Comments and Responses on SOCCR/SAP 2.2 Draft 1 (May 2006)
CHAPTER 13

COMMENT FROM PEER REVIEWERS						AUTHOR'S RESPONSE						
Comment Number	Reviewer ID	Chapter	Page	Line	Comment Text	Acknowledged, but no further reponse or revisions are required	Revisions have been incorporated as suggested in the comment	Agree, but see "Notes on Response"	Agree, but elaboration is precluded by length limitations	Disagree; see "Notes on Response"	Beyond scope of report/chapter	Notes on Response
13-001	22	13	General		The authors of Chapter 13 – Wetlands should be commended for the effort they put into compiling and analyzing data they obtained from disparate sources. The result of these efforts is a comprehensive document that provides the reader with a better understanding of the important role wetlands can and do play as sources and sinks of greenhouse gases.	X						
13-002	22	13	General		There are important limitations in the data available to estimate the type and amount of wetland coverage in the North American landscape. Some of these limitations result from inadequate effort applied to conducting wetland inventories on a sufficiently large scale and at appropriate return frequencies. Other limitations relate to the incomplete level of standardization among the definitions of some wetland types. For instance, bogs are easily identified and therefore peat inventories of these ecosystems are better quantified. Other wetland types can be classified differently by different observers, like swamps or forested wetlands, which could be classified as "freshwater mineral soil (FWMS)" wetlands or just "forest". These discrepancies are compounded when remotely sensed data are used to classify a landscape and ground truthing effort is insufficient so that the size of the wetland carbon pool is uncertain. The authors are aware of these limitations and included cautionary language where appropriate.	X						
13-003	22	13	General		Much of the interest in studying wetlands revolves around their potential as a sink for atmospheric carbon. Some studies are geared to understanding carbon sinks as their main objective, but many studies that concentrate on ecology, hydrology or biogeochemistry have the sink function of wetlands as an important "background" concern. The authors have done a good job reviewing the sink/source potential of many types of wetlands and, within the limitations mentioned above, present useful estimates on a national and continental basis and compare them to global estimates.	X						
13-004	22	13	General		The authors are probably not aware of a recently published paper by Euliss et al. (2006). See the following comment. The Euliss et al. (2006) paper concerns a specific type of wetland, the prairie pothole wetlands, which are widely distributed on the Great Plains of north central US and southwestern Canada. These wetlands are an important component of the predominantly agricultural landscape of the plains, and many of them are directly or indirectly impacted by agricultural land management practices. These wetlands provide important ecological services and in particular they are critical habitat for migratory waterfowl. Reference: Euliss, N.A. Jr., R.A. Gleason, A. Olness, R.L. McDougal, H.R. Murkin, R.D. Robarts, R.A. Bourbonniere and B.G. Warner (2006). North American prairie wetlands are important nonforested land-based carbon storage sites. Science of the Total Environment, 361: 179 – 188.		X					This very pertinent paper was published after our the draft chapter was completed, but we were alerted to it immediately after its publication. We have referenced it in the chapter now, but it does not change our conclusions.

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13-005	22	13	General		The Euliss paper suggests that restoration of prairie pothole wetlands – conversion from current cropped status to grassland – could result in 378 Tg of carbon sequestration over a 10-year period. In Chapter 13 sequestration is reported in Mt per year, so for comparison restoration of prairie pothole wetlands might sequester 38 Mt per year, which is comparable to the total sequestration of current FWMS wetlands for all of North America (34 Mt per year – Table 13A-2). Prairie pothole wetlands would be classified as FWMS according to the descriptions provided by Euliss et al. (2006). It might be worth the effort to determine how similar the inventory and flux estimates are between the Euliss et al. (2006) paper and the current chapter. If a significant proportion of the prairie pothole wetlands were not captured in the current tabulations, then this demonstrates the veracity of the > 100% error estimates for C-sequestration.		X					See changes in text, pages 13-10 and 13-11.
13-006	22	13	General		It is important that the authors addressed emissions of both CO2 and CH4 when considering carbon balances and when estimating the probable magnitude of net sequestration. Future compilations should be able to address the emissions of N2O, particularly if agriculturally impacted wetlands are included. This greenhouse gas has been hardly studied outside of the agricultural setting (see Chapter 10) where it is known to be very important. Chapter 10 does not consider wetlands in the agricultural landscape, so these should be considered in future compilations under wetlands with cross-referencing to the future agricultural chapter.		X					We have acknowledged the lack of studies of N2O emissions in mineral soil wetlands and those impacted by agriculture (see page 13-7).
13-007	22	13	General		Overall the wetlands chapter represents fairly the current state of knowledge of carbon cycling in North American wetlands allowing for an understanding of where they fit in the total carbon budget and greenhouse gas picture	X						
13-008	21	13	General		The other issue is the role of wetlands in producing CH4. Currently high latitude wetlands are a substantial CH4 source. As wetlands warm and dry, they will lose C and supply CO2 to the atmosphere. However, they will also decrease the amount of CH4 that they produce. This is suggested but not developed.					X		We believe that we discuss this topic adequately and with the appropriate nuances. Not all high latitude wetlands will become drier, although most continental interior wetlands are predicted to. One also has to consider effects of melting permafrost, etc., so that this is not simple climate-change prediction.