Biodiversity and EIA for road and railway projects

A review in European Union countries

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Ecological/Biodiversity assessment

- International level:
  - Convention on Biological Diversity (CBD)
  - Ramsar
  - Guidelines (World Bank, CBD, IAIA, etc.)
- National legislation
  - National Environmental Policy Act (NEPA, 1969)

    "preserve (…) natural aspects of our national heritage, and maintain, wherever possible, an **environment which supports diversity**, and variety of individual choice"
  - EU directive on EIA (85/337/EEC)

    "(…) effects of a project on the following factors: -Human beings, **fauna and flora**"
  - EU directive on SEA (2001/42/EC)

    "(…) likely significant effects on the environment, including issues **such as biodiversity** (…)"

Ecological/Biodiversity assessment

- National level:
  - Guidelines
  - Sweden's 15 environmental objectives

    and the 16th environmental goal on biodiversity

Flourishing lakes and streams

Thriving Wetlands

Healthy and sustainable forest

Specific and quantitative

EIA review

- Database

  -38 EIS

  -Road and railway projects

  -Published after 1999

  -Same legislation: EU directive on EIA (85/337/ECC)

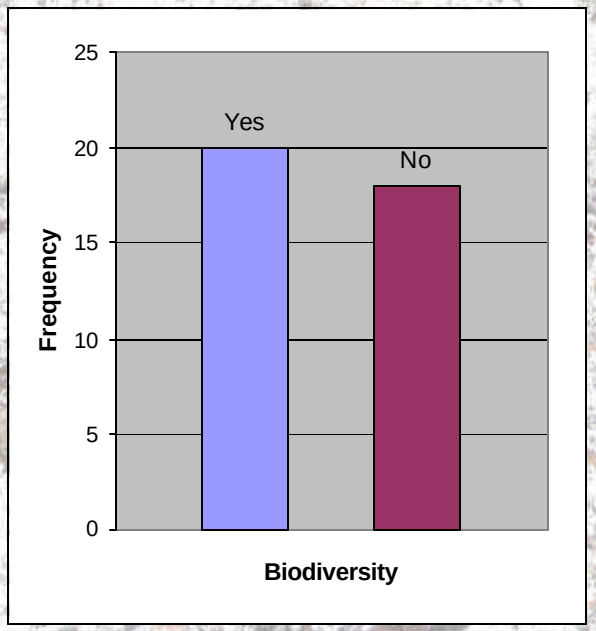
  -4 EU countries: -Sweden (19)
  -France (10)
  -United Kingdom (5)
  -Ireland (4)

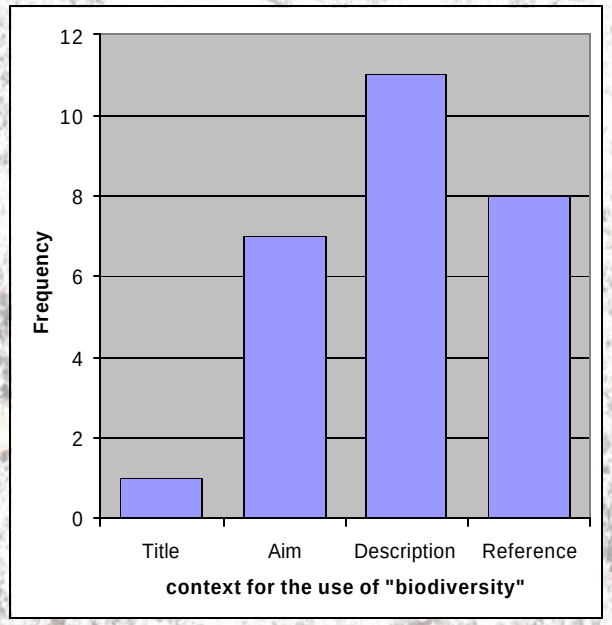
- Methodology: -Review checklist
  -Content analysis
  -Closed questions (yes/no)

