Results of Large Scale Forest Inventories for Germany and Baden-Wuerttemberg

Inventory Design of the 2nd German Federal Forest Inventory (BWI)

http://www.bundeswaldinventur.de

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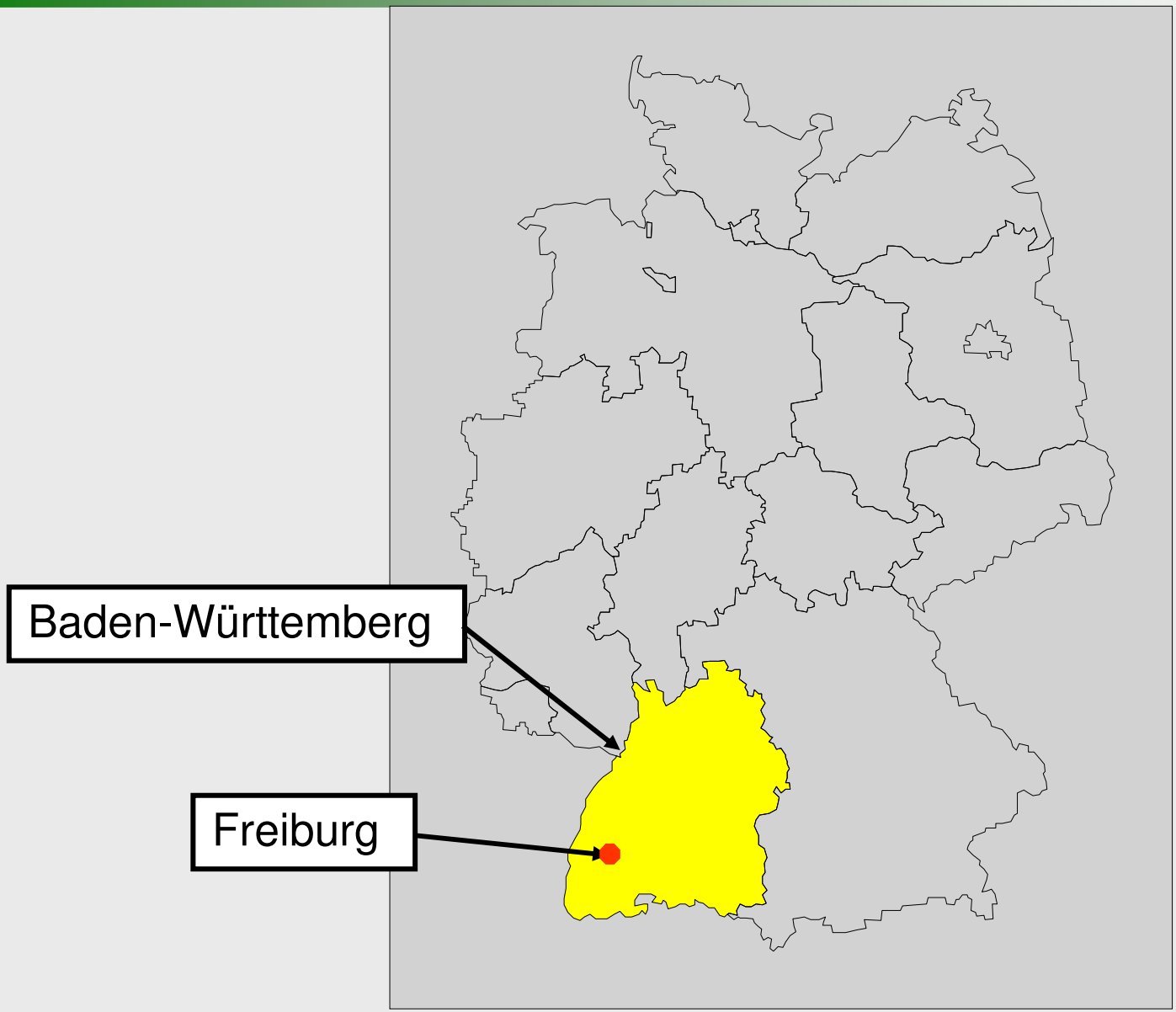
Abteilung Biometrie
und Informatik


Baden-Württemberg
Freiburg

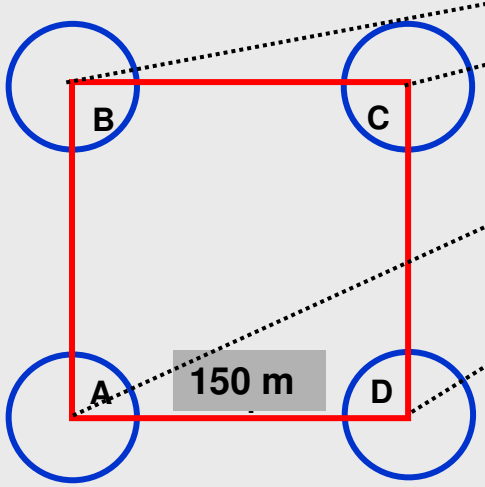
Competences & Tasks:

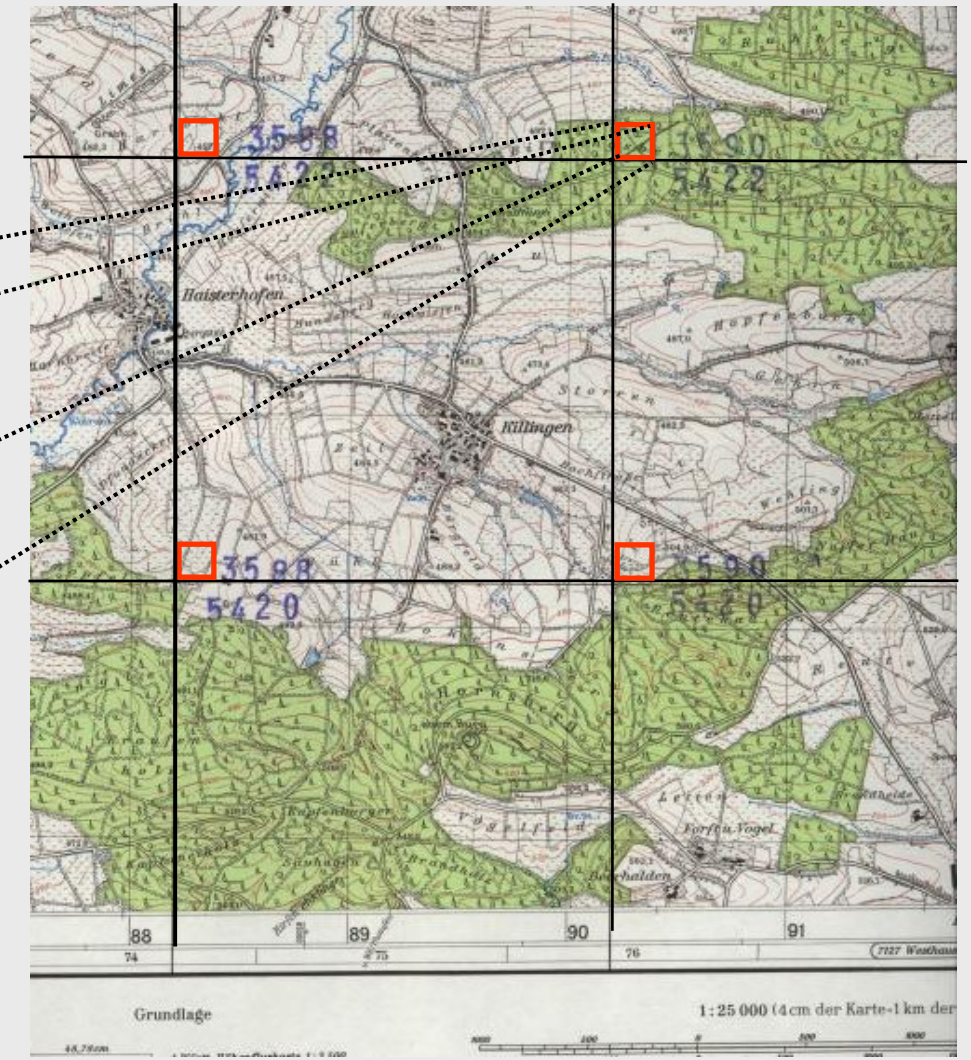
- Federal Government: central coordination, data management, data processing & reporting
- Federal states (Länder): survey (field work = data collection)

Baden-Württemberg: FVA (Forest Research Institute, Dep. of Biometrics)

- Data collection and validation (quality assurance)
- R & D for the federal government: Forest development and timber supply model
- Data processing, analysis, and reporting for the forest in Baden-Württemberg

Design | Tracts





Note: the grid covers the total area!

Design **Permanent** Samples in clusters (tracts)

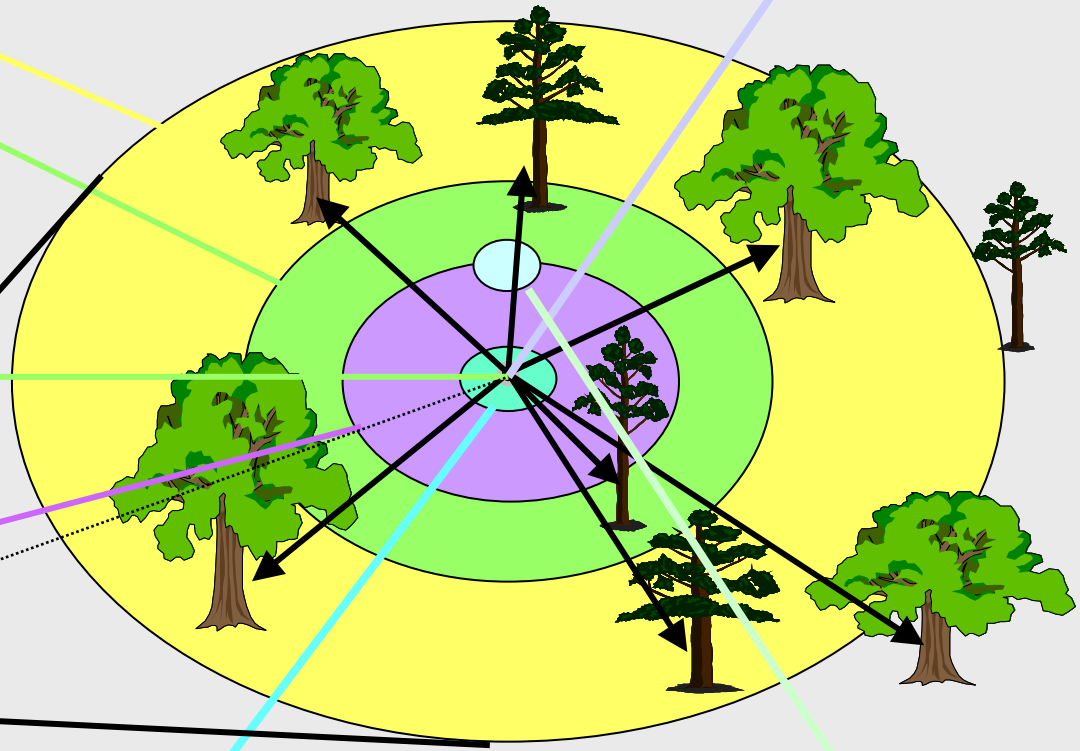
r = 25 m: Site characteristics

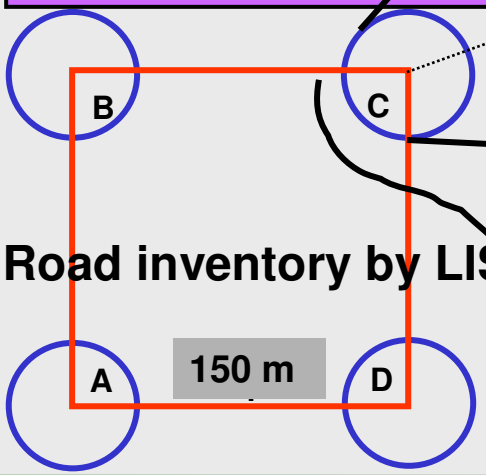
Angle-count sampling (factor 4) trees with D.B.H. >= 7 cm

