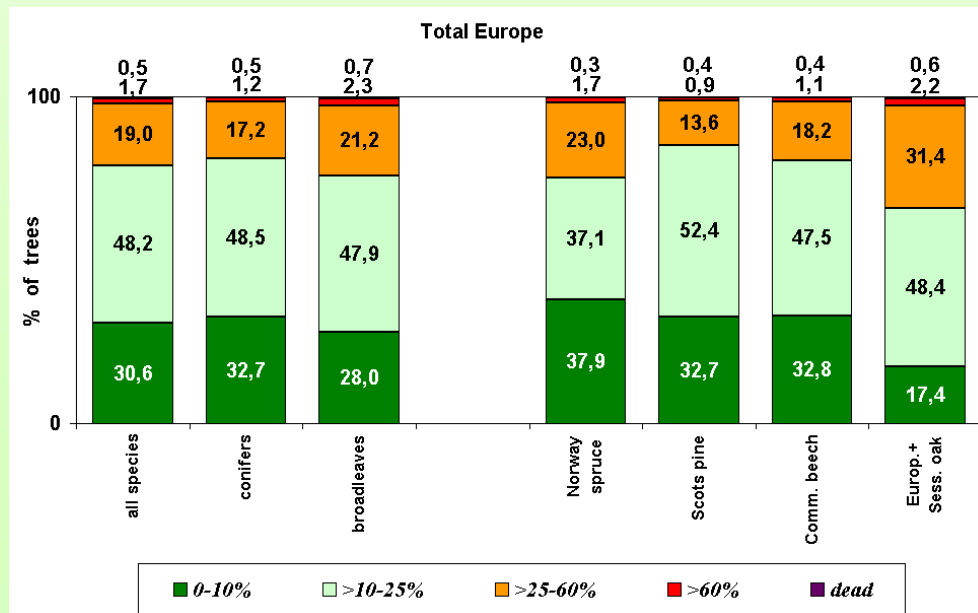


Item 4 Results and reports of ICP Forests in 2009

In 2008

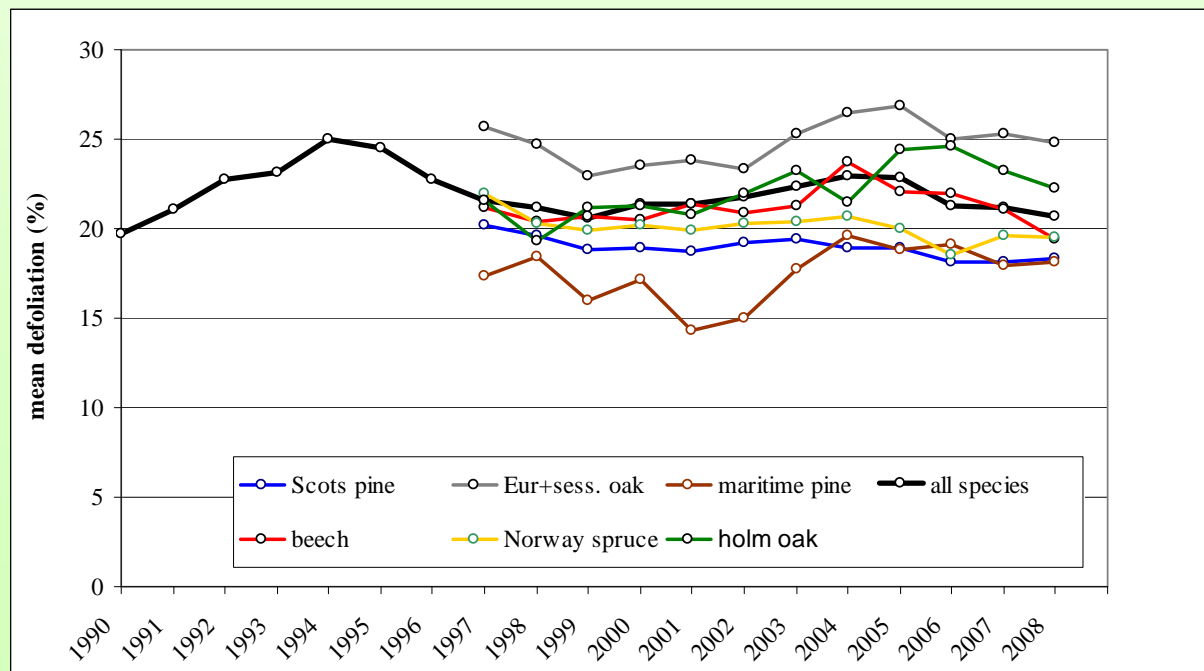
- ✿ fewer data submitted than in previous years,
- ✿ despite tremendous increase in Turkey (nearly 1/10 of all trees)
- ✿ yet results similar to previous ones: 1/5 of trees rated as damaged



