“Classical” Impact Categories

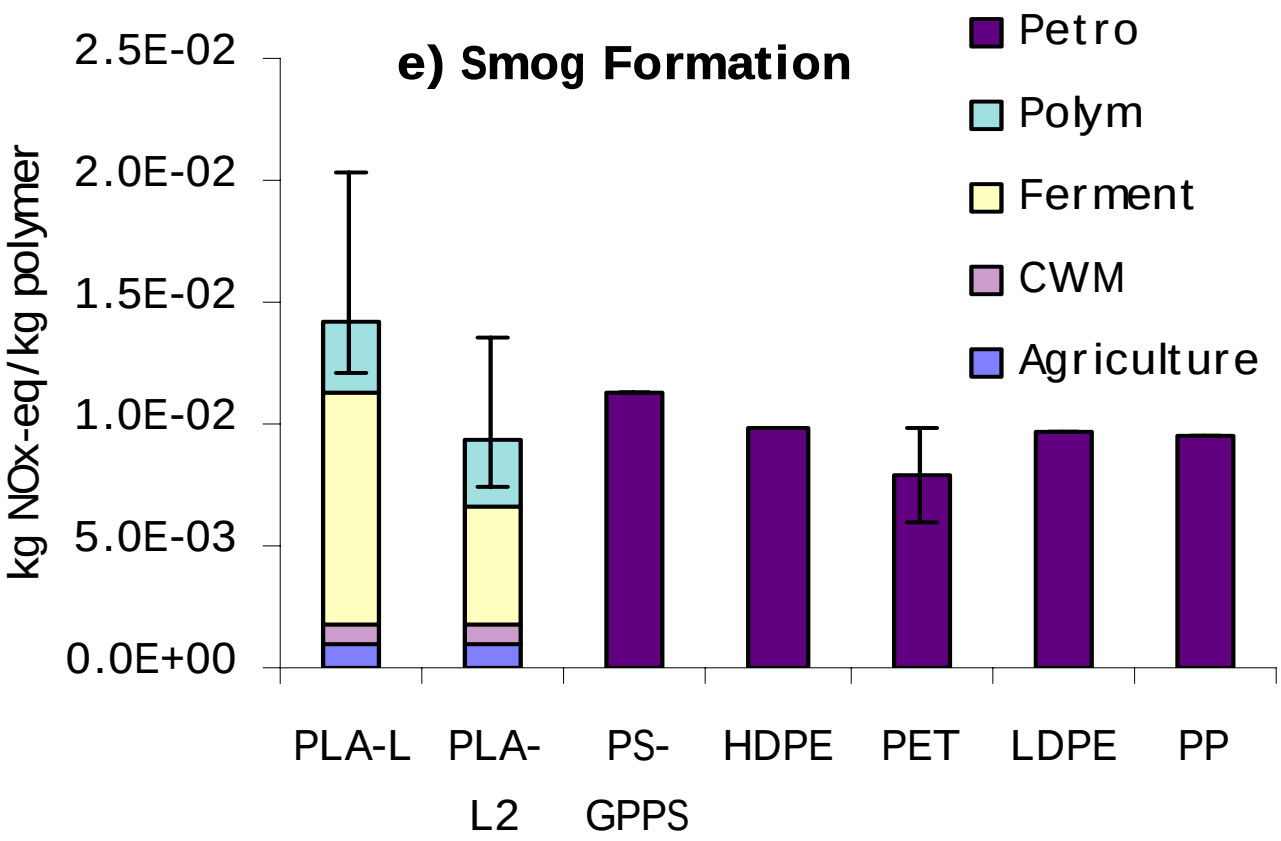
Global Warming	kg CO_2 eq/unit
Eutrophication	kg N eq/unit
Ecotoxicity	kg 2,4 D eq/unit
Human Health (cancer)	kg benzene eq/unit
HH (non cancer)	kg toluene eq/unit
Acidification	eq H^+/unit
Smog Formation	kg NO_x eq/unit
Ozone Depletion	kg CFC eq/unit

