

Update Manual Part IV

Visual Assessment of Crown Condition and Damaging Agents

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CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

International Co-operative Programme on
Assessment and Monitoring of Air Pollution Effects on Forests (ICP
Forests)

MANUAL

on
methods and criteria for harmonized sampling, assessment,
monitoring and analysis of the effects of air pollution on forests

Part IV

**Visual Assessment of Crown Condition and
Damaging Agents**

updated: 05/2010

Aims

- Integrated view on vitality, response of trees and plants with regard to resilience, vulnerability and adaptability in forest ecosystems
- Improve tree condition parameters, link to damaging causes on tree condition
- Better organized link to other tree related manuals (e.g. growth, phenology, LAI)
- Approve data quality
- Keep time series: Level I; Level II

Parameters

Variable	see	Level I	Level II	Level II core	Reporting units
Tree visibility	5.2.1	O	M	M	code
Social class	5.2.2	O	M	M	code
Relative crown distance	5.2.3	O	O	M (only deciduous stands)	Relative measure
Crown shading	5.2.4	O	O	O	code
Defoliation	5.2.5	M	M	M	5 % classes
Foliage transparency	5.2.6	O	O	O	5 % classes
Flowering (only Pinus spec.)	5.2.7	O	O	O	code
Fruiting	5.2.8	O	O	M (only beech + spruce)	code
Crown form (Fagus sylvatica)	5.2.9	O	O	M	code
Crown form / morphology (Picea ssp., Pinus sylvestris)	5.2.10	O	O	O	code
Tree removals and mortality	5.2.11	M	M	M	code
Stand age	5.2.12	M	M	M	classes
Tree age		O	O	M	classes
Secondary shoots/epicormics	5.2.13	O	O	O	code
Specification of affected part	5.2.13	M	M	M	code
Symptom	5.2.14	M	M	M	code
Specification of symptoms		O	M	M	code
Location in crown		O	M	M	code
Age of the damage		O	M	M	code
Causal agents or factors	5.2.15	M	M	M	code
Scientific name of cause		M	M	M	code
Extent and quantification	5.2.16	M	M	M	% (classes)

Data quality

1. Quality of field teams and training
2. National quality control: repeated field measurements, defined measurement quality objective and data quality objective
3. Calibration courses on national and on international level. Aim: Analysis of variation of classes or codes under field conditions.
4. Photo calibration courses (assessable crown)

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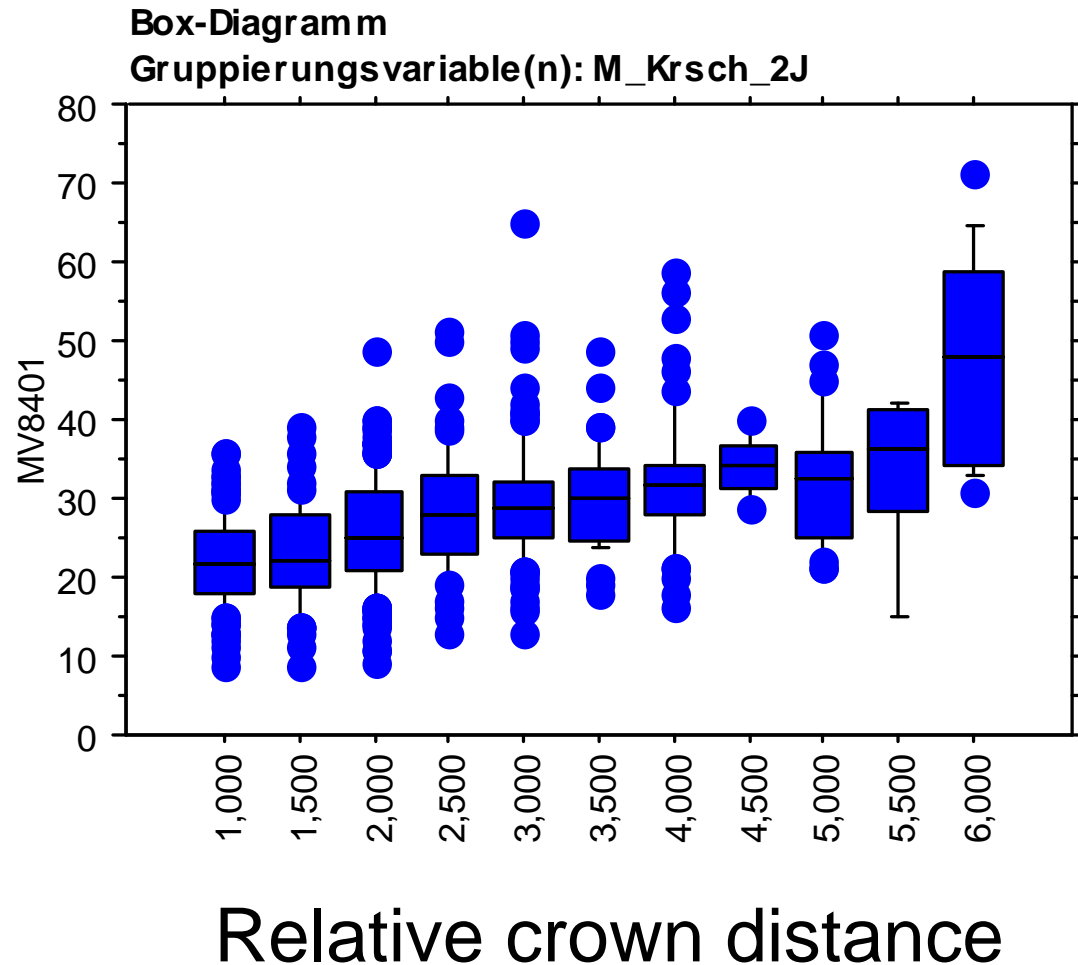
Visual Assessment of Crown Condition and Damaging Agents

