (1992)
<i>Pinus sylvestris</i>		330	Finland	calibrated model parameter	Rannik et al. (2002)
<i>Pinus sylvestris</i>	283		Finland	measured	Medlyn et al. (2001)
<i>Pinus sylvestris</i>		20	France	measured	Adriaenssens et al. (2012)
<i>Pinus sylvestris</i>	513		Norway	measured	Beerling (1999)
Deciduous broad-leaved woodland					
-		150		tabulated	Allen et al. (1996)

Vegetation class	Mean leaf resistance (s.m ⁻¹)*	Minimum leaf resistance (s.m ⁻¹)*	Location	Type of data	Source
-		200		proposed model parameter	Dickinson et al. (1993)
<i>Fagus sylvatica</i>	500		Germany	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Fagus sylvatica</i>	357		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Fagus sylvatica</i>		36	France	measured	Adriaenssens et al. (2012)
<i>Fagus sylvatica</i> (mature)	482		Germany	measured	Keitel et al. (2003)
<i>Fagus sylvatica</i> (seedling)	342		France	measured	Epron et al. (1995)
<i>Fagus sylvatica</i>	502		Germany	measured	Medlyn et al. (2001)
<i>Fagus sylvatica</i>	229		Denmark	measured	Medlyn et al. (2001)
<i>Quercus petraea</i> (no hydric stress)	192		UK	measured	Medlyn et al. (2001)
<i>Quercus petraea</i> (hydric stress)	270		UK	measured	Medlyn et al. (2001)
<i>Quercus petraea</i>	234		UK	measured	Medlyn et al. (2001)
<i>Quercus robur</i>		35	France	measured	Adriaenssens et al. (2012)
<i>Quercus robur</i>	228		UK	measured	Medlyn et al. (2001)
<i>Quercus robur</i>	376		Germany	measured	Medlyn et al. (2001)
<i>Quercus robur</i>	1111			measured	Holmgren et al. (1965 in Breuer and Frede 2003)
<i>Quercus robur</i>	345		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Quercus robur</i>	707		France	measured	Guehl et al. (1995)
<i>Castanea sativa</i>	625		Italy	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Castanea sativa</i> (seedling)	446		France	measured	Epron et al. (1995)
Wet woodland					
<i>Betula pendula</i>	170		UK	measured	Medlyn et al. (2001)
<i>Betula pendula</i>	123			measured	Holmgren et al. (1965 in Breuer and Frede 2003)
<i>Betula pendula</i> (seedling)	238			measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Betula pendula</i>		29	France	measured	Adriaenssens et al. (2012)
<i>Betula pubescens</i>	315		Norway	measured	Beerling (1999)
<i>Salix pulchra</i>		200	Alaska, USA	measured	Stoner and Miller (1975)

Vegetation class	Mean leaf resistance (s.m ⁻¹)*	Minimum leaf resistance (s.m ⁻¹)*	Location	Type of data	Source
Pastures and meadows					
grass (clipped, 0.15m)	100-150			tabularised	Allen et al. (1996)
grass (irrigated, clipped, 0.10-0.12m)	75	40		tabularised	Allen et al. (1996)
short grass		200		proposed model parameter	Dickinson et al. (1993)
tall grass		200		proposed model parameter	Dickinson et al. (1993)
<i>Alopecurus pratensis</i>	179		Czechoslovakia	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Alopecurus pratensis</i>	149		Czechoslovakia	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Arrhenatherum elatius</i>	130		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Carex flacca</i>	315		Germany	measured	Wedler et al. (1996 in Breuer and Frede 2003)
<i>Dactylis glomerata</i>	400			measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Dactylis glomerata</i>	149		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Deschampsia cespitosa</i>	250			measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Holcus lanatus</i>	159		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Lolium perenne</i>	400			measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Nardus stricta</i>	628		UK	measured	Friend et al. (1989)
Heathlands					
<i>Calluna vulgaris</i>		40-70	UK	measured	Jackson et al. (1999)
<i>Calluna vulgaris</i>	82		UK	measured	Kerslake et al. (1998)
<i>Calluna vulgaris</i> (wind speed 1m.s ⁻¹)	248		UK	measured	Hinshiri (1973)
<i>Calluna vulgaris</i> (wind speed 2.5m.s ⁻¹)	345		UK	measured	Hinshiri (1973)
<i>Calluna vulgaris</i>	110 (50-290)	50	UK	measured	Miranda et al. (1984)
<i>Vaccinium myrtillus</i>	526		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Vaccinium myrtillus</i> (shade leaves)	769		USA	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Vaccinium myrtillus</i> (sun leaves)	435		USA	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Vaccinium myrtillus</i> (timberline, exposed)	385		Austria	measured	Körner et al. (1979 in Breuer and Frede 2003)
<i>Vaccinium myrtillus</i>	456		Norway	measured	Beerling (1999)

