



Universität für Bodenkultur Wien  
Department für Wald- und Boden-  
wissenschaften

# Strategic policy development for the protection of drinking water in Austria

Roland Koeck, Hans-Peter Nachtnebel,  
Eduard Hochbichler, Hubert Siegel

**Land Use & Water Quality 2015 –  
Conference in Vienna,  
21<sup>st</sup> – 24<sup>th</sup> September 2015**

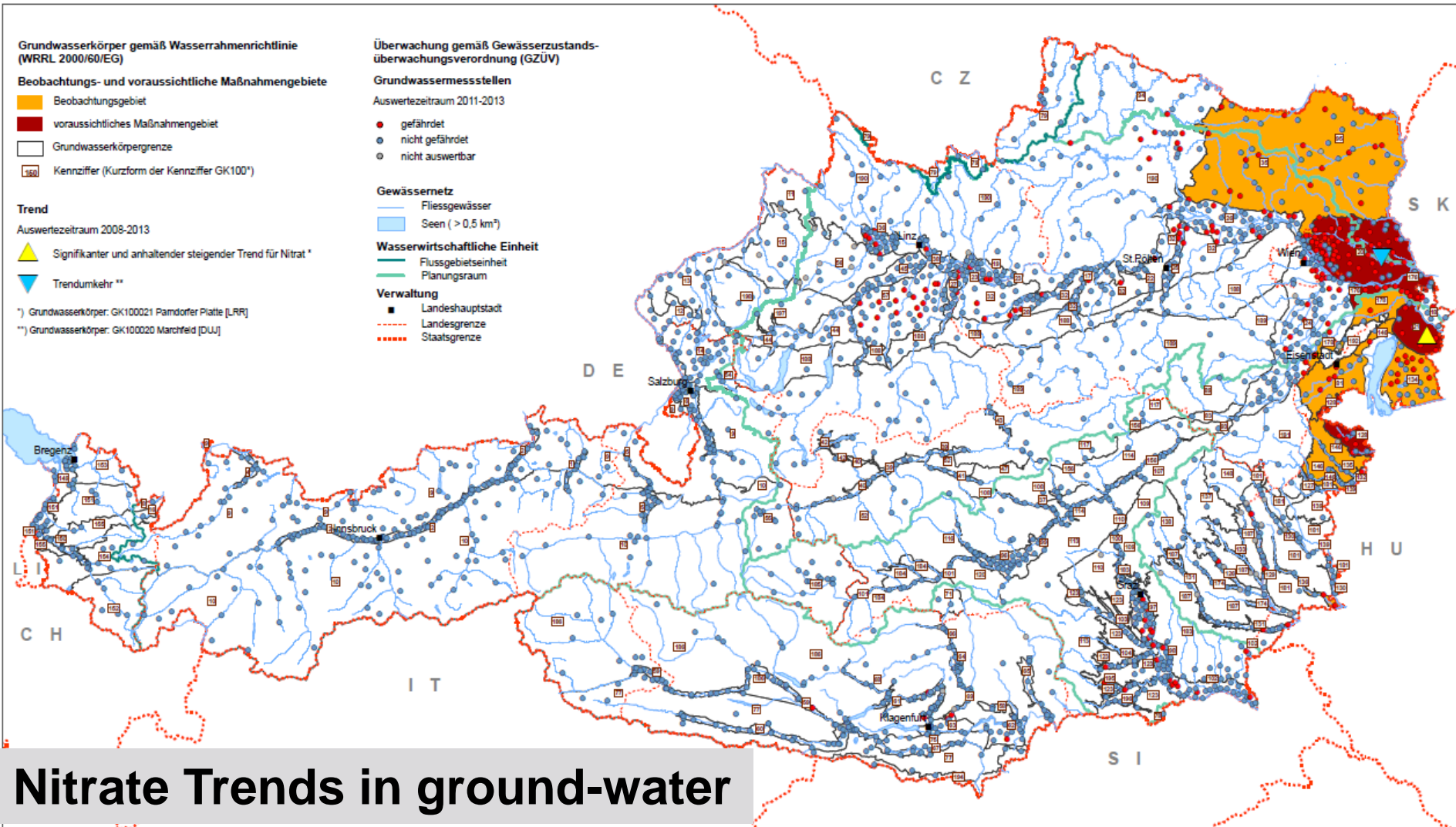
# Content of the presentation

- Challenges for the drinking water supply in Austria
- The CC-WARE project within this context
- Forested drinking water protection zones and best practices
- Raising of public awareness for drinking water protection
- National water protection policy / International policy

