Elaboration of country specific emission factors for organic soils in Latvia according to LIFE REstore project results

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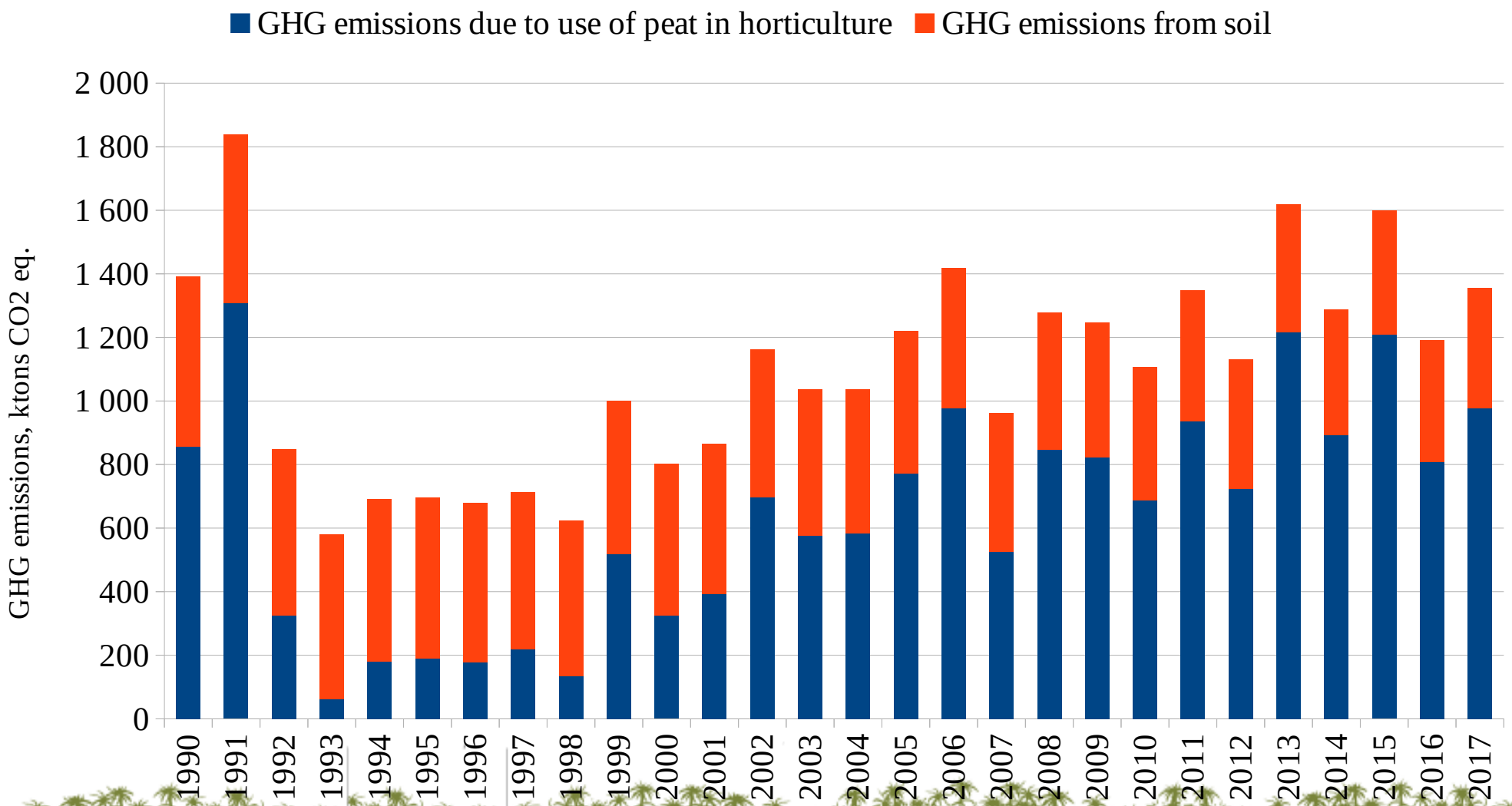
Arta Bārdule, **Aldis Butlers**, Gints Spalva, Ainārs Lupiķis, Kaido Soosar, Andis Lazdiņš
LSFRI Silava, Riga street 111, Salaspils LV-2169
Phone: +37126386458, E-mail: aldis.butlers@silava.lv

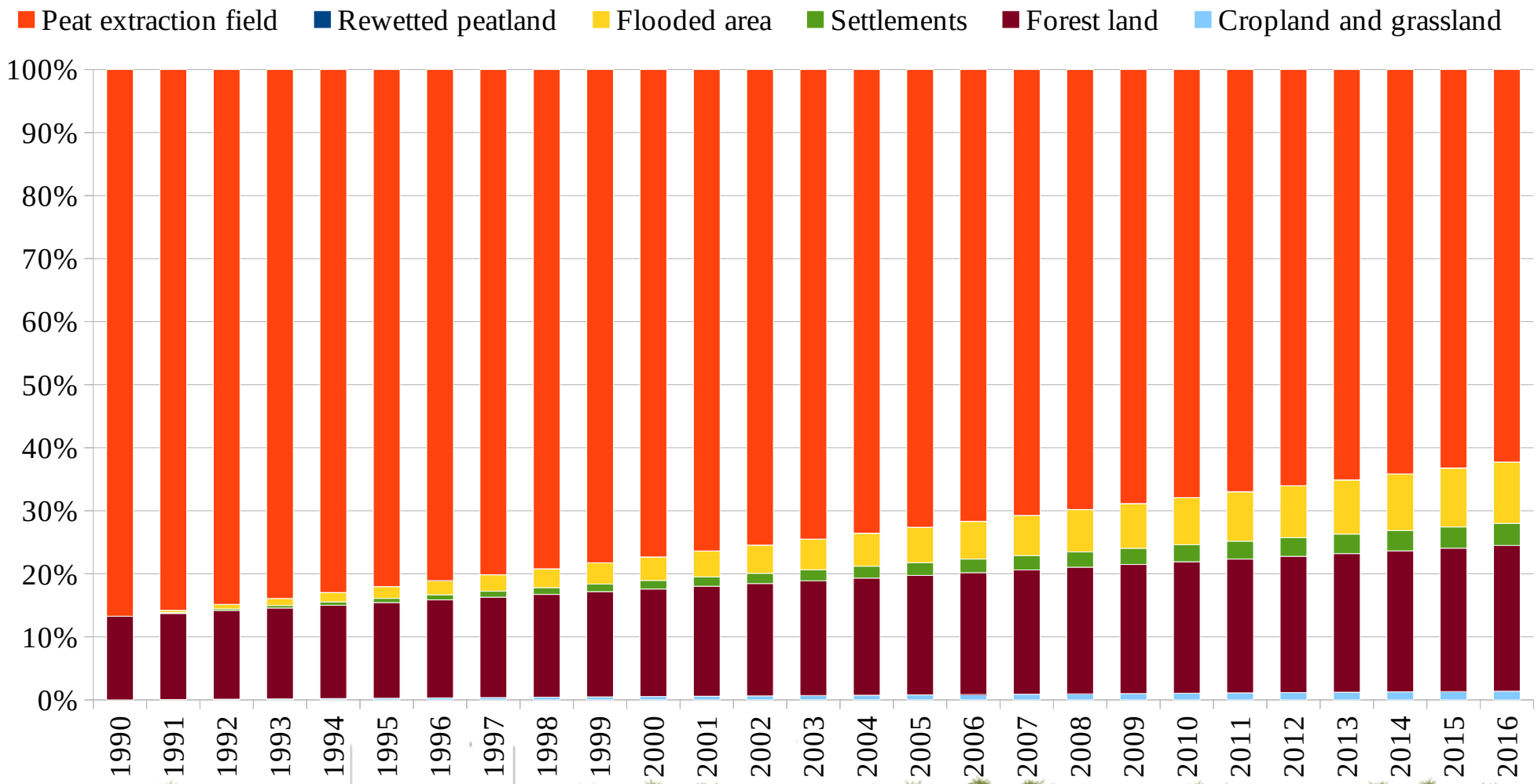
GHG emission from managed wetlands in the National GHG inventory (2019) of Latvia



