

**2013 Supplement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.**

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**OVERVIEW CHAPTER**

- Background – request from UNFCCC
- This supplementary guidance addresses gaps identified in the 2006 IPCC Guidelines as far as possible. It focuses on those human activities and management that give rise to anthropogenic emissions or removals by wetlands
- Policy Relevance
- Summary

**Chapter 1- INTRODUCTION**

- Coherence and compatibility with 2006 Guidelines.
- What is covered by the 2006 Guidelines and what are the gaps it identifies?
- Definitions & Coverage (coastal wetlands, peatlands and other freshwater wetlands) and
  - Definition and delineation of wetlands taking into account the RAMSAR definitions
  - Completeness and potential overlaps
  - Roles and functions of constructed wetlands
  - Flooded lands are NOT covered (such as reservoirs)
- Significance of human activities on wetlands emissions and removals.
  - (Estimation of anthropogenic emissions and removals. Annex could include examples)
- Assessment of data available (current and historical) for wetland types of the world

**Chapter 2 – CROSS-CUTTING GUIDANCE ON ORGANIC SOILS**

*(Supplemental guidance to Chapter 2<sup>1</sup> on Generic methods relating to organic soils)*

- Introduction (generic guidance for all systems with organic soils)
- Relationships to other chapters
- Methodologies<sup>2</sup>:
  - Drainage. (Water table - drainage classes, Ditches and Water-borne carbon)
  - Land use and land use intensity changes on organic soils
  - Fires (both wildfires on drained peatlands and managed fires)
- Use of these additional generic methods Forestlands, Croplands, Grasslands, Settlements and Wetlands

**Chapter 3 – REWETTING AND RESTORATION OF PEATLANDS**

*(Supplemental Guidance to Chapter 7<sup>1</sup>)*

- Introduction
- Methodologies<sup>2</sup>:
  - Rewetting (reversal of drainage)
  - Restoration/rehabilitation
  - Restored/rewettered peatlands remaining restored/rewettered peatlands

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<sup>1</sup> These chapter references are to Volume 4 of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

<sup>2</sup> Throughout this chapter outline “Methodologies” includes tiered methodologies, choice of methodology, default Emission Factors, Activity Data, uncertainty assessment and other category specific good practice issues. All GHGs as applicable would be considered. See the “Instructions for Authors” for more details

#### Chapter 4 – COASTAL WETLANDS

(Coastal wetlands are those that are tidally influenced and include mangroves, saltmarsh, seagrass and tidal freshwater systems. Supplemental Guidance to Chapters 2&7<sup>1</sup>)

- Introduction,
- Relationships to other chapters – e.g. Constructed wetlands and wastewater treatments, prevention of double-counting
- Important and unique characteristics of these wetland types (e.g. Soil- organic vs mineral; Hydrology and water quality; and Vegetation types)
- Methodologies<sup>2</sup>:
  - Activities<sup>3</sup>, Management practices and how these effect emissions (use 5 IPCC pools)
  - Restoration, Creation, and recovery of coastal wetlands – sequestration and changes in emissions

#### Chapter 5 - OTHER FRESHWATER WETLANDS

(Covers *inter alia*, Seasonally Flooded Wetlands, Riparian, Swamps, marshes etc, Supplemental Guidance to Chapters 2 & 7<sup>1</sup>)

- Introduction
- Relationships to other chapters – e.g. Constructed wetlands and wastewater treatments, prevention of double-counting
- Important and unique characteristics of these wetland types (e.g. Soil- organic vs mineral; Hydrology and water quality; and Vegetation types)
- Methodologies<sup>2</sup>:
  - Activities<sup>3</sup>, management practices and land uses and how these affect emissions (use 5 IPCC pools)
  - Restoration, Creation, and recovery of wetlands – sequestration and changes in emissions

#### Chapter 6 - CONSTRUCTED WETLANDS – Wastewater Treatment

(Supplemental Guidance to Volume 5 Chapter 6)

- Introduction
- Relationships to other chapters – e.g. wastewater treatments, prevention of double-counting and discussion on natural wetlands that are used as wastewater treatments
- Types of constructed wetlands for waste water disposal
  - Surface-flow constructed wetlands; Subsurface –flow wetlands (Vertical and horizontal flows)
  - Main Parameters that affects GHG emissions e.g. – Inputs such as Nutrient loading (e.g., N loading, P loading); Hydrological regime and species of plant (macrophytes)
- Methodologies<sup>2</sup>:
  - emissions and removals from constructed wetlands

#### Chapter 7 – GOOD PRACTICE AND IMPLICATIONS FOR REPORTING

- General Good Practice Issues
  - Quality and quantity of data
  - Completeness, Time Series consistency, QA/QC
- Completeness, Time-series consistency, QA/QC for wetlands as a whole
- Need for, and how to, maintain 2006 Reporting Approaches
- Reporting according to the 2006 Guidelines
- Mapping Wetlands emissions into 2006 Guidelines reporting
- Areas for further work
- Worksheet

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<sup>3</sup> Activities that may be significant for individual categories of wetlands include clearance (followed by biomass combustion, filling, drainage, aquaculture, conversion to agriculture); changes in hydrology; application of waste water; restoration and fires. The impacts of these need specific methodologies particularly for soils.