# Actual challenges for regional water supply

- + Due to intensive agricultural activities, groundwater bodies are endangered by nutrients and pesticides

Beobachtungs- und voraussichtliche Maßnahmengebiete sowie Trend gemäß QZV Chemie GW für Nitrat (2011-2013)



# Nitrate Trends in ground-water

Datenquelle: BMLFUW, Ämter der Landesregierungen, BEV  
 Auswertung/Kartographie: Umweltbundesamt GmbH

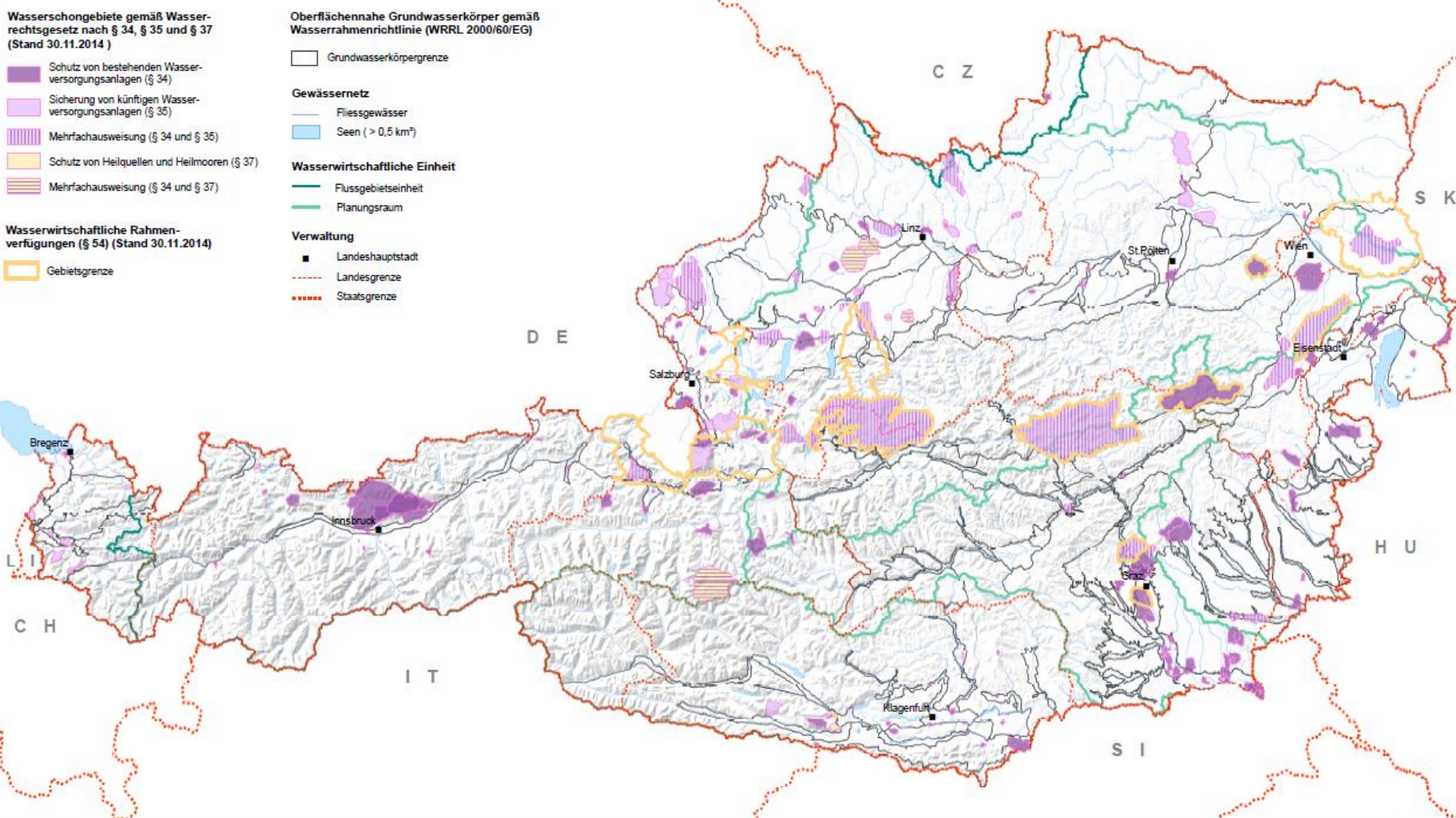
# Actual challenges for regional water supply