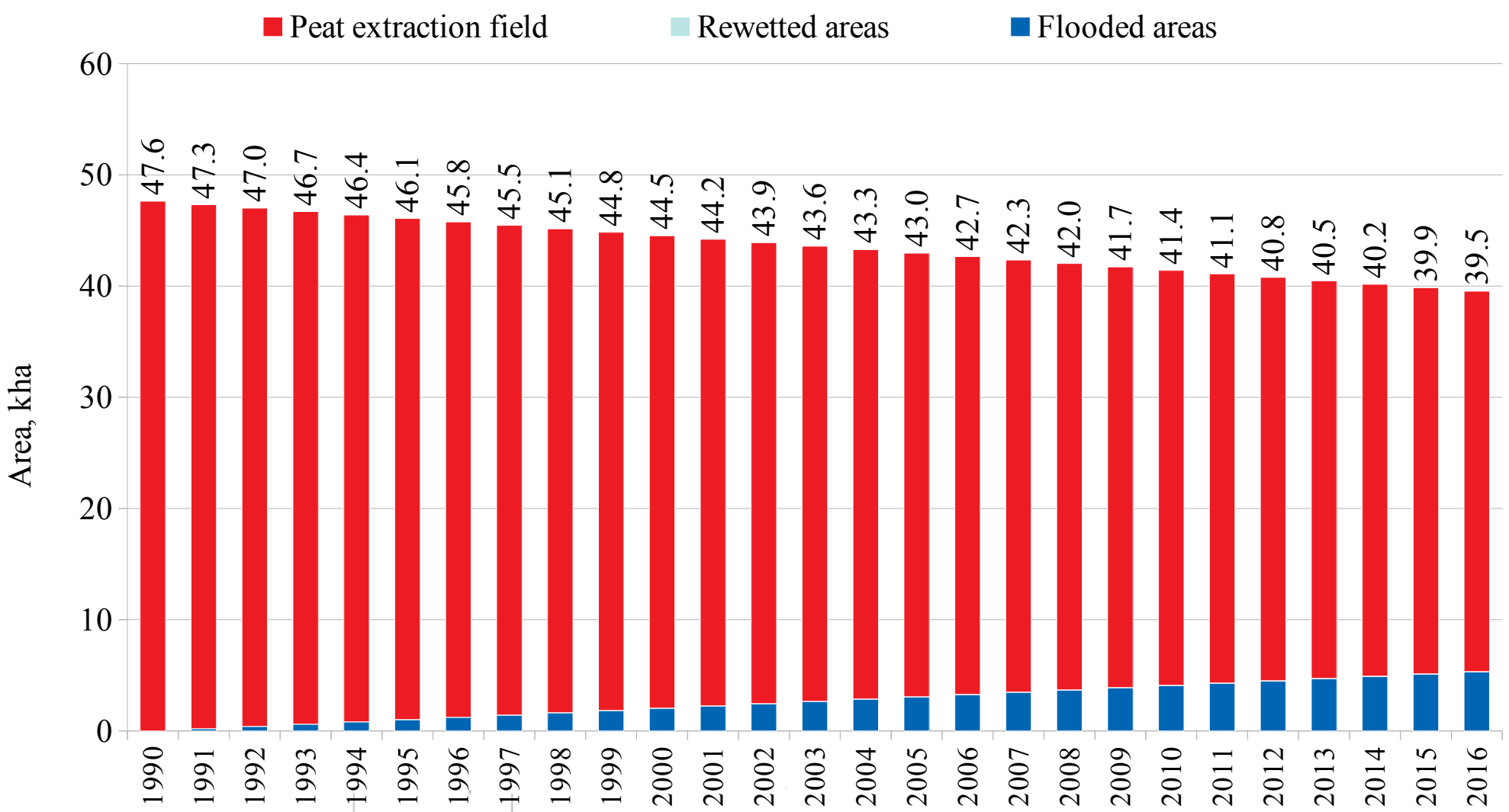
The GHG inventory improvement targets of the LIFE REstore project

- **Elaboration of CO_2 , CH_4 and N_2O** for peat extraction sites in raised and transitional bogs for different land use practices.
- **Elaboration of activity data** for calculation of GHG emissions from managed wetlands.
- **Evaluation of potential impact of management** approach and land use changes on GHG emissions in former peat extraction sites.

Land use changes in former peat extraction fields



Area reported under managed wetlands according to LIFE REstore

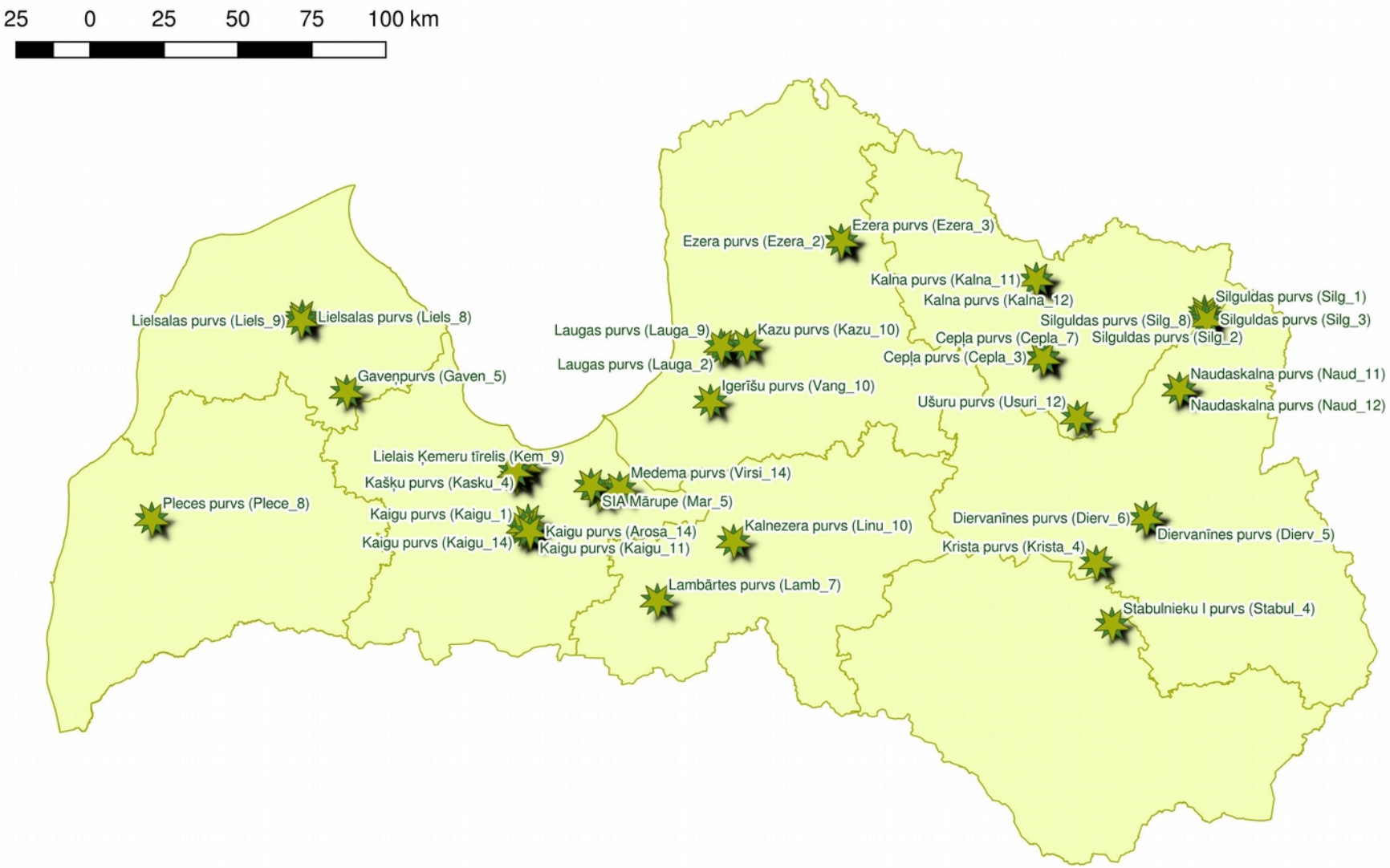



Attributes
Peat deposits:
external border
commercially valuable area
Historical border of peat extraction field
Active peat extraction licence area
Forest land
Shrubland
Bare ground & grassland
Cropland
Peat extraction field
Flooded area
Settlements
0
600
1200
1800 m
Example of land uses in extracted peatland