Midpoint Impacts

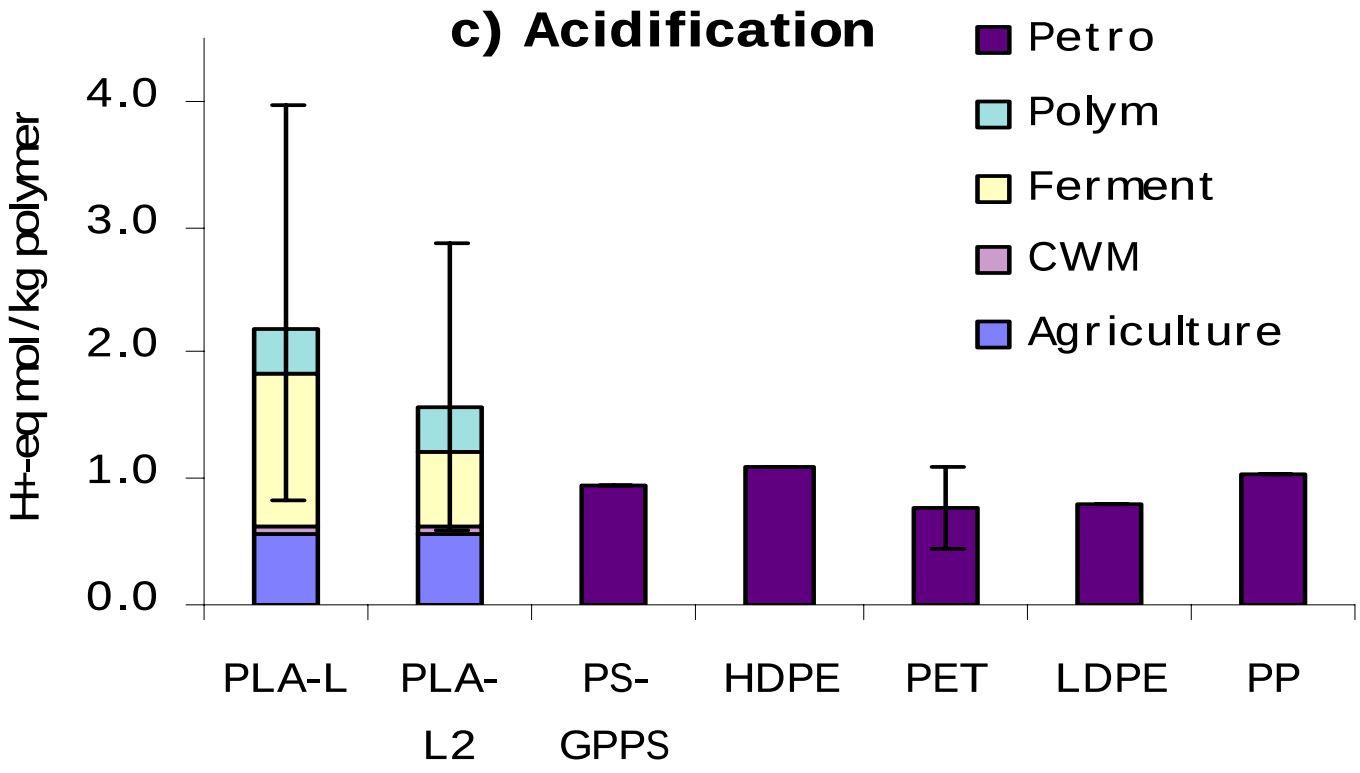
Impact analysis based on emissions that include steps up to and including the production of a given product or service (functional unit)

Total impact (and risk) depends on the subsequent cycling of emissions, and the use and end-of-life disposition of the product (alternative units can be used here, e.g. $$)