- + Beside actual local mitigation strategies also alternative catchment locations **were and are** part of solution strategies
- + In Austria drinking water supply in many cases was attempted to be drawn from forested drinking water protected areas (DWPA)
- + Hence also the national policy development has put a focus on the interdependencies between forests and water

# Schutzgebiete gemäß Artikel 7 der WRRL - Entnahme von Wasser für den menschlichen Gebrauch

Karte S-1

Kartenstand: 22.12.2014



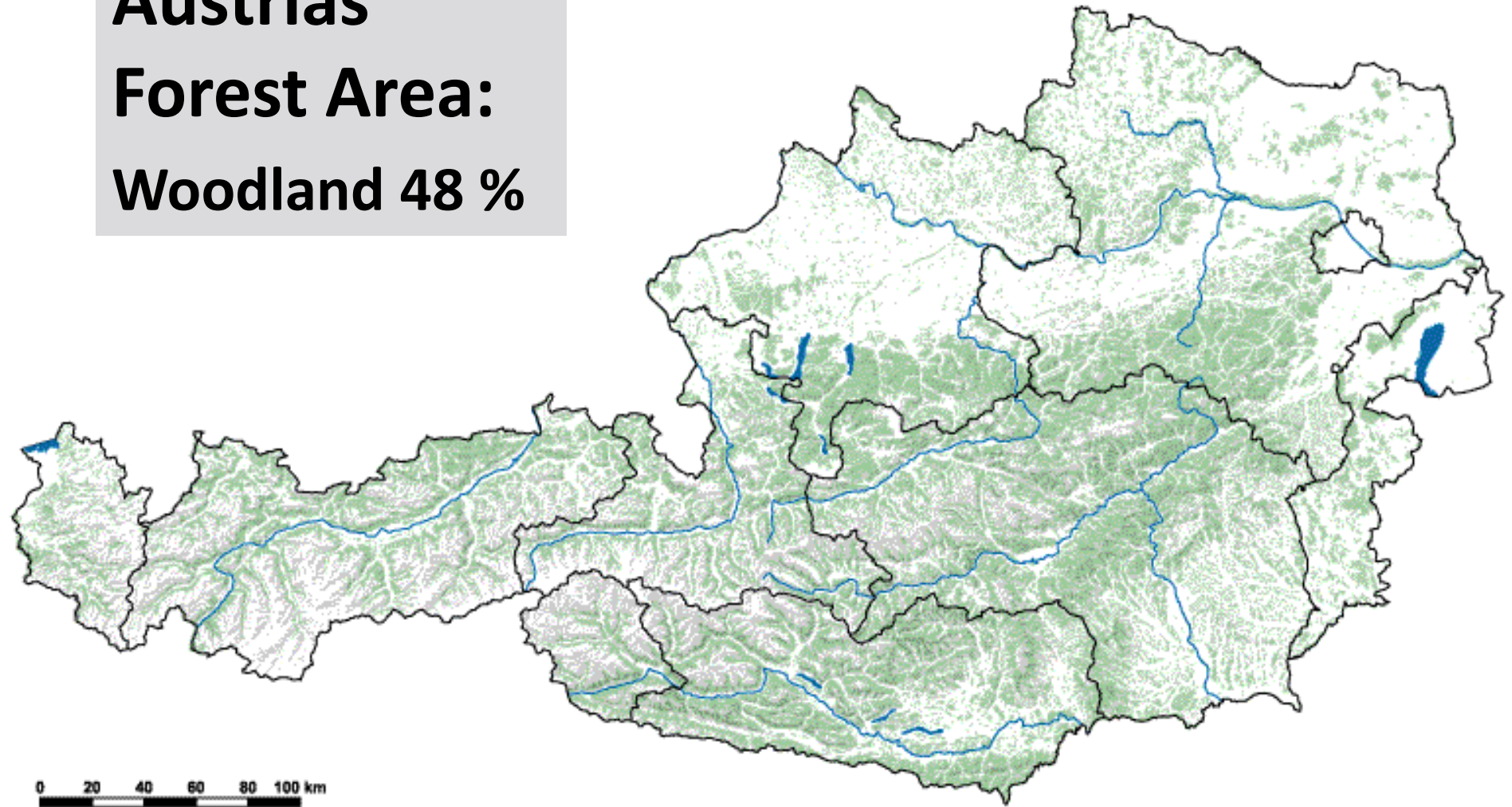
Datenquelle: BMLFUW, Ämter der Landesregierungen, BEV  
Auswertung/Kartographie: Umweltbundesamt GmbH