r = 10 m: trees up to 4 m height, shrub layer and ground vegetation

Angle-count sampling (factor 1 (2)): trees over 4 m height

r = 5 m: deadwood





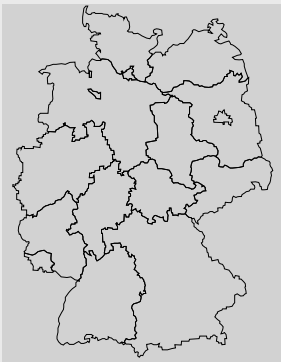
Road inventory by LIS

r = 1,75 m: trees > 50 cm and D.B.H. < 7 cm

r = 1 m: trees of 20 cm to 50 cm in height

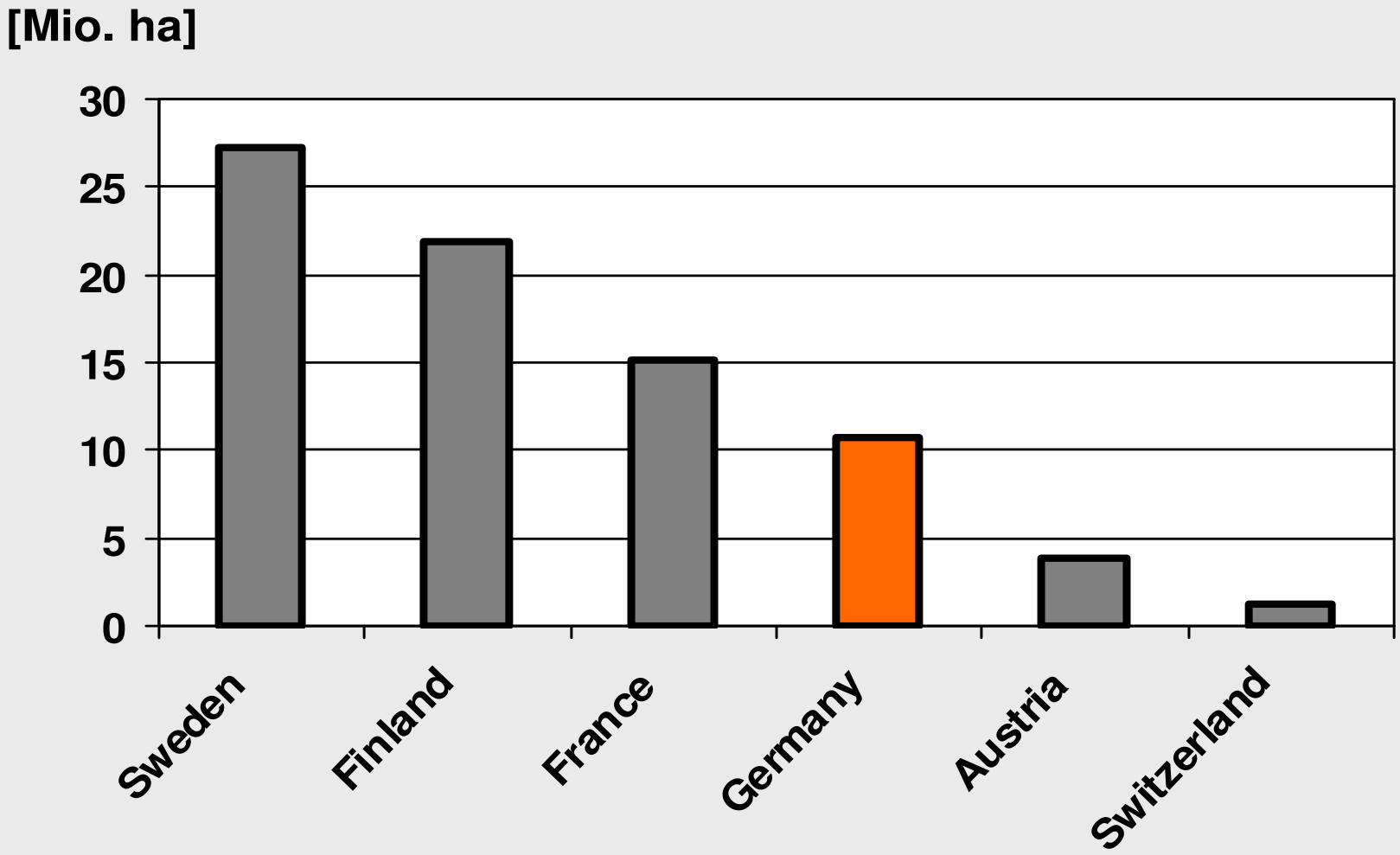
Permanent plots = retrievable plots

- Permanent **marking** of the subplot centre (by metal rod in the ground, invisible, auxiliary markers, tract coordinates)
- Recording of **tree positions** (polar coordinates)
  → assessment of growth and drain at consecutive survey

