

Tatiara PWA numerical groundwater flow model and projected scenarios:

Volume 2

Chris Li and Roger Cranswick

Department of Environment, Water and Natural Resources

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Department for Environment
and Water

Department for Environment and Water

GPO Box 1047, Adelaide SA 5001

Telephone National (08) 8463 6946
 International +61 8 8463 6946

Fax National (08) 8463 6999
 International +61 8 8463 6999

Website www.environment.sa.gov.au

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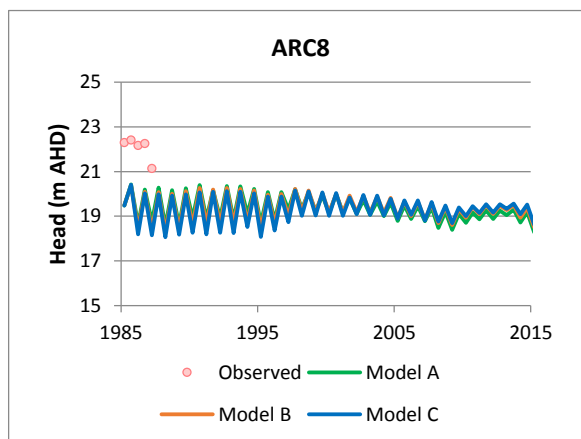
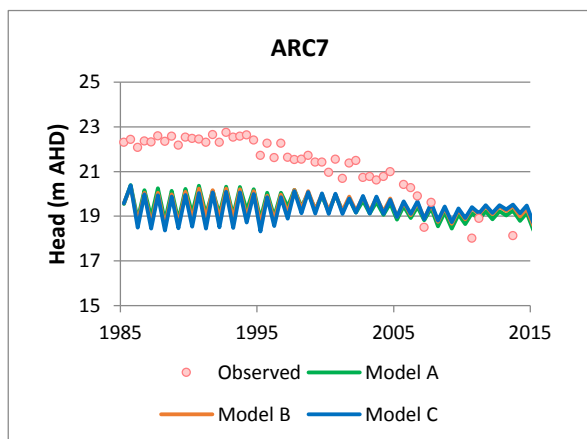
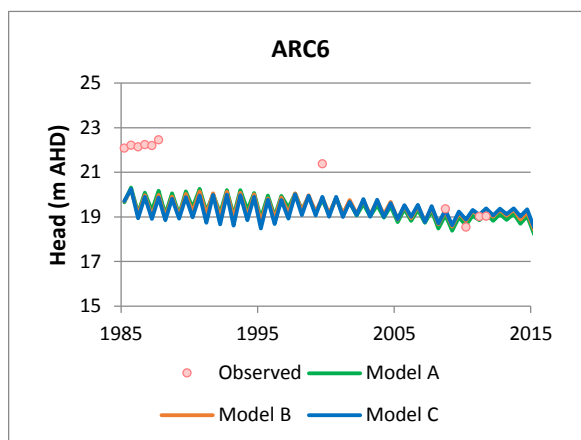
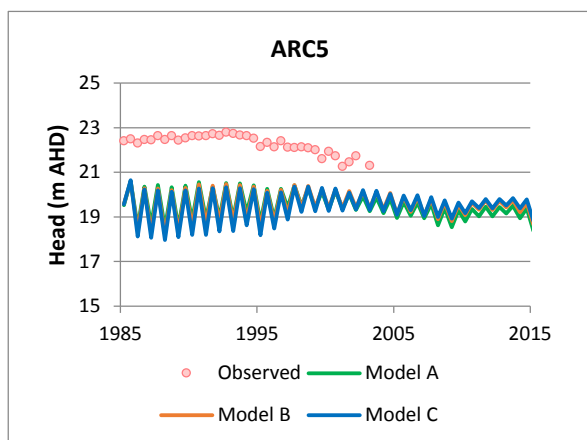
