

Towards an Advanced Inventorying and Monitoring System for the Swiss forest (AIMS)

internal workshop 12.11.2020

Contribution of the RU Community Ecology

1) Position of the RU with respect to the Swiss AIMS vision

- No specific additional needs for a regular field survey of a subset of NFI-plots every year
- We see a need in providing a yearly and spatial-explicit record of any kind of disturbance occurring on NFI plots (e.g. in collaboration with the Swiss Forest Protection group), so as to have a solid reference for interpreting the data provided by the regular NFI survey

2) Key scientific questions

- Evolution of key forest parameters related to a forest service (e.g., protection forest)
- Evolution of specific iconic tree species that faces problems under the present climatic and environmental conditions (e.g. the chestnut tree in the southern Alps)
- Impact of specific abiotic stresses (drought, heat and VPD)
- Forest regeneration and future forest dynamics

3) Scale of interests and statistical inference

- Single Swiss regions, including the mountain regions as a whole
- Specific (at least locally) dominant tree species
- Specific forest types (e.g., protection forests)

4) Statistical requirements

- Our dream would be to come back to the 1x1 km net e.g. every 50 years? IFN6, IFN11, ...
- A part of that, no particular additional needs

6) Related data needs (I)

- Plot level: it would be great to re-assess red wood ant species id in NFI6 (in NFI4 species id & nest counts; in NFI5 only nest counts)
- We strongly furthermore suggest to (re)include following parameters at single tree level:
 - ***origin of the tree*** (gamic or agamic)
 - ***social position*** (dominant, codominant, dominated, suppressed), which can not be completely substituted by the position in the stand layer
 - ***next neighboring tree for sample tree at the plot margin*** (distance from focal tree, height, DBH, species)

6) Related data needs (II)

Parameters related to protection against natural hazards

(mostly at stand level. i.e. 50 x 50 m):

- Additional information on **terrain roughness** and **dead wood** (relevant for rockfall and snow movements (e.g. spatial arrangement, dimension, decomposition stage of logs and root plates)).
- **Further development of remote sensing methods** and related field verifications have generally a high potential to improve the assessment and quantification of protection effects against natural hazards.
- Nice to have: **Additional soil data related to soil stability** and shallow landslides (geotechnical soil classification)

7) Support and resource available

- Strong moral support !
- Resources to be discussed according to the single needs