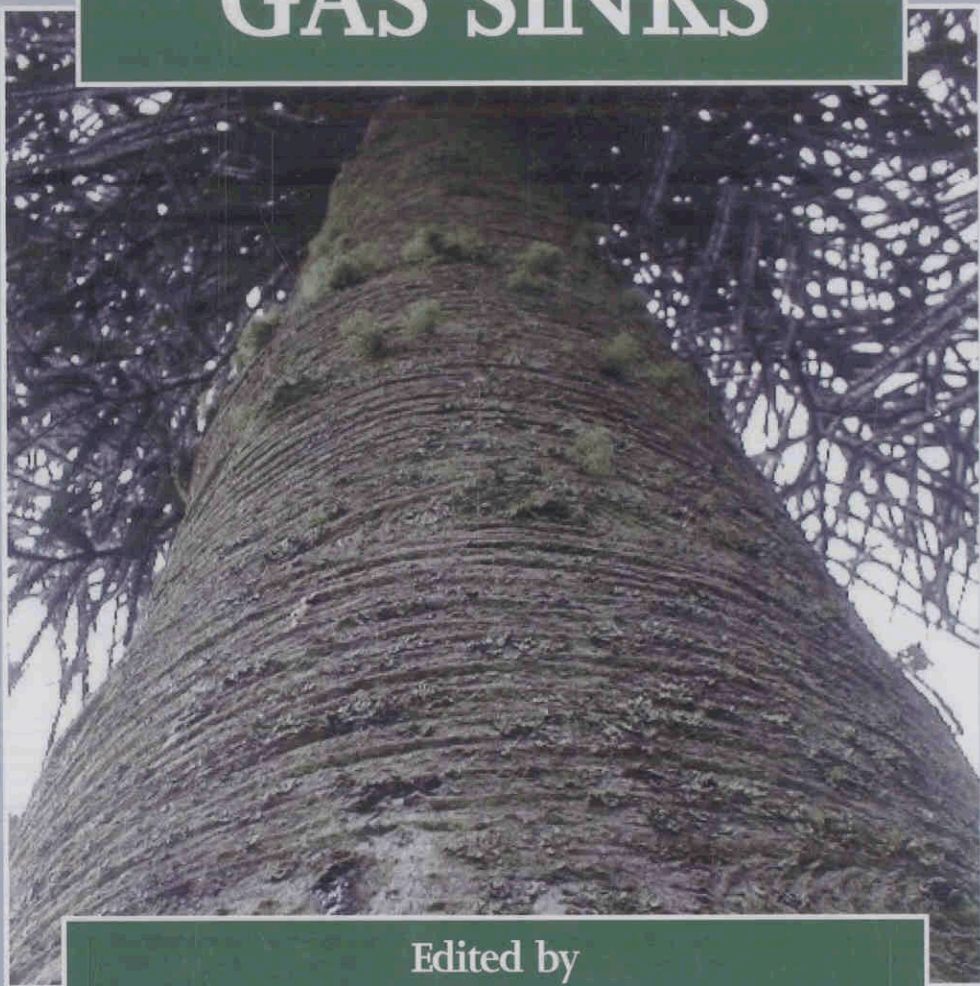


GREENHOUSE GAS SINKS



Edited by
D. Reay, C.N. Hewitt, K. Smith and J. Grace

Contents

Contributors	vii
Preface	xi
Acknowledgements	xv
1 Carbon Dioxide: Importance, Sources and Sinks	1
<i>David S. Reay and John Grace</i>	
2 Terrestrial Vegetation as a Carbon Dioxide Sink	11
<i>Graham Hymus and Riccardo Valentini</i>	
3 The Oceanic Sink for Carbon Dioxide	31
<i>Christopher L. Sabine and Richard A. Feely</i>	
4 The Soil Carbon Dioxide Sink	50
<i>Pete Smith and Phil Ineson</i>	
5 Implications for Increasing the Soil Carbon Store: Calculating the Net Greenhouse Gas Balance of No-till Farming	58
<i>Reynald L. Lemke and H. Henry Janzen</i>	
6 Geological Carbon Sinks	74
<i>Andy Ridgwell and Ursula Edwards</i>	
7 Artificial Carbon Sinks: Utilization of Carbon Dioxide for the Synthesis of Chemicals and Technological Applications	98
<i>Michele Aresta and Angela Dibenedetto</i>	
8 Prospects for Biological Carbon Sinks in Greenhouse Gas Emissions Trading Systems	115
<i>John Reilly, Benjamin Felzer, David Kicklighter, Jerry Melillo, Hanqin Tian and Malcolm Asadoorian</i>	
9 Methane: Importance, Sources and Sinks	143
<i>David S. Reay, Keith A. Smith and C. Nick Hewitt</i>	

10	The Soil Methane Sink <i>Peter F. Dunfield</i>	152
11	The Atmospheric Methane Sink <i>Dudley E. Shallcross, M. Aslam K. Khalil and Christopher L. Butenhoff</i>	171
12	Artificial Methane Sinks <i>Alex De Visscher, Pascal Boeckx and Oswald Van Cleemput</i>	184
13	Nitrous Oxide: Importance, Sources and Sinks <i>David S. Reay, C. Nick Hewitt and Keith A. Smith</i>	201
14	Stratospheric Sinks of Nitrous Oxide <i>Christopher L. Butenhoff and M. Aslam K. Khalil</i>	207
15	Sinks for Nitrous Oxide at the Earth's Surface <i>Carolien Kroeze, Lex Bouwman and Caroline P. Slomp</i>	227
16	Cross-cutting Issues and New Directions <i>David S. Reay</i>	243
17	Impact of Atmospheric Nitrogen Deposition on the Exchange of Carbon Dioxide, Nitrous Oxide and Methane from European Forests <i>Wim de Vries, Klaus Butterbach-Bahl, Hugo Denier van der Gon and Oene Oenema</i>	249
	Index	285