Vegetation class	Mean leaf resistance (s.m ⁻¹)*	Minimum leaf resistance (s.m ⁻¹)*	Location	Type of data	Source
<i>Vaccinium myrtillus</i>	553		UK	measured	Friend et al. (1989)
<i>Vaccinium myrtillus</i>	165-375		UK	measured	Llorens et al. (2002)
<i>Vaccinium myrtillus</i>		100 (unfolding leaves), 300 (mature leaves)		measured	Davies and Albrigo (1983)
Bogs and acidic fens					
<i>Eriophorum angustifolium</i>		200	Alaska, USA	measured	Stoner and Miller (1975)
<i>Carex aquatilis</i>		300	Alaska, USA	measured	Stoner and Miller (1975)

*Leaf resistance and conductance were assumed to equal stomatal resistance and conductance respectively. Leaf and stomatal conductances expressed in mol.m⁻².s⁻¹ were converted to m.s⁻¹ by dividing them by 41, assuming a temperature of 20°C and mean sea level pressure.

Table 5. Literature review of bulk interception ratios measured in contexts similar to the Dauges catchment.

Vegetation	Stand characteristics	Bulk interception ratio			Understorey & litter included?	Location	Source
		Annual	Winter	Summer			
Evergreen needle-leaved woodland							
<i>Picea abies</i>		0.3			yes (lysimeter)	UK	Calder (2003)
<i>Picea abies</i>	24 year-old, 13m, 2160 stems/ha	0.36	0.38	0.31	no	Lorraine, France	Aussenac (1970)
<i>Picea abies</i>	30 year-old, 13m, 2160 stems/ha	0.34			?	Lorraine, France	Aussenac (1968)
<i>Picea abies</i>	50 year-old	0.28			?		Johnson (1980 in Ulrich et al. 1995)
<i>Picea abies</i>		0.23-0.38			?	Belgium	Noirfalise (1959 in Forgeard et al. 1980)
<i>Picea abies</i>		0.38-0.40			?	Sweden	Nihlgard (1970 in Forgeard et al. 1980)
<i>Picea abies</i>		0.59			?	?	Horton (1919 in Forgeard et al. 1980)
<i>Picea abies</i>		0.48			?	?	Ovington (1954 in Forgeard et al. 1980)
<i>Picea abies</i>		0.36			?	UK	Calder (2003)
<i>Picea abies</i>		0.37			?	Russia	Molchanov (1960 in Jansen 1986)
<i>Picea abies</i>		0.29			?	Germany	Benecke (1984 in Katzensteiner et al. 2011)
<i>Abies grandis</i>	33 year-old, 23m, 620 stems/ha	0.42	0.47	0.36	no	Lorraine, France	Aussenac (1970)
<i>Pseudotsuga menziesii</i>		0.38			no	The Netherlands	Tiktak and Bouten (1994)
<i>Pseudotsuga menziesii</i>	23 year-old, 16m, 535 stems/ha	0.35 (Oct-Jul)	0.32	0.36	no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i>	23 year-old, 18m, 1030 stems/ha	0.36 (Oct-Jul)	0.35	0.36	no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i>	23 year-old, 17m, 2229 stems/ha	0.37 (Oct-Jul)	0.36	0.37	no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i>		0.39			no	United Kingdom	Rutter et al. (1975)
<i>Pseudotsuga menziesii</i>		0.35			no	United Kingdom	Rutter et al. (1975)
<i>Pinus sylvestris</i>	29 year-old, 13m, 1520 stems/ha	0.32	0.33	0.31	no	Lorraine, France	Aussenac (1970)
<i>Pinus sp.</i>		0.21			?	Russia	Molchanov (1960 in Jansen 1986)
<i>Pinus sylvestris</i>	28 year-old, 13m, 1520 stems/ha	0.31			?	Lorraine, France	Aussenac (1968)

