

Ash dieback

spread, status and conservation efforts in Europe

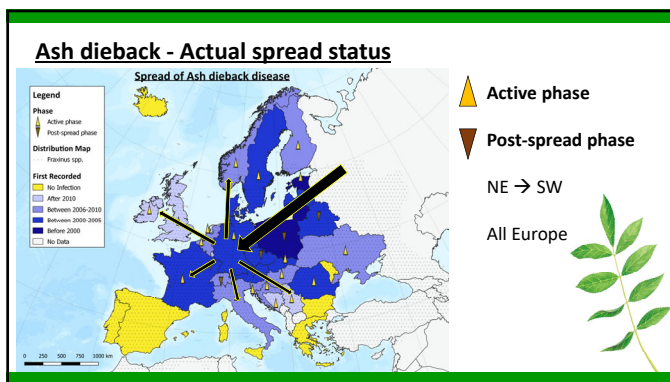
Results of the survey

Silvio D. Oggioni - EUFORGEN




Ash dieback - Actual spread status

- Spread from **north-east to south-west**
- First symptoms in the **mid-1990s** [Estonia, Lithuania and Poland]
- Where appeared early → **Post-spread phase**
- Other countries → **Active phase**



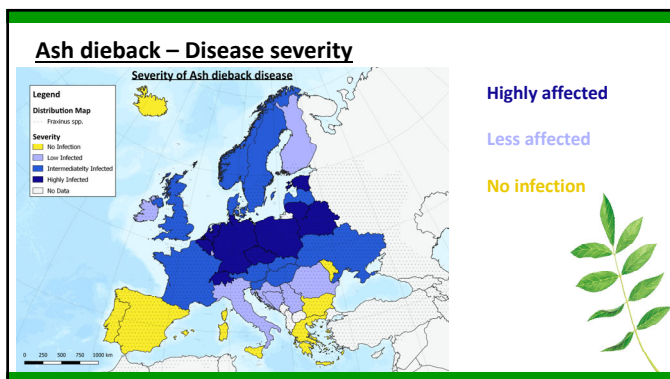
Ash dieback - Severity of the disease

Highly affected countries

- Infection through the **whole state** [NE and Central Europe]
- **Restoration of some stands seems to be impossible** [Extinction]

Less affected countries

- **Scandinavian countries, UK, Ireland** [Future infection]
- Countries of **southern Europe** [Climate]



Ash dieback - Measures

- **Monitoring** programs
- *In situ* conservation measures
- *Ex situ* conservation measures

Ash dieback - Monitoring

- Coordinate **state-level** monitoring programme:
[Denmark, Estonia, Ireland, Latvia, Lithuania and Poland]
- **Regional** monitoring:
[Belgium, Czech Republic, Germany, Italy, Netherlands, Romania and UK]
- **Indirect** monitoring (amount of ash cut-off):
[Hungary, Slovakia, Slovenia and Switzerland]
- **No monitoring**
[Greece, Bosnia and Herzegovina, Luxembourg, ...]



Ash dieback - Monitoring

Monitoring methods:

- Surveys [Belgium, France, Ireland, UK]
- Network of reports [Austria, Germany, Italy, Netherlands, Poland, Serbia, UK]
- Selected plots / stands [Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, Latvia, Lithuania, Norway, Poland, Romania, Ukraine]
- Indirect monitor [Hungary, Slovakia, Slovenia, Switzerland]

Periodicity:

- Yearly [Belgium, Croatia, Czech Republic, Denmark, Germany, Hungary, Ireland, Italy, Finland, Norway, Serbia]
- On a regular basis [Austria, Estonia, Latvia, Lithuania, Netherlands, Poland, Romania, Switzerland, Ukraine]



Ash dieback - In Situ conservation

- GCUs are generally **highly affected**
- **Difficult** conservation:
 - No rehabilitation protocols
 - No effective forestry technique
- **Resistant plants:**
 - Forest owners encouraged to **not cut healthy trees**
 - **Identified and marked** during research programmes



Ash dieback - Ex Situ measures

- **Highly affected countries** → Planting of seed orchards **interrupted**

Measures:

- **Active** trial-fields with resistant genotypes
[Austria, Belgium, Czech Republic, Denmark, Finland, Ireland, Lithuania and Norway]
- **Future** trial-fields for study resistant genotypes
[Ireland, Netherlands, Serbia, Slovakia, Sweden, and UK]
- **Scientific research projects** with genetic analysis on the resistance
[Croatia, Belgium, Germany, Poland]



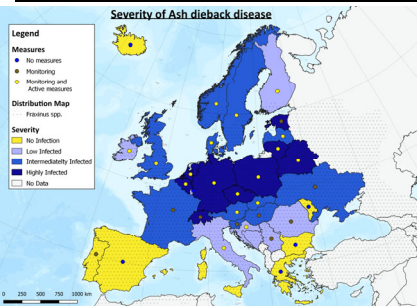
Ash dieback

Options:

- Too late
- Need more information on GCUs
- New minimum requirements for GCU
- Initiate *ex situ* measures



Ash dieback - Monitoring and conservation measures



Most affected countries

↓
More active measures and monitoring



Thank you for your attention



Silvio D. Oggioni
silvio.oggioni@efi.it