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Buffer strips

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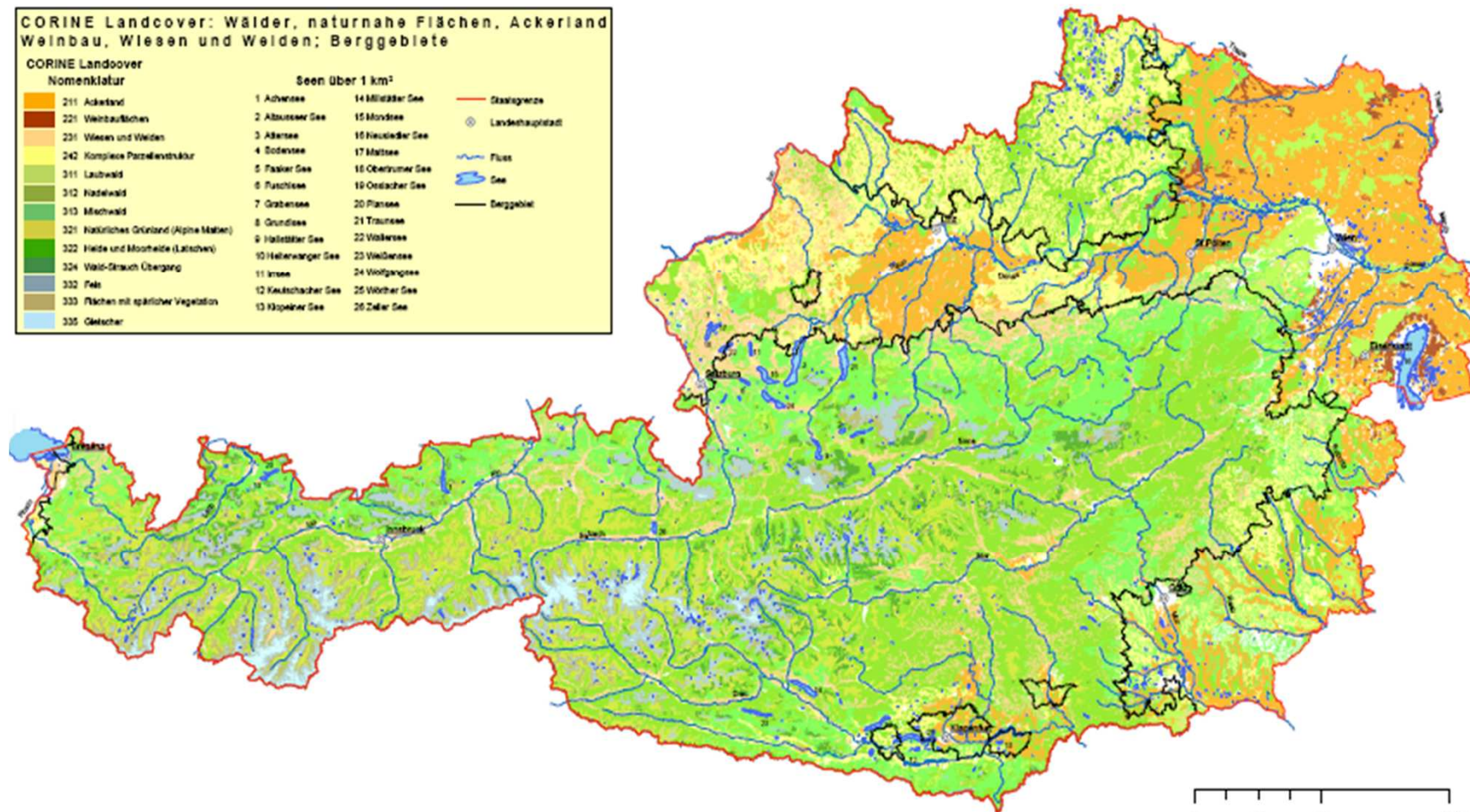
Austrian Ministry of Agriculture, Forestry, Environment and Water Management