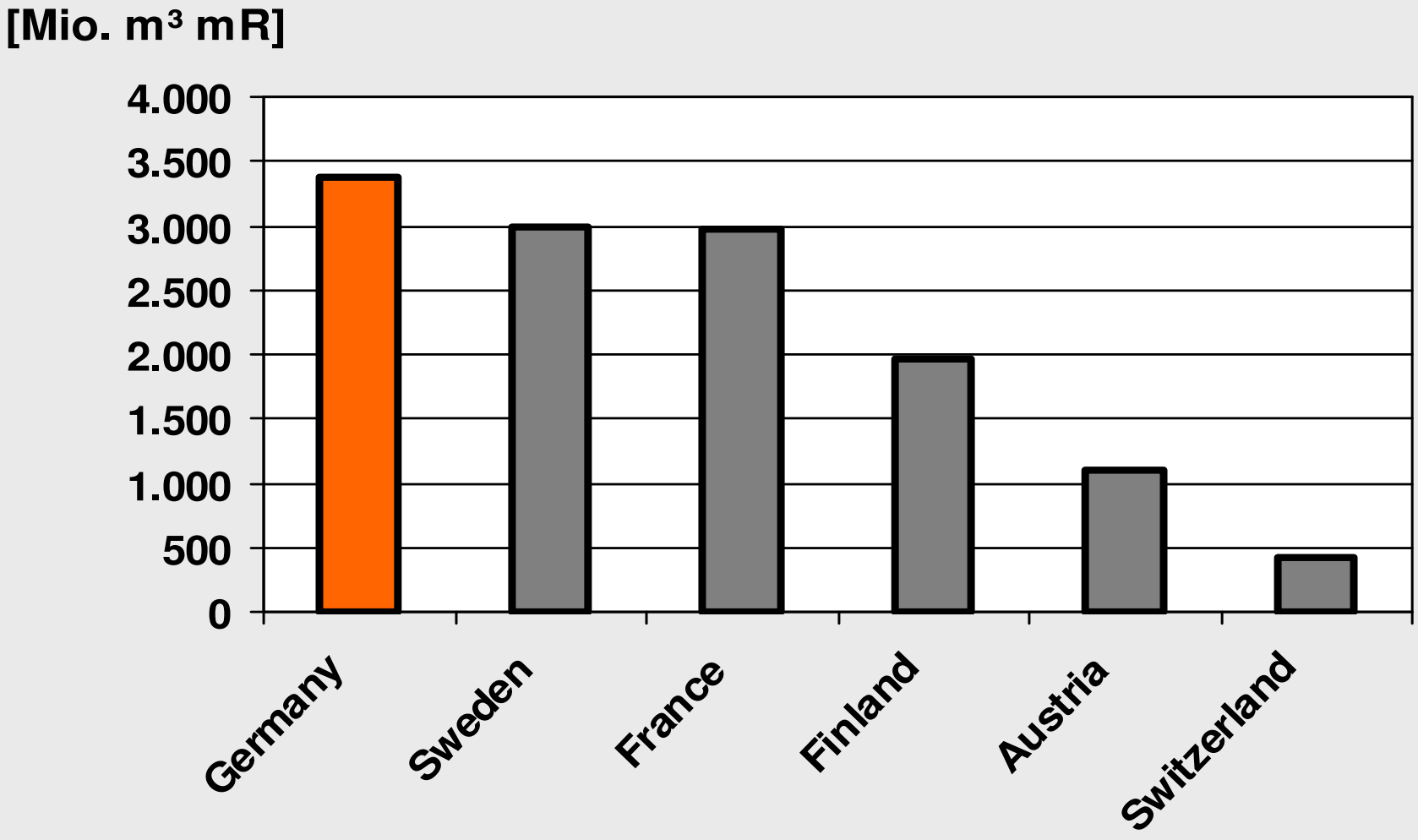


Forest Area and Growing Stocks: Germany Compared with Other Countries

Total Forest Area

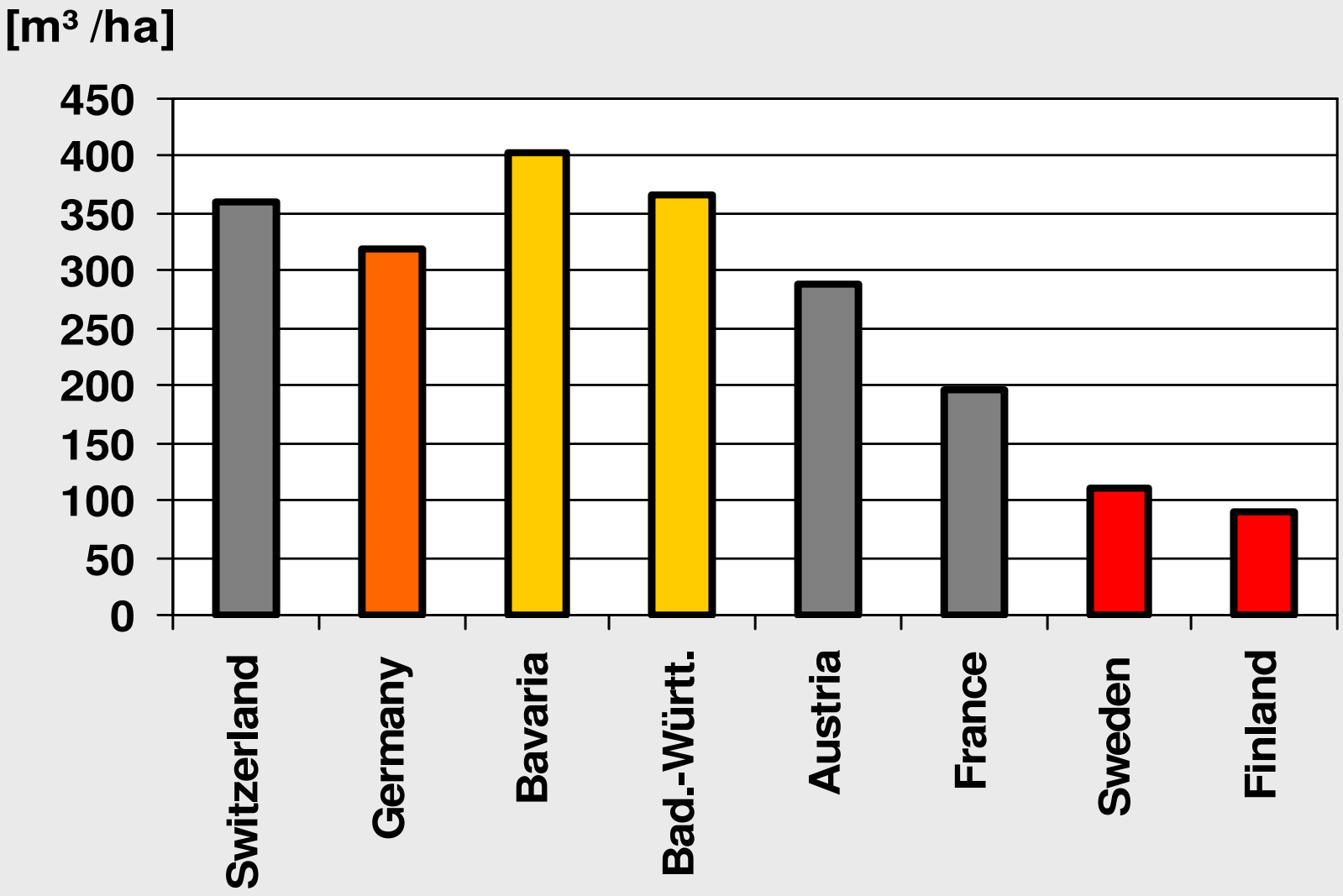


Total Growing Stocks



Results

Growing Stocks per Hectare

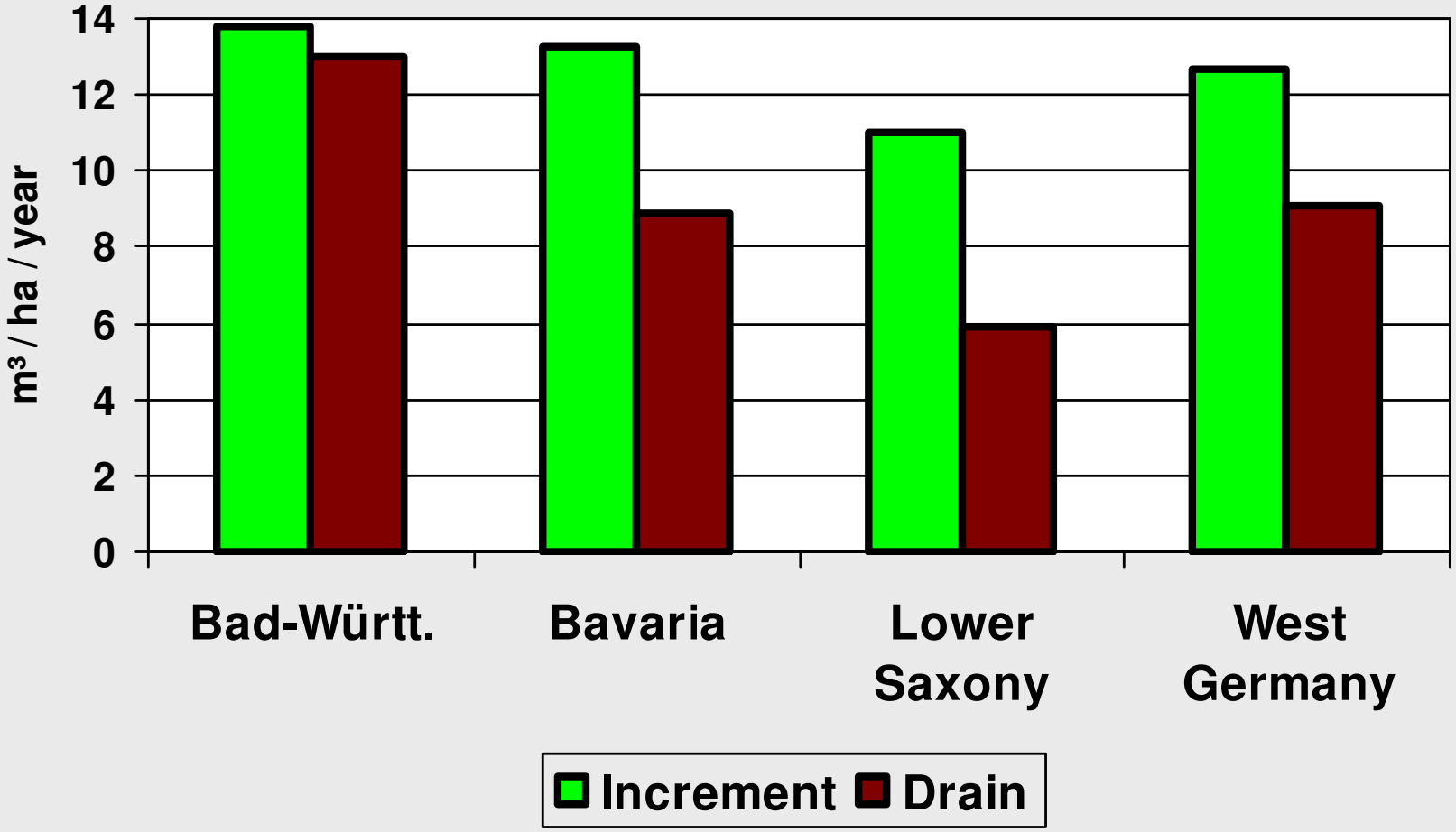


Increment and Drain (Removals)

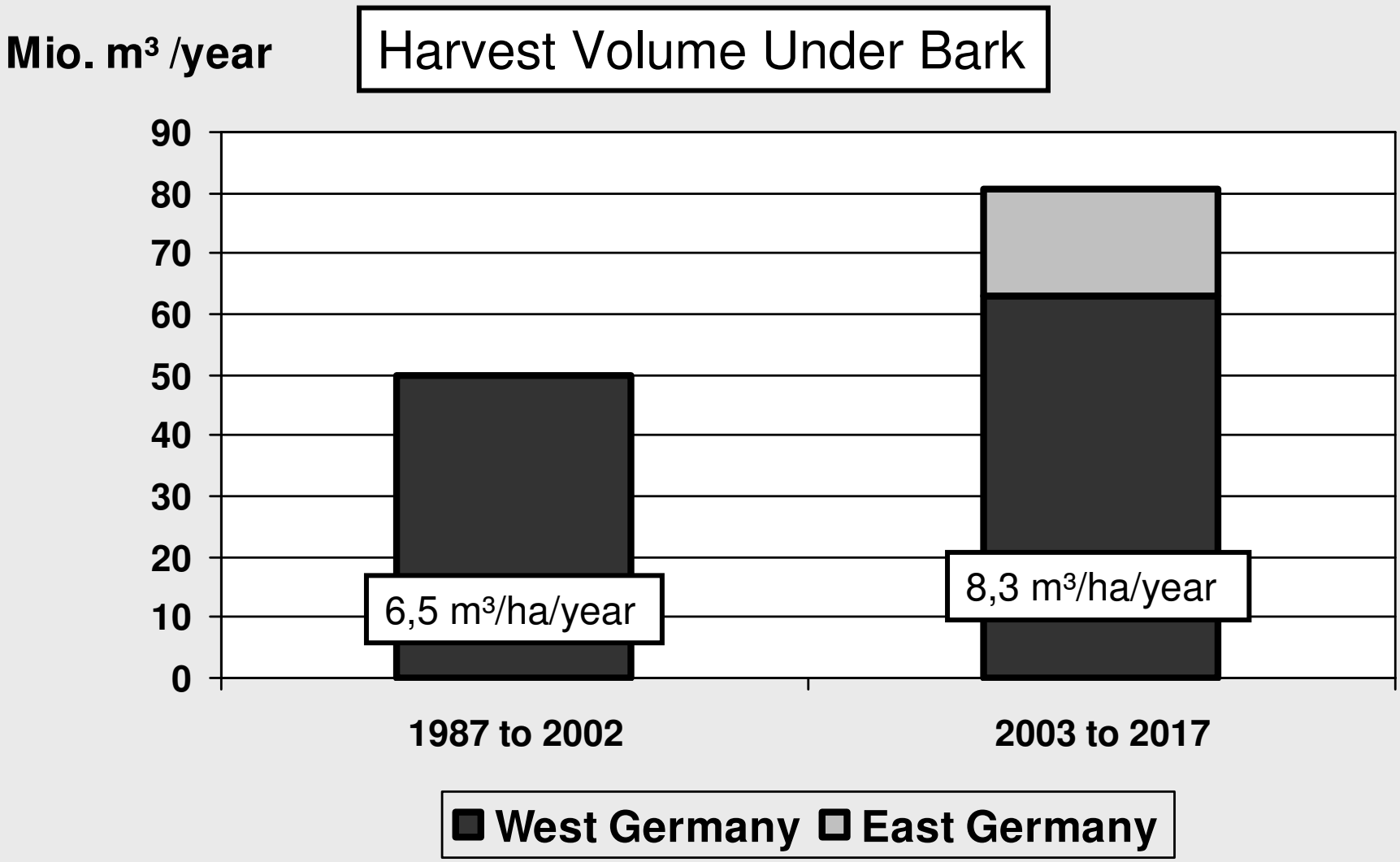
- Period **1987 bis 2002**
- **Increment**: mean annual volume growth [*m³/ha/year*]
- **Drain**: mean annual removals (cut **and** mortality) [*m³/ha/Jahr*]