Thank you for your attention

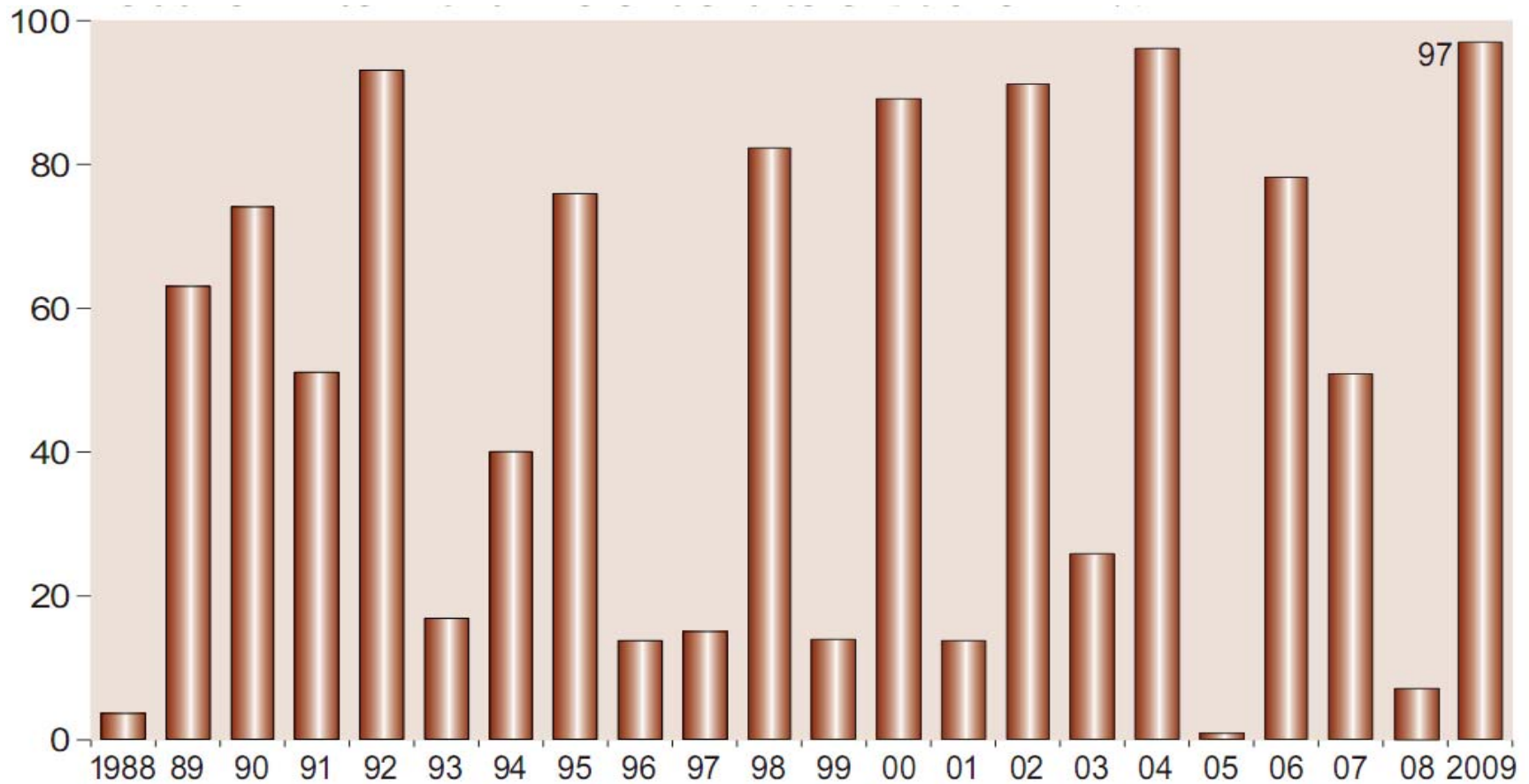
Relative crown distance

Defoliation

*Example Beech
Hessen*



Fruiting *Fagus sylvatica*



Fagus sylvatica: percentage of tree fruiting
(age >60) 1984-2007

Systematic Monitoring (n=4.204 Beech trees)

Hesse, Lower Saxony, Saxony-Anhalt

Updating process

- Field protocols D1 (FutMon) 4/2009
- FutMon assessment period 2009
- Common manual structure, data quality concept
- Discussion at FutMon Meeting Tampere
- Suggestions for parameter status by ICP Forests Expert Panel meeting, Tampere
- Circulation of Manual draft
- Comments
- Task Force

ICCs: Include all relevant classes