Land use



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N-surplus on area worthwhile application

	average	extensive	intensive
	kg N/(ha.a)		
mineral fertiliser	51	0	71
organic manure("net")	49	49	153
deposition	20	15	20
N-fixiation	19	25	25
Input	139	89	269
Output – N in crops	105	65	190
surplus (denitrification, groundwater)	34	24	79

N- und P-Emissions into surface waters



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N- und P-Emissions into surface waters (daNUbs; Behrendt, 2004)

		Deposition	Surface Runoff	Erosion	Dainage	Groundwater flow	Urban runoff	Point sources	Total
N	[kt/a]	2.310	16.790	2.970	3.370	36.370	2.530	15.200	79.540
N	[%]	3 %	21 %	4 %	4 %	46 %	3 %	19 %	100 %
P	[kt/a]	48	559	3.069	17	652	399	1.204	5.948
P	[%]	1 %	9 %	52 %	0 %	11 %	7 %	20 %	100 %

Measures for emission reduction



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- **Nationwide action programme**
- **Additional voluntary measures** (rural development) nationwide;
- **Supplementary measures enforceable** on basis of the Water Act in areas where average NO_3 concentration in groundwater is > 50 mg/l (not implemented)
- **Catch crops in winter / buffer strips** in order to reduce N and P-emissions
- **Advisory services** important for implementation

Nitrate Action Programme – periods in which fertilizer application is forbidden



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period	fertilizer	areas
15 October - 15 February	Mineral fertilizer, slurry, sewage sludge	Agricultural area without green cover
15 November - 15 February		Agricultural area with green cover
30 November - 15 February	Solid manure, compost	Agricultural area

For cultures cultivated early in the year (e.g. spring barley, vegetables) and green covers with early nitrogen demand (e.g. rapeseed, winter barley) application is allowed from **1 February** .

Application is not allowed on **frozen** soils, **snow covered** soils and **water saturated** soils



Nitrate Action Programme – storage capacity

- Minimum requirement of **6 months** capacity
- Capacity has to be sufficient in order to guarantee that **other provisions** of the action programme are **not violated**
e.g. to avoid manure application at times with
 little crop demand,
 danger of runoff due to uncovered soils
(e.g. maize dominated crop rotation: > 6 months)

Buffer strips



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Nitrate Action Programme does not allow fertilisation near water courses:

- **near stagnant waters:**

20 m in general, 10 m if accurate fertilisation devices are used

- **near running waters:**

5 m in general, 2.5 m if accurate fertilisation devices are used

- **near running waters in case of steep slopes (> 10 %):**

10 m in general, 5 m if accurate fertilisation devices are used

GAEC provisions do not allow tillage near water courses:

- **near stagnant waters:** 10 m

- **near running waters more than 5 m wide:** 5 m

Control system



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- **national water quality monitoring system:**
 - ~ 2.000 groundwater monitoring sites
 - ~ 250 surface water monitoring sites
- **controls by water inspectorate:**
 - check of sites, installation and water quality
- **controls by supervisors of EAGGF paying agency:**
 - ÖPUL (> 5 % of farms)
 - cross compliance (1 % of farms)
 - mainly on-site controls
- **Information / advisory services** are very important

Discussions on EU level



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EC proposal: A standard on buffer strip width

% of arable land affected by buffer stripes near rivers (EEA, 2011) :

MS	RIVER LENGTH (km)	LENGTH ON ARABLE LAND (km)	%	ARABLE LAND SURFACE (km ²)	1m strip km ²	% ARABLE 1m strip	5m strip km ²	% ARABLE 5m strip
AT	46681	4008	8,6%	10.989	8,0	0,07%	40,08	0,36%
NL	3420	337	9,9%	7.721	0,7	0,01%	3,37	0,04%
SI	10763	629	5,8%	1.125	1,3	0,11%	6,29	0,56%
EU27	1458021	259019	17,8%	1.094.334	518,0	0,05%	2590,19	0,24%



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Thank you very much for your attention!