Increment and Drain in different federal states

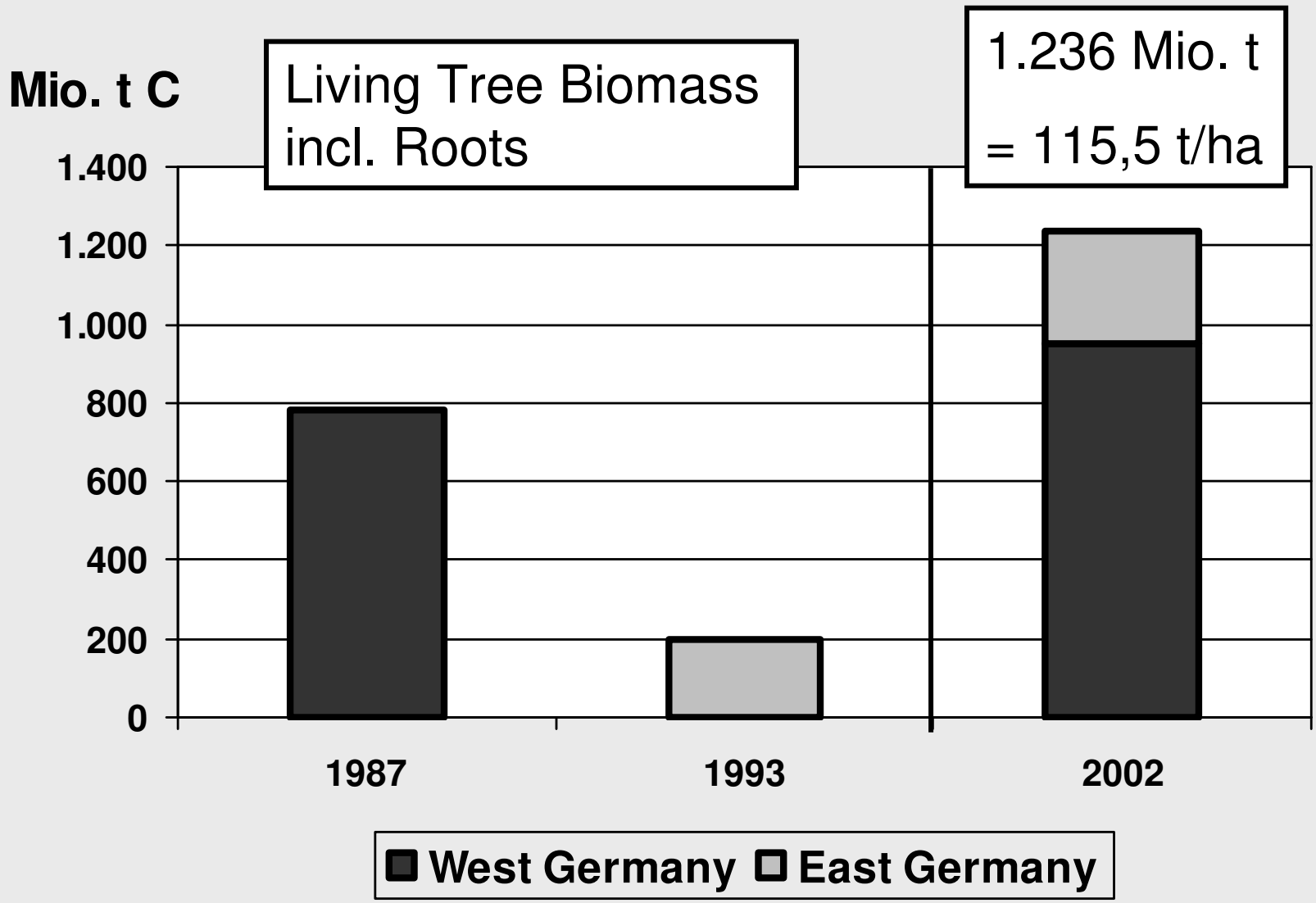
Total Forest



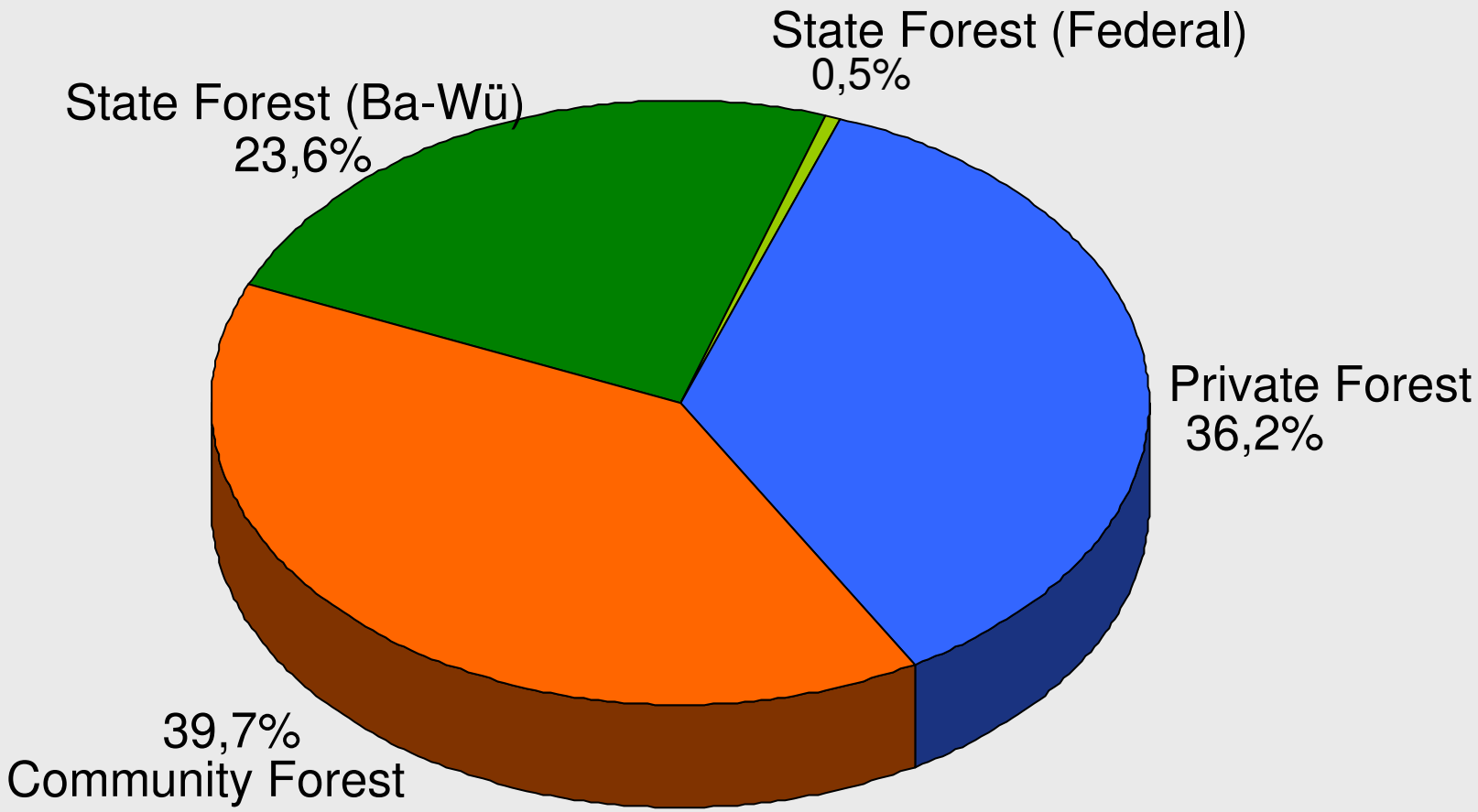
Timber Supply Forescast 2003 bis 2017 in Germany