EIA review: Results

- The biodiversity concept in the EIA process

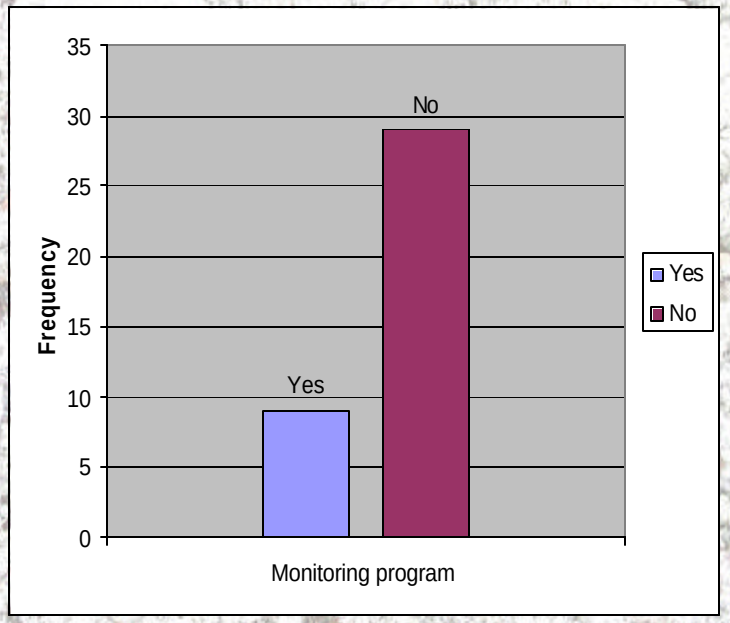
  Definition: “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (CBD)





EIA review: Results

- The time perspective in ecological assessment
  - Distinction between impact during construction/operation phase
    - 34 out of 38 EIS distinguished impacts during construction/operation
    - Standardized text on impacts during construction
  - Consideration of long-term and short-term impacts
    - 5 EIS distinguished long-term/short-term impacts
  - Information on monotoring of ecological parameters

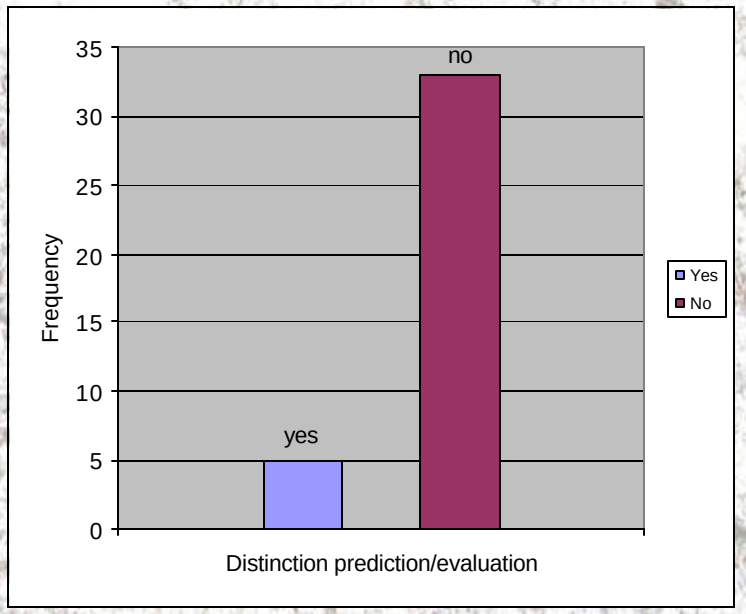


EIA review: Results

- The methodology and assessment characteristics (1)
  - Qualitative/ quantitative assessment
    - All EIS included a qualitative assessment whereas only 8 tried to qunatify the impacts
  - A stepwise assessment: Distinction between impact prediction/evaluation
    - In Sweden:

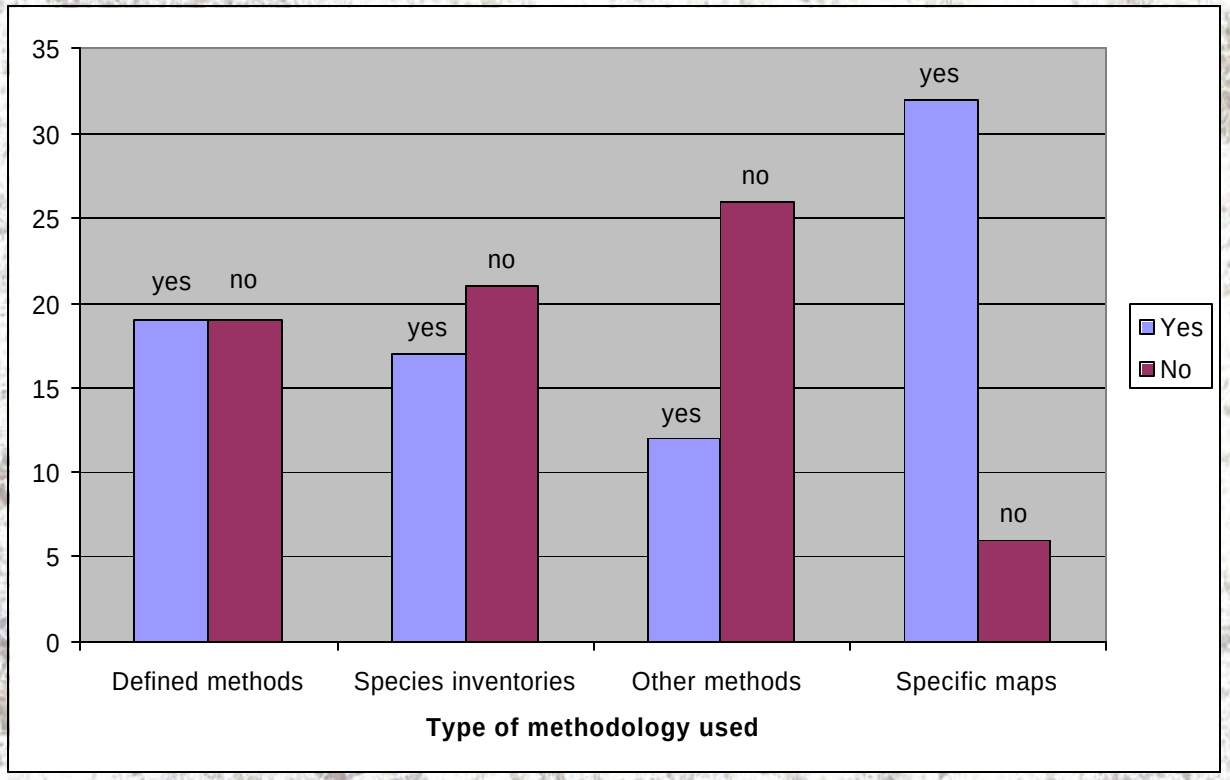
      effects/consequences
    - In The UK and Ireland :

