List of Figures

Figure	Title	Page
No.		No.
3.1	Concise Schematic diagram of Methodology of Water Quality-	41
	Urbanization	
3.2	Detailed schematic diagram of Methodology of Water Quality-	42
	Urbanization Regression Model (WQURM) formulated in this study	
3.3	Schematic diagram for Case A1 B1	67
3.4	Schematic diagram for Case A1 B2	67
3.5	Schematic diagram for Case A2 B1	68
3.6	Schematic diagram for Case A2 B2	69
3.7	Scatter plot for linear regression	71
3.8	Residual plot	71
3.9 (a)	Sample scatter plot for nonlinear regression	72
3.9 (b)	Sample scatter plot for nonlinear regression	72
4.1	Sabarmati basin Index map	74
4.2	Land Use/ Land Cover	79
4.3	Sabarmati Lower sub-basin and watersheds	81
4.4	Sabarmati Upper sub-basin and watersheds	82
4.5	Map of Sabarmati river basin showing the location of stations under	85
	study	
5.1 (a)	District map of Sabarmati river basin with stations under study	99
5.1 (b)	Watershed map of Sabarmati river basin with stations under study	100
5.1.1	Seasonal Variation of Water Quality Index for station S_1	103
5.1.2	Seasonal Variation of Water Quality Index for station S_2	103
5.1.3	Seasonal Variation of Water Quality Index for station S_3	104
5.1.4	Seasonal Variation of Water Quality Index for station S ₄	104
5.1.5	Seasonal Variation of Water Quality Index for station S ₅	105
5.2	Spatial season-wise Variation of Water Quality Index for stations	105
5.2.1	Sabarmati river basin map with districts and stations	107

5.3	Watershed map of Sabarmati river basin with stations under study	109
5.4	Districts and Watershed map of Sabarmati river basin with stations under study	110
5.5	Watersheds contributing to the station S ₃	111
5.6	Watersheds contributing to the station S ₅	112
5.7	Watersheds contributing to the station S ₂	112
5.8	Watersheds contributing to the station S_1	114
5.9	Watersheds contributing to the station S ₄	114
5.10	Residual plot for exponential regression	121
5.11	Residual plot for logarithmic regression	122
5.12	Residual plot for power regression	122
5.13	Residual plot for linear regression	122
5.14	Exponential Regression plot	123
5.15	Logarithmic Regression plot	123
5.16	Power Regression plot	123
5.17	Water Quality - Urbanization Regression Model (WQURM)	124
	plot for Sabarmati river	
5.18	Observed versus predicted plot for the Water Quality - Urbanization	125
	Regression Model applied on Sabarmati river	
6.1	Validation of Water Quality Index Model by Comparision of WQI	131
	by two methods	
6.2	Map of Mahi River Basin	135
6.3	Map of Mahi River Basin with stations under study	136
6.4	Watershed map of Mahi river basin with districts and stations	145
6.5	Watersheds contributing to the station M ₁	146
6.6	Watersheds contributing to the station M ₂	147
6.7	Watersheds contributing to the station M ₃	148
6.8	Watersheds contributing to the station M ₄	148
6.9	Exponential Regression plot for Mahi river	160
6.10	Logarithmic Regression plot for Mahi river	160
6.11	Power Regression plot for Mahi river	160

6.12	Graph for Water Quality- Urbanization Regression Model	161
	(WQURM) plot for Mahi river	
6.13	WQURM models for Sabarmati river and Mahi river	162