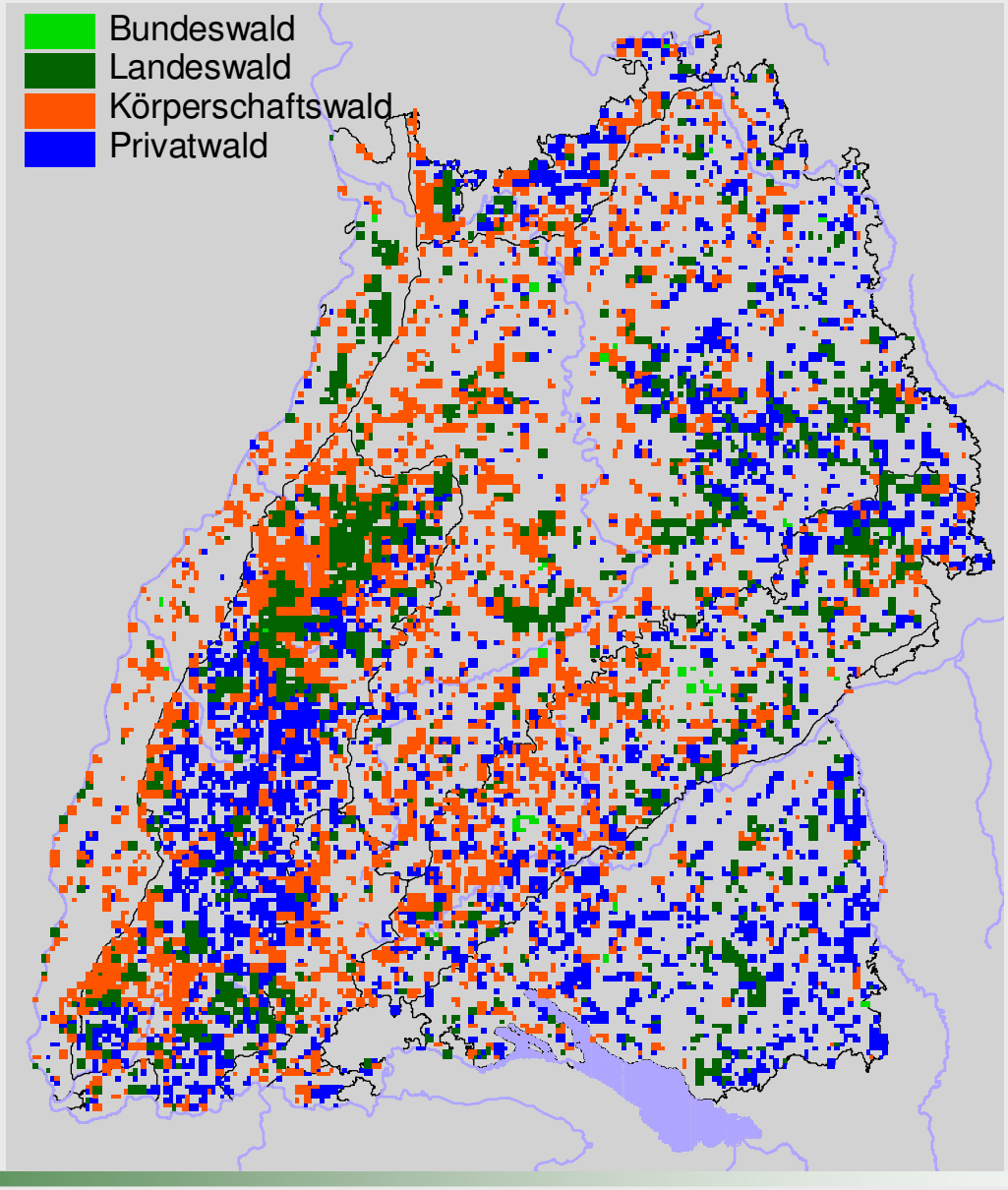
Carbon Stocks in the Forests of Germany



Forest ownership Baden-Wuerttemberg

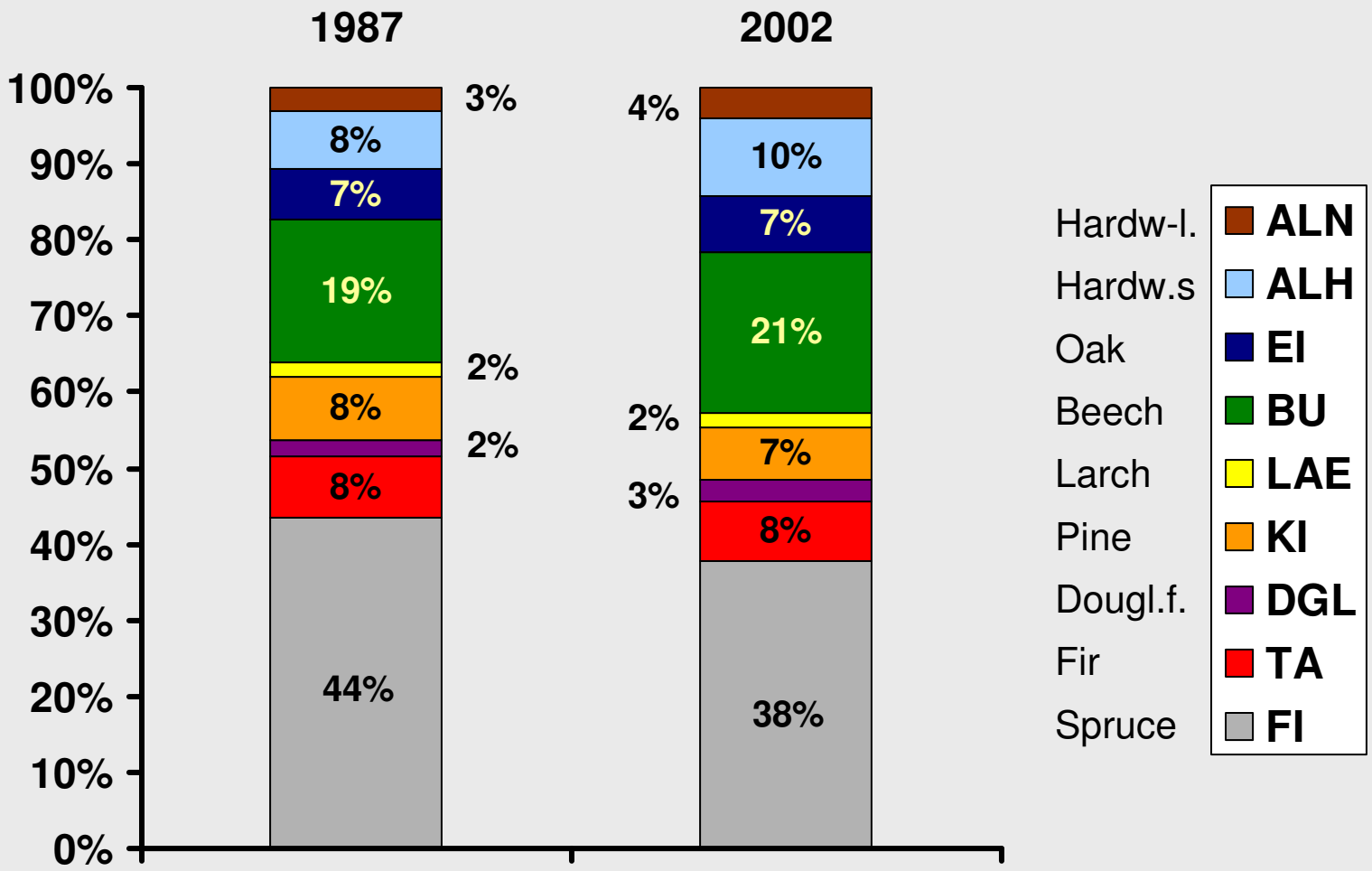


Distribution of ownership



Tree species

Total forest land

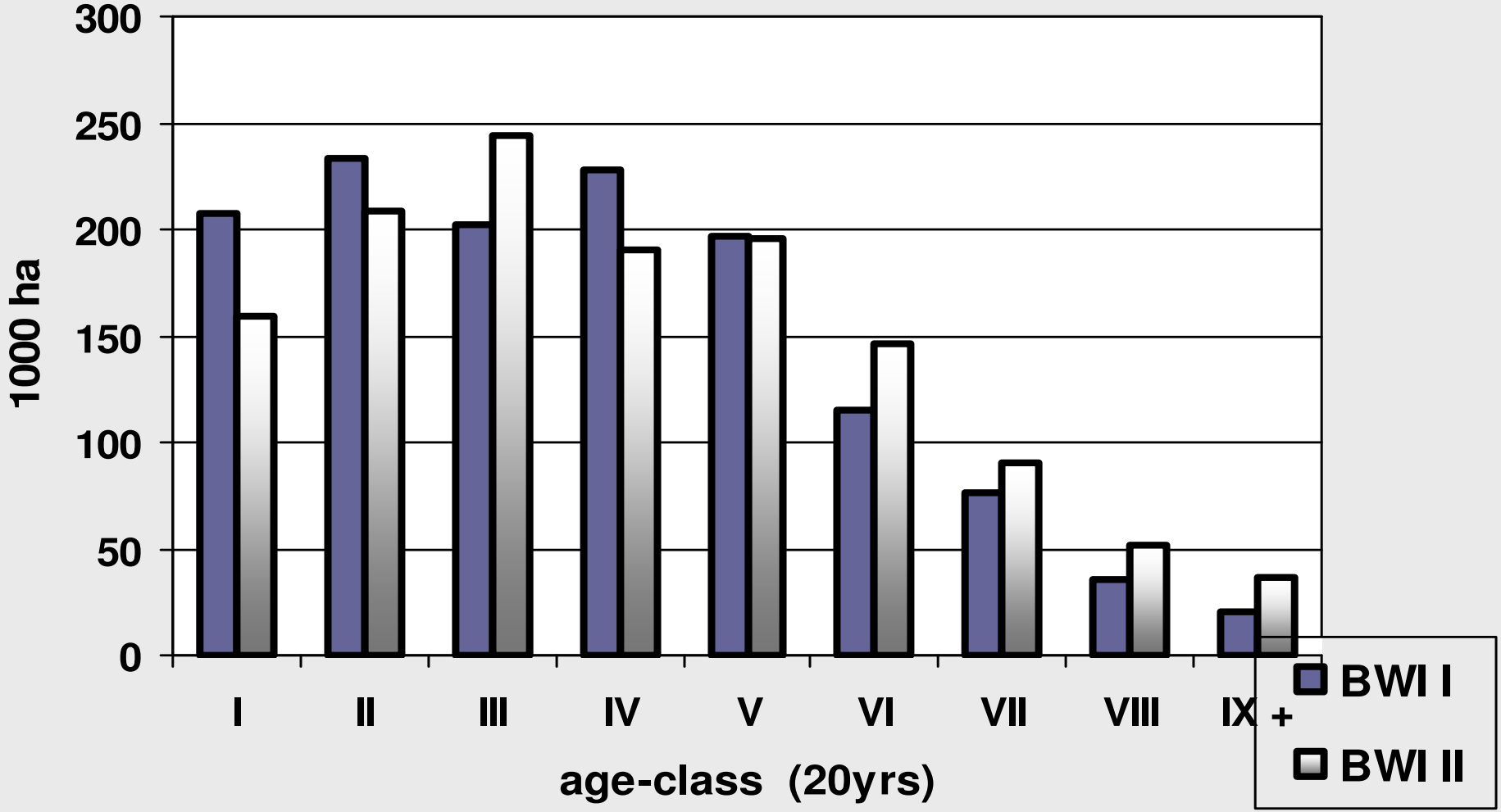


Area – statistics – Baden-Wuerttemberg

- Whole country: 35.743 tract corners
- In the forest: 13.619 tract corners