Herausgeber: Bundesministerium für Land- und Forstwirtschaft,  
Umwelt und Wasserwirtschaft (BMLFUW), Sektion IV

## Drinking water protected areas (DWPA)



**Austrias  
Forest Area:  
Woodland 48 %**



**Reference: BFW 2015**

# Existing policy strategies

e.g.:

+ EU Water Framework Directive (International, EU-wide)

+ Decreed Water Protected Areas (Regional, for each water protected area)

→ The limits of all of those policies are given with the fact, that they do not define specific management guidelines for forested drinking water protected areas (DWPA)



# The CC-WARE project

- + The transnational SEE-project CC-WARE thematised the mitigation of the vulnerability of water resources under climate change
- + Both *transnational and national strategies for water protection* were elaborated in the course of the project
- + In the CC-WARE project were cooperating scientists, water suppliers and administrative bodies (e.g. ministries)
- + In Austria, rules for forested DWPA were elaborated within the CC-WARE project
- + The aim of the project was the process of awareness-raising among relevant stakeholders and the general public -

→ ***Communication of scientific findings to decision-makers***

# Forest Ecosystems and Water Protection – Best Practice (BP) Guidelines

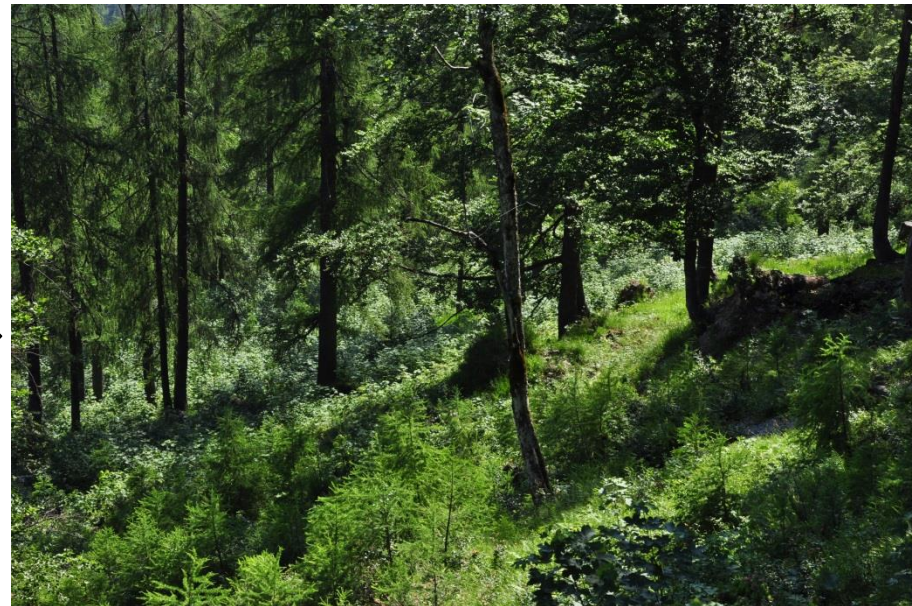
- + Forest Ecosystems are known for providing high quality drinking water
- + For securing this forest ecosystem service → specific forest management rules to support the water protection functionality of the forests
- + Those BP are a basis for operational concepts in forested DWPA
- + It is possible to evaluate forested DWPA based on the BP-catalogue
- + Financial funding of forestry practices as policy instrument can be based on the BP-Catalogue

