



HBLFA für Landwirtschaft Raumberg-Gumpenstein (AREC)

Sites and Platform Forum SPF 5
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Filling a
critical gap
for top-class
science at the
continental
scale

 HBLFA
Raumberg-Gumpenstein
Landwirtschaft



Styria: Irdning-Donnersbachtal head quarter, school, administration, Grassland management, Livestock, Plant breeding, Environmental ecology, ...

Stainach-Pürgg: Organic farming

Upper Austria: Wels/Lambach, Organic farming

Agricultural Research and Education Center Raumberg Gumpenstein



The largest institute of the Austrian Federal Ministry for Agriculture, Forestry, Regions and Water Management

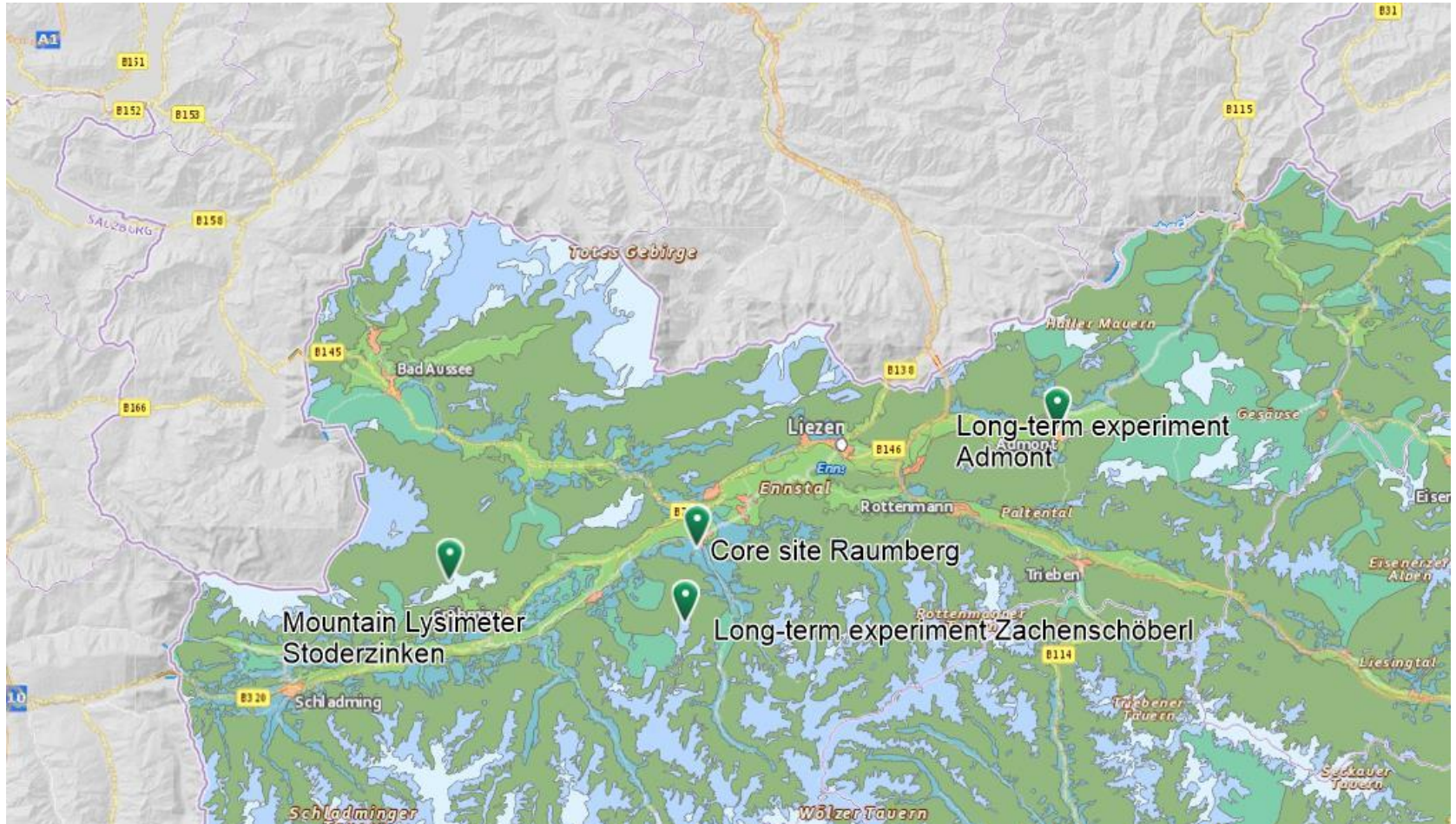
- Capacities for in-field experimentation on 200 ha arable and grassland
- App. 850 livestock
- Organic and conventional experimental sites
- High variety of grass-land sites in regard to management, altitude, soil-properties and water regimes, also Natura 2000 sites (Enns river valley)
- Lab facilities
- 320 employees and 402 students



Core site and satellite sites



Geographical location (District Liezen)



Monitoring facilities at Gumpenstein



Meteorological station (Geosphere Austria)



Measurement

- air temperature
- precipitation
- air pressure
- air humidity
- soil temperature
- dewpoint
- wind direction
- wind speed
- sunshine duration
- global radiation
- sky radiation
- composition of precipitation