Vegetation	Stand characteristics	Bulk interception ratio			Understorey & litter included?	Location	Source
		Annual	Winter	Summer			
Deciduous broad-leaved woodland							
<i>Quercus petraea</i>	120 year-old, 30m, 182 stems/ha, LAI 4.38	0.29	0.22	0.34	no	Fontainebleau, France	Nizinski and Saugier (1989)
<i>Quercus petraea</i>	65 year-old	0.23			?		Szabo (1975 in Ulrich et al. 1995)
<i>Quercus petraea</i>	LAI 3.3-5.6	0.17-0.23			no	Lorraine, France	Bréda (1994)
<i>Quercus robur</i>		0.18			no	UK	Rutter et al. (1975)
<i>Quercus sp.</i>		0.18			?	Russia	Molchanov (1960 in Jansen 1986)
<i>Quercus robur</i> & <i>Betula pubescens</i>	LAI 3.9		0.2	0.29	?	Berkshire, UK	Herbst et al. (2008)
<i>Q. robur</i> & <i>F. sylvatica</i>	85 year-old, 27m, 345 stems/ha	0.21	0.1	0.31	no	Belgium	Staelens et al. (2008)
<i>F. sylvatica</i> & <i>Q. petraea</i>			0.25	0.32	no	Germany	Leuschner and Rode (1999)
<i>Fagus sylvatica</i>	80 year-old, 25m, 743 stems/ha	0.15 (Oct-Jul)	0.06	0.21	no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>F. sylvatica</i> & <i>Carpinus betulus</i>	24 year-old, 13m, 1300 stems/ha	0.24	0.23	0.36	no	Lorraine, France	Aussenac (1970)
<i>F. sylvatica</i> & <i>Carpinus betulus</i>	30 year-old, 13m, 1300 stems/ha	0.17			?	Lorraine, France	(ussenac (1968)
<i>Fagus sylvatica</i>	50 year-old	0.17			?		Cepel (1967 in Ulrich et al. 1995)
<i>Fagus sylvatica</i>	50 year-old, 26m	0.34			no	Pyrenees, France	Ulrich et al. (1995)
<i>Fagus sylvatica</i>	90 year-old	0.21			no	Lorraine, France	Ulrich et al. (1995)
<i>Fagus sylvatica</i>	80-100 year-old	0.10			no	Gard, France	Ulrich et al. (1995)
<i>Fagus sylvatica</i>	30 year-old, LAI=6			0.26 on average (0.30, 0.27, 0.25 for events of 5, 10 and 15mm respectively)	no	Alsace, France	Granier et al. (2000)
<i>Fagus sylvatica</i>		0.24-0.28			?	Lorraine, France	Aussenac (1975 in Forgeard et al. 1980)
<i>Fagus sylvatica</i>		0.25			?	Belgium	Noirfalise (1959 in Forgeard et al. 1980)