# CC-WARE Best Practice (BP) Catalogue

- Prevention of clear cuts (*Water Quality*)
- Improvement of forest ecosystem stability (tree species → natural vegetation, etc.)  
(*Water Quality, Vulnerability Mitigation*)
- Protection of the natural gene-pool (protect old and stable tree individuals)  
(*Stability*)
- Securing the natural regeneration dynamics of the forests  
(*Forest Ecosystem Stability*)
- Forested Buffer Strips along streams  
(*Water Quality*)
- Prevention of forest road constructions as far as possible  
(*Water Quality, Water Quantity*)
- (...)

# Adaptive Forest Management in DWPA

- + Higher tree species diversity, more structured & uneven-aged forests
- + Higher diversity → elevated stability and resiliency
- + Successful natural regeneration dynamics



→ BP are valid for the whole SEE area (international)

# Awareness Raising & Knowledge Transfer as strategic policy development

- + Only few relevant stakeholders possess knowledge about the specific requirements to forests in DWPA
- + Hence knowledge transfer becomes a crucial facet of policy development
- + For this task it was of importance to approach local stakeholders like water suppliers, forest owners and staff from administrative bodies
- + This was achieved by CC-WARE knowledge transfer workshops
- + Stakeholders from the region were invited to participate
- + Thematic lectures (science-based) were accompanied by intensive discussions

# Awareness Raising & Press Conferences

- + Combination of lectures and discussions → a good means for awareness raising
- + The public frame of the workshops was a kind of opener for new views, for all participants
- + The whole thematic field was also presented in the course of Press Conferences
- + Those had the function of creating a multiplier effect by informing the general public
- + Especially for very tricky challenges in the field of water protection, this was a fitting means for supporting solutions

# Strategic Policy Development

- + It is intended to achieve an improvement of the precautionary approach for the protection of the water resources (→ prevention of problems)
- + Awareness raising and knowledge transfer are basic conditions for such (→ stakeholder training)
- + The integration of water suppliers, forest owners, administrative bodies and scientists guarantee a broad scope of thematic involvement and support the implementation
- + An improvement of the drinking water protection functionality of forest ecosystems within DWPA is the desired outcome

# Conclusions

- + To shift water supply sources from agriculturally dominated towards forested catchments is a valuable policy solution [wherever it is possible]
- + Forest management in DWPA has to follow specific rules, a catalogue of Best Practices was defined in the CC-WARE project
- + This is already a step beyond existing policies (WFD, Decreed DWPA)
- + Knowledge transfer and awareness raising is crucial within this context
- + Some critical themes were prepared with the support of press conferences
- + The strategic policy development is work in progress (national & international)



# Thank you for your attention



**Universität für Bodenkultur Wien**  
Department für Wald- und Boden-  
wissenschaften

## University of Natural Resources and Applied Life Sciences, Vienna - Austria

- **Department of Forest- and Soil Sciences**  
Institute of Silviculture  
*DI Dr. Roland Koeck*  
*Ao. Univ.-Prof. DI Dr. Eduard Hochbichler*
- **Department of Water-Atmosphere-Environment**  
Institute of Water Management, Hydrology and  
Hydraulic Engineering  
*Em. O. Univ.-Prof. DI Dr. Hans-Peter Nachtnebel*



## CC-WARE - Lead Partner of the project

*DI Hubert Siegel*