

CE Lovelock *et al.* – Supporting Information

**WebTable 3. Variation in the risk of soil C<sub>org</sub> remineralization over variation in availability of dissolved oxygen and the size of the soil C<sub>org</sub> stock (varies from 1 to 5)**

		Soil carbon stock				
		Low C <sub>org</sub> stock ( $< 50 \text{ mt ha}^{-1}$ )	Low-moderate C <sub>org</sub> stock ( $50\text{--}100 \text{ mt ha}^{-1}$ )	Moderate C <sub>org</sub> stock ( $100\text{--}250 \text{ mt ha}^{-1}$ )	Moderate-high C <sub>org</sub> stock ( $250\text{--}500 \text{ mt ha}^{-1}$ )	High C <sub>org</sub> stock ( $> 500 \text{ mt ha}^{-1}$ )
Description of exposure to oxygen	Relative score	1	2	3	4	5
Anoxic $E_H < 100 \text{ mV}$	1	1 (Low)	2 (Low)	3 (Low)	4 (Low)	5 (Mod)
Low $E_H = 100\text{--}200 \text{ mV}$	2	2 (Low)	4 (Low)	6 (Mod)	8 (Mod)	10 (Mod-High)
Moderate $E_H = 200\text{--}300 \text{ mV}$	3	3 (Low)	6 (Mod)	9 (Mod)	12 (Mod-High)	15 (High)
Moderate to high $E_H = 300\text{--}400 \text{ mV}$	4	4 (Low)	8 (Mod)	12 (Mod-High)	16 (High)	20 (Very High)
Oxic $E_H > 400 \text{ mV}$	5	5 (Mod)	10 (Mod-High)	15 (High)	20 (Very High)	25 (Very High)

**Notes:** mt = metric tons. Relative levels of dissolved oxygen vary from anoxic (level 1, eg redox potential  $E_H < 100 \text{ mV}$ ), which may be expected in undisturbed sediments, to oxic (level 5, eg redox potential  $E_H > 400 \text{ mV}$ ) (Zhi-Guang 1985). The estimated relative level of C<sub>org</sub> remineralization varies from low (blue, scores 1–4); moderate (green, 5–9); moderately high (yellow, 10–12); high (orange, 15–16); and very high (red, 20–25). Final scores (from 1, low likelihood to 25, very high likelihood) were obtained by multiplying the scores related to oxygen level and the magnitude of C<sub>org</sub> stocks.

Zhi-Guang L. 1985. Oxidation–reduction potential. In: Tian-Ren YE (Ed). Physical chemistry of paddy soils. Berlin, Germany: Springer.