

Eutrophication Potential Indicators in LCA

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Objective

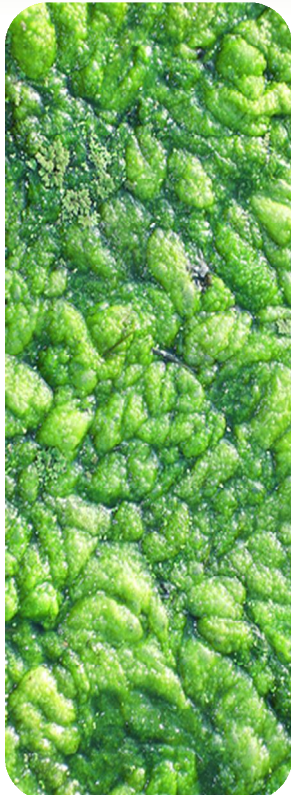
Overview of eutrophication indicators

- Main limitations
- Best practices?
- On-going research



What is Eutrophication?

Eutrophication in a nutshell



“covers all impacts of excessively high environmental levels of macronutrients, the most important of which are nitrogen (N) and phosphorus (P)”

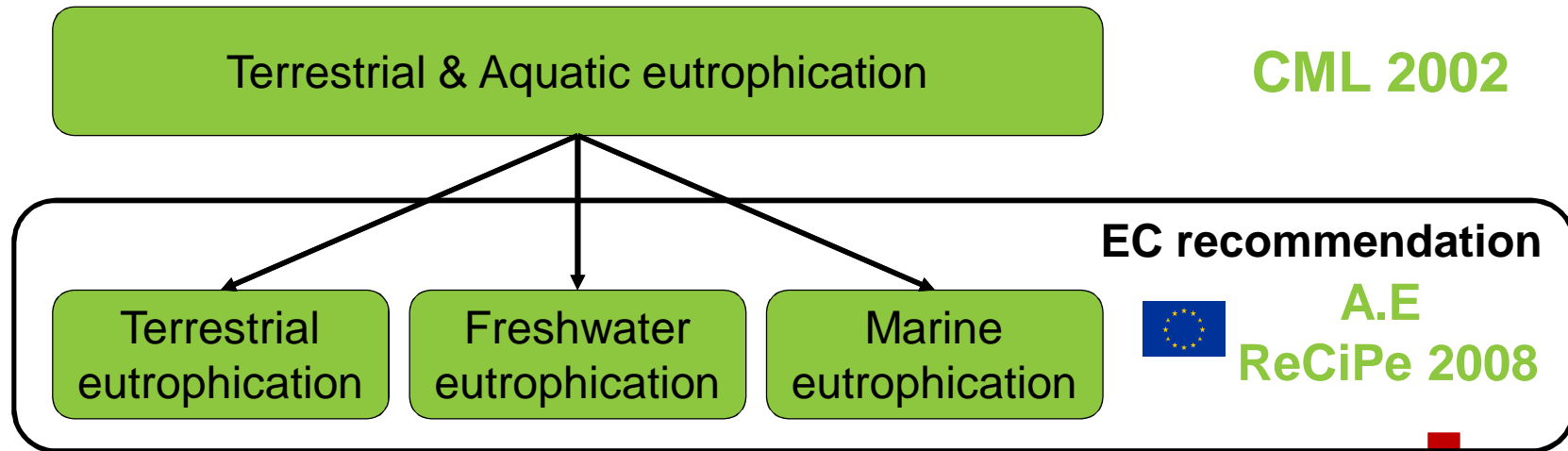
(Guinee et al. 2002)





Methods overview

More impact categories indicators over time



Better modelling of the environmental mechanisms

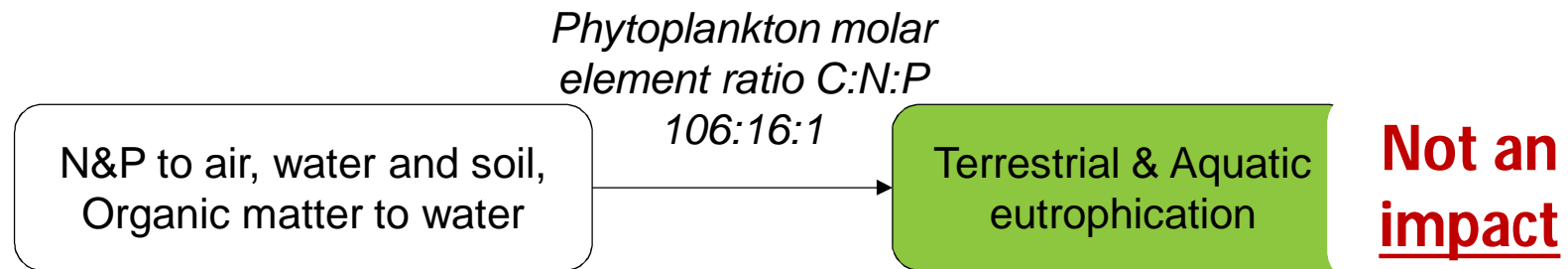
BUT

Less substances covered

(Batch et a. 2016)