Land use types in details, each represented by 3-4 plots

- **Peat extraction site**.
- Partially extracted **peatland, poorly developed vegetation**.
- Partially extracted **peatland, covered by bushes and herbaceous plants**.
- **Perennial grassland** (pasture).
- **Cropland (cereals and sown grasses)**.
- Cropland (**legumes**).
- **Plantations of blackberries**.
- **Plantations of cranberries**.
- At least 20 years old **pine or spruce stands**.
- At least 20 years old **birch stands**.
- Natural **raised bog**.
- Natural **transitional bog**.

Location of sampling sites



Management of peatlands and GHG emissions

CH_4 CO_2

DOC

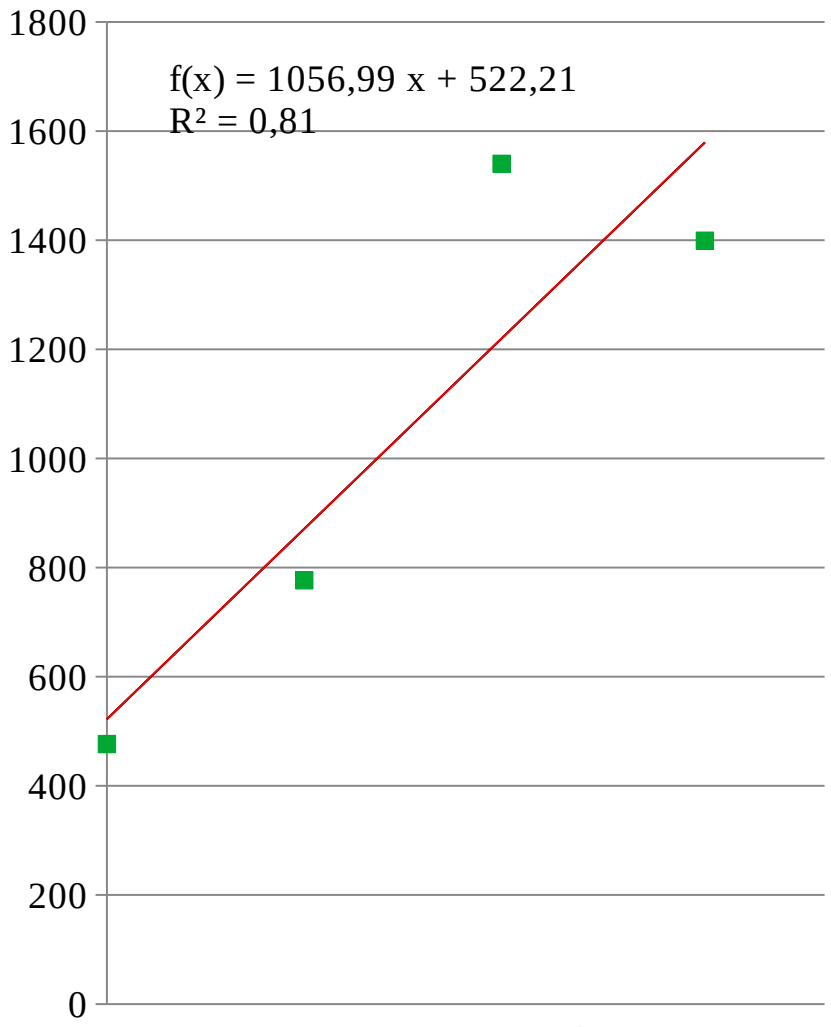
CO_2

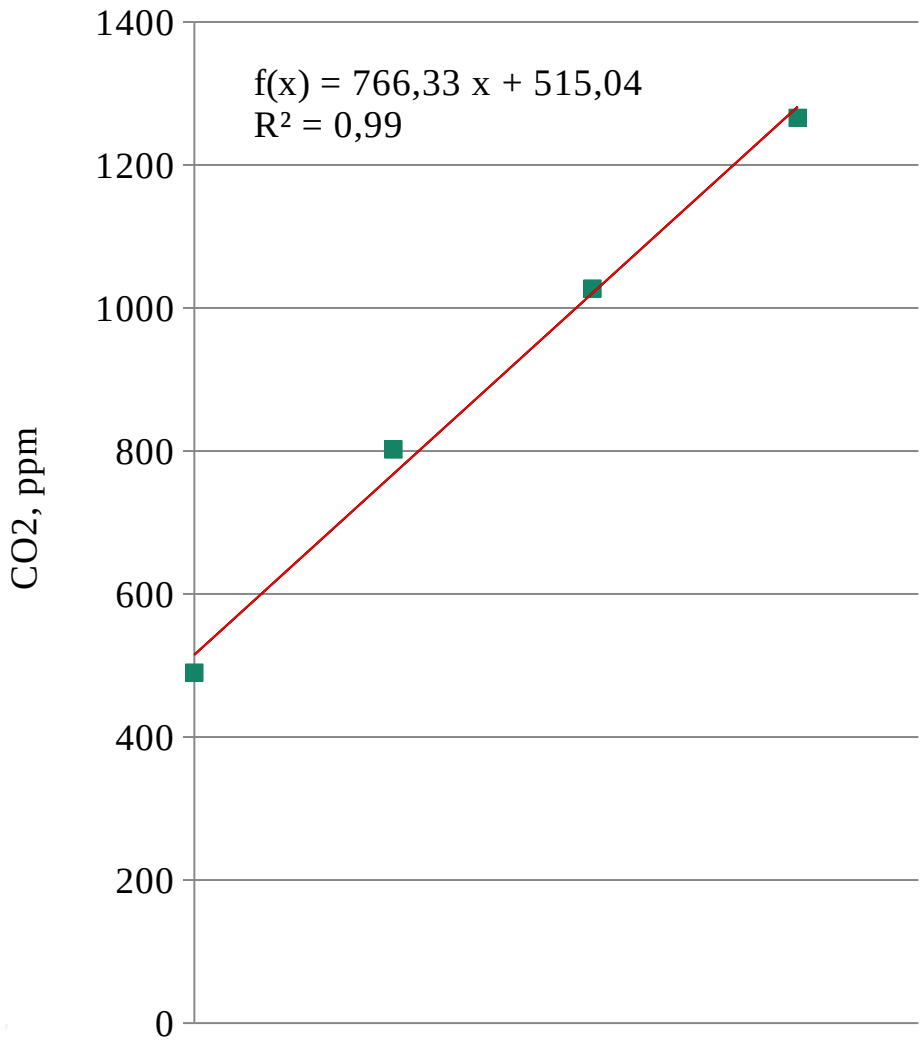
CH_4

DOC

Field sampling equipment

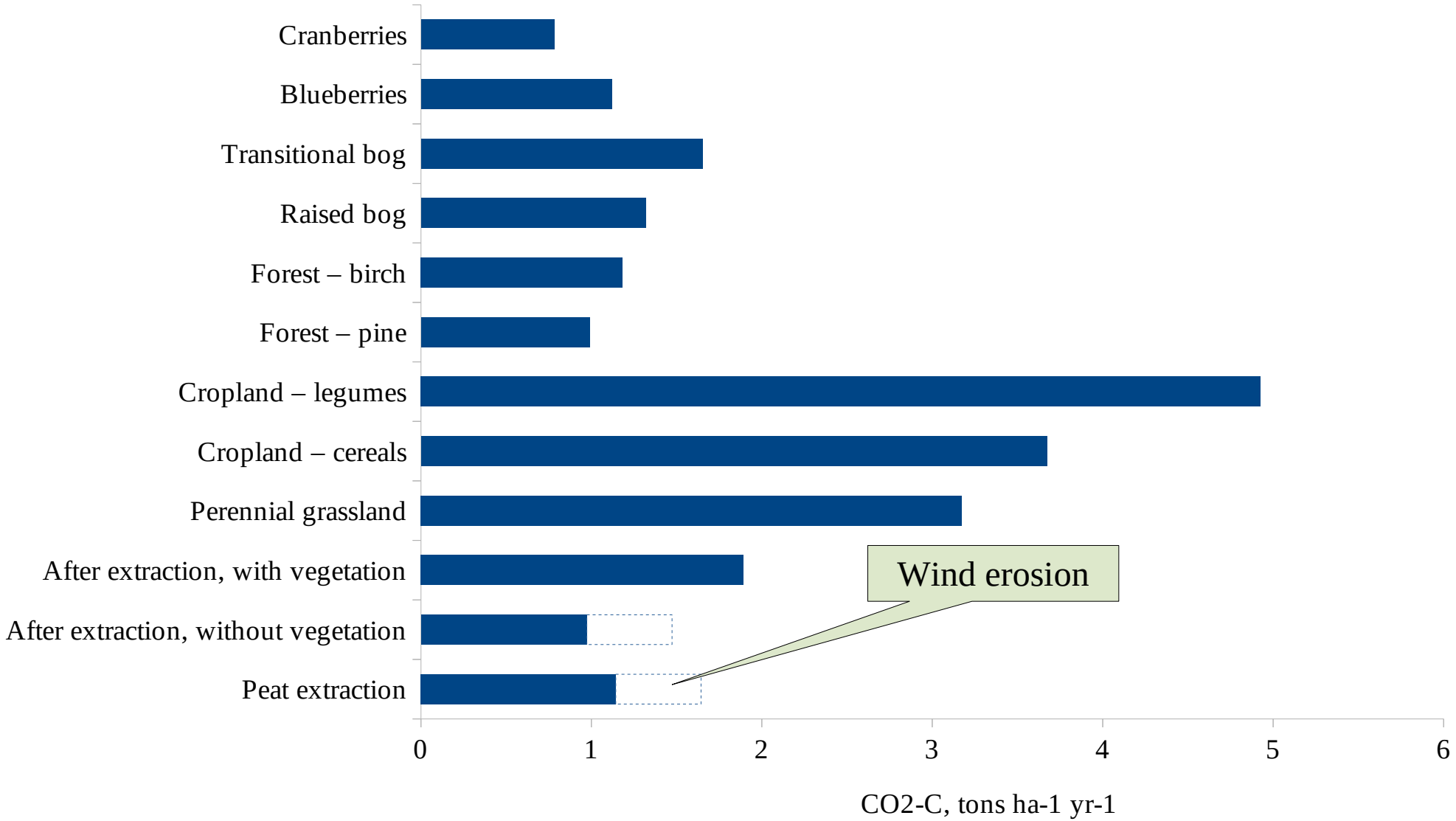
Data verification and quality control procedures