      magnitude/significance



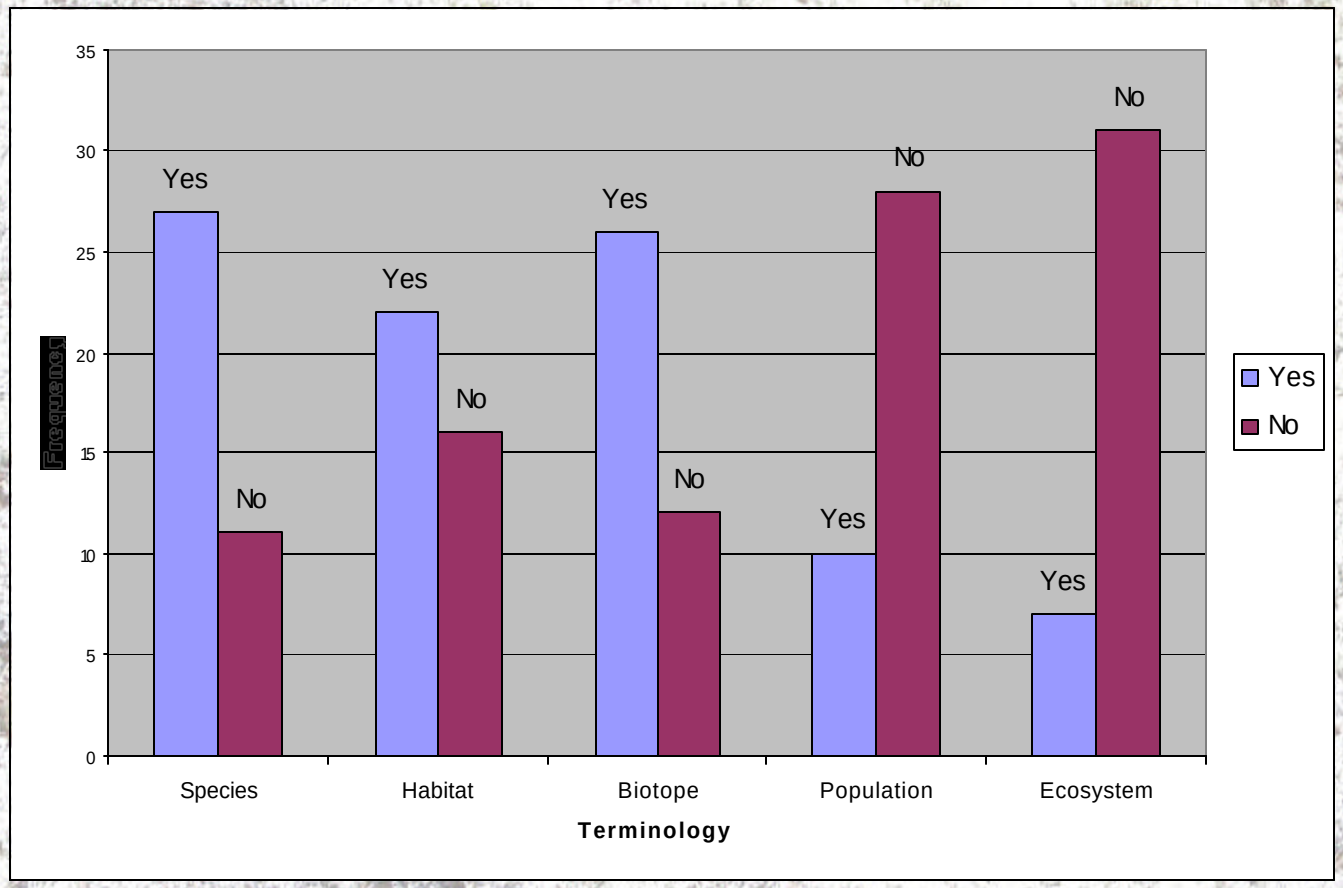
EIA review: Results

- The methodology and assessment characteristics (2)



