GSA Data Repository item 2007215
Where do floodplains begin? The role of total stream power and longitudinal profile form on floodplain initiation processes
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GSA Bulletin; doi: 10.1130/B26092.1

TABLE DR1: CHARACTERISTICS OF THE TRANSITION POINTS BETWEEN VALLEY SETTINGS, AND THE TRANSITION ZONE ALONG LONGITUDINAL PROFILES OF THE UPPER HUNTER CATCHMENT

Rivers	Confined – Partly-confined transition point			Partly-confined – Laterally-unconfined transition point			Long profile Transition zone		
	D* (km)	A§ (km^2)	E# (m)	D* (km)	A§ (km^2)	E# (m)	Range (km)*	Total length (km)	Elevation range (m)
Hunter River	12.8	62	659	111.2	1200	263	2.39-33.05	31	1119-491
Pages Creek	4.1	11	834	ND**	ND**	ND**	1.09-11.69	10	979-700
Moonan Brook	12.2	58	557	ND**	ND**	ND**	0.77-13.53	12	1300-534
Stewarts Brook	24.1	127	388	ND**	ND**	ND**	0.68-7.88	7	777-551
Brush Hill Creek	11.2	37	492	ND**	ND**	ND**	1.17-23.19	21	790-358
Branch Creek	4.0	22	745	ND**	ND**	ND**	0.94-9.33	8	867-658
Rouchel Brook	30.4	243	238	48.5	431	188	1.18-46.85	45	673-192
Davis Creek	ND**	ND**	ND**	ND**	ND**	ND**	0.74-14.22	13	731-365
Isis River	12.8	78	515	ND**	ND**	ND**	1.08-22.43	21	692-451
Pages River	0.7	6	658	86.8	1103	202	1.12-10.92	9	635-469
Dart Brook	0.4	3	531	43.4	266	190	1.43-27.09	26	480-238
Middle Brook	7.4	24	421	31.9	67	217	3.58-16.03	13	504-318
Kingdon Ponds	2.8	9	361	16.5	120	271	1.23-15.64	14	395-273

D* - Distance from source.
A§ - Catchment area at transition point.
E# - Elevation at transition point.
ND** – No data.

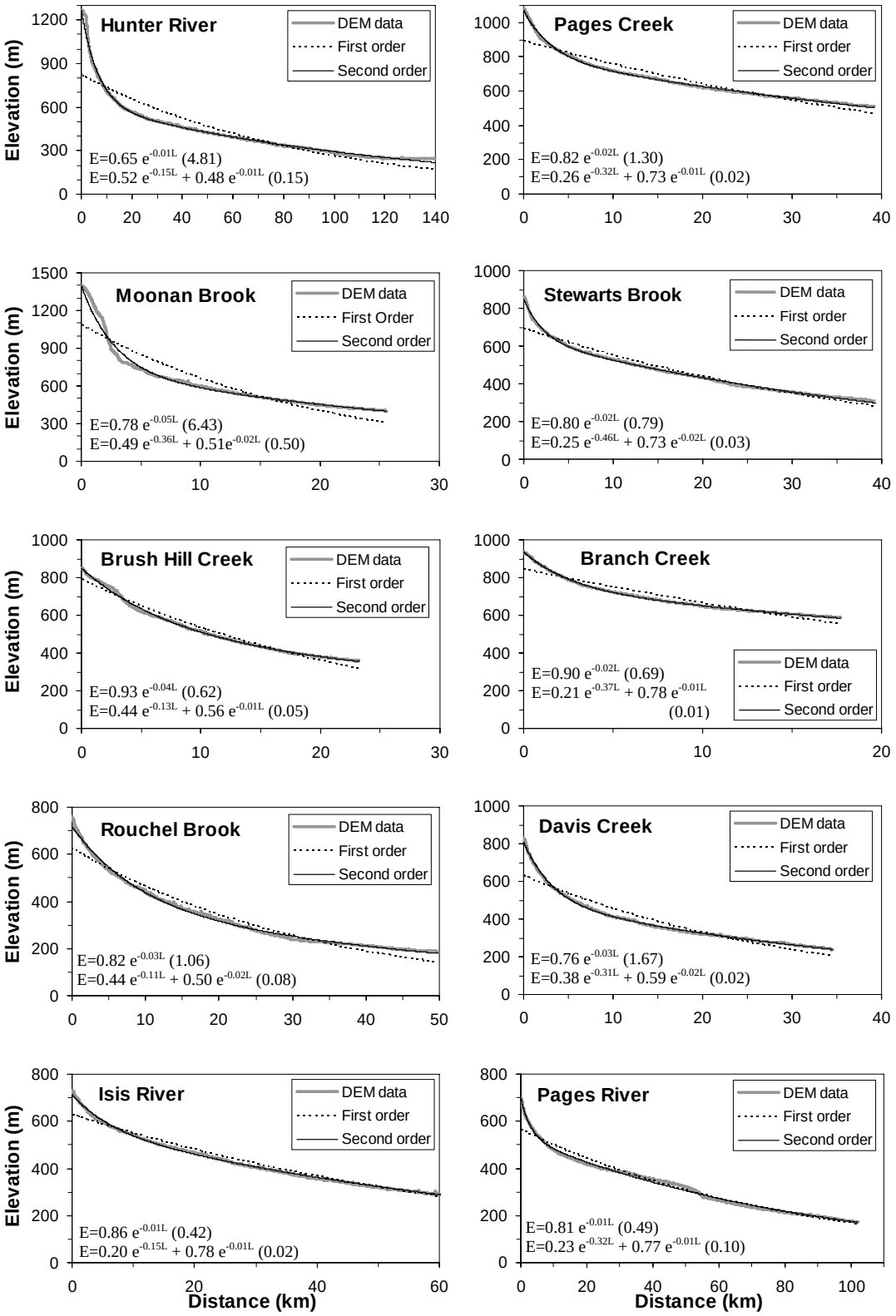
TABLE DR2: RANGE OF TOTAL STREAM POWER AND SLOPE VALUES FOR RIVERS IN DIFFERENT VALLEY SETTINGS OF THE UPPER HUNTER CATCHMENT

