

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

COMMENT FROM PEER REVIEWERS						AUTHOR'S RESPONSE						
Comment Number	Reviewer ID	Chapter	Page	Line	Comment Text	Acknowledged, but no further response 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
01-001	3	1	General		The title of Chapter 1, on which I was asked to focus my review, indicates that it is to provide information on the "purpose, scope, and structure" of the SOCCR. I do not think that it achieves this objective in its current state. I found little information on the scope of the report as a whole and nothing at all on its structure.		X					title edited to better reflect content of chapter; material on purpose, scope, structure to appear in Preface
01-002	3	1	1-1	18-19	Since all life on earth is carbon-based, why not say "pools of carbon on and near the earth's surface (mainly in plants and soils), in the atmosphere, and in water and sediments in the ocean"? That way you also include by inference freshwater systems and geological sediments mentioned in the next paragraph and included in Fig. 1-1.		X					
01-003	3	1	1-1	21	Should say "food, shelter, and energy." Biomass energy is already critical to the survival of much of humankind.		X					
01-004	3	1	1-9	Fig 1-1	The figure is too complex for a general audience without additional explanation. Incorporate into a text box to accomplish this? In addition, the sizes of the reservoirs/pools and exchanges do not match those in Fig. 2-1. Which year(s) does this set of values apply to?		X					figure was replaced by a simpler graphic and more explanatory text added.
01-005	3	1	1-1	30	Add "—and back again" at the end of the sentence to match what is shown in the figure and reinforce the idea that these exchanges are typically a "two-way street"?		X					
01-006	3	1	1-2	1	I think "that transfer" should be "those transfers."		X					
01-007	3	1	1-2	3, 4, & 5	The word "imbalance" is used four times in lines 4 and 5. How about replacing the words following "whether the budget" in line 3 with "is balanced, and if it is unbalanced can provide insights about why such a condition exists and how it might be managed." The words "in imbalance" in line 5 could simply be replaced by "unbalanced."		X					
01-008	3	1	1-2	6	Since tropical deforestation is a source of carbon to the atmosphere, would it not be more accurate to say that use of fossil fuels is "primarily" responsible?		X					
01-009	3	1	1-2	17	Would it be advisable to add the words "and continue to do so in tropical regions" at the end of the sentence?		X					
01-010	3	1	1-3	5-9	This sentence begs the question: Why? A brief explanation should be added.		X					
01-011	3	1	1-3	18	Don't we care about the unbalanced state of the entire carbon cycle, of which the atmospheric component is only one aspect?		X					
01-012	3	1	1-3	21-22	My favorite word again.		X					text revised to balance use of the word imbalance
01-013	3	1	1-3	30-31	"Acidity" is simpler than "acidification" and seems to work just as well in this context; see earlier comment on Executive Summary.		X					
01-014	3	1	1-4	12-17	The estimates of the North American sink and its potential significance relative to the global sink do not match those given in the second paragraph on page ES-4 and the estimates of the global terrestrial sink in this paragraph don't match the estimate in Fig. 1-1.		X					text revised to better match discussion in Executive Summary and Figure revised (see comment 01-004).
01-015	3	1	1-4	17	Insert the word "located" before the word "primarily"?		X					
01-016	3	1	1-4	27-30	Which processes and mechanisms are considered most significant? Give examples?		X					

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01-017	3	1	1-4 and 1-5	33 and 1-2	This sentence provides one important answer to one of questions I identified in my general comments. I think much more effort is needed to address such questions in this chapter and in the report as a whole.			X				The executive summary will be revised to better address the types of questions raised by the reviewer in the general comments. Those questions are better addressed in the executive summary as part of the assessment than in this introductory chapter.
01-018	3	1	1-5	3-6	One important question that was not comprehensively addressed in this section of the report was how well we think we need to understand the North American carbon budget to achieve our goals for carbon cycle modeling or carbon management. The issue of the spatial resolution needed to address key questions was not touched upon at all, for example, but is a critical one for some uses. Is this issue addressed somewhere else in this report?		X					Text has been added to at least address the issue raised by the review. Specific discussion of spatial resolution issues are addressed in individual chapters of Parts II and III
01-019	3	1	1-5	8	The length of this section is disproportionately long in relations to other sections of Chapter 1, and in view of the absence of substantive material on the scope and structure of the report, as promised by the title of the chapter. I think the section could be reduced significantly without loss of meaning.		X					text has been substantially shortened.
01-020	3	1	1-5	25	For reasons given in my comments on text from page ES-11, lines 5, 12, and 19, I think the term "saliency" is another example of unnecessarily complex wording, and its usage by Cash et al. is in marked contrast to its dictionary definition. "Relevancy" makes more sense to me.		X					
01-021	3	1	1-5	26-28	Credibility thus depends on effective, honest communication of uncertainties in data, parameters, and conclusions, e.g., in estimates of sources and sinks.			X				No revisions made in text here, but honest effort in communicating uncertainties throughout report is being made
01-022	3	1	1-6	1	Same comment as # 01-020		X					
01-023	3	1	1-6	17-23	The objectives given in this paragraph will not be accomplished unless much greater effort is made in this report to communicate more effectively with a more general audience.		X					that effort is being made in revisions of all chapters
01-024	3	1	1-6	30-34	I expected that either Chapter 1 or the Executive Summary would have provided a roadmap to the report that would have pointed me to the Chapters and sections where the first and third of the three critical areas identified in this one-sentence paragraph were addressed, including information on the status of answers to the key questions they imply. Where are we on the road to providing substantive information to the address the areas identified in this paragraph? For example, how "mature" is our information with respect to understanding individual parts of the North American carbon cycle? How long do we think it will take to fill in critical data gaps? Is technology development a limiting factor? If so, for what components? How will we know when we have achieved the implied goals? Etc.			X				The road map cited by the review is part of the Preface to the report. Revision of the Executive Summary will address some of the questions raised by the review comment. The review comment raises some very good but demanding questions. They are questions significantly different than the questions arrived at through dialogue (e.g., workshops) with stakeholders in the process of formulating the report. The report and its Executive Summary are structured around and respond to those questions. We believe answers to many of the questions raised by the reviewer are actually addressed throughout the various chapters (e.g., in the sections on research needs for decision support). Expanding or restructuring the report and Executive Summary to explicitly and directly answer the excellent questions raised by the reviewer are beyond the scope of this revision of the report.
01-025	34	1	General		In general, the first part of the title (What is the carbon cycle) is adequately covered and can be understood by the general reader.	X						