The good “old” method

CML2002 (*Heijungs et al. 1992*)



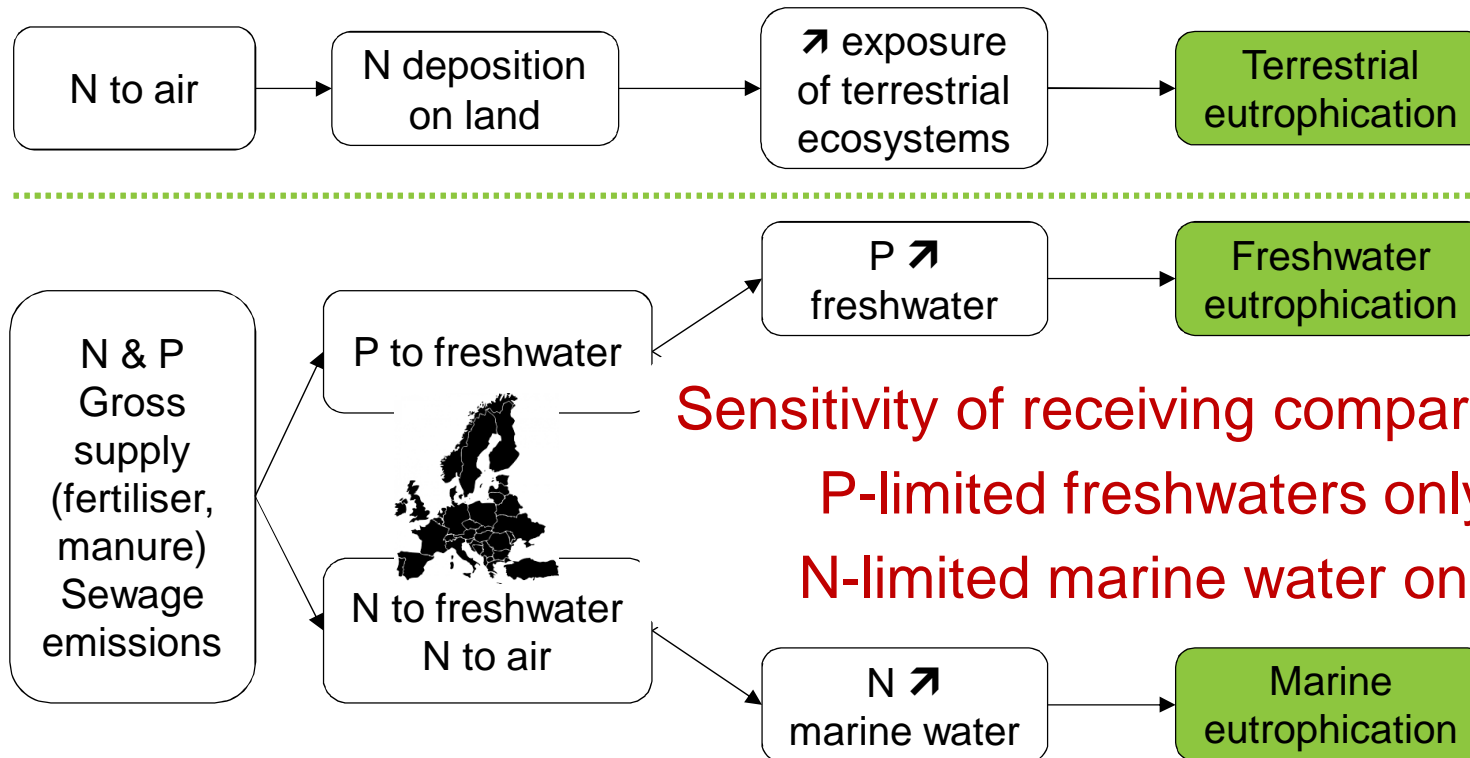
“worst case scenario”:

