

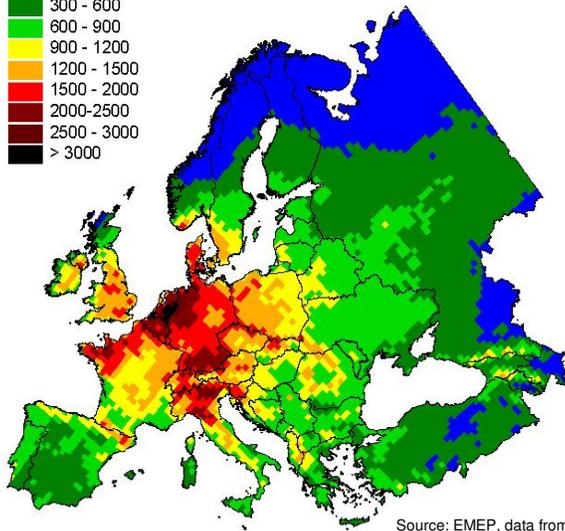
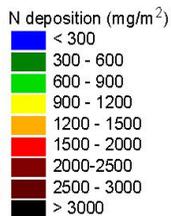
Nitrate in soil water in a steep nitrogen deposition gradient in Swedish forests

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Deposition levels in Sweden differ between north and south

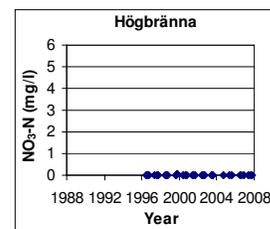
The N deposition in northern Sweden is close to background levels, 100-200 mg m⁻². In southern Sweden it is much higher, up to 1500 mg m⁻². The deposition in southwestern Sweden is between the high levels in central Europe and the low levels in northern Sweden. But is it high enough to cause a risk of N leaching from growing forests?



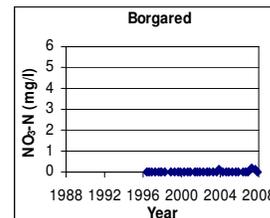
Source: EMEP, data from 2000

Does the risk of N leaching differ between north and south?

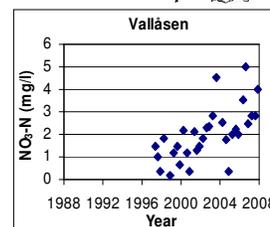
Nitrate in soil water on 50 cm is presently measured on 64 forest sites in Sweden. Moreover, there are 24 sites on which measurements has been cut off recently, in 2006 or later. These 88 sites have been studied thoroughly.



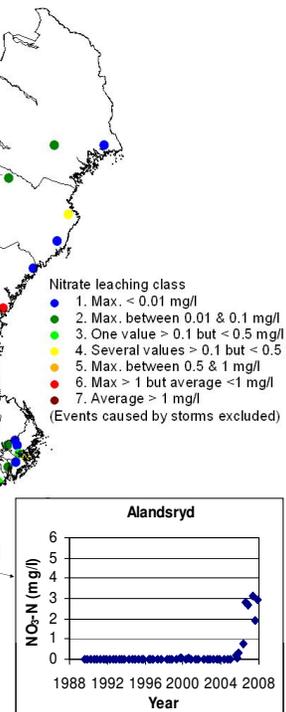
In northern Sweden the N concentration is generally low.



In southern Sweden there are sites with low concentrations...



...but there are also several sites with chronically elevated concentrations.



A big Januar storm in 2005 (Gudrun) is clearly visible in the soil water on several sites.

The Swedish Throughfall Monitoring Network



In the Throughfall Monitoring Network air concentrations, deposition and soil water chemistry on 50 cm depth have been measured at forest sites starting in 1985. Air concentrations and deposition is measured monthly, and soil water chemistry three times a year, using lysimeters. Most of the sites are part of a forest monitoring network. Read more on www.krondroppsnetet.ivl.se.

Conclusions and work in progress

- Low concentrations in northern Sweden.
- Both high and low concentrations in the South.
- Site properties (e.g. tree properties, soil chemistry and microbe communities) are mapped in detail in order to explain why some sites leach and some not.