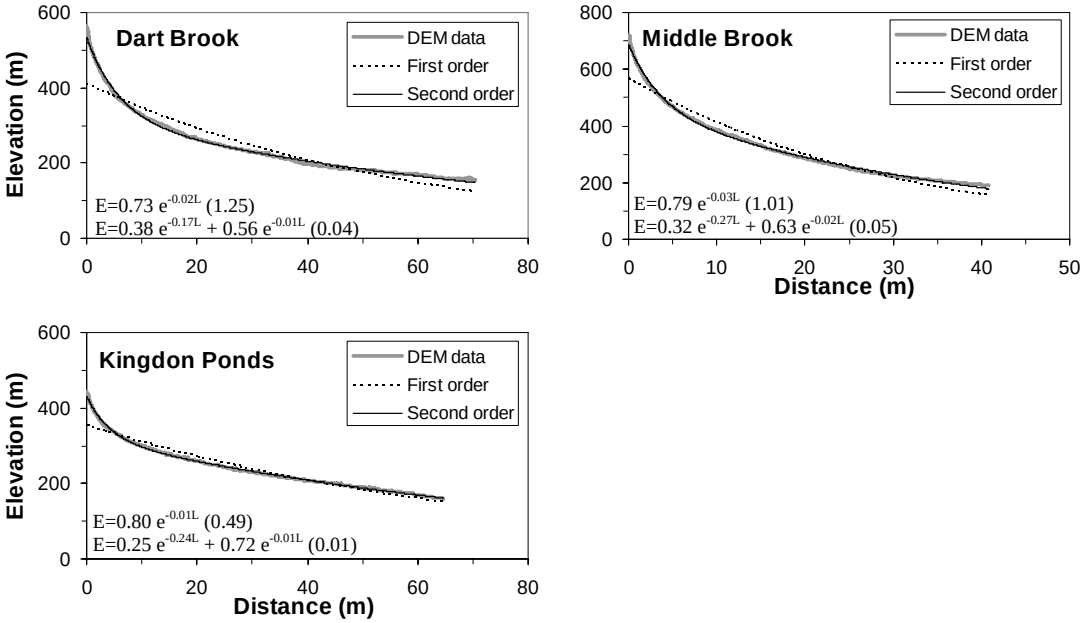
Rivers	Confined reaches				Partly-confined reaches				Laterally-unconfined reaches			
	Slope (m/m)	Total stream power (W/m)			Slope (m/m)	Total stream power (W/m)			Slope (m/m)	Total stream power (W/m)		
	Average	Avg	Max	Min	Average	Avg	Max	Min	Average	Avg	Max	Min
Hunter River	0.0526	5907	15299	699	0.0048	4897	10459	1443	0.0010	1933	13237	20
Pages Creek	0.0638	2731	4378	2084	0.0106	2818	4428	1652	ND*	ND*	ND*	ND*
Moonan Brook	0.0740	6383	22309	3180	0.0131	4164	5631	2540	ND*	ND*	ND*	ND*
Stewarts Brook	0.0199	3091	6218	1658	0.0059	2708	3987	1875	ND*	ND*	ND*	ND*
Bursh Hill Creek	0.0348	3251	6180	1377	0.0131	3016	4970	2088	ND*	ND*	ND*	ND*
Branch Creek	0.0497	2521	3995	1991	0.0130	2390	3717	1492	ND*	ND*	ND*	ND*
Rouchel Brook	0.0172	3036	6881	1838	0.0030	2517	4345	1041	0.0026	2474	2665	2349
Davis Creek	0.0164	2364	3816	1175	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*
Isis River	0.0175	2089	2849	1311	0.0053	3829	9826	1090	ND*	ND*	ND*	ND*
Pages River	0.0575	2226	ND*	ND*	0.0067	4647	19300	993	0.0023	4438	9859	1370
Dart Brook	ND*	ND*	ND*	ND*	0.0085	1798	4427	1002	0.0018	1691	5103	509
Middle Brook	0.0348	3251	6180	1377	0.0131	3016	4970	2088	0.0033	862	1074	607
Kingdon Ponds	0.0288	1221	1540	956	0.0081	1606	2903	940	0.0026	1580	4590	746