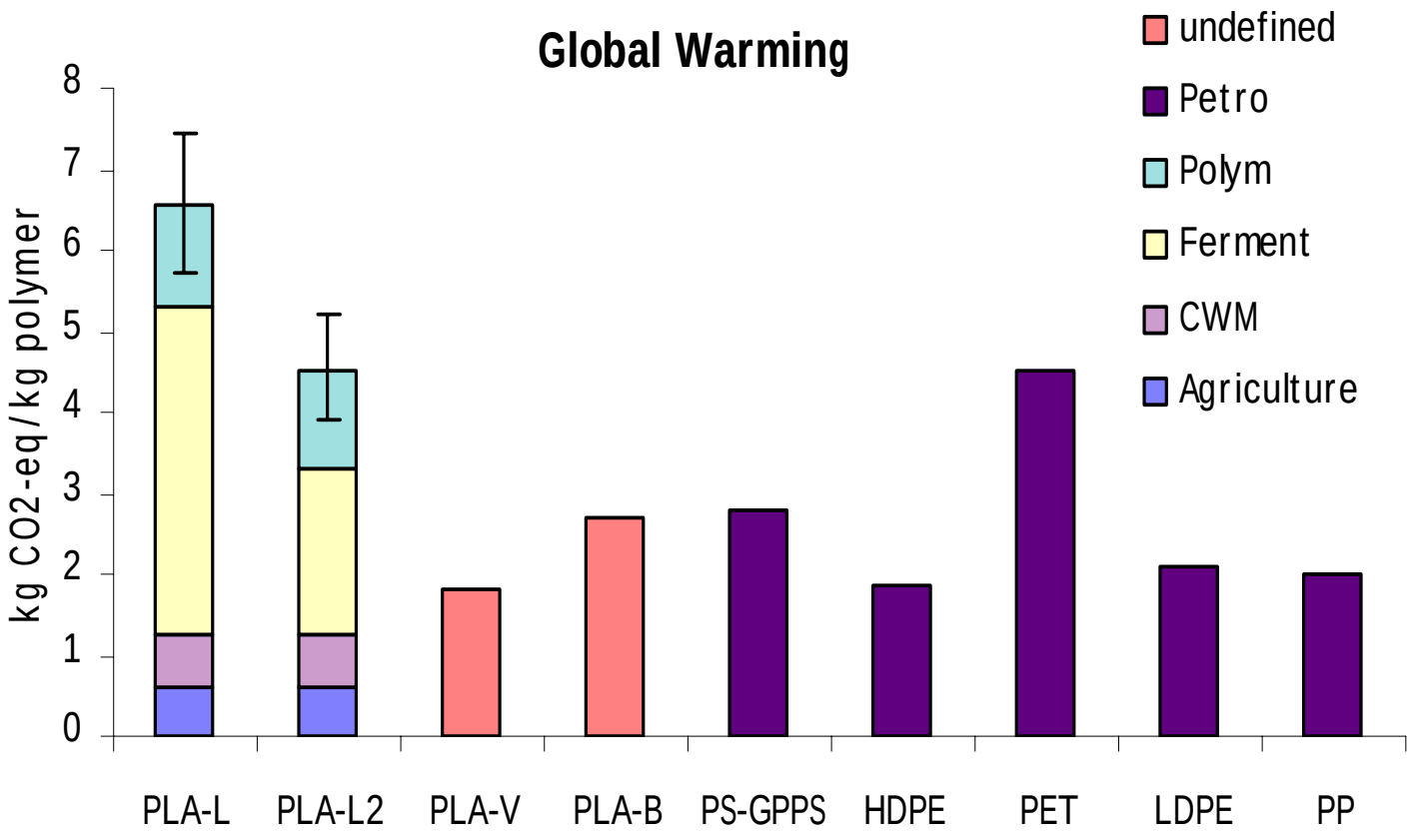
Midpoint Smog



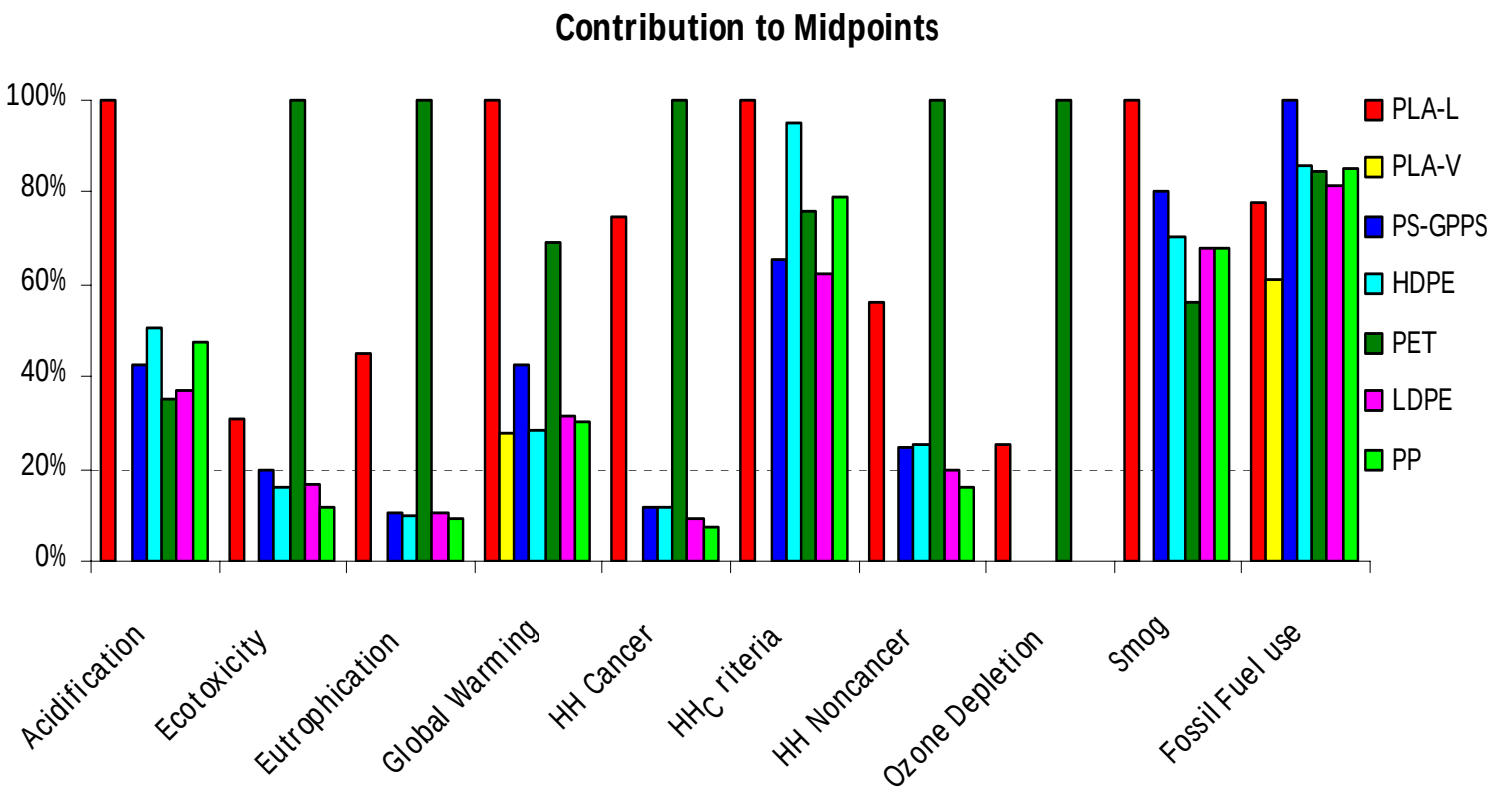
Midpoint Acidification



Midpoint Global Warming



