

Class	Predictor	Data source	Spatial resolution	Temporal resolution	Temporal Extent	Measurement Unit	Ecological Justification	Ecological Literature
Soil	pH	BExIS		Every 3 years	2011-2023	-	Evolution	Pärtel (2002)
	Olsen-P	BExIS		2014, 2021 & 2023	2014-2023	mg/kg	Plant nutrition, light-competition, evolution	Janssens et al. (1998) Wassen et al. (2005)
	N	BExIS		Every 3 years	2011-2023	g/kg	Plant nutrition, light-competition, evolution	Foster & Gross 1998, Hautier et al. (2009), Pärtel et al. (2007)
	C/N ratio	BExIS		Every 3 years	2011-2023	-	Plant nutrition, light-competition	Klimek et al. (2007), Sebastia et al. (2004)
Climate	Mean temperature during the early growing season (March to May)	DWD	30 arc secs	Yearly	2008-2023	°C	Heat stress, altered interactions	White et al. (2014)
	Precipitation preceding the vegetation period (October to May)	DWD	30 arc secs	Yearly	2008-2023	mm	Water availability	White et al. (2014)
Terrain	Roughness	Copernicus	25m			-	Habitat diversity	Stein et al. (2014)
	Slope	Copernicus	25m			°	Energy (Irradiation)	Klimek et al. (2007)
	Topographic Wetness Index	Copernicus	25m			-	Water availability	Moeslund et al. (2013)
Land Use	Mean Land-Use-Intensity over previous 5 years	BexIS		Yearly	2011-2023	-	Eutrophication, Disturbance, Heterogeneity, Light availability	Klimek et al. (2007), Minden et al. (2017), Gough et al. (2000), Jacquemyn et al. (2003), Allan et al. (2014), Collins et al. (1998)
	SD of Land-Use-Intensity over previous 5 years	BexIS		Yearly	2011-2023	-	Temporal	Allan et al. (2014)
	Grassland in 1km buffer	ATKIS DLM / Copernicus				%	Metapopulation, Seed Rain	Gajour et al. (2012), Söderström et al. (2001)
	Arable Land in 1km buffer	ATKIS DLM / Copernicus				%	Spillover effects	Gajour et al. (2012), Söderström et al. (2001)
	Forest in 1km buffer	ATKIS DLM / Copernicus				%	Spillover effects, Irradiation	Gajour et al. (2012), Söderström et al. (2001)
	Patch area	ATKIS DLM / Copernicus				m²	Island effect	Gajour et al. (2012)
	Distance to nearest grassland	ATKIS DLM / Copernicus				m	Metapopulation connectivity	Gajour et al. (2012)
Vegetation Cover	Longtime mean of NDVI	Landsat	30 m	Yearly	1985-2023	-	Proxy for long-term biomass production	Levin et al. (2007) Fraser et al. (2015)
	Spatial sd of longtime mean of NDVI	Landsat	30 m	Yearly	1985-2023	-	Habitat heterogeneity	Stein et al. (2014)
	Yearly mean of NDVI		30 m	Monthly	2023	-	Proxy for short-term biomass production	Levin et al. (2007) Fraser et al. (2015)
	Yearly sd of NDVI		30 m	Monthly	2023	-	Inter-annual variability of productivity	Tilman & Pacala (1993)
	Yearly 10 th percentile of NDVI		30 m	Monthly	2023	-	Proxy for short-term biomass production	Levin et al. (2007) Fraser et al. (2015)
	Yearly 90 th percentile of NDVI		30 m	Monthly	2023	-	Proxy for short-term biomass production	Levin et al. (2007) Fraser et al. (2015)