

GGY/GLY 335 GEOMORPHOLOGY: Drainage Basin Morphometry Examples

Basins Analyzed by students, Spring Semester 2008:

Quadrangle Name	State	Basin Magnitude (order)	Basin Area (mi ²)	L-W Ratio (ft/ft)	Total Relief (ft)	Relief Ratio (ft/ft)	Drainage Density (mi/mi ²)	Bifurcation Ratio (#/#)	Ruggedness Number (mi ² /mi ²)
Cass	WV	4	5.8	1.5	1080	0.064	8.2	4.6	1.7
Franklinton	NC	5	4.1	1.7	190	0.010	9.9	3.5	0.35
Southeast Eden	NC	4	2.7	1.9	320	0.019	11.9	5	0.72
Southeast Leonardtown	NC	4	2.0	1.6	130	0.012	18.6	5.3	0.47
Welcome	NC	4	5.3	2.0	170	0.009	12.7	5.9	0.41
Apex	NC	4	3.0	2.7	140	0.009	24.5 (?)	4.8	0.63
Burlington	KY/OH	5	3.8	0.7	180	0.017	26.9 (?)	4.9	0.91
Walkertown	NC	5	4.4	1.1	240	0.018	5	4	0.20
Apple Springs	TX	4	4.3	4.4	120	0.005	7.8	4.7	0.18
Jellico East	TN	5	2.8	1.3	1140	0.091	12.1	4.2	2.6
Oakvale	WV	5	5.6	1.1	2050	0.070	22	4.1	8.5
Wayah Bald	NC	5	5.9	1.8	2380	0.113	9.2	4.2	4.1
Ben's Run	WV-OH	5	3.4	2.5	490	0.031	12.3	3.6	1.1
Hunt Dale	NC	4	4.0	2.0	2060	0.114	16.6	5.3	6.5
Iron Mountain Gap	TN	4	2.1	1.3	1320	0.132	13.7	4.6	3.4
Eggleston	VA	5	5.3	2.8	2500	0.112	10.3	3.7	4.8
Goforth	KY/OH	5	6.2	1.2	320	0.016	13.4	4.3	0.82
Stanley	VA	4	6.4	2.1	1640	0.074	16.7	6.3	5.2
Efland	NC	6	7.7	1.7	200	0.009	11.3	3.7	0.43
Albany	KY/OH	6	5.7	1.5	380	0.022	15.2	3.4	1.1
Chestoa	TN	4	1.7	1.5	2320	0.206	11.9	4.3	5.3
MEAN VALUES	=	4.6	4.4	1.8	922	0.055	12.6	4.5	2.3

Examples in textbook (Ch. 5, p. 152):

State	Basin Magnitude (order)	Basin Area (mi ²)	L-W Ratio (ft/ft)	Total Relief (ft)	Relief Ratio (ft/ft)	Drainage Density (mi/mi ²)	Bifurcation Ratio (#/#)	Ruggedness Number (mi ² /mi ²)
C.TX	4.5	4.8	---	354	0.012	4.1	---	0.55
UT	4.5	11.5	---	3990	0.127	5.6	---	6.3
CA	4.6	0.9	---	1416	0.220	13.7	---	5.8
IN	5.9	60.5	---	161	0.002	3.8	---	0.25
PA	5.4	47.1	---	901	0.010	2.3	---	0.59
VA	4.0	13.2	1.8	1609	0.060	2.3	4.4	1.1
W.TX	5.0	12.7	2.6	2285	0.078	4.9	4.5	3.5
MEAN VALUES	=	4.8	2.2	1531	0.073	5.2	4.5	2.6