Midpoint contribution



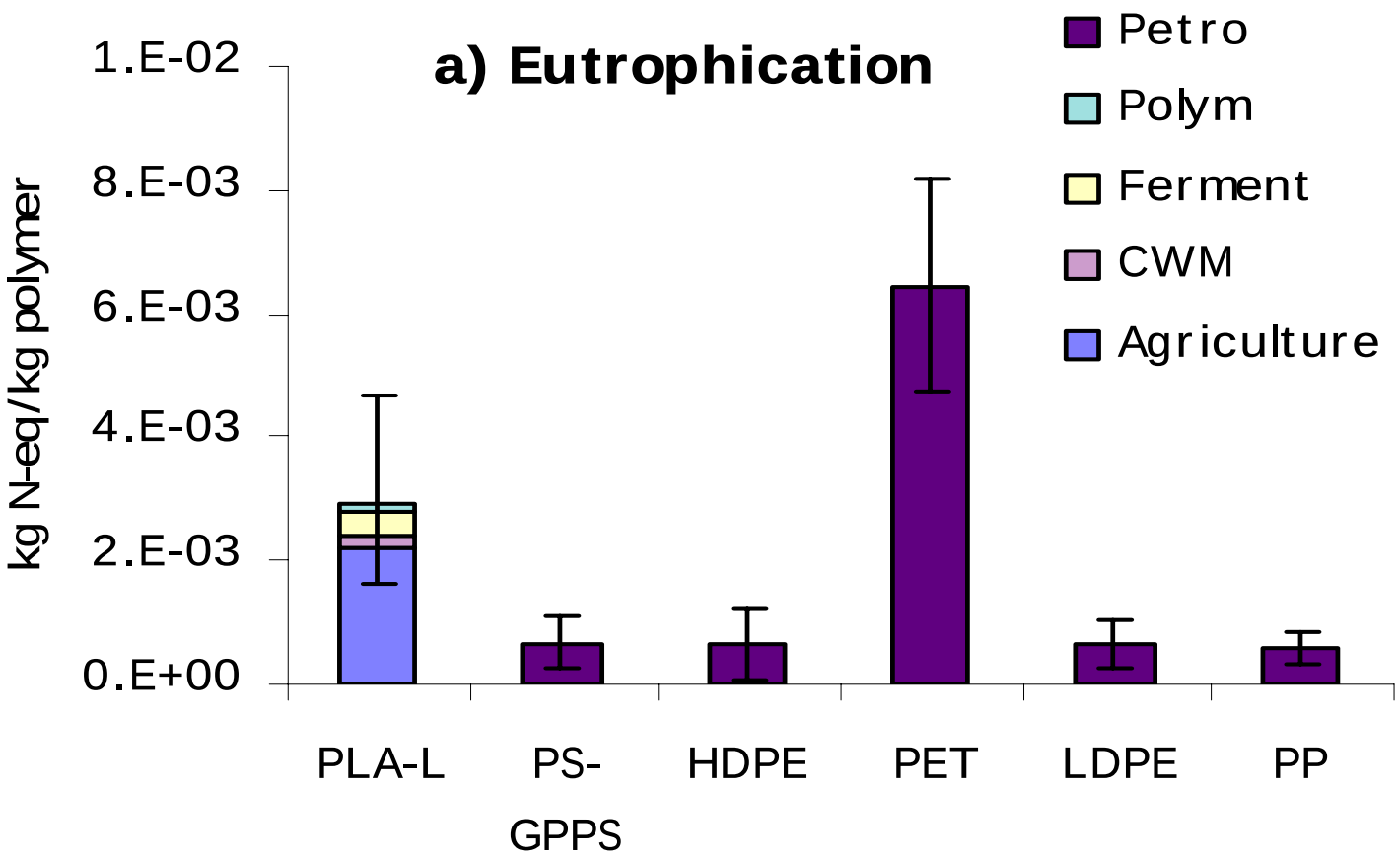
Ecosystem Services

- Trade offs (supply vs demand)
- Impact (degradation) related to human risk
- Ecojustice (rural/urban, wealthy/poor, developed/undeveloped)
- Intrinsic value of species (other than human)