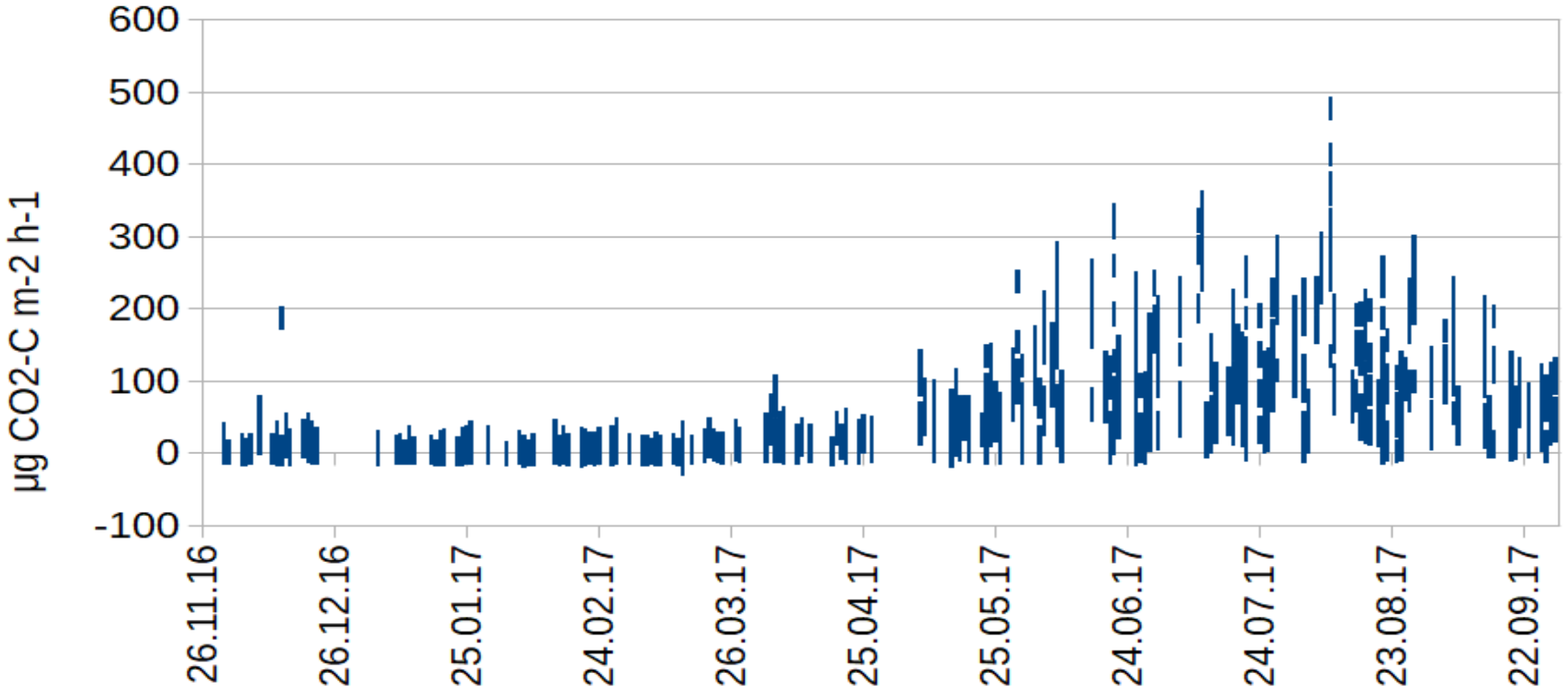


Collection of litter samples in forest lands

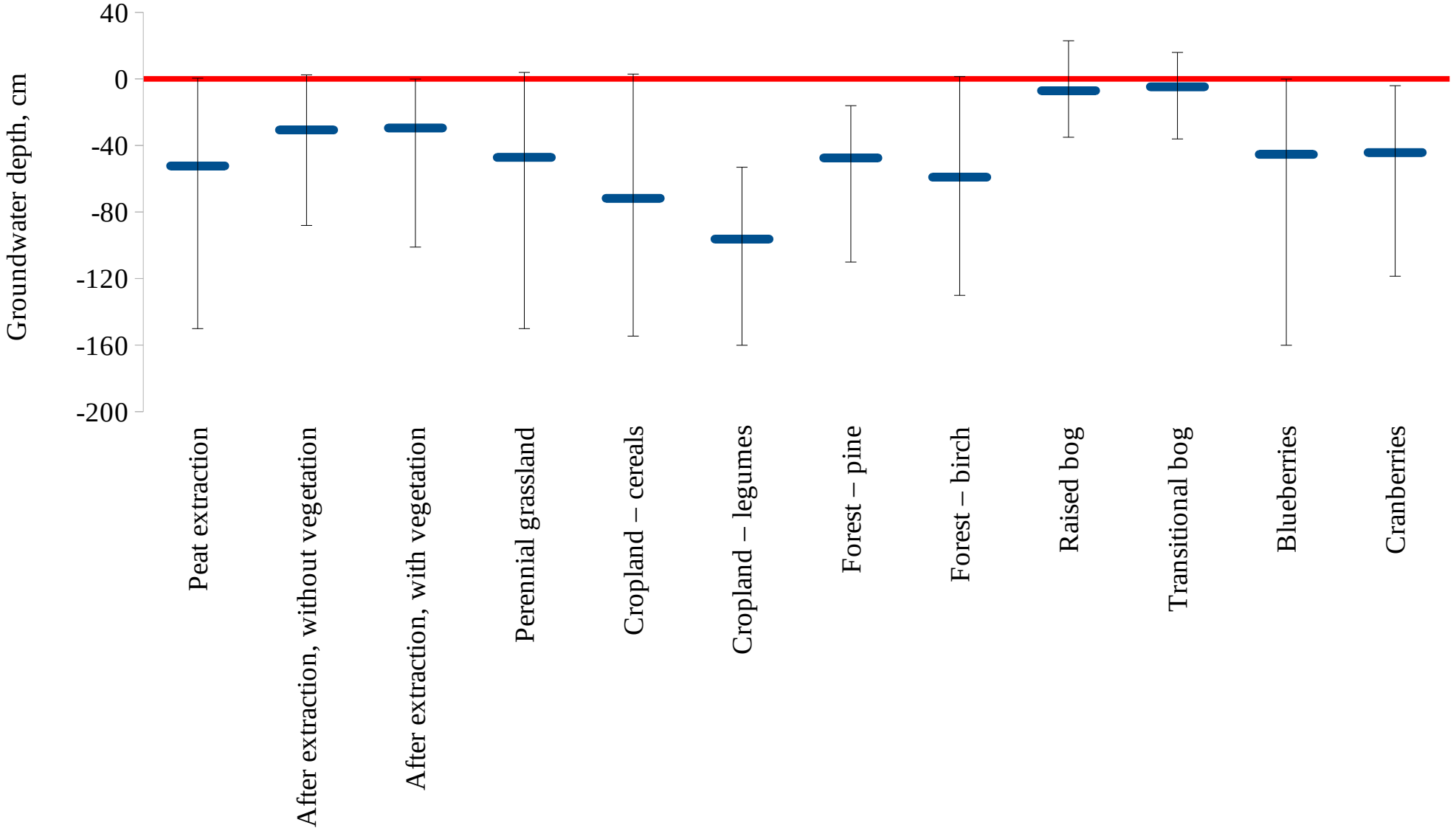
CO_2 soil fluxes