Vegetation	Stand characteristics	Bulk interception ratio			Understorey & litter included?	Location	Source
		Annual	Winter	Summer			
<i>Fagus sylvatica</i>		0.18-0.20			?	Sweden	Nihlgard (1970 in Forgeard et al. 1980)
<i>Fagus sylvatica</i>		0.22			?	?	Horton (1919 in Forgeard et al. 1980)
<i>Fagus sylvatica</i>		0.17			?	Germany	Benecke (1984 in Katzensteiner et al. 2011)
<i>Fagus sylvatica</i>	120 year-old, 15m, 168 stems/ha		0.07	0.15	no	Luxembourg	Gerrits (2010)
<i>Fagus sylvatica</i> forest floor			0.22	0.22	-	Luxembourg	Gerrits (2010)
Wet woodland							
<i>Betula sp.</i>		0.12			?	Russia	Molchanov (1960 in Jansen 1986)
Pastures and meadows							
grassland	ungrazed (year 1)			0.14	yes	Canada	Couturier and Ripley (1973)
grassland	ungrazed (year 2)			0.22	yes	Canada	Couturier and Ripley (1973)
grassland	grazed (year 2)			0.16	yes	Canada	Couturier and Ripley (1973)
Heathlands							
<i>Calluna</i> heathland		0.16			yes (lysimeter)	UK	Calder (2003)
<i>Calluna</i> heathland			0.2	0.23	no (stemflow not included)	Germany	Leuschner and Rode (1999)
<i>Calluna</i> heathland		0.11			yes (calibrated soil moisture model)	Denmark	Ladekarl et al. (2001)
moorland		0.19			yes (lysimeter)	UK	Calder (2003)
wet heath				0.13 (0.11-0.16)	yes (from HYLUC model calibrated against observed soil moisture)	Cairngorms, Scotland	Haria and Price (2000)

Table 6. Literature review of maximum and specific storage capacities measured in contexts similar to the Dauges catchment.

vegetation	stand characteristics	maximum storage capacity (mm)	specific storage capacity (mm per LAI unit)	understorey & litter included?	location	source
Evergreen needle-leaved woodland						
<i>Abies alba</i>			0.37	no	Denmark	Rosenqvist et al. (2010)
<i>Abies grandis</i>		3.8 (summer)		no	Lorraine, France	Aussenac (1968)
<i>Picea abies</i>		3.1 (summer)		no	Lorraine, France	Aussenac (1968)
<i>Pseudotsuga menziesii</i>		2.4	0.22	no	The Netherlands	Klaassen et al. (1998)
<i>Pseudotsuga menziesii</i>		3.6-3.9 (summer)		no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Pseudotsuga menziesii</i>	LAI 19.2	1.5	0.08	no	USA	Massman (1983)
<i>Pseudotsuga menziesii</i>	35 year-old, thinned heavily	1.6		?	Germany	Mischerlich and Moll (1970 in Breuer and Frede 2003)
<i>Pseudotsuga menziesii</i>		2.1		?	Hampshire, UK	Robins (1969, 1974 in Rutter et al. 1975)
<i>Pseudotsuga menziesii</i>	35 year-old, thinned weakly	2.4		?	Germany	Mischerlich and Moll (1970 in Breuer and Frede 2003)
<i>Pseudotsuga menziesii</i>	35 year-old, thinned moderately	3.1		?	Germany	Mischerlich and Moll (1970 in Breuer and Frede 2003)
<i>Pinus sylvestris</i>		3 (summer)		no	Lorraine, France	Aussenac (1968)
<i>Pinus sylvestris</i>	23 year-old, 2900 stems/ha	0.3		?	Sweden	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	LAI 1.46	2.47-2.65		no	Spain	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	LAI 0.84	1.42-1.52		no	Spain	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	LAI 1.12	1.90-2.03		no	Spain	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	LAI 0.68	1.16-1.24		no	Spain	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	LAI 1.29	2.18-2.34		no	Spain	Llorens and Gallart (2000)
<i>Pinus sylvestris</i>	1870 stems/ha	1		?		Gash et al. (1980 in Llorens and Gallart 2000)
<i>Pinus sylvestris</i>	800 stems/ha	0.8		?		Gash and Morton (1978 in Llorens and Gallart 2000)

