

# Finding the Forest in the Trees

*The Challenge of Combining Diverse  
Environmental Data*

---

**Selected Case Studies**

Committee for a Pilot Study on  
Database Interfaces

U.S. National Committee for CODATA

Commission on Physical Sciences, Mathematics, and Applications  
National Research Council

**SUB Göttingen 7**  
**204 411 67X**



96 A 6333

---

NATIONAL ACADEMY PRESS  
Washington, D.C. 1995

# Contents

EXECUTIVE SUMMARY	1
1 INTRODUCTION	12
Methodology of the Study, 14	
Organization of the Report, 17	
References, 17	
2 IMPACT ASSESSMENT PROJECT FOR DROUGHT EARLY WARNING IN THE SAHEL	18
Variables Measured and Sources of Data, 20	
Data Management and Interfacing, 22	
Lessons Learned, 27	
References, 29	
3 THE NATIONAL ACID PRECIPITATION ASSESSMENT PROGRAM	30
Variables Measured and Sources of Data for the Aquatic Processes and Effects Portion of NAPAP, 31	
Major Considerations in Evaluating the Data Management Activities of the Aquatic Processes and Effects Portion of NAPAP, 34	
Data Management and Interfacing in the Aquatic Processes and Effects Portion of NAPAP, 38	
Lessons Learned, 45	
References, 45	

4	THE H.J. ANDREWS EXPERIMENTAL FOREST LONG-TERM ECOLOGICAL RESEARCH SITE	46
	Variables Measured and Sources of Data, 48	
	Data Management and Interfacing, 51	
	Lessons Learned, 54	
	References, 55	
5	THE CARBON DIOXIDE INFORMATION ANALYSIS CENTER	56
	Variables Measured and Sources of Data, 57	
	Data Management, 58	
	Lessons Learned, 62	
	References, 65	
6	THE FIRST ISLSCP FIELD EXPERIMENT	66
	Variables Measured and Sources of Data, 67	
	Data Management and Interfacing, 68	
	Lessons Learned, 71	
	References, 72	
7	THE CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATION	74
	Variables Measured and Sources of Data, 75	
	Data Management and Interfacing, 76	
	Lessons Learned, 79	
	References, 80	
8	INTERFACING DIVERSE ENVIRONMENTAL DATA— ISSUES AND RECOMMENDATIONS	81
	The Problem and Its Context, 82	
	Addressing Barriers Deriving from the Data, 84	
	Addressing Barriers Deriving from Users' Needs, 93	
	Addressing Barriers Deriving from Organizational Interactions, 97	
	Addressing Barriers Deriving from Information System Considerations, 103	
	Ten Keys to Success, 112	
	References, 116	
APPENDIXES		
A	Case Study Evaluation Criteria	121
B	List of Abbreviations and Acronyms	128