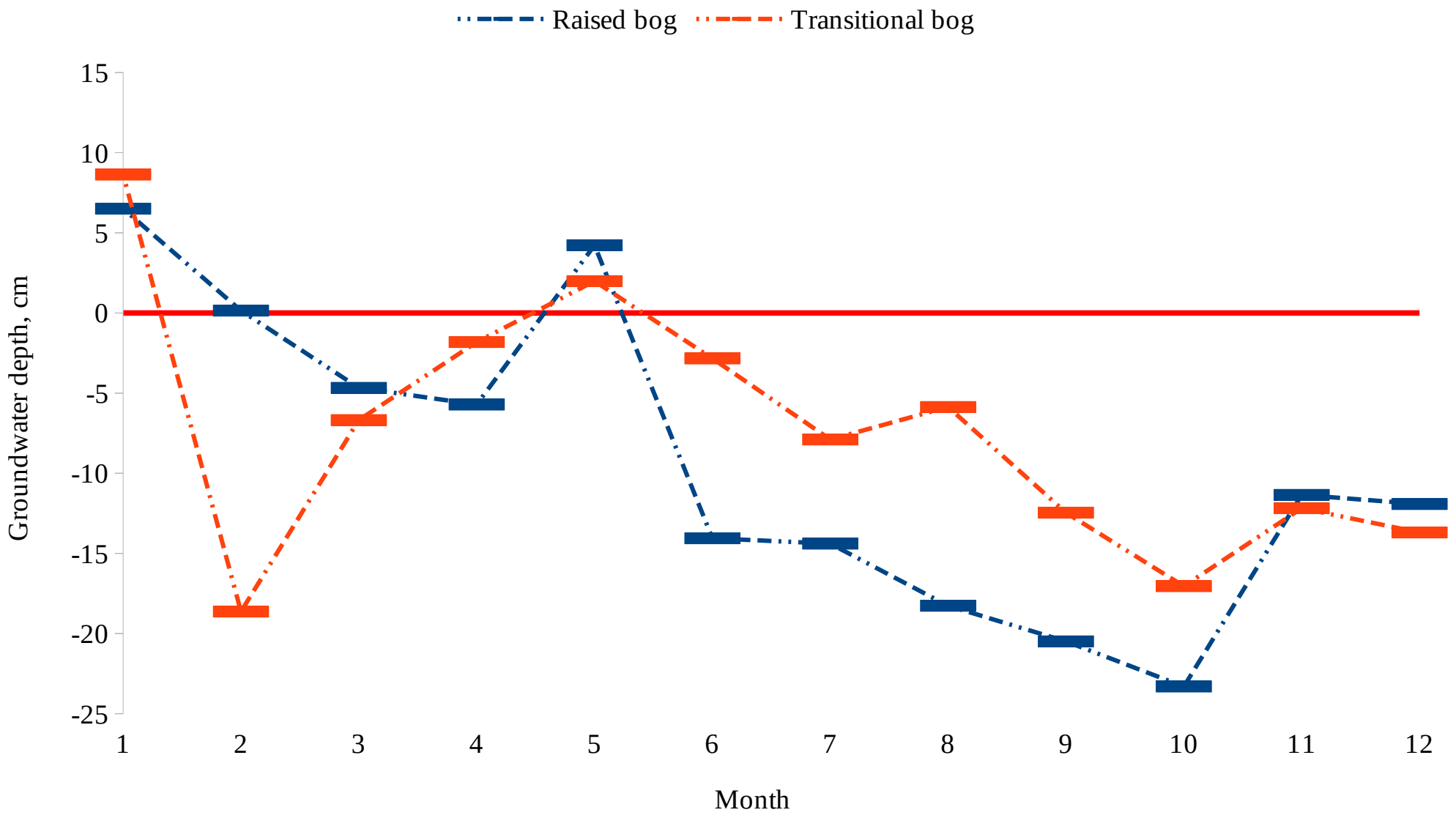
Seasonal dynamics of CO_2-C emissions



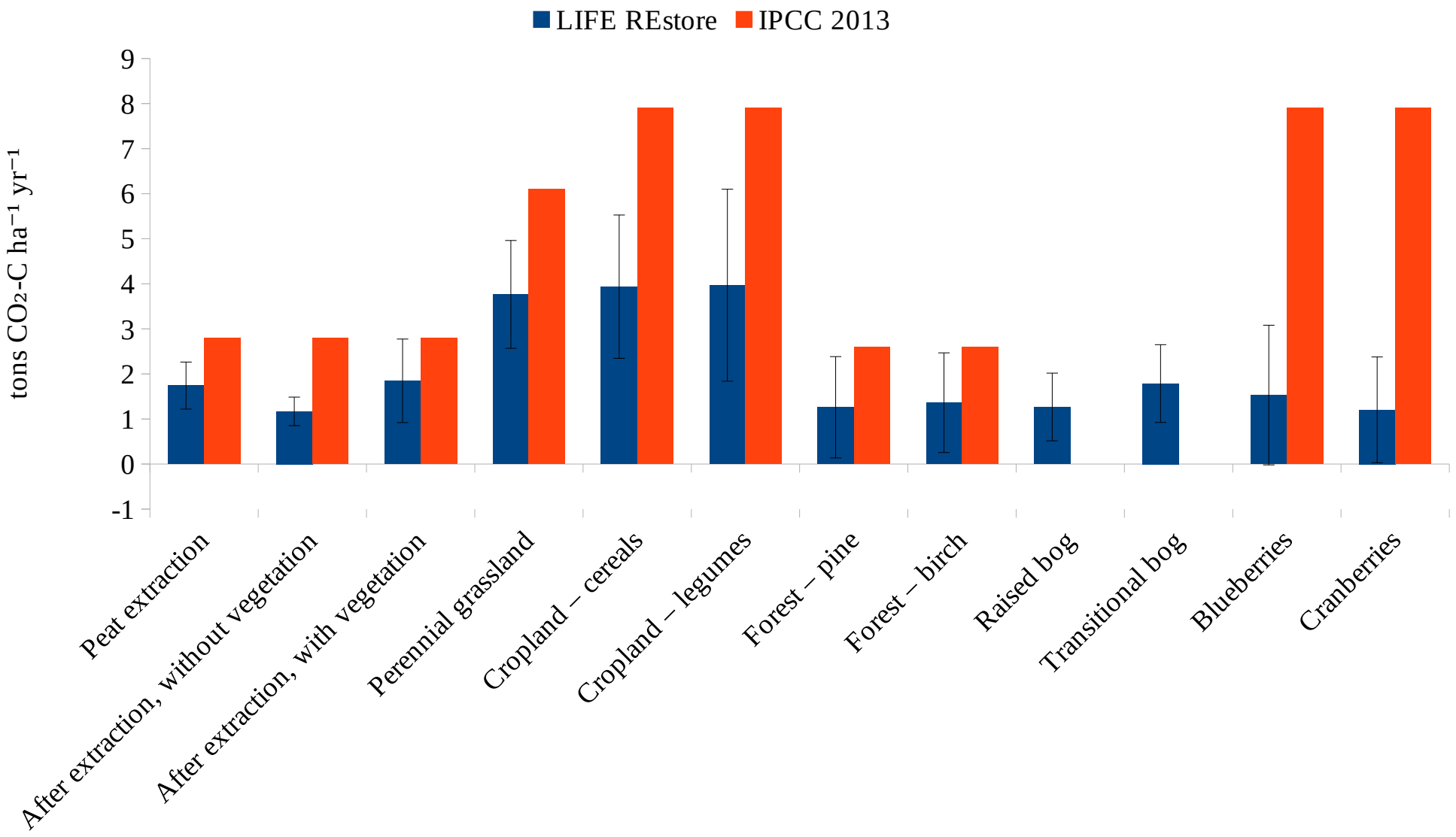
Groundwater level in different land