- Forested area: **38,1** %
- 13.619 forest plots: **1.362.228** ha
  - 32.108 ha non-timber area
  - 1.330.120 ha forest land
    - **1.323.119** ha reachable forestland (13.228 plots)

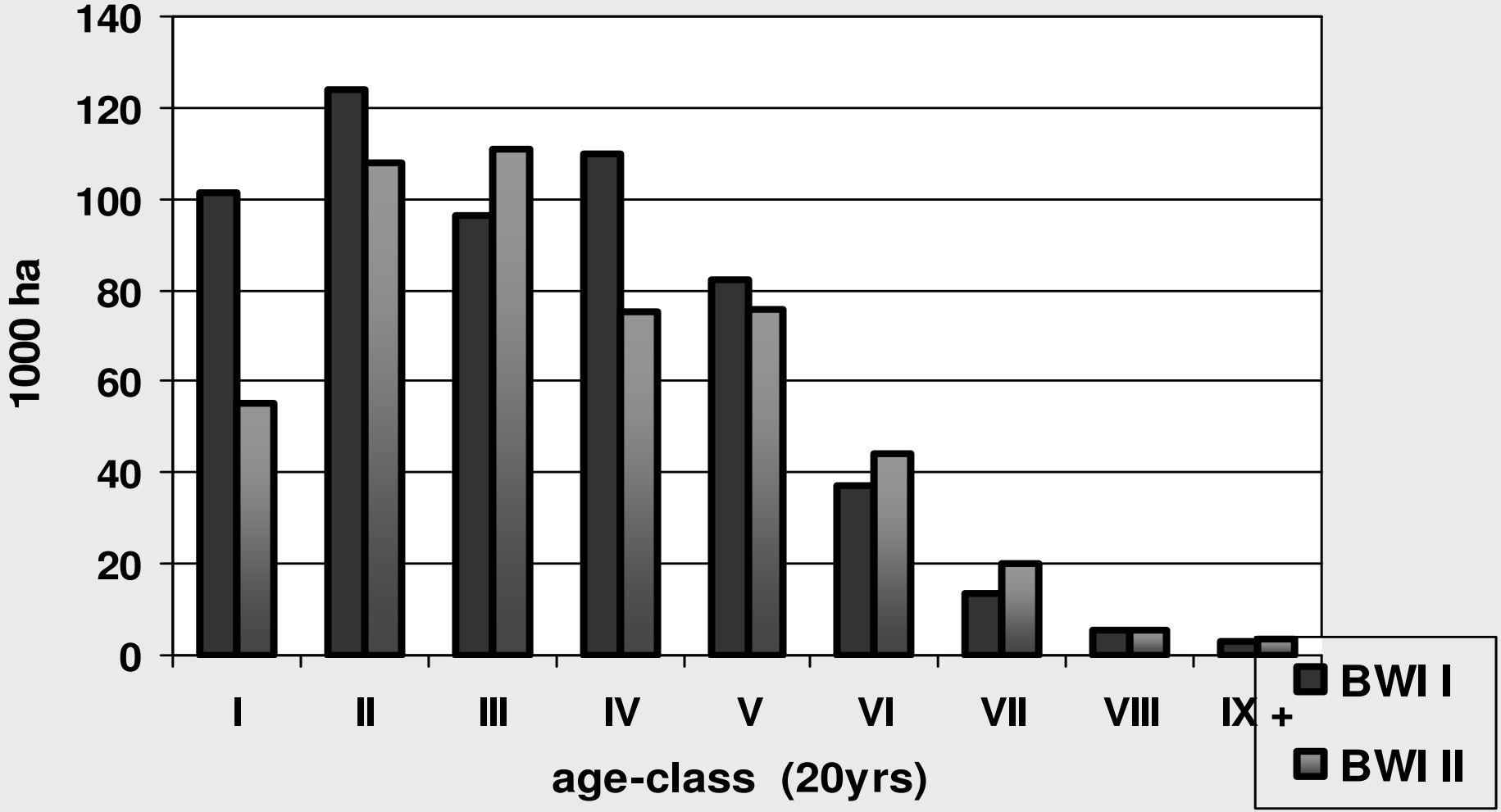
Age-class distribution Baden-Wuerttemberg

All tree species



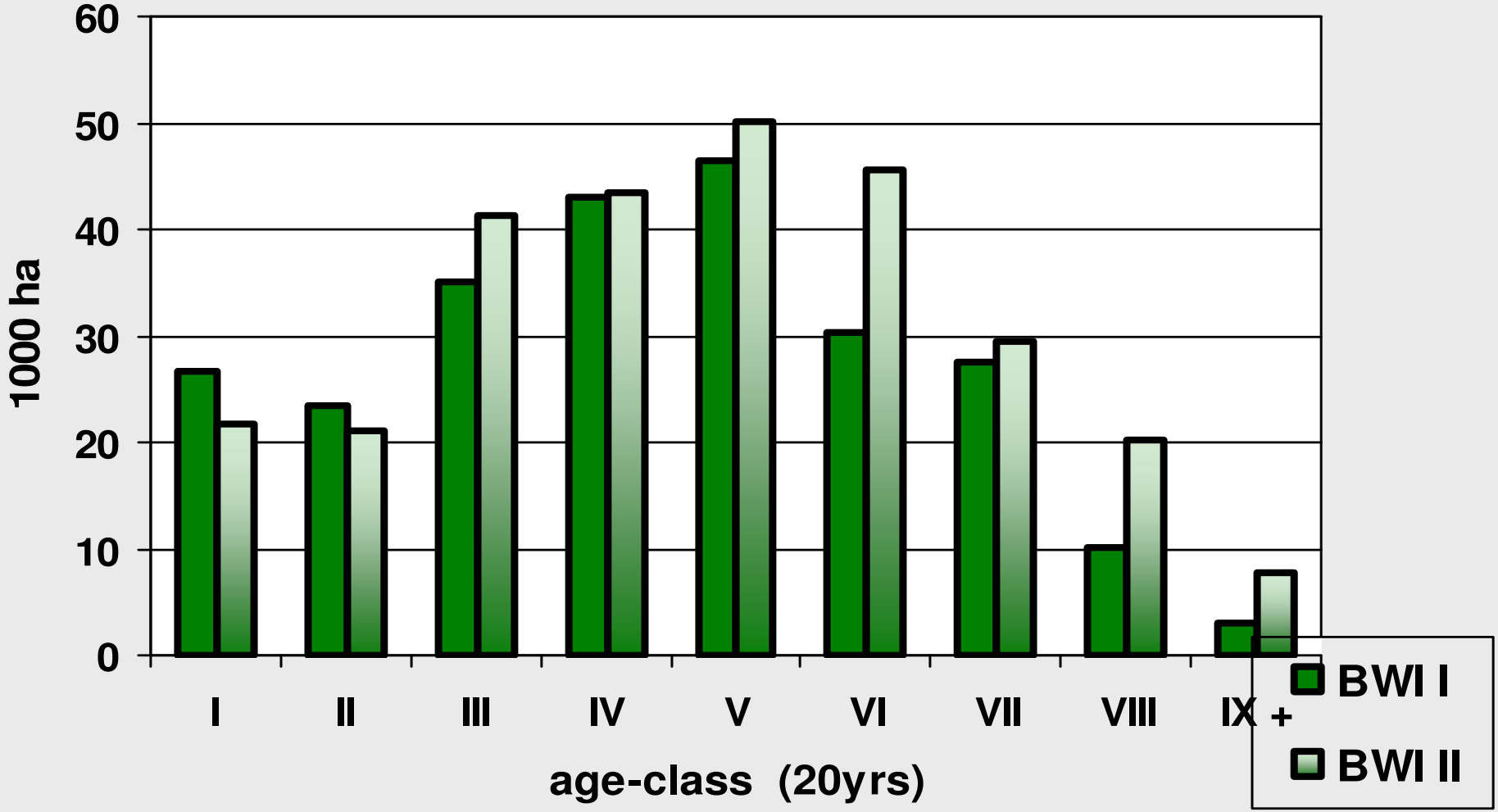
Age-class distribution Baden-Wuerttemberg

