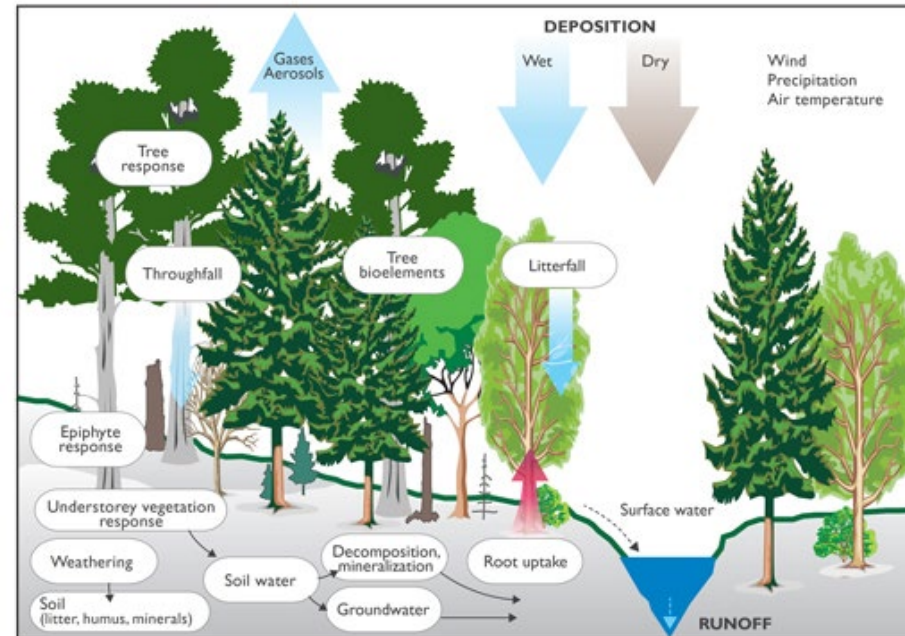




Extended ICP IM monitoring strategy

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Rationale behind the work (CLRTAP)

- Sets a vision for the period 2020–2030 and beyond, to address the priorities set and in light of the emerging **challenges regarding the effects of air pollution and their interaction with climate change, nitrogen pollution, biodiversity loss and other global environmental challenges**, through an integrated approach involving agricultural, transport, energy, climate and other policies



Cont. rationale

- While abatement measures under the Convention have significantly reduced the impact of air pollution on health and ecosystems, substantial problems remain. Based on the 2016 Assessment Report, the following air pollutant effects should be addressed through **a multi-pollutant, multi-effect approach that includes their potential interaction with climate change, the nitrogen cycle and biodiversity.**



Rationale behind the work ICP IM community

- I. It has come to our attention that establishing new ICP IM sites is difficult due to the large cost of starting and operating the monitoring programs
- II. There is a request from the Air Convention to add other ecosystem types than forests in the monitoring strategies.
- III. For ICP IM to expand its monitoring to more sites, a simplified monitoring of other ecosystem types is needed and desirable
- IV. There is a high demand from the EU directive on National Emission Ceiling (NECD) to harmonize ecosystem monitoring towards other ecosystem types than forests.



Aim and scope

The aim of the WG is to develop an extended monitoring strategy for ICP IM that:

- *is simplified compared to the current ICP IM monitoring manual;*
- *integrates monitoring with other ICPs under the WGE;*
- *reflects and integrates today's and possible future environmental issues;*
- *allows monitoring in ecosystems other than forests and higher number of sites;*
- *promotes high international cooperation with other initiatives such as the EU-NECD, eLTER, LIFE Watch and others.*



Levels of monitoring

Level 3: Full ICP IM site (monthly, catchment as stated in the ICP IM Manual) - **No changes to current practices**

Level 2: Plotscale with budgets on other ecosystem types (monthly)

Level 1: Plotscale without budget (aiming for annual measurements, but accepting other temporal resolution) of soil and vegetation (plant list, cover and chemistry)

ICP IM Level 2

Measurement group	Comments
Soil chemistry	Some parameters will be measured once or every five years
Soil water chemistry	Monthly sampling
Foliage chemistry	Yearly or every five years
Precipitation chemistry	Monthly
Meteorology	Can be taken from a nearby station
Vegetation cover and species structure	Every 3 to 5 years, with equal intervals
Dry deposition	Monthly monitoring

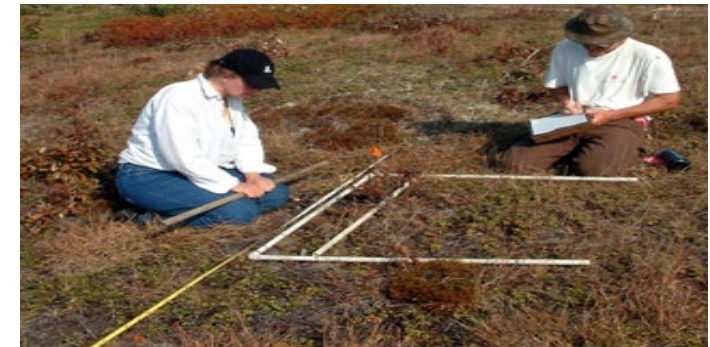
ICP IM Level 1

Measurement group	Comments
Soil chemistry	Some parameters will be measured annually or every five years
Foliage chemistry	Yearly or every five years
Vegetation cover and species structure	Every 3 to 5 years, with equal intervals



Identified ecosystem types for levels 2 and 1

Grassland	E Grasslands and land dominated by forbs, mosses or lichens	<ul style="list-style-type: none"> E1 Dry grasslands E2 Mesic grasslands E3 Seasonally wet and wet grasslands E4 Alpine and subalpine grasslands E5 Woodland fringes, clearings and tall forb stands E6 Inland salt steppes E7 Sparsely wooded grasslands
Heathland and shrub	F Heathland , scrub and tundra	<ul style="list-style-type: none"> F1 Tundra F2 Arctic, alpine and subalpine scrub F3 Temperate and mediterraneo-montane scrub F4 Temperate shrub heathland F5 Maquis, arborescent matorral and thermo-Mediterranean brushes F6 Garrigue F7 Spiny Mediterranean heaths F8 Thermo-Atlantic xerophytic scrub F9 Riverine and fen shrubs FA Hedgerows FB Shrub plantations
Attributed to sparsely vegetated land	B Coastal habitats	<ul style="list-style-type: none"> B1 Coastal dunes and sandy shores B2 Coastal shingle B3 Rock, cliffs, ledges and shores, including supralittoral
Wetlands	D Mires , bogs and fens	<ul style="list-style-type: none"> D1 Raised and blanked bogs D2 Valley mires, poor fens and transition mires D3 Aapa, palsa and polygon mires D4 Base-rich fens and calcareous spring mires D5 Sedge and reedbeds, normally without free-standing water D6 Inland saline and brackish marshes and reedbeds





Summary

- ICP IM are welcoming all parties to contribute with data and sites to the extended ICP IM monitoring program
- There is no problem to start with level 1 and move to level 2 after a "while"
- The work for the chairs and programme center starts with promoting the program
- Again, focus on **other ecosystem types** than those present under WGE (forests, waters etc.)



Thank you!