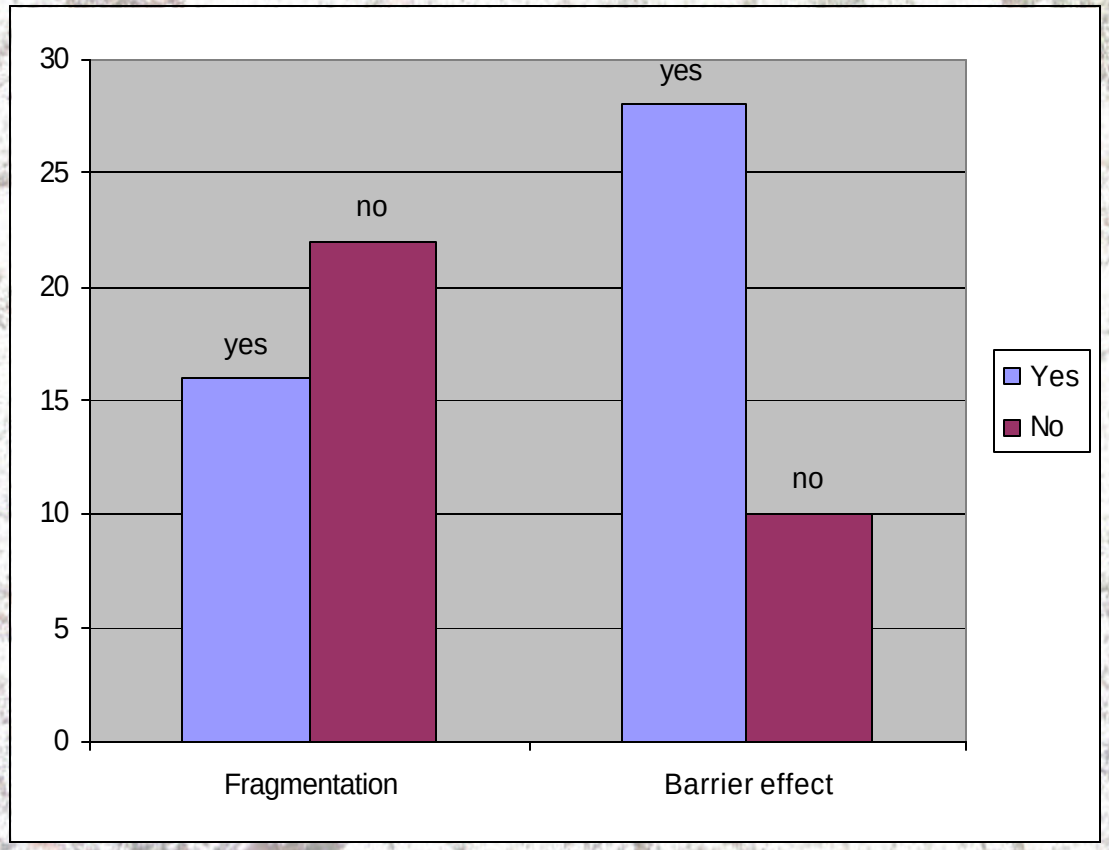
EIA review: Results

- The physical scale in ecological impact assessment



EIA review: Results

- Fragmentation and barrier effects: impacts inherent to linear projects



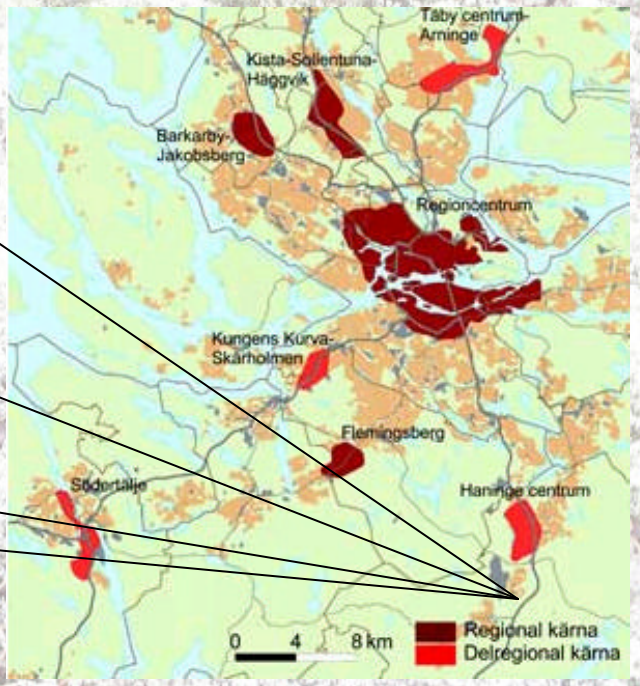
EIA review: Conclusion

- Institutional problem: all the EIS reviewed were accepted!
- The inertia for the use of guidelines on biodiversity assessment
- Education problem: The misunderstanding of the scope of biodiversity assessment
- The time scale: Engineering perspective versus ecological perspective
- From description to assessment: the lack of specific methodologies
- Need for prediction tools: description is not prediction

Conclusion

EIA or SEA: a question of scale

Road project



Road network for the for the Stockholm region