use and vegetation type categories



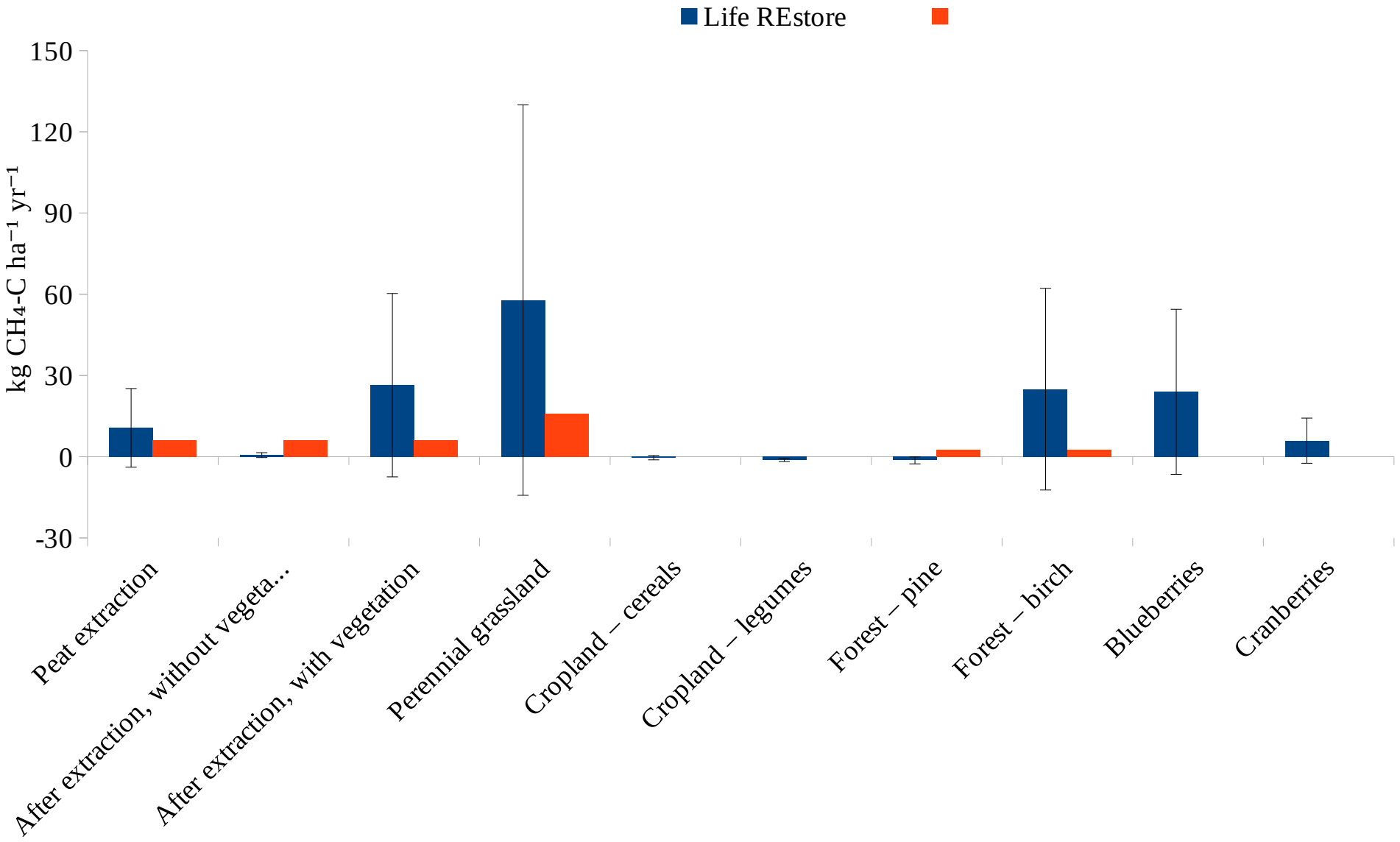
Groundwater level dynamics in the intact raised and transitional bogs