- ✓ Sum all emissions
- ✓ No fate modelling

E.C recommendations

Geographical validity:
Europe

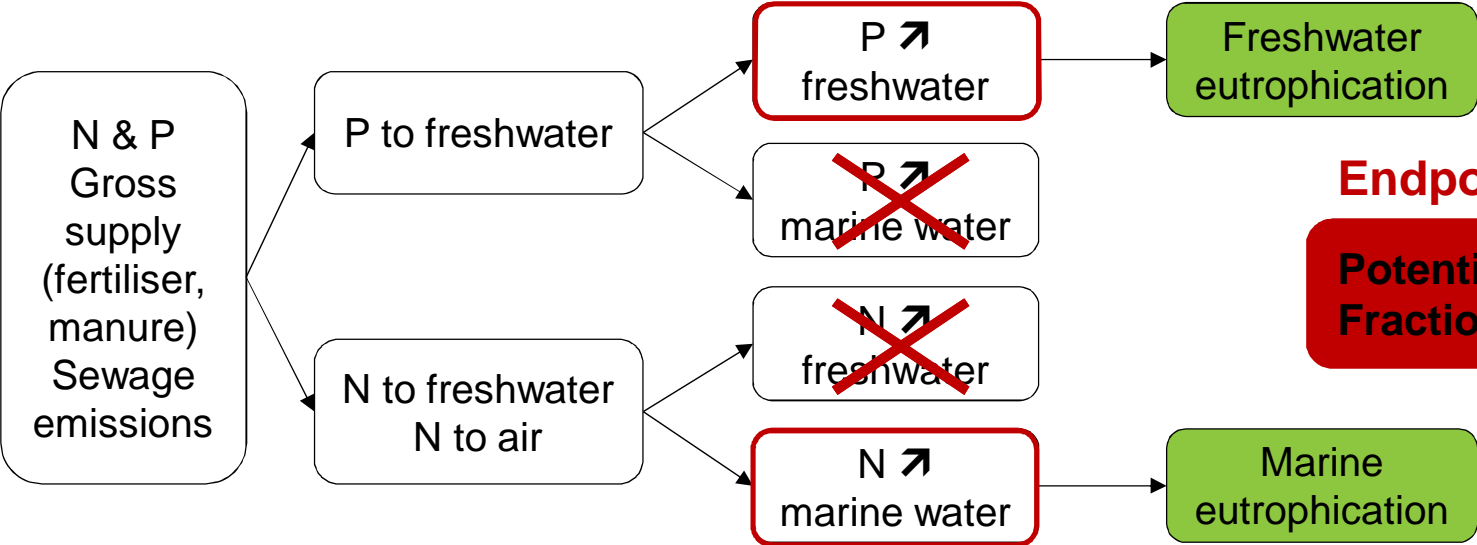
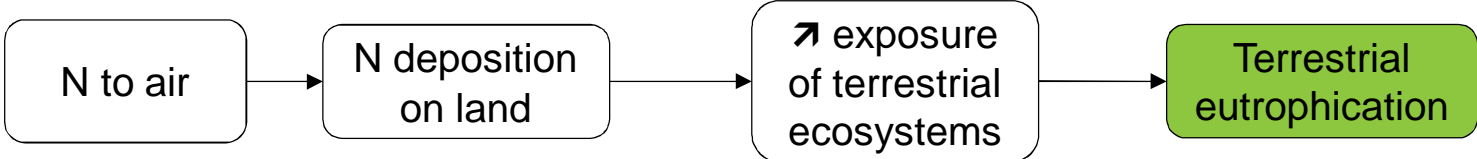
Accumulated Exceedance (Seppala et al 2006)



ReCiPe 2008 - Midpoint (Stuijs et al. 2009)

E.C recommendations

Accumulated Exceedance (Seppala et al 2006)



Endpoint method
Potentially Affected Fraction of Species

ReCiPe 2008 - **Midpoint** (Stuijs et al. 2009)

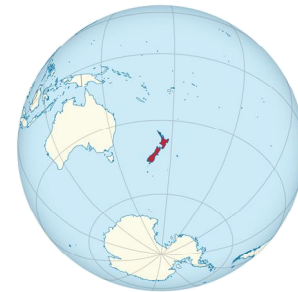


Current developments

globally valid model,
with **site-specific** C.F for

→ P fate modelling

→ N fate modelling



Customisation of these C.F for NZ



Conclusions

Take Home Messages

ReCiPe



CML



- Chose a method depending on the scope and objective of the study, and account for its limitations in results interpretation
- Anticipate promising developments...
and the upcoming change in recommendation



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āta mātai, mātai whetū

Thank you for your attention

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Key references

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