Norway spruce

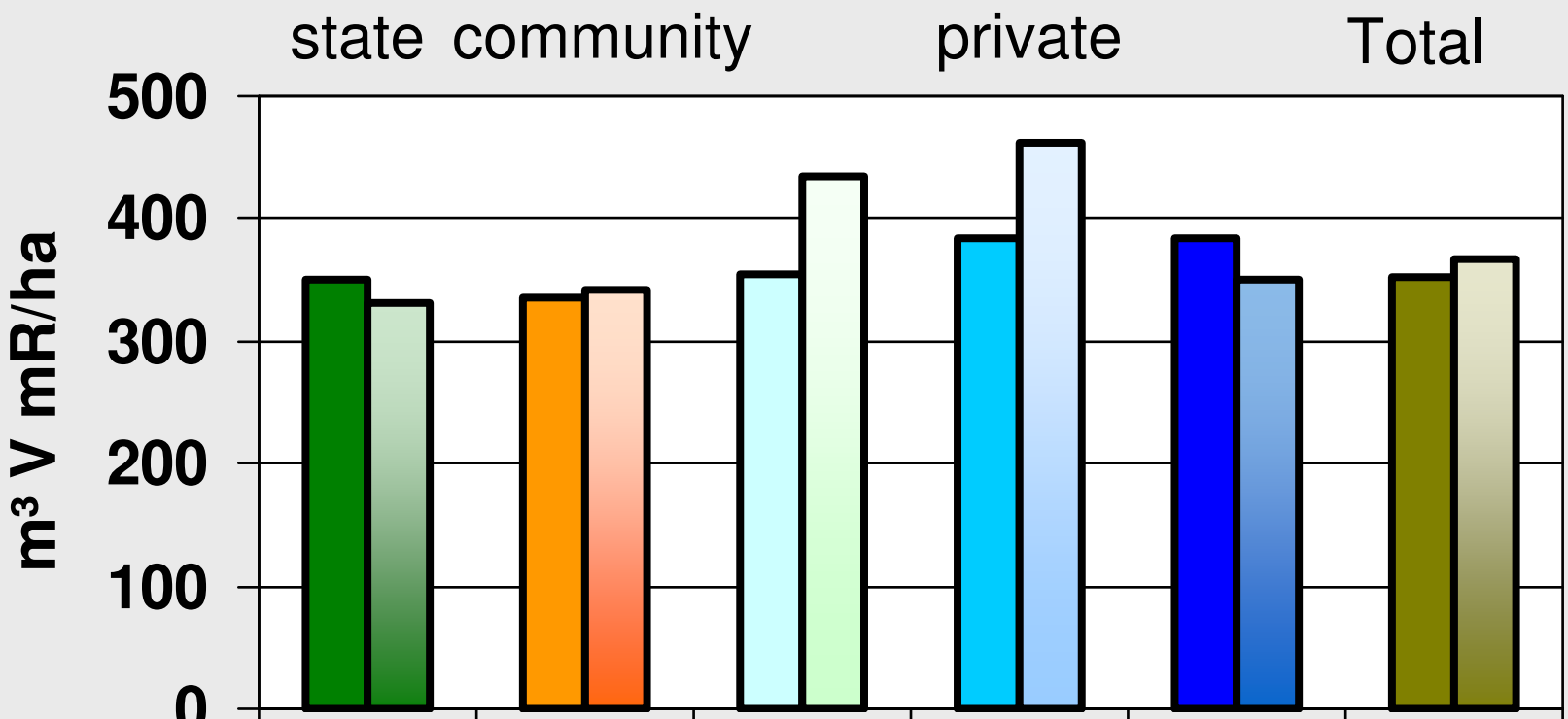


Age-class distribution Baden-Wuerttemberg

European beech



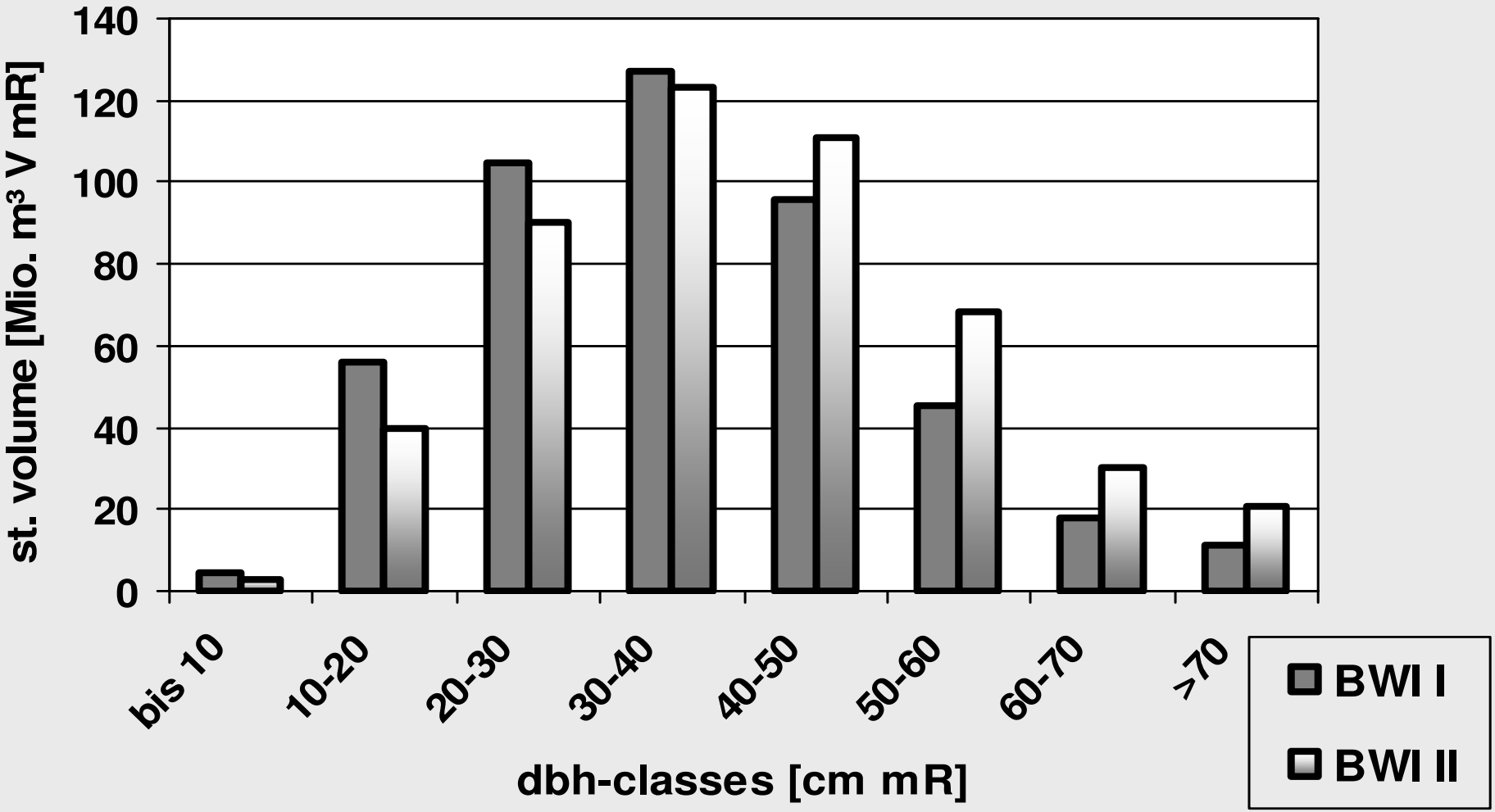
Standing volume m3/ha over bark



	StW	KW	KPW	MPW	GPW	GW
1987	350	336	354	384	384	352
2002	331	342	435	462	350	367

Structure of standing volume

All tree species



Structure of standing volume

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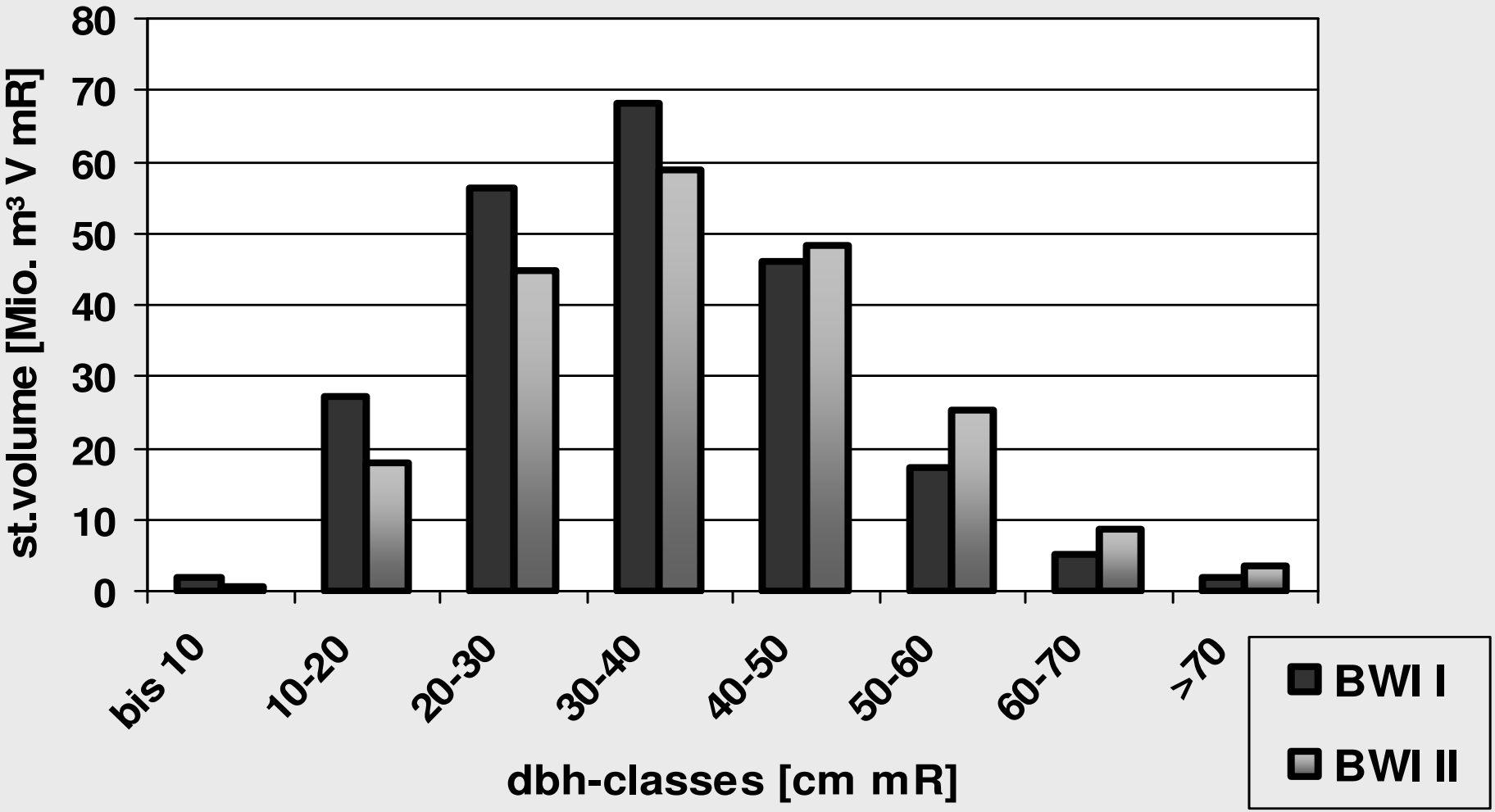
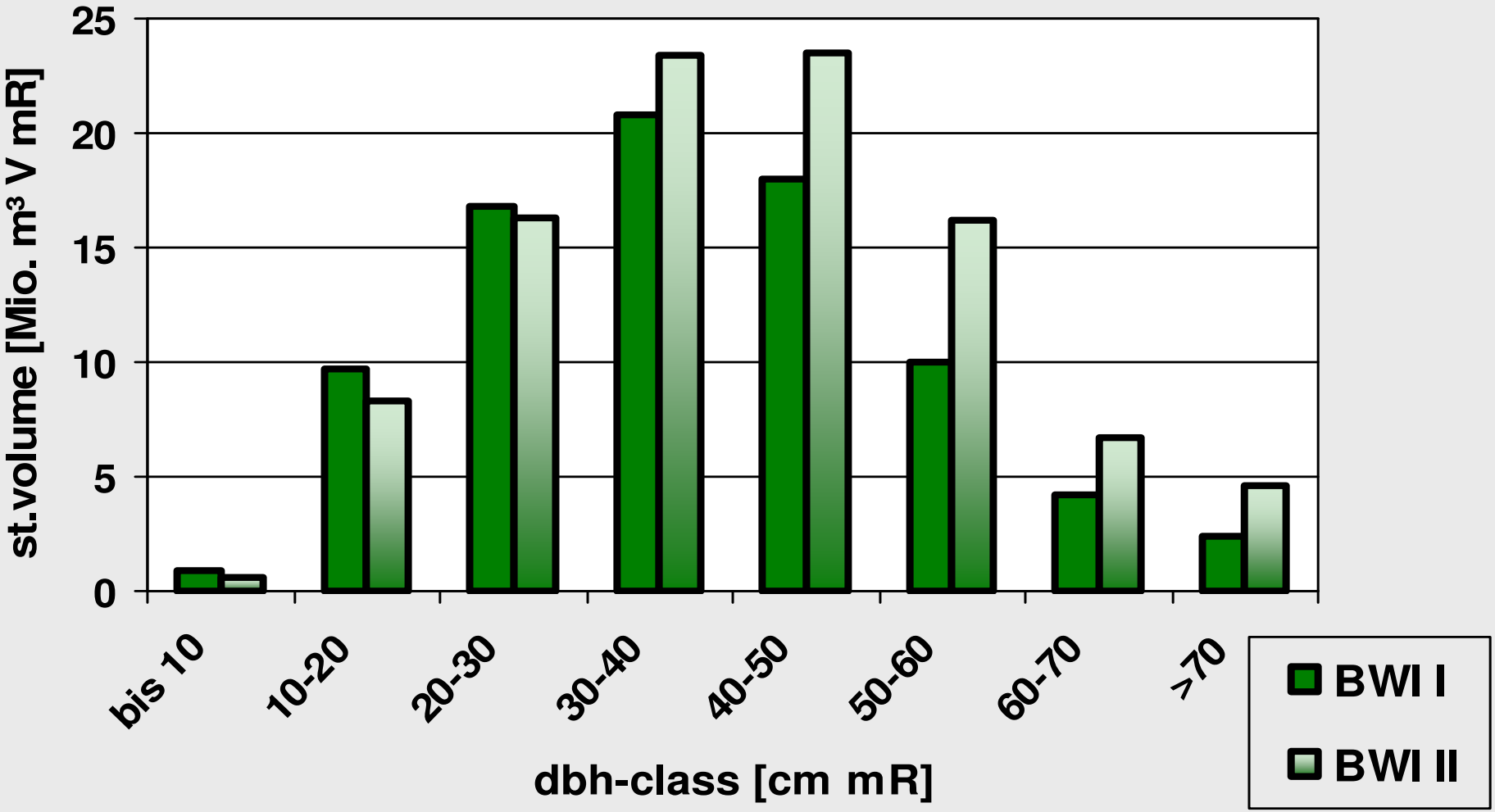
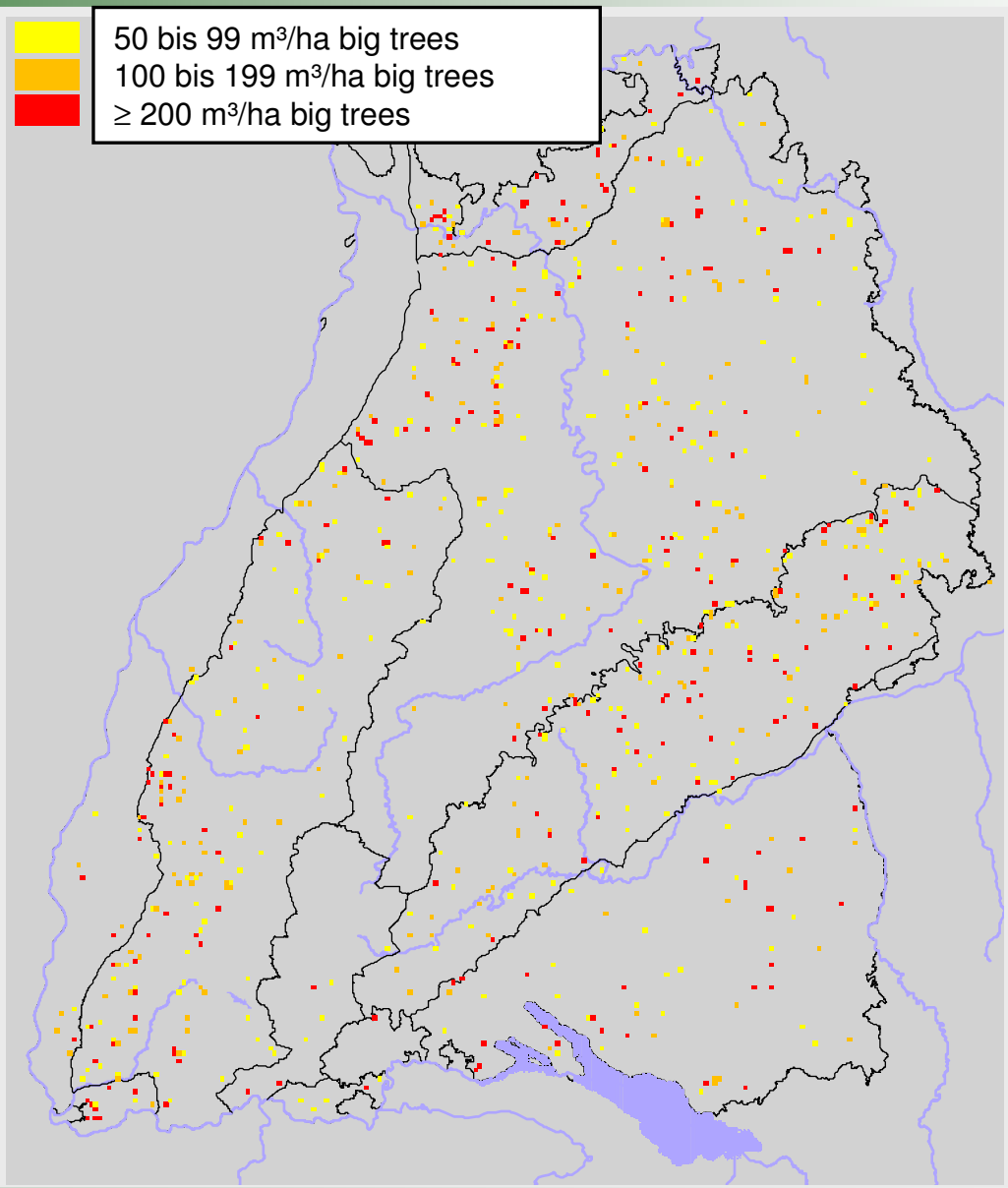