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01-026	34	1	General		The second part of the title (why do we care?) is nearly non-existent. Taking into account that the entire rest of the report is still to follow, one might have expected an overview of the impacts and policy dimensions related carbon imbalances, the opportunity costs of delayed interventions, the role of the public and private sectors, etc.					X		The chapter does address the central issue of why we care about the carbon cycle and the North American carbon budget (e.g., role of global carbon cycle in climate change and the role of North America in that carbon cycle). Other issues raised by the comment are more facets of the response having decided we care (see Chapter 4).
01-027	34	1	General		The section, Carbon cycle science in support of carbon management decisions, is relevant but unrelated to the chapter title. Here one would expect to find significant coverage of international initiatives related to the carbon cycle, taking into account the priorities, progress and work of the Igbp (to which Usa scientists have made significant contributions) and the Global observing systems - Gcos (Climate), Gcos (Oceans), and Gtos (Terrestrial). It would seem appropriate for this section to place the "North American" initiative into the global context in which carbon science and policymaking is occurring.			X			X	The section has been edited (reduced) substantially to make it more relevant and "to the point" of this chapter. Comments regarding context of international activity beyond the scope of this chapter but relevant to the extended preface which will address purpose, scope and structure (see response to comment 01-001)
01-028	9	1	General		There are a number of statements made in the chapters that also lack any source reference. Some examples are detailed in the following items.		X					
01-029	9	1	1-1	2-6	That cycling determines the balance of the carbon budget observed at any particular time. <u>Examining the carbon budget not only reveals whether the budget is in balance or imbalance, but also provides insight into causes of any imbalance and steps that might be taken to manage that imbalance. Currently, the global carbon budget is in imbalance; and human use of coal, petroleum, and natural gas to fuel economies is responsible.</u>		X					
01-030	9	1	1-3	29-33	<u>It is also increasingly evident that atmospheric carbon dioxide concentrations are responsible for increased acidification of the surface ocean, with potentially dire future consequences for corals and other marine organisms that build their skeletons and shells from calcium carbonate. Ocean acidification is a powerful reason, in addition to climate change, to care about the carbon cycle and the accumulation of carbon dioxide in the atmosphere</u>		X					
01-031	26	1	General		This is a much needed chapter as the assessment will be speaking to very diverse group of stakeholders.	X						
01-032	26	1	1-1	13 et seq	In justifying the reasons why we should care about the carbon cycle I miss a clear statement on what I think are the most important reasons (they are embedded in various sentences but not clearly spelled out). These reasons are detailed in the following two items.		X					
01-033	26	1	1-1	13 et seq	The terrestrial sink (in NA or globally) is a service provided by terrestrial ecosystems worth billions of dollars if we had to pay for the equivalent amount through carbon sequestration or emission reductions. Consequently, we need to understand its dynamics and processes.		X					

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01-034	26	1	1-1	13 et seq	Vulnerabilities of the carbon cycle into the future (eg, carbon-climate feedbacks) may change the strength of terrestrial sinks and put further pressure on carbon mitigation and emission reductions to achieve agreed stabilization targets. Thus, we want to make sure we understand future trajectories of terrestrial sinks/sources and have them appropriately considered when designing CO2 stabilization pathways.		X					
01-035	26	1	1-5	8 et seq	I think the intent of this section is important but as it stands now, it largely reports on the "theory" of having an assessment like this one to be owned and recognized by key stakeholders. Instead, I would propose to tell the reader the different steps the managing team of this assessment have taken to ensure credibility, buy, etc. (eg, stakeholder consultation to ask what they need from the assessment).			X				