FUTMON / UNECE ICP Forests
Training course on the Assessment of Damage Causes
Belgium – Leuven 14 – 17 June 2010

Minutes

1. The training course was organised by the Research Institute for Nature and Forests (INBO) in the frame of the Life+ FutMon action C1Dam-3(BE). The meeting was held in Belgium, Leuven, 14 – 17 June 2010.

2. 39 delegates of 18 countries participated in the meeting (annex 1).

3. The main objectives of the course were: training in applying the guidelines on the assessment of damage causes and harmonisation. The field exercises and the group discussions contributed to the training of the observers in diagnosing damage symptoms caused by different agents.

4. The course started 14 June in the afternoon (annex 2: agenda). The first session consisted of:
   - an introduction to the guidelines on the assessment of damage causes (Peter Roskams);
   - a photo exercise on symptoms caused by biotic and abiotic agents (Geert Sioen). A report on the results of the photo exercise is attached (annex 3);
   - an overview of the more important biotic and abiotic agents in N-Europe (Seppo Nevalainen – Fin) and S-Europe (Paloma Garcia – Sp). Due to time constraints the session on C-/W-Europe had to be skipped;
   - an introduction to the new concept for the Photo ICC (Inge Dammann- Ge)
   - an introduction to the field exercises

5. The field exercises took place in the forest of Meerdaal, in the neighbourhood of the city of Leuven. Transport in the forest was done by bicycle. Prior to the start of the field work a representative of the forest service (Agency for Nature and Forests) gave an introduction to the forest management in the area.

6. In total 4 plots were assessed, 1 mixed beech – oak plot (14 trees), 1 plot in beech (5 trees), 1 plot in Scots pine (15 trees) and 1 plot in oak (7 trees). Field exercises were carried out by individual representatives or by country teams. For each tree the participants gave scores for:

- overall defoliation;
- parts of the tree affected by biotic/abiotic agents (leaves/needles, twigs/branches and stem);
- symptoms and symptom specifications;
- location in the crown;
- extent;
- age of the damage;
- cause(s) of the observed symptoms.

7. The exercises in each plot were followed by a group discussion on the scores for a selection of sample trees.

8. The results of the field exercises for each team are presented as:
   - the number of trees per plot with symptoms on leaves/needles (L), twigs/branches (B) and stem/collar (S);
   - the total number of symptoms on leaves/needles, twigs/branches and stem/collar per plot;
   - the number of trees per plot with symptoms caused by defined biotic/abiotic agent groups

9. For the evaluation of the field exercises the scores of the teams were compared to the scores of the organising team of Belgium-Flanders, which was considered as the reference team. The scores for leaves/needles, twigs/branches and stem/collar were analysed separately. This resulted in agreement levels for each plot and each team.

10. Agreement levels were calculated:
    - on tree level: the agreement levels specify the % of common trees in which symptoms on leaves/needles, twigs/branches and stem/collar were reported by the respective team ànd the reference team (e.g. agreement level of 60 % for affected part “twigs/branches” means that 60 % of the trees with symptoms on this part of the tree were reported by both teams, 40 % of the trees was reported by 1 team only: either the respective team or the reference team);
    - on symptom level: the agreement levels specify the % of common symptoms on leaves/needles, twigs/branches and stem/collar for all trees in the plot. In order to have a complete match (100 % agreement) between the team and the reference team both the code for affected part (SAF = specification of affected part) and the symptom code should be identical;
    - On ‘cause’ level: the agreement levels specify the % of common trees in which damage by a defined biotic/abiotic agent was reported by both teams.

11. Some general conclusions from the results of the field exercises:

    - differences between the teams are found regarding the number of trees with symptoms on defined affected parts (L, B, S), the total number of symptoms on these affected parts and the number of trees with symptoms caused by defined agent groups. Explanations for these differences may include: differences between observers regarding the level of detail when reporting damage symptoms, the use of a minimum damage threshold by some teams (damage below this threshold is not reported), different levels of expertise in diagnosing

damage symptoms. Some teams seem to report only 1 main symptom for each tree;
- similar symptoms were sometimes described in different ways. E.g. dead current year shoots with brown needles in conifers were described as 'dead current year shoots' or as 'brown current year needles';
- the agreement level between the teams and the reference team amounts to max. 85 % for the occurrence of stem damage (plot I, oak + beech). For trees showing damage on leaves/needles the max. agreement level is 64 % (plot II, beech) and for trees with twig/branch damage 90 % (plot III, pine);
- overall (average for 4 plots) the agreement levels amount to 58 % for trees showing symptoms on leaves/needles, 59 % for trees with symptoms on twigs/branches and 66 % for trees with stem damage;
- the detailed symptom description using codes and the agreement on this description results in lower agreement levels. Overall the average agreement level is lowest for symptoms on the stem (24 %) and highest for symptoms on leaves (55 %). The average agreement level for symptoms on twigs/branches amounts to 31 %.
- these lower agreement levels for the symptom description are partly explained by different codes for the affected part of the tree, even when the reported symptom code by the team and the reference team was exactly the same. E.g. in the event of dead branches some teams reported code 22 for affected part (branches < 2 cm diameter), while other teams used code 23 (branches 2 – 10 cm), while in both cases the same code for the symptom (dead/dying) was reported. The same applies to stem damage (code 32, trunk between collar and crown and code 33, collar). Neglecting these different codes for affected part when the same symptom code was reported, would have resulted in considerable higher agreement levels for the symptom description;
- agreement levels for trees damaged by different agent groups were calculated for the oak + beech plot. Max. agreement levels between the teams and the reference team were found for trees showing insect damage (61 %).

12. In the closing session on 17 June problems raised during the field exercises and suggestions for amendments of the manual were discussed (see below).

13. Delegates of 8 participating countries presented the results of the assessment of damage causes in their country. A list of presentations is included (annex 2).

14. Amendments and additions to the manual, discussed at the closing session and which will be presented for adoption at the Task Force Meeting:
    - Add a code to the symptoms list for 'mycelium incl. rhizomorphs';
    - If the same symptom occurs on several parts of the tree, the symptom should be reported for all affected parts (e.g. on the collar and on the main trunk);
    - As regards age of the damage "Old + new damage" means a continuing process, active and going on (code 3 = fresh + old damage);
    - Resin flow and slime flux: 'fresh' means it is still moist, transparent;
    - Reporting of the extent of signs of insects, fungi, … (e.g. nests of caterpillars, fruiting bodies etc.) is optional;
    - A code will be added to the symptoms list for 'totally brown or necrotic leaves/needles'. The description of the present symptom code 3 will be changed into "Partially red to brown discolouration including partial necrosis";

15. Other recommendations:
    - Regular training of the observers on national and international level in describing and diagnosing damage symptoms is of great importance in order to achieve more harmonisation;
    - A photoguide with pictures showing frequently occurring damage symptoms including a coded symptom description could be an important instrument for achieving more harmonisation between observers.