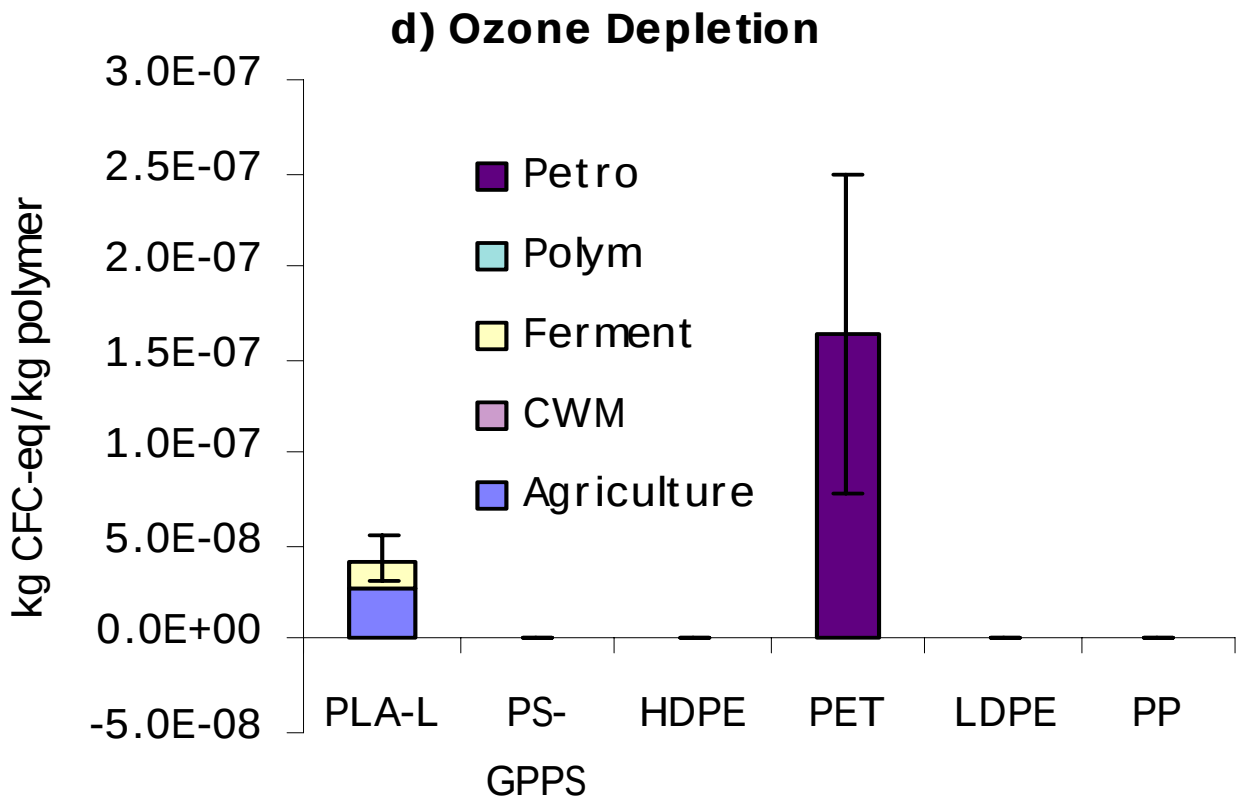
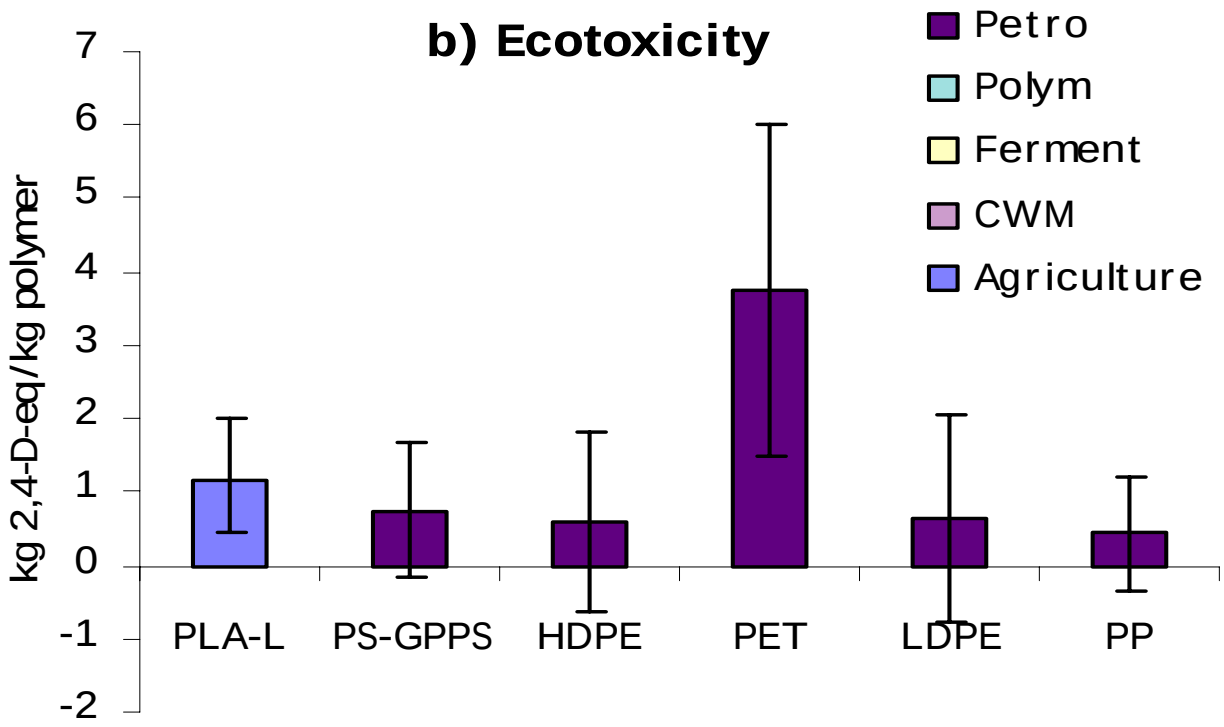
Ecosystem Services

- Provisioning--products and services
- Regulating—climate, water, diseases, etc.
- Cultural—Non-material benefits (recreation, aesthetics, knowledge systems, etc.)
- Supporting—services needed for all other ecosystem products and services (e.g. O_2, soil formation, biomass production)

Midpoint Impacts



Midpoint Ozone



Midpoint Ecotoxicity