Hydrographical Station

Open-field sensors and lysimeters, measuring

- soil water content
- soil temperature
- suction power
- quantity of percolation



ClimGrass (Gumpenstein)

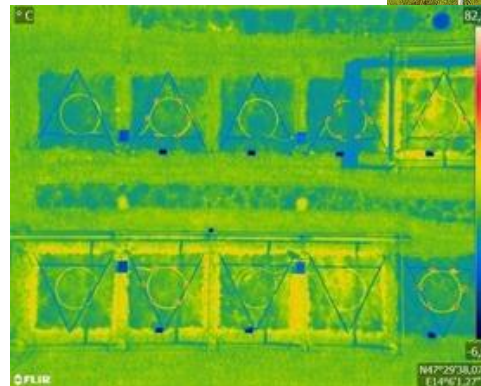


A field experiment facility for climate impact research

ClimGrass simulates the impact of climate change on managed grassland with regard to productivity and soil chemistry of the grassland ecosystem on 54 experimental plots.

Instrumentation:

- heating
- free air carbon dioxide enrichment (FACE)
- rainout shelters
- lysimeters



Mountain lysimeter station Stoderzinken



Water balance and atmospheric depositions

The site was established in 2006 at an altitude of 1.830 m in order to gain data on the water balance and atmospheric depositions of alpine grassland ecosystems.

It combines a meteorological station and a mountain Lysimeter

Measurements

- suction power
- quantity of percolation
- lysimeter weight
- soil water content
- soil temperature
- soil electric conductivity
- global radiation
- snow depth
- snow pressure
- air temperature
- precipitation
- air humidity
- wind direction
- wind speed
- composition of precipitation



Long-term experiments on managed grassland



Data going back to 1944

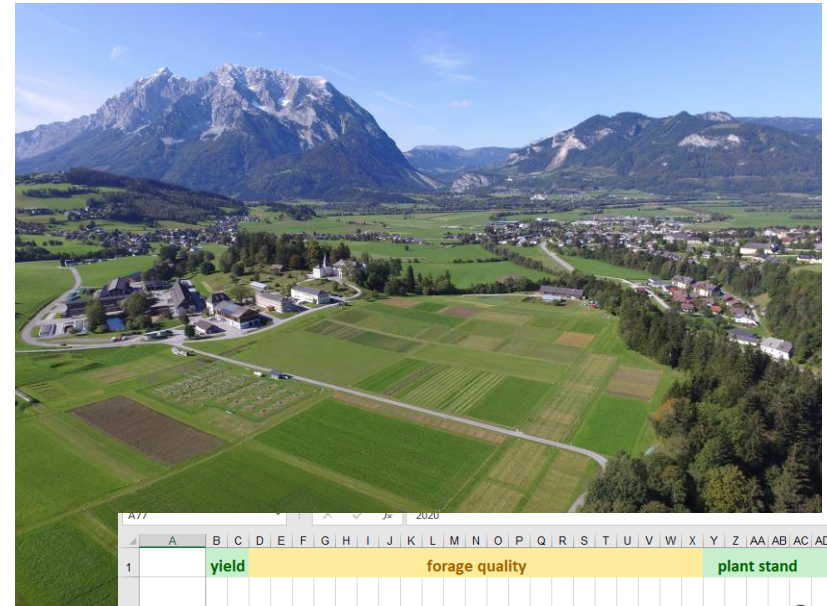
Fertilization Experiments at three sites:

Admont (alt. 633 m):

3 experiments varying fertilizer type and harvest frequency, earliest since 1944.

Gumpenstein (alt. 687 to 713 m): 3 experiments varying fertilizer types and harvest frequency, 1 nutrient deficiency experiment, earliest since 1960.

Zachenschöberl (alt. 1.297 m): 1 lime fertilization trial, 1 fertilizing experiment at an alpine meadow, since 1964.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF		
1		yield	forage quality																	plant stand														
2		fresh mass (kg/ha)	dry matter (kg/ha)	crude fibre (g/kg DM)	crude protein (g/kg DM)	cauda ash (g/kg DM)	nrf (g/kg DM)	adf (g/kg DM)	adf (g/kg TM)	phosphorus (g/kg DM)	potassium (g/kg DM)	calcium (g/kg DM)	magnesium (g/kg DM)	sodium (g/kg DM)	iron (mg/kg DM)	copper (mg/kg DM)	zinc (mg/kg DM)	mangan (mg/kg DM)	sulfur (mg/kg DM)	cobalt (mg/kg DM)	digestibility (DOM %)	ME (MJ/kg DM)	NEL (MJ/kg DM)	coverage (%)	grass (weight-%)	clover (weight-%)	herb (weight-%)	plant survey (area-% of all species)	pH Wert in CaCl2 (NORM L 1083)	pH in Calciumacetat (Kalkbedarfsermittlung)				
3	1946																																	
4	1947	x	x	x	x	x				x	x	x																						
5	1948	x	x	x	x	x				x	x	x																						
6	1949	x	x	x	x	x				x	x	x																						
7	total	c	x	x	x	x				c	x	x																						

