



# An 'Econics check' of conservation policy in Brandenburg State, Germany

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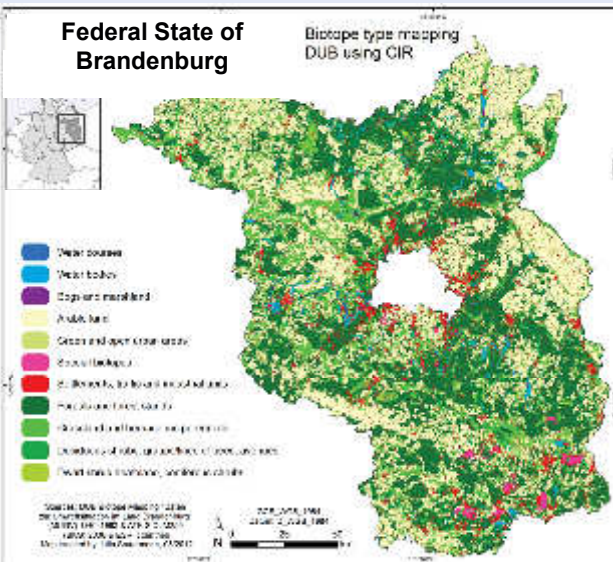
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## INTRODUCTION

- Nature conservation has to deal with complex, nested natural systems. Thus, it would be logical to align its strategies to the ways biodiversity works (Hobson & Ibisch 2012).
- Nature conservation legislation is regularly amended in response to societal challenges. The direction of the evolution of a legal framework is the result of a constant societal discourse.
- Science has the power, and responsibility, to inform these discussions, and even initiate them (Ibisch et al. 2012b).
- Econics represents a new systemic framework for sustainable development and conservation** (Ibisch et al. 2012a and poster by Ibisch & Hobson in this session).
- The conservation policy and underlying legislation in the Federal State of Brandenburg, Germany, is taken as an example of the coherence of today's governmental conservation activities with such 'econical' lessons.

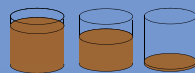
## STUDY AREA



- Through the centuries, Brandenburg has experienced less anthropogenic pressure than many other regions in western Europe.
- This is due to its natural setting (e.g., relatively dry climate, poor soils) and political as well as economical circumstances (peripheral position, rural character).
- In general, the conservation status of its biodiversity is relatively favourable.
- Notwithstanding, nature conservation has to deal with various threats to the ecosystems of the region: degradation, fragmentation, and loss. Climate change and societal reactions to it (bioenergy crops, dyke reinforcement etc.) are to gain impact and increasingly interact with 'conventional' threats (Reyer et al. 2012, Ibisch et al. 2012b).

## METHODS

- The "econical lessons from ecosystems" (→ poster by Ibisch & Hobson in this session) are taken as checklist criteria.
- The German federal states are in charge of nature conservation including legislation. The legal framework is centered around the Brandenburg Conservation Act, but many other laws, in part from other societal sectors, directly touch onto conservation. Unless otherwise stated, the analysis refers to the Brandenburg Conservation Act.
- The legal conservation framework of Brandenburg is checked against the checklist criteria reflecting econics. The evaluation is limited to biodiversity and areas of conservation priority (e.g., industrial agriculture excluded).
- Final scores of agreement of the legal framework with econical criteria are visualised by **whisky glasses**:  
full – high agreement  
halfway empty – moderate agreement  
almost empty – low agreement.