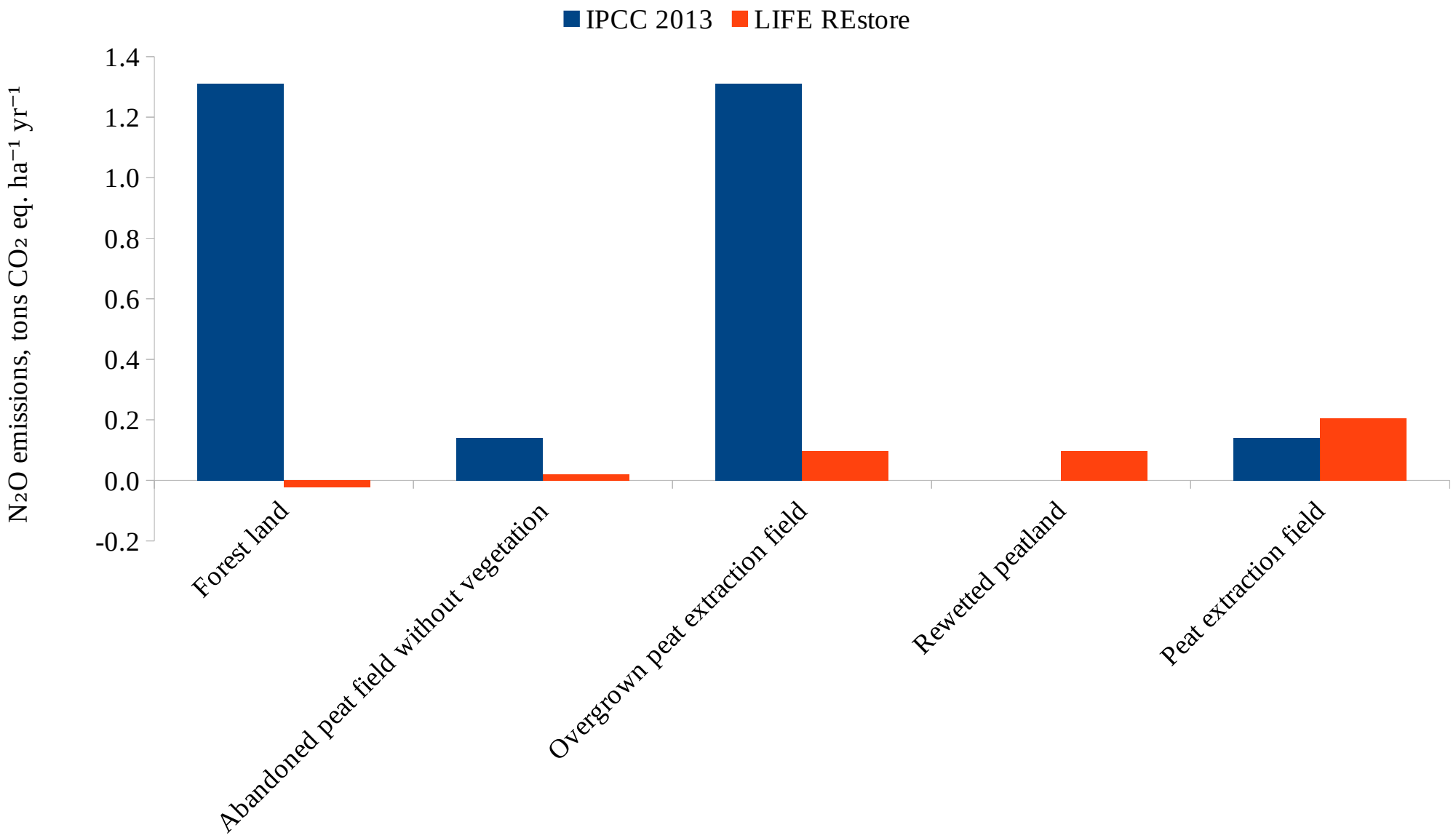
CO_2 net ecosystem exchange



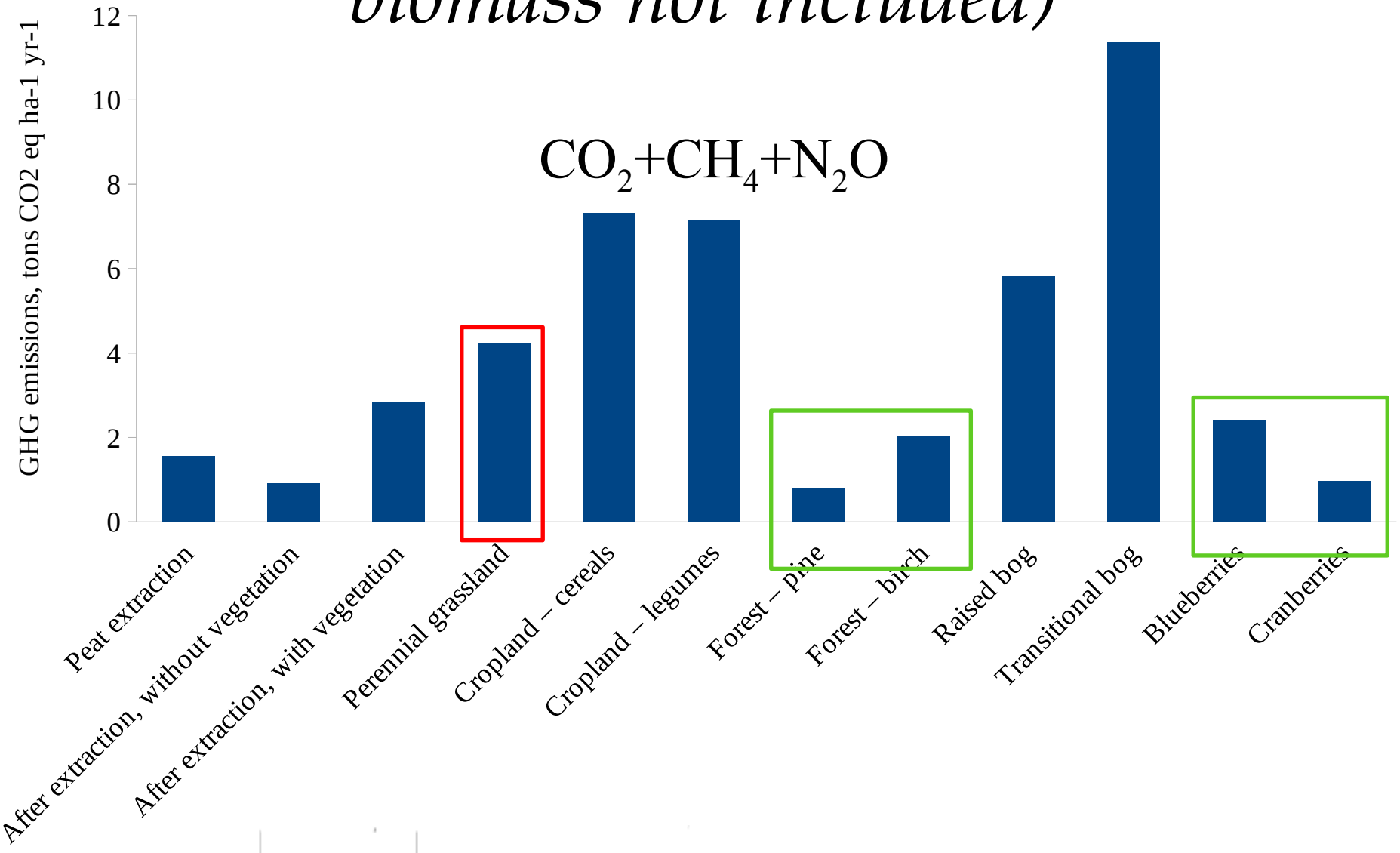
LIFE Restore and IPCC 2013 CH_4 emission factors



