



# A Semiquantitative Concept for O<sub>3</sub> Risk Assessment

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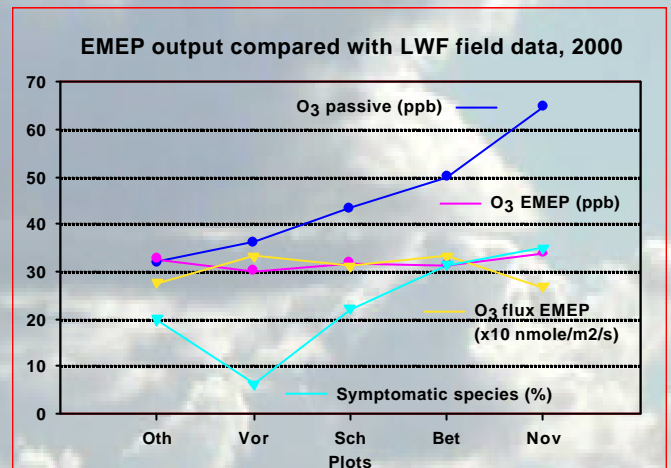
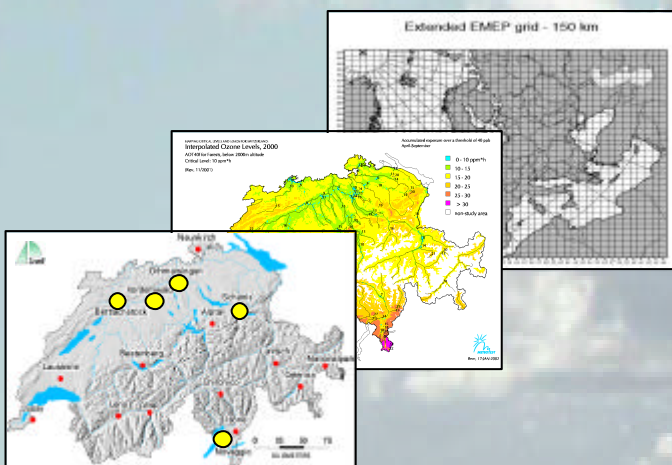
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## Background:

- ◆ So far, the UNECE LRTAP AOT40 threshold has been used to protect vegetation from adverse O<sub>3</sub> effects.
- ◆ The AOT40 is based on the reduced biomass data set of *Fagus sylvatica* seedlings grown under OTC conditions.
- ◆ Several approaches are being investigated using AOT40 and O<sub>3</sub>-flux calculations as well as passive O<sub>3</sub>-monitoring combined with intensive monitoring of O<sub>3</sub>-like foliar injury.
- ◆ EMEP is assessing the O<sub>3</sub> risk by calculating the O<sub>3</sub> flux based on a 50 x 50 km grid across Europe.

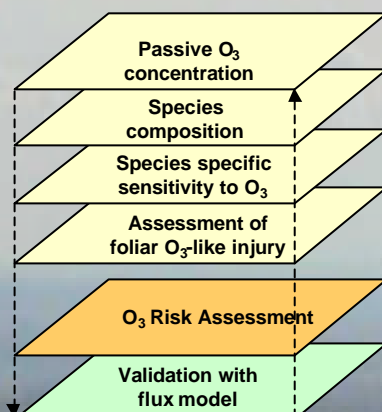
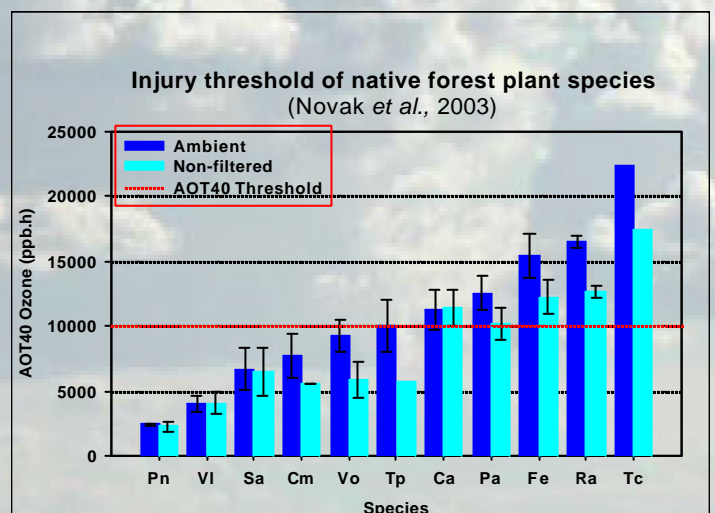
## Preliminary Results and Conclusions:

- ◆ The data from the calculated EMEP output for 2000 differ from the LWF field data significantly.
- ◆ The EMEP grid of 50 x 50 km may be too large to take species composition, species specific sensitivity to O<sub>3</sub>, and the effect of microsite conditions into account as they occur on the topography of Switzerland.
- ◆ A validation of the flux calculations with the output of the intensive monitoring program LWF is suggested.



## The Concept:

- ◆ The Swiss Long-term Forest Ecosystem Research Program LWF conducted on 16 Level II plots
  - Passive O<sub>3</sub> sampling
  - Assessment of O<sub>3</sub>-like foliar injury
  - Monitoring of species composition and landuse
- ◆ Scanning native forest species for their sensitivity to ozone by investigating the O<sub>3</sub>-exposure threshold for the onset of visible foliar injury.
- ◆ Estimating O<sub>3</sub>-risk assessment by combining intensive monitoring data.
- ◆ Validation of the results by comparing the LWF output with the output of O<sub>3</sub> flux models such as EMEP or ODEM.



## Acknowledgements:

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