ND* – No data

Figure DR1: Curve fitting of 1st order and 2nd order exponential curves used to construct stream longitudinal profiles in the upper Hunter catchment. In all cases, a 2nd order exponential curve better represents the longitudinal profile form. Curve fitting errors are shown in the parenthesis after the exponential curve equation.

Figure DR1


Hunter River
DEM data
First order
Second order
E=0.65 e^-0.01L (4.81)
E=0.52 e^-0.15L + 0.48 e^-0.01L (0.15)
Pages Creek
DEM data
First order
Second order
E=0.82 e^-0.02L (1.30)
E=0.26 e^-0.32L + 0.73 e^-0.01L (0.02)
Moonan Brook
DEM data
First Order
Second order
E=0.78 e^-0.05L (6.43)
E=0.49 e^-0.36L + 0.51e^-0.02L (0.50)
Stewarts Brook
DEM data
First order
Second order
E=0.80 e^-0.02L (0.79)
E=0.25 e^-0.46L + 0.73 e^-0.02L (0.03)
Brush Hill Creek
DEM data
First order
Second order
E=0.93 e^-0.04L (0.62)
E=0.44 e^-0.13L + 0.56 e^-0.01L (0.05)
Branch Creek
DEM data
First order
Second order
E=0.90 e^-0.02L (0.69)
E=0.21 e^-0.37L + 0.78 e^-0.01L
(0.01)
Rouchel Brook
DEM data
First order
Second order
E=0.82 e^-0.03L (1.06)
E=0.44 e^-0.11L + 0.50 e^-0.02L (0.08)
Davis Creek
DEM data
First order
Second order
E=0.76 e^-0.03L (1.67)
E=0.38 e^-0.31L + 0.59 e^-0.02L (0.02)
Isis River
DEM data
First order
Second order
E=0.86 e^-0.01L (0.42)
E=0.20 e^-0.15L + 0.78 e^-0.01L (0.02)
Pages River
DEM data
First order
Second order
E=0.81 e^-0.01L (0.49)
E=0.23 e^-0.32L + 0.77 e^-0.01L (0.10)
Elevation (m)
Distance (km)


Dart Brook
DEM data
First order
Second order
Elevation (m)
E=0.73 e^-0.02L (1.25)
E=0.38 e^-0.17L + 0.56 e^-0.01L (0.04)
Middle Brook
DEM data
First order
Second order
E=0.79 e^-0.03L (1.01)
E=0.32 e^-0.27L + 0.63 e^-0.02L (0.05)
Distance (m)
Kingdon Ponds
DEM data
First order
Second order
Elevation (m)
E=0.80 e^-0.01L (0.49)
E=0.25 e^-0.24L + 0.72 e^-0.01L (0.01)
Distance (m)