

A D A P T A T I O N  
OF AN EMPRICAL  
BASIN LAG FORMULA  
TO THE  
UPPER CAGAYAN  
RIVER BASIN  
IN REGION II

ADAPTATION  
OF AN  
EMPRICAL  
BASIN LAG FORMULA  
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UPPER CAGAYAN RIVER BASIN  
IN REGION II

702000

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## ABSTRACT

Insufficiency of rainfall and streamflow data prevent hydrologists to derive a unit hydrograph for flood estimation and prediction. This paper attempts to identify some empirical methods for deriving a synthetic unit hydrograph. These methods are fitted to the actual unit hydrograph through statistical testing. Furthermore, limitations and constraints of each method are the final aspect considered to determine its fitness and appropriateness to the basin.

The project area chosen in this study is the Upper Cagayan River Basin in Region II which has a drainage area of 6,283.20 square kilometers. Two major stations with synchronized rainfall and streamflow data have been identified to represent the entire basin, namely; Naguilian and Echague stations. Comparison of the synthetic and the actual unit hydrographs is done in terms of the following parameters: basin lag, time to peak, peak discharge and base length.

This study concludes two empirical methods, namely; BPW and River Dredging Project II, that can safely predict the four parameters and are, therefore, adaptable to the Upper Cagayan River Basin.

# TABLE OF CONTENTS

CHAPTER	TITLE	PAGE NO.
I	INTRODUCTION	
	1.1 Background of the Study	2
	1.2 Statement of the Problem	5
	1.3 Objectives of the Study	9
	1.4 Hypotheses of the Study	11
	1.5 Importance of the Study	12
	1.6 Scope, Limitations and Delimitations of the Study	15
	1.7 Definition of terms	20
II	REVIEW OF RELATED LITERATURE AND STUDIES	
	2.1 Foreign Studies	30
	2.2 Local Studies	37
III	THEORETICAL FRAMEWORK	
	3.1 The Hydrograph	41
	3.1.1 The Rising Limb	42
	3.1.2 The Crest Segment	42
	3.1.3 The Recession Limb	44
	3.2 Topographic Factors Affecting the Hydrograph	45
	3.5 Climatic Factors Affecting the Hydrograph	49



CHAPTER	TITLE	PAGE NO.
3.4	Separation of Baseflow	50
3.4.1	Straight Line Method	51
3.4.2	Fixed Base-Length Method	51
3.4.3	Variable Slope Method	53
3.5	Unit Hydrograph	53
3.6	Limitations of the Theory	57
3.7	Derivation of Unit Hydrograph	61
3.8	Derivation of Synthetic Unit Hydrograph	62
3.8.1	Snyder's Method	65
3.8.2	Taylor and Schwarz Method	67
3.8.3	Soil Conservation Service	69
3.8.4	FSR Method	70
3.8.5	Gale et al. Method	72
3.8.6	Hickok et al. Method	72
3.8.7	Nakayasu Method	74
3.8.8	BPW Method	75
3.8.9	RDP II Method	76
3.8.10	US Corps of Engrs. Method	76
3.8.11	Kimura Method	77
3.8.12	Kirpich Method	77
3.8.13	CWC (Indian Practice) Method	77
3.9.14	Linsley et al.	78

CHAPTER	TITLE	PAGE NO.
IV	AREA PROFILE OF THE PROJECT STUDY AND RESEARCH METHODOLOGY	
	4.1 The Data	80
	4.1.1 Regional Description	80
	4.1.2 Description of the Basin	83
	4.1.3 Basin Characteristics	86
	4.2 Research Methodology	104
	4.2.1 Research Design	104
	4.2.1 Nature and Sources of Data	105
	4.2.3 Procedure in Selecting the Gaging Stations	106
	4.2.4 Procedure in Deriving the Actual Unit Hydrograph by Conventional Method	111
	4.2.5 Procedure in Deriving the Synthetic Unit Hydrograph Using the Empirical Methods	115
	4.3 Statistical Treatment of Data	117
V	DISCUSSION, PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS	
	5.1 The Unit Hydrograph by Conventional Method	121
	5.2 Synthetic Unit Hydrograph	136
	5.3 Statistical Investigation	154
	5.4 Synthesis of Statistical Results	194



CHAPTER	TITLE	PAGE NO.
VI	SUMMARY, CONCLUSION AND RECOMMENDATIONS	
	6.1 Findings	203
	6.2 Conclusion	207
	6.3 Recommendations	209
	APPENDICES	216
	BIBLIOGRAPHY	339

## LIST OF TABLES

Tables	Title	Page No.
IV-A-1	Topographic Background of Isabela Province	134
IV-A-2	Topographic Background of Quirino Province	134
IV-A-3	Topographic Background of Nueva Vizcaya Province	135
IV-B	General Slopes Characteristics	137
IV-C	Land Use Classification	137
IV-D-1	Topographic Data of Upper Cagayan River	139
IV-D-2	Summary of Topographic Data	140
IV-D-3	Measured Length with Corrections	141
IV-D-4	Slope Computation	142
IV-E-1	Historical Streamflow Records	107
IV-E-2	Historical Rainfall Records	109
IV-F	Location of Selected Gaging Stations	143
V-A-1	Actual Parameters of Individual Storms for Naguilian Station	145
V-A-2	Actual Parameters of Individual Storms for Echague Station	146
V-A-3	Actual Parameters of Individual Storms for Diadi Station	147
V-B	Summary of Actual and Synthetic Parameters for Each Empirical Method	149