vegetation	stand characteristics	maximum storage capacity (mm)	specific storage capacity (mm per LAI unit)	understorey & litter included?	location	source
<i>Pinus sylvestris</i>	2400 stems/ha	1.3		?		Llorens et al. (1997 in Llorens and Gallart 2000)
<i>Pinus sylvestris</i>	3600	1.6		?		Rutter (1963, 1975 in Llorens and Gallart 2000)
<i>Pinus sylvestris</i>			1.83-2.00	no		Llorens and Gallart (2000)
Pine litter		0.6-1.7		-	UK	Walsh and Voigt (1977)
Deciduous broad-leaved woodland						
<i>Quercus petraea</i>	120 year-old, LAI 5.3	2.29 (summer), 1.48 (winter)	0.43 (summer)	no	Fontainebleau, France	Halldin et al. (1984)
<i>Quercus robur</i>	60 year-old	1		?	UK	Breuer and Frede (2003)
<i>Quercus robur</i>			0.25	no	Denmark	Rosenqvist et al. (2010)
<i>Quercus robur</i>		0.8 (summer), 0.3 (winter)		no		Dolman (1987)
<i>Quercus robur</i>		1 (summer), 0.3-0.4 (winter)		no	Oxfordshire, UK	Thompson (1972 in Rutter et al. 1975)
<i>F. sylvatica</i> & <i>Q. robur</i>		0.6 (summer)		no		Schröder (1984, 1985 in Hörmann et al. 1996)
<i>F. sylvatica</i> & <i>C. betulus</i>		1.9 (summer)		no	Lorraine, France	Aussenac (1968)
<i>Fagus sylvatica</i>		0.6 (summer)		?		Weihe (1968 in Breuer and Frede 2003)
<i>Fagus sylvatica</i>	120 year-old	2.6		?	Germany	Breuer and Frede (2003)
<i>Fagus sylvatica</i>		1.7 (summer)		no	Lorraine, France	Aussenac and Boulangeat (1980)
<i>Fagus sylvatica</i>	120 year-old, 15m, 168 stems/ha	0.4 mm (winter) 0.9 mm (summer)		no	Luxembourg	Gerrits (2010)
<i>Fagus sylvatica</i>		1.2 (summer), 0.5 (winter)		no		Kändler (1986 in Hörmann et al. 1996)
<i>Fagus sylvatica</i>		2.6 (summer)		no		Elling et al. (1990 in Hörmann et al. 1996)
Bracken litter		1.67		-	UK	Walsh and Voigt (1977)
Bracken litter			minimum 0.16, maximum 0.47	-	UK	Pitman (1989)
Beech litter		0.9-2.8		-	UK	Walsh and Voigt (1977)
Beech litter		1.8mm (both in summer and winter)		-	Luxembourg	Gerrits (2010)

vegetation	stand characteristics	maximum storage capacity (mm)	specific storage capacity (mm per LAI unit)	understorey & litter included?	location	source
Pastures and meadows						
grassland		1.23 (of which 1.19 is due to dead vegetation)		yes	Canada	Couturier and Ripley (1973)
<i>Lolium perenne</i>		0.43-2.82		?	USA	Merriam (1961)
Heathlands						
<i>Calluna</i> heathland		1.5	0.75	yes	UK	Calder et al. (1984)
<i>Erica</i> spp.		2		?	UK	Leyton et al. (1967 in Breuer and Frede 2003)
<i>Pteridium aquilinum</i>		0.9		?	UK	Leyton et al. (1967 in Breuer and Frede 2003)
<i>Pteridium aquilinum</i>		1.27		?		Brookes (1950 in Breuer and Frede 2003)
Bogs and acidic fens						
<i>Molinia caerulea</i>		0.66		?	UK	Leyton et al. (1967 in Breuer and Frede 2003)

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