REFERENCES: Hobson, P.R. & P.L. Ibisch (2012) Learning from nature for sustainability: an econical approach to (non-) knowledge management. In: Ibisch, P.L., L. Geiger & F. Cybulla (eds.) Global change management: knowledge gaps, blindspots and unknowables. Nomos - Ibisch, P.L., P.R. Hobson & S. Kretz (2012) The European nature conservation network Natura 2000 in meeting uncertain challenges of climate change: Applying principles of complex systems and ecosystem theory. In: Ibisch, P.L., L. Geiger & F. Cybulla (eds.) Global change management: knowledge gaps, blindspots and unknowables. Nomos - Ibisch, P.L., S. Kretz & V. Luthardt (eds., 2012) Regionale Anpassung des Naturschutzes an den Klimawandel: Strategien und methodische Ansätze zur Erhaltung der Biodiversität und Ökosystemdienstleistungen in Brandenburg. Eberswalde University for Sustainable Development, Eberswalde, Germany. Download: <http://www.hnee.de/klimawandel-naturschutzstrategien-buch>. - Reyer, C., J. Bachinger, R. Bloch, F.F. Hattemann, P.L. Ibisch, S. Kretz, P. Lasch, W. Lucht, C. Nowicki, P. Späthel, M. Stork & M. Weip (2012) Climate change adaptation and sustainable regional development: a case study for the Federal State of Brandenburg, Germany. Regional Environmental Change 12, 523-542.

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## RESULTS

| Econical "lesson from ecosystems"   | Develop and manage socio-economic systems within carrying capacities.  |
|---|--|
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Most ecosystems targeted by conservation are early-successional ecosystems that depend on systematic excess (overuse) of carrying capacities.</li> <li>- Annex habitats of the Habitats Directive, e.g. grasslands.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Conservation goals focus on (representation of) patterns rather than processes and functions.</li> <li>- Habitats Directive, Red Lists.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Most target ecosystems and species depend on artificially extracting material and energy.</li> <li>- Annex habitats of the Habitats Directive, e.g. mowing or burning of heathlands.</li> </ul>  |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Most ecosystems managed towards a certain state of structural impoverishment.</li> <li>- High number annex habitats of the Habitats Directive represent degraded states of forest ecosystems.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Administrative borders are defined opportunistically and generally do not follow ecological boundaries.</li> <li>- 'Minimalistic' protected areas around conservation targets, overlapping only partially.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Adaptive management not explicitly addressed.</li> <li>- Habitats Directive: static preservation of biodiversity at defined places.</li> <li>- No horizontal alignment between neighbouring management units.</li> <li>- Neighbouring protected areas and their management normally do not relate to each other.</li> </ul> |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Conservation planning is fundamentally (while unsystematically) evidence-based.</li> <li>- No scenarios, risk or vulnerability assessments applied in conservation planning.</li> </ul>  |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Static prescriptions for procedures and the application of instruments.</li> <li>- No monitoring and evaluation of the efficiency of management resource use in conservation.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Conflicts with econical lesson.</li> <li>- Examples/details (facultative)</li> </ul> | <ul style="list-style-type: none"> <li>- Not explicitly addressed.</li> <li>- Conservation of biological as well as establishment institutional/management diversity.</li> <li>- Collaboration of governmental administrations with non-governmental organisations and foundations.</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ Agreement with econical lesson</li> <li>+ Examples/details (facultative)</li> </ul>  | <ul style="list-style-type: none"> <li>+ Conservation of the "productive und functional capacity of the natural household".</li> </ul>   |

## DISCUSSION

- This analysis allows a first approximation to the idea of an 'econical' conservation legislation. Naturally, any current legal conservation framework has not had the opportunity to accept guidance from this new conceptual framework und 'learn its econical lessons'.
- Overall, there is mixed evidence concerning the agreement of nature conservation laws in the study area with econics.
- Notwithstanding, the results reveal substantial efforts to safeguard biodiversity according to econics, thus potentially bolstering the resilience of the landscape to threats.
- At the same time, there appears to be considerable potential for improvement, particularly in terms of heuristic decision-making and dealing with non-knowledge (e.g. uncertainty) within an adaptive management approach.
- Furthermore, the conservation of patterns predominate over the conservation of processes.
- At the heart of the issue, there is a conflict between natural systems and processes (e.g. exergy storage) versus static preservation of the historical cultural landscape (e.g. extraction of material and energy).