

DRAFT CONTENTS

Abstract	14
Introduction.....	19
Purpose and Scope	25
Acknowledgements	28
Environmental Setting	28
Basin-Fill Aquifers	29
Major River Systems	32
Physiography and Geology.....	34
Climate	38
Land Cover, Population, and Water use	40
Salinity Control Projects and Desalinization Plants	44
Approach, Data Compilation, and Data analysis	46
Spatial Distribution.....	47
Basin-Fill Aquifers.....	47
Major River Systems.....	48
Conceptual Model of Effects of Natural and Human Factors	56
Sources and Accumulation	57
Interannual Trends.....	69
Basin-Fill Aquifers.....	69
Major River Systems.....	72
Spatial Distribution	75
Basin-Fill Aquifers	76

Physiographic Provinces	80
Hydrologic Units	82
Major River Systems	84
Major River Basins	85
Physiographic Provinces	93
Effects of Natural and Human Factors.....	101
Rio Grande Valley	103
San Luis Valley.....	107
The Middle Rio Grande Basin	108
Mesilla Valley	110
Upper Colorado River Basin	111
Central Arizona Basins.....	116
The East Salt River Valley, West Salt River Valley, Eloy Basin, and Maricopa-	
Stanfield Basin	119
Nevada Basin and Range	124
Carson River Basin	125
Las Vegas Valley Area.....	129
Great Salt Lake Basins	131
Utah and Goshen Valleys.....	133
Salt Lake Valley	135
Santa Ana Basin	138
The San Jacinto Basin	142
Inland Basin	144

Coastal Basin.....	146
Conceptual Model	147
Sources and Accumulation	152
SPARROW Model of Dissolved Solids Transport	153
Physical Interpretations of Model Coefficients.....	155
Model Assumptions, Strengths, and Limitations	160
Significant Source and Accumulation Areas.....	162
Significant Sources.....	165
Sources, Transport, and Accumulation in Major River Basins	168
Interannual Trends	173
Basin-Fill Aquifers	173
Trends – 1974-1988	177
Trends – 1989-2003	178
Trends – 1974-2003	179
Trend Summary and Comparison Between Periods at Common Sites.....	179
Factors Affecting Trends.....	181
¹ Major River Systems	184
Changes and trends – 1974 - 1988	186
Changes and trends – 1989 - 2003	190
Changes and trends – 1974 - 2003	193
Trends – Comparison between periods at common sites	195
Trends in ambient stream dissolved-solids concentration	197

Changes in adjusted annual dissolved-solids loads in the vicinity of salinity-control projects	199
Summary	201
Literature Cited	211
Appendix.....	299