Structure of standing volume

European beech



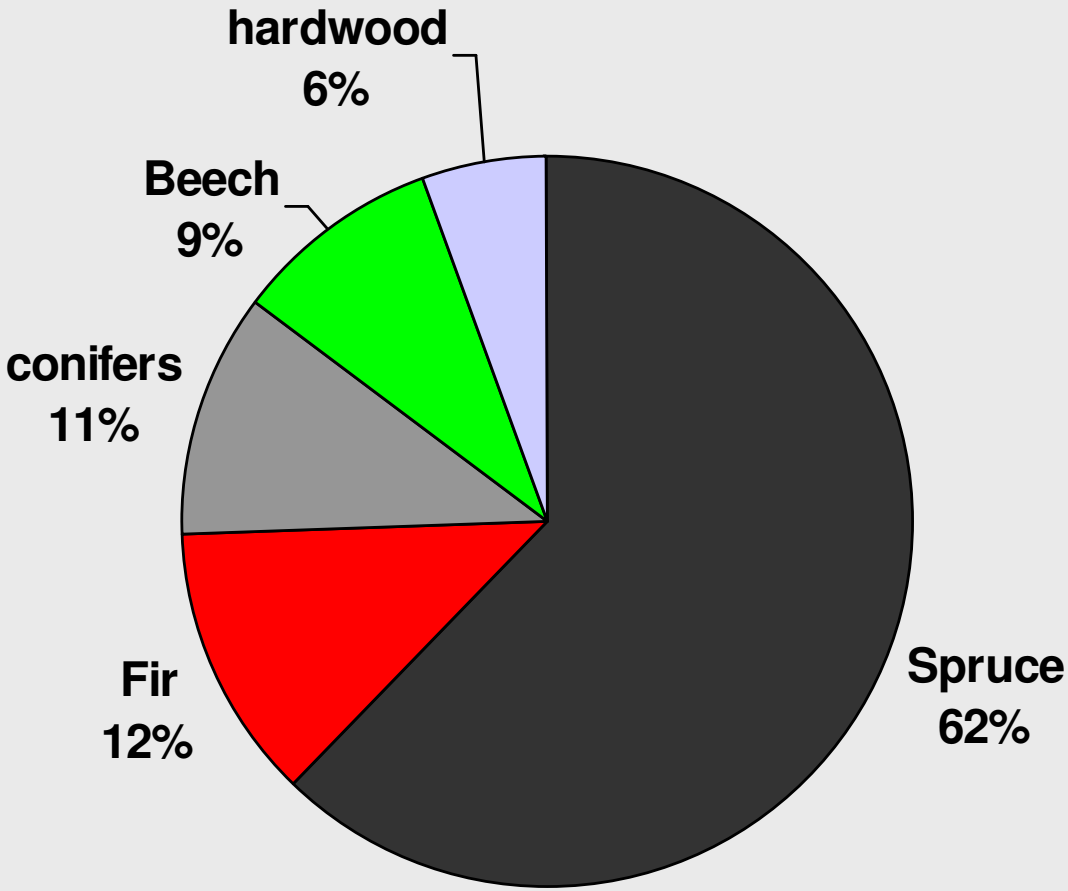
Big trees >50 cm European beech



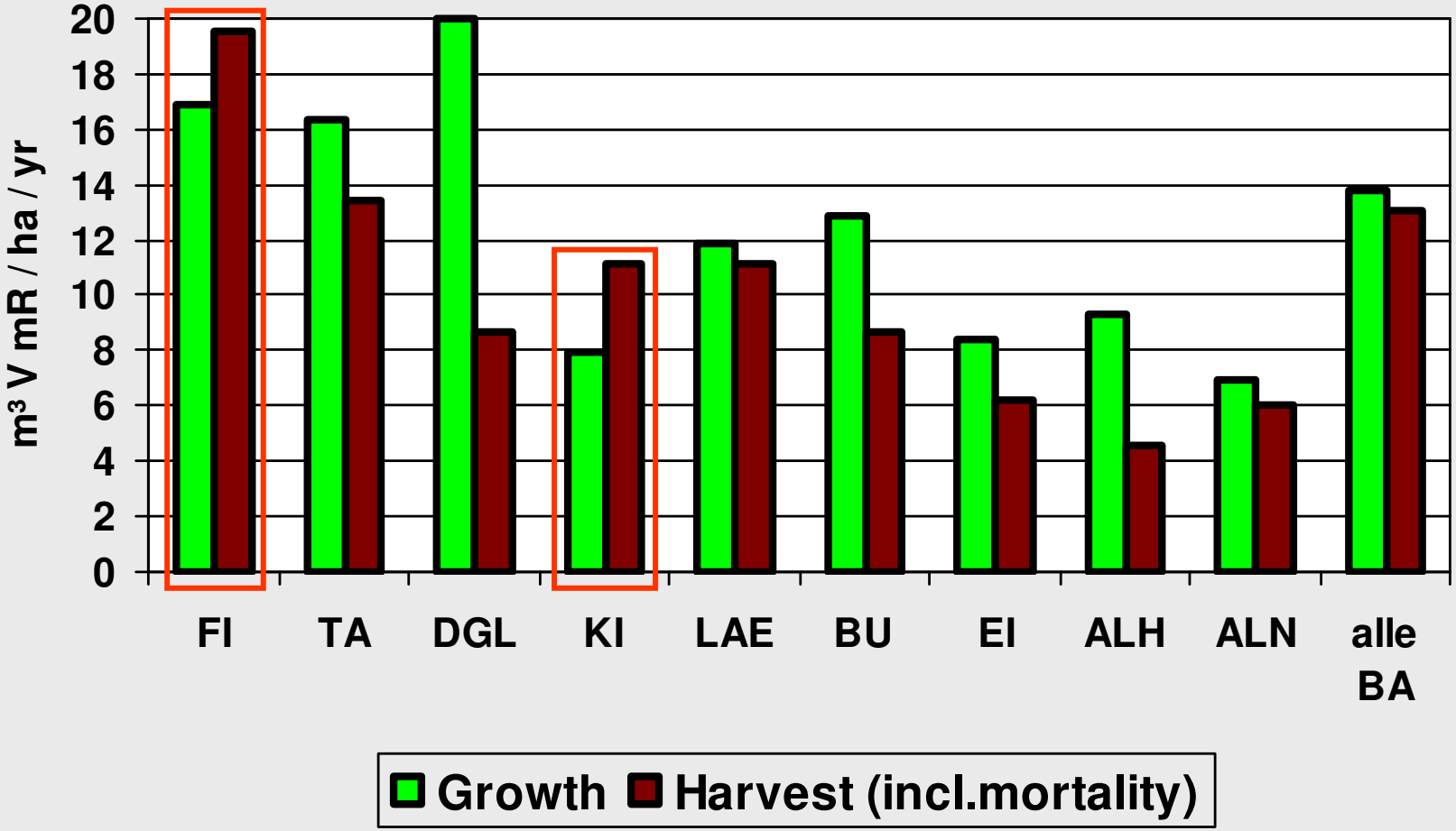
Storm damage Lothar 1999

Total forest area

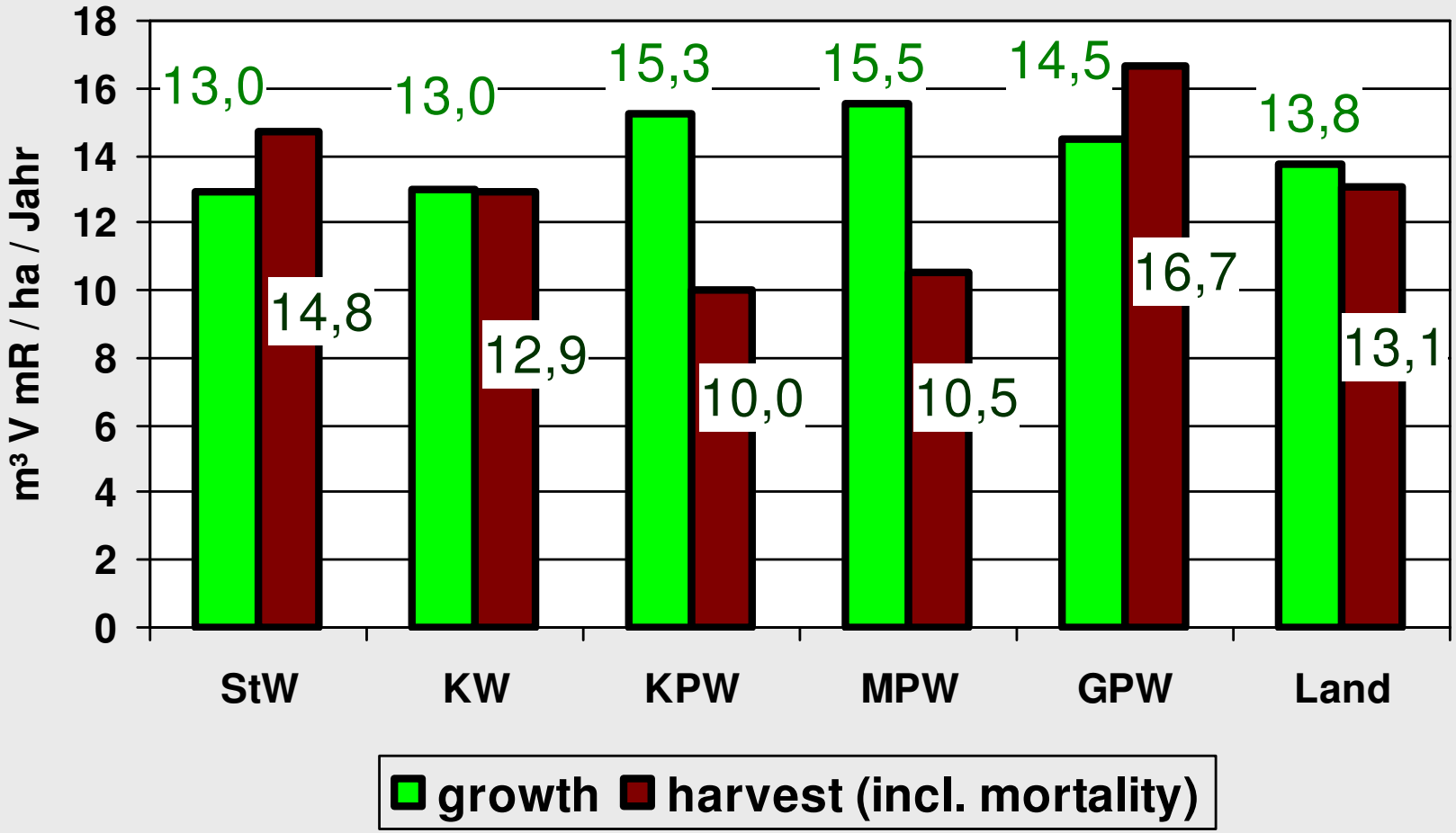
Overall 46,2 Mio. m³ V mR

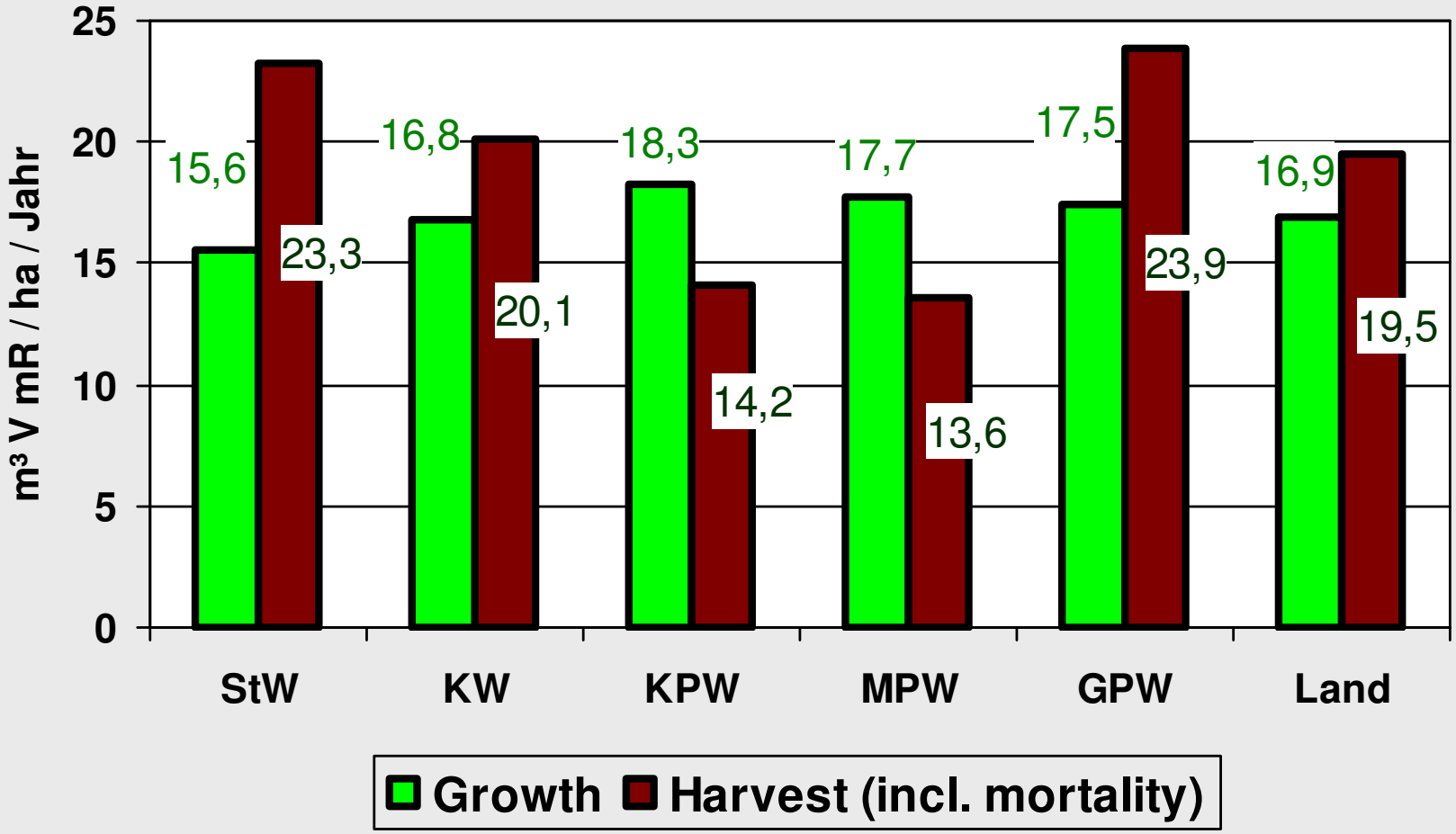


Total forest area



All tree species



Growth and harvest according to ownership

spruce