Tables	Title	Page No.
V-C-1	Percentage Difference of Parameters for Naguilian Station	151
V-C-2	Percentage Difference of Parameters for Echague Station	152
V-C-3	Percentage Difference of Parameters for Diadi Station	153
V-D-1	Basin Lag t-test Results for Naguilian Station	155
V-D-2	Time to Peak t-test Results for Naguilian Station	156
V-D-3	Peak Discharge t-test Results for Naguilian Station	157
V-D-4	Base Length t-test Results for Naguilian Station	158
V-D-5	Basin Lag t-test Results for Echague Station	159
V-D-6	Time to Peak t-test Results for Echague Station	160
V-D-7	Peak Discharge t-test Results for Echague Station	161
V-D-8	Base Length t-test Results for Echague Station	162
V-D-9	Basin Lag t-test Results for Diadi Station	163
V-D-10	Time to Peak t-test Results for Diadi Station	164
V-D-11	Peak Discharge t-test Results for Diadi Station	165
V-D-12	Base Length t-test Results for Diadi Station	166

Tables	Title	Page No.
V-E-1	Summary of Statistical Parameters of Basin Lag for Naquilian Station	168
V-E-2	Summary of Statistical Parameters of Time to Peak for Naquilian Station	169
V-E-3	Summary of Statistical Parameters of Base Length for Naquilian Station	170
V-E-4	Summary of Statistical Parameters of Peak Discharge for Naquilian Station	171
V-E-5	Summary of Statistical Parameters of Basin Lag for Echague Station	172
V-E-6	Summary of Statistical Parameters of Time to Peak for Echague Station	173
V-E-7	Summary of Statistical Parameters of Base Length for Echague Station	174
V-E-8	Summary of Statistical Parameters of Peak Discharge for Echague Station	175
V-E-9	Summary of Statistical Parameters of Basin Lag for Diadi Station	176
V-E-10	Summary of Statistical Parameters of Time to peak for Diadi Station	
V-E-11	Summary of Statistical Parameters of Base Length for Diadi Station	178
V-E-12	Summary of Statistical Parameters of Peak Discharge for Diadi Station	179
V-F	Summary of Ranks of Empirical Methods for Each Parameter at Naquilian Station	195



Tables	Title	Page No.
V-G	Summary of Ranks of Empirical Methods for Each Parameter at Echague Station	196
V-F	Weighted Rank of Empirical Formulas at Naguillian Station	198
V-G	Weighted Rank of Empirical Formulas at Echague Station	198
V-J	T-mean for Each Empirical Formula at Naguillian Station	199
V-H	T-mean for Each Empirical Formula at Echague Station	199
V-L	Summary of Findings	208

## LIST OF FIGURES

Figures	Title	Page No.
I-A	Location Map	7
I-B	Drainage Map	8
III-A	Elements of a Typical Hydrograph	43
III-B	Baseflow Separation	52
III-C	Elements of Unit Hydrograph	63
IV-A	Location Map	81
IV-B	Drainage Map	82
IV-C	Development Framework Map	84
IV-D	Climate Map	82
IV-E	Water Picture - Average Annual Runoff	89
IV-F	Isohyetal Map	90
IV-G	Surface Runoff	91
IV-H	Flood Prone Areas	93
IV-I	General Slopes	94
IV-J	Geologic Formation	96
IV-K	Major Groups of Soils	97
IV-L	Land Capability	98
IV-M	Soil Erosion Susceptibility	99
IV-N	Existing Land Use	100



Figures	Title	Page No.
IV-0	Hydrologic Map	101
IV-U	Water Impounding Reservoir Projects	102
IV-V	Existing Irrigation System	103
IV-P-1	Storm Hydrographs of Selected Storms at Naguilian Station	125
IV-P-2	Unit Hydrographs of Selected Storms at Naguilian Station	126
IV-P-3	Distribution Graphs of Selected Storms at Naguilian Station	127
IV-Q-1	Storm Hydrographs of Selected Storms at Echague Station	128
IV-Q-2	Unit Hydrographs of Selected Storms at Echague Station	129
IV-Q-3	Distribution Graphs of Selected Storms at Echague Station	130
IV-R-1	Storm Hydrographs of Selected Storms at Diadi Station	131
IV-R-2	Unit Hydrographs of Selected Storms at Diadi Station	132
IV-R-3	Distribution Graphs of Selected Storms at Diadi Station	133
IV-S	Storm Hydrographs of Selected Storms at Naguilian, Echague and Diadi Stations	113
IV-T	Unit Hydrographs of Selected Storms	114



## LIST OF APPENDICES

Appendix	Title	Page No.
Appendix A	Computations of Direct Run-off Hydrograph and Unit Hydrograph Ordinates for the Selected Storms	216
Appendix B	Computations of Rainfall Excess for the Selected Storms	235
Appendix C	Computations Distribution Graph Ordinates for the Selected Storms	253
Appendix D	Storm Hydrographs, Direct Run-off Hydrographs, Unit Hydrographs and Hyetographs for the Selected Storms	272
Appendix E	Computations of Parameters Using the Empirical Methods	308
Appendix F	Tables for Coefficients	324
Appendix G	Statistical Parameters	328
Appendix H	Climate Classification	335