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For temporal variation till 2008

- Selection of trees of „common countries“
- Two time series: 1990-2008 and 1997-2008

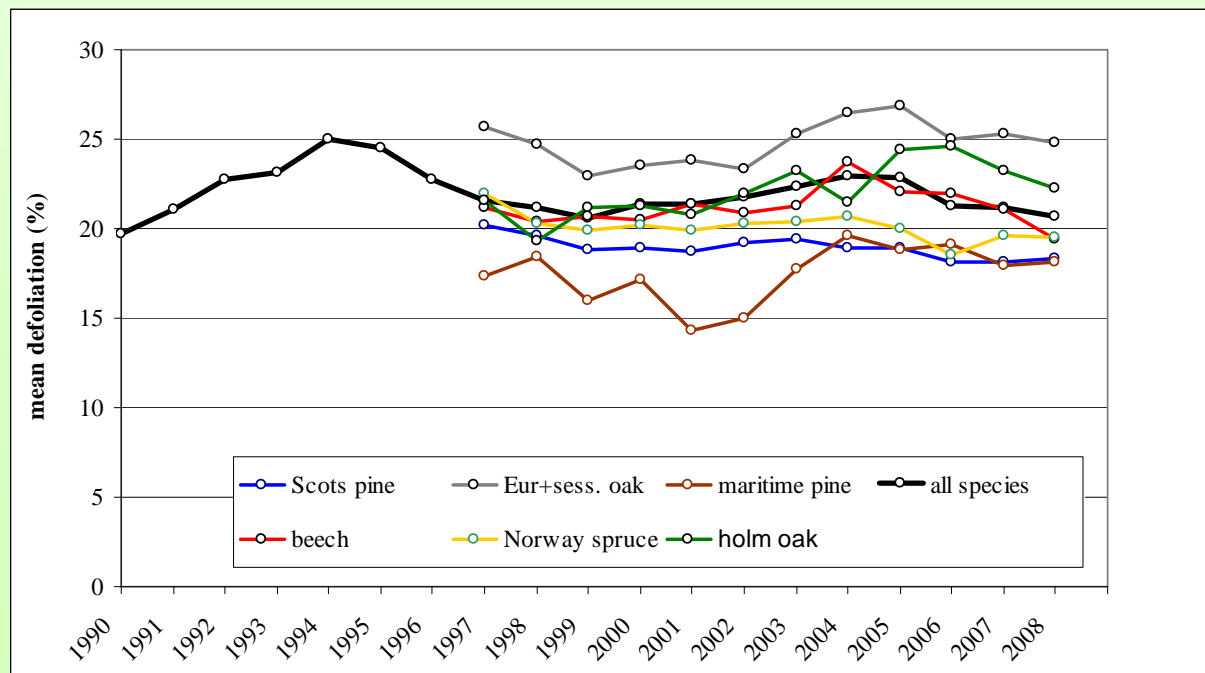


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Maritime pine (brown curve) and holm oak (green curve)