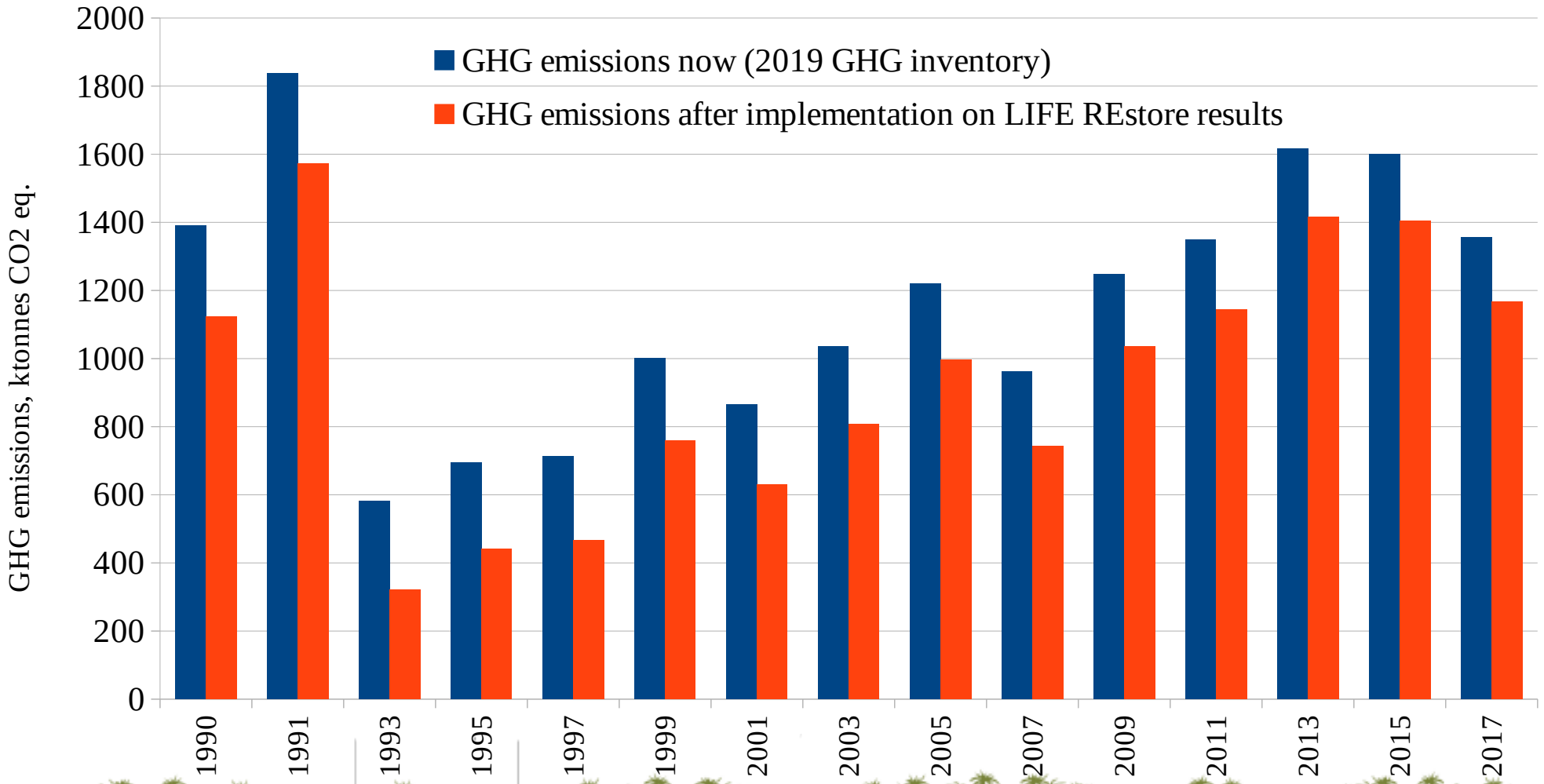
N_2O emission factors in LULUCF sector *(excl. agriculture)*



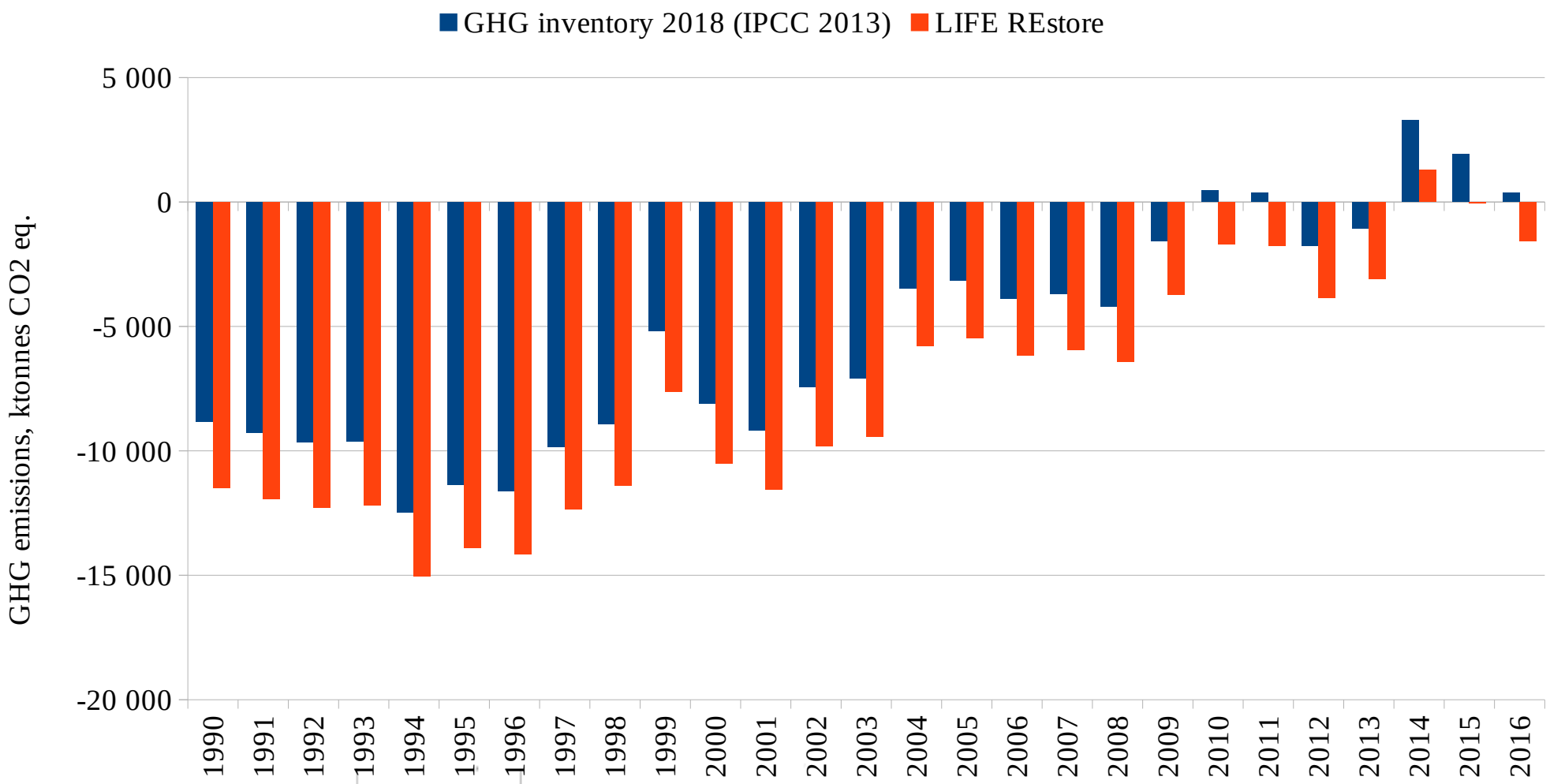
The most efficient end use of extracted peatlands *(removals in living biomass not included)*



Impact of implementation of LIFE REstore results on GHG emissions in wetlands



Possible impact of LIFE REstore results on GHG emissions in LULUCF sector in Latvia



Conclusions

- Actual GHG emission factors for the most of the land use categories are about twice smaller than the default emission factors according to IPCC 2013.
- The most efficient management strategies is afforestation, blueberry and cranberry production (where possible).
- GHG emission reduction due to rewetting may be considerably overestimated if default IPCC 2013 emission factors are applied.
- Next step is elaboration of GHG emission factors for nutrient-rich organic soils in forest land and development of climate change mitigation strategies (LIFE OrgBalt project).

More information:

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