Loddon River Flows at Laan

Prepared by Keith Greenham AM [redacted] from documents in his posession May 2011 E&OE

Year	Monthly Flows '000 m/l [only significant monthly events recorded]								Murray River			Loddon River					
									Torrumbarry	Barham	Swan Hill		Lannecoorie			Height	
										Peak Daily		Year	Peak	Peak	Peak	Murray R.	
	May	June	July	August	September	October	Novemebe	December		Flows		Flow	monthly	7 day	one day	Swan Hill	metric
									ml/d	ml/d	ml/d	,000ml	,000 ml	.000ml	,000ml	ft/ins	AHD
1870				Early European settlement free flow											> 1909	16' 2"	67.85
																Rank 1	
1893	102	192	93	72	84	100	63					727	192	u/k	u/k		
				Minimul european settlementinfluence								Rank 2					
1909	82	85	57	353	43				80,000	n/a	31,000	659	353	220	153	15' 4"	67.6
				Laanecoorie Weir failed								Rank 4	Rank 1	Rank 3	Rank 2	Rank =5	
	Reports from Fish Point of Loddon R. coming down in a wave, the roar of water									Similarity of FL raking [=5] impact at Swan Hill to the Jan. 2011 event is noted							
	over topping natural and man made levees heard as it approached.																
1916				91	264	157			95,000	34,000	32,000	618	264	225	78	15' 5"	67.63
													Rank 5	Rank 2		Rank 4	
1917			83	149	191	82			95,000	31,000	30,000	582	191	80	39	15' 2"	67.55
1921				95	136	30			86,000	31,000	28,000		136	60	33	14' 4"	67.28
1931	44	172	104	83	69							516	172			14' 9"	67.41
				No hydrographs - Levee failures Pental Island & elsewhere													
1933			33	31	88	21	21	332	48,000	30,000	27,000	536	332	265	100	13' 8"	67.08
				Too late in year [December] to be significant									Rank 2	Rank 1	Rank 3		

Major levee bank reconstruction by Public Works Depatment followed

High ranking prior to 1955 due to lack of major dam storage ?

Year	Monthly Flows '000 m/l [only significant monthly events recorded]							Torrumbarry	Murray River Barham Peak flows	Swan Hill	Year	Loddon River Laanecoorie Peak monthly	Peak 7 day	Peak one day	Height Murray R. Swan Hill	Metric AHD
	May	June	July	August	September	October	Novemebe	December	ml/d	Ml/d	ml/d	Flow				
	Major Dam storage and levee bank era. L Hume dam in service															
1955		30	41	262	73	33			62,000	30,000	29,000	468	262	112	39	14' 10"	67.45
1956	106	96	243	142	127	68			65,000	34,000	31,000	811	243	100	48	15' 4"	67.6
	Cairn Curran [Loddon] & Eilden [Goulburn] in service - Levee failures Benjeroop area.											Rank 1			Rank 4	Rank =5	
1960	73	80	127	106	236	32						694	236			14' 8"	67.4
	No hydrographs available																
1964					96	161			59,000	32,000	29,000	385	161	85	33	14' 6"	67.35
	Major levee bank reconstruction commenced on Pental Island																
1973		51	89	126	142	117			59,000	32,000	32,000	644	142	72	32	15' 4"	67.6
	Levee failure Benjeroop area -Winlation Depression											Rank 5				Rank =5	
	Cause - Pyramid Creek dredged for improved irrigation service																
1974	57	17	40	127	102	66			55,000	32,000	31,000	487	127	45	22	15'	67.5
	Winlaton Depression Levee failure Benjeroop not repared in time.																
1975					102	281	89		59,000	35,000	35,000	563	281	115	41	15' 8"	67.7
	Eastern Pental Island Little Murray River levee failures - app.7,000 ml stored for some 5 days												Rank 4		Rank 5	Rank 2	
1981			27	294	21	23			55,000	34,000	33,000	467	294	124	30	15' 6"	67.65
	No levee failures - Pental Island levees remodelled to comply with Interstate NSW/Vic. Levee Agreements												Rank 3			Rank 3	
1993	N/A	Hydrographs not avaiable			Flood Ev.	Flood Ev.										15' 4"	67.6
	New Loddon Floodway Spilway operating - S H Murray Downs Creek closed															Rank =5	
2010/11	N/A					Flood Event								Rank 1 >	194	15'	67.5
	Hydrographs not available - major flooding of all northern slopes river floodplains with 200 levee failures above																
	Loddon and Avoca R junctions saving the Swan Hill region from levee failures and flooding																

General Comment

Midsummer flood events highlighted for benefit of 2017 ENRRDC Inquiry into the governance and use of Environmental Water.& black water event

The most interesting is the 30% reduction in peak daily flow through Torrumbarry following construction of Hume, Eilden and Dartmouth Dams - Capacity 10,000,000 m/l

By comparison with the above the downstream impact of Loddon Dams with a storage capacity of only 228,000 ml is noted.

The similarity of peak Murray River flows through Barham and Swan Hill after inflow from the Loddon and Avoca Rivers and outlow via Waddy Forest to Merran Cr is noted.

The January 2011 event for the Loddon River was 4 times greater than 1956 and almost 5 times greater than 1975 making the disasterous outcome inevitable

The similarity of the 2011 Loddon event to 1909 impact on FL at Swan Hill is noted

The similarity of summer 2010 & 2011 Loddon event to the summer 1933 flood event is noted

1909 & 2011 impact on the Swan Hill Murray River region was cushioned by Loddon and Avoca floodplain temporary storage of more than 100,000ml compared to 7,000ml 1975

As Laanecoorie, Torrumbarry, Barham, Swan Hill hydrographs for 1993, 2010, 2011 become available new light on the issues will become available

Fully levee bank contained flood level at Swan Hill is estimated to rise by 4.5cm above 1975 FL per 1,000ml increased flow. [1991 SH/TF Flood Study]

Swan Hill Modelled 40,000ml/d event = 67.99mAHD or 1975 FL plus 29cm, 50,000ml/d event = 68.80m AHD or 1975 plus 109cm [1991 SH/TF Flood Study]