■ Maritime pine: only 2 000 trees, strong increase 2001-04

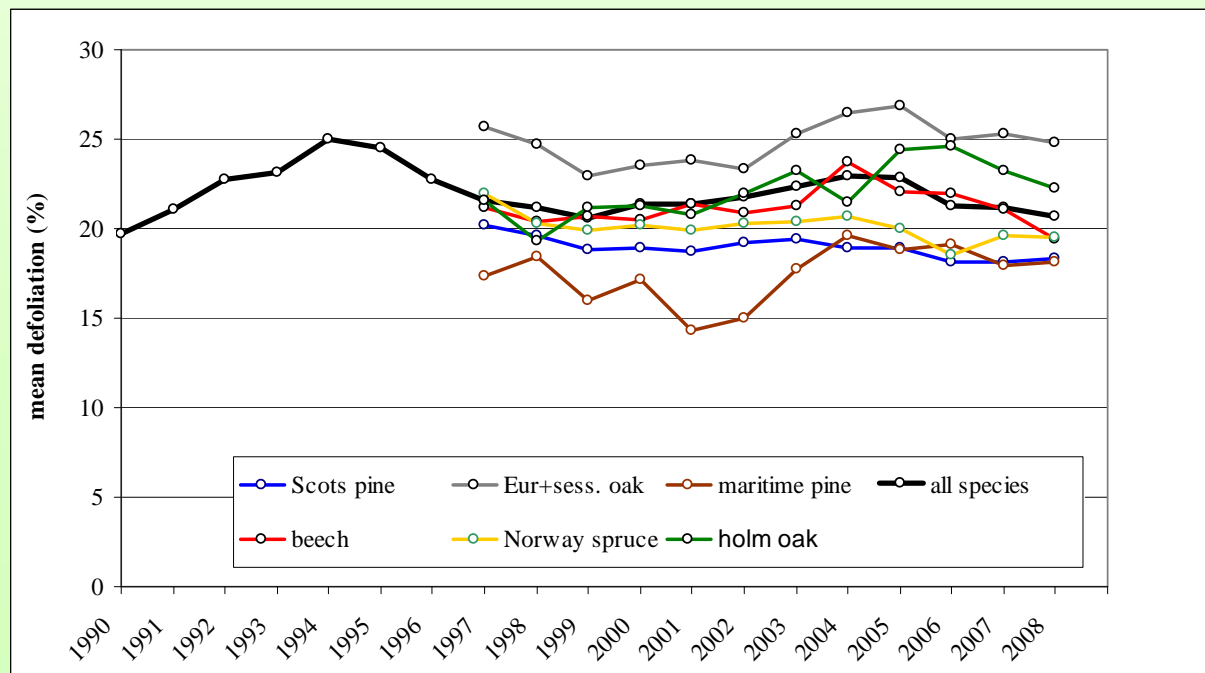
■ Holm oak: recuperation 2007/08



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Scots pine (blue curve)

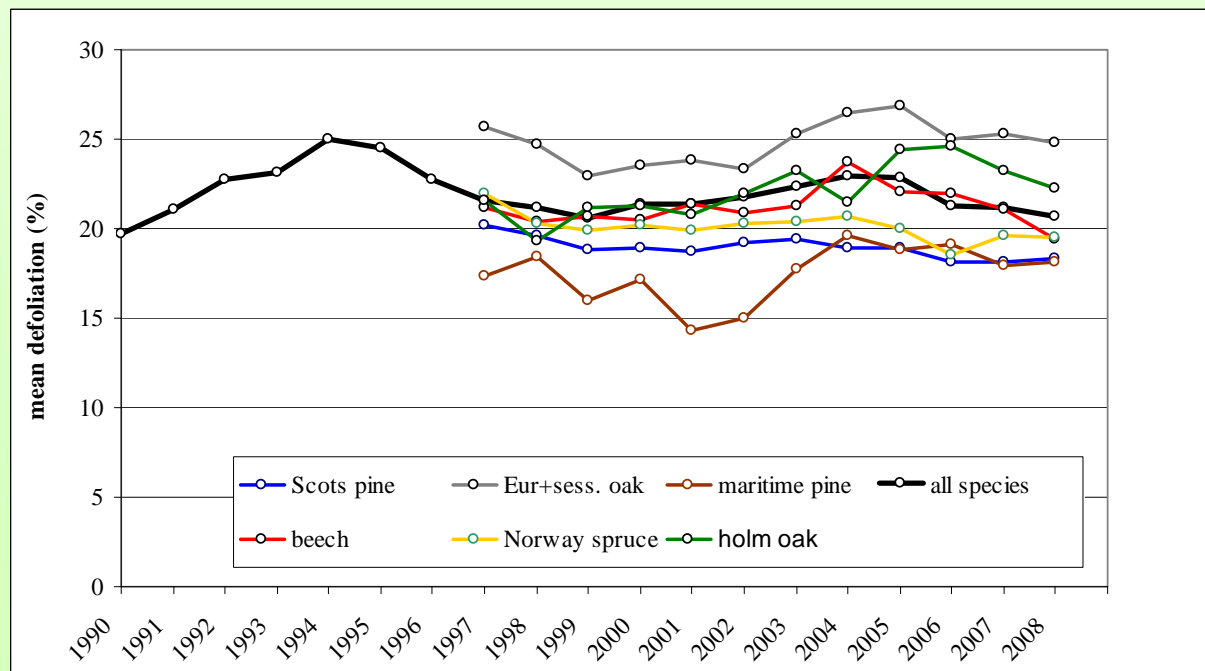
- No changes since 1997, large sample (25 000 trees across Europe)
- No response to drought stress of 2003



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Common beech (red curve)

- ✿ Clear response to drought stress of 2003
- ✿ Continued recuperation since 2005

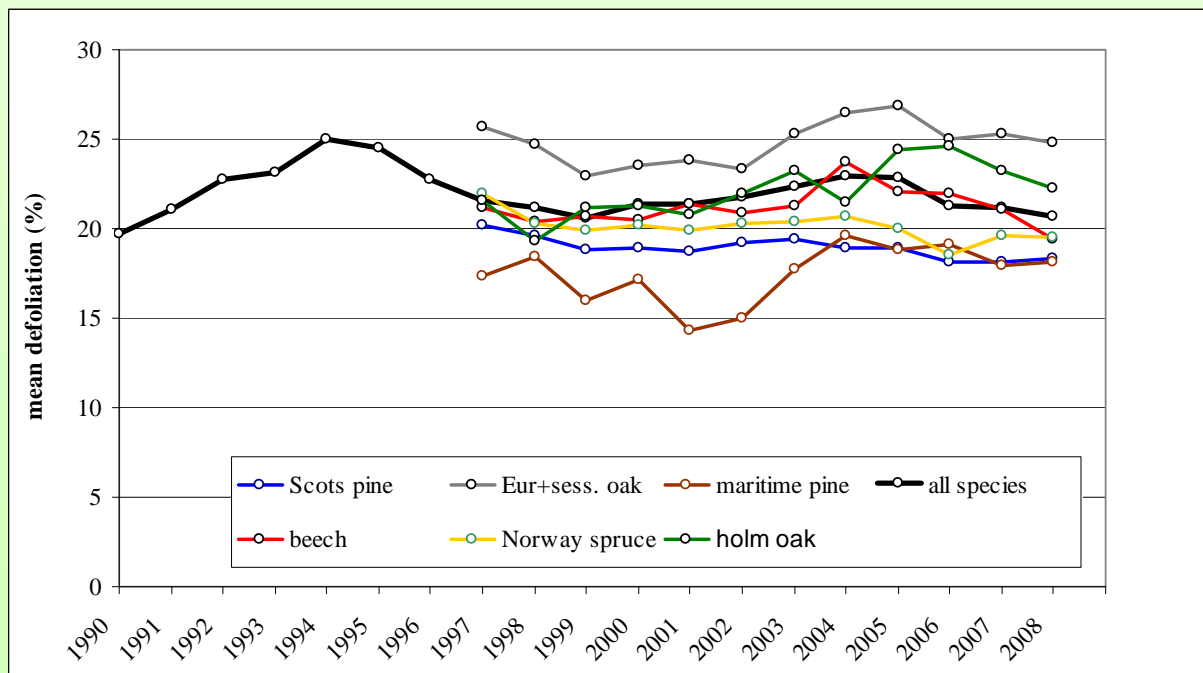


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European and sessile oak (grey curve)

Clear increase in defoliation and response to drought stress 2003

Recuperation since 2006

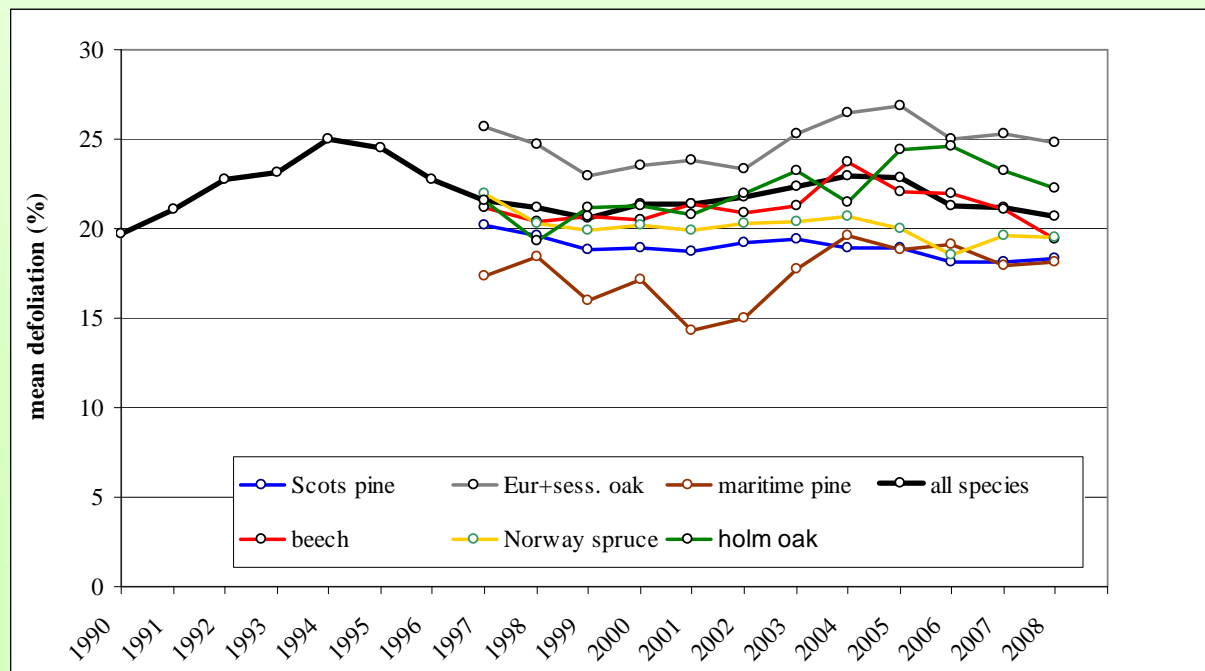


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Norway spruce (yellow curve)

■ Little change since 1997

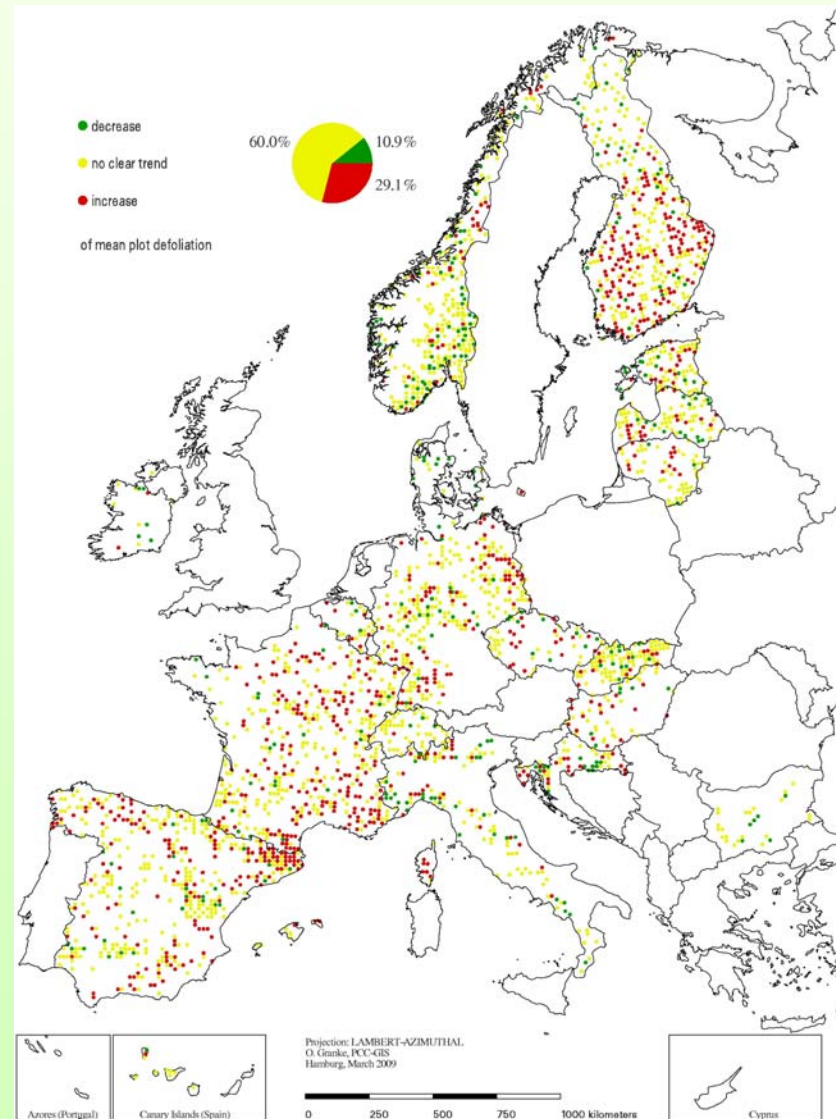
■ Slight response to drought stress of 2003



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Mean plot defoliation 1997-2008

- No change in defoliation on 60.0% of the plots
- Increase in defoliation on 29.1% of the plots, spread across many parts of Europe
- Decrease in defoliation on 10.9% of the plots, mostly situated in Norway, Estonia, Latvia, Italy, and Slovak Republic



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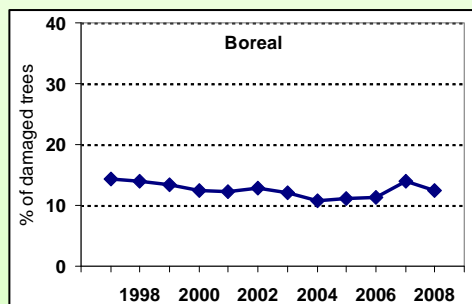
Special Chapter: Spruce Forests in Russia

- ✿ Introduction
- ✿ Geographic extent
- ✿ Tree species
- ✿ Spruce tolerance and adaptation
- ✿ Types of forest
- ✿ Disturbance factors
 - ✿ drought, windthrows
 - ✿ clear cutting
 - ✿ bark beetles
 - ✿ air pollution

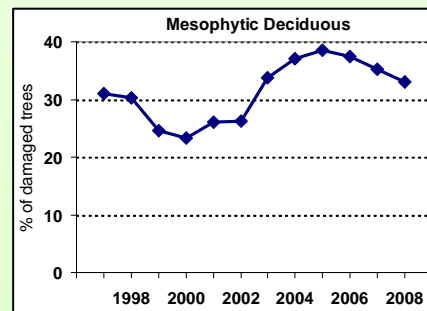


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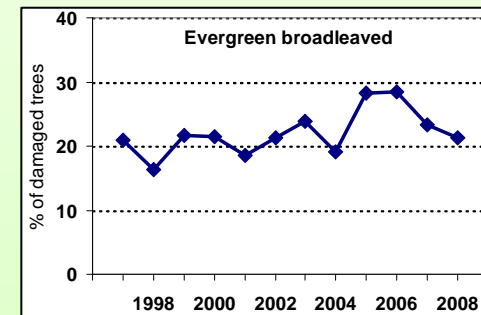
This year: stratified evaluation according to forest types:
Some examples



Boreal forests: low defoliation in the graph. But specific problems in parts of Russia (not yet included in the graph)



Central European mixed deciduous forests. Reacted clearly to the extreme year in 2003



Evergreen broadleaved forests: very complex ecosystems, intensive human influence, „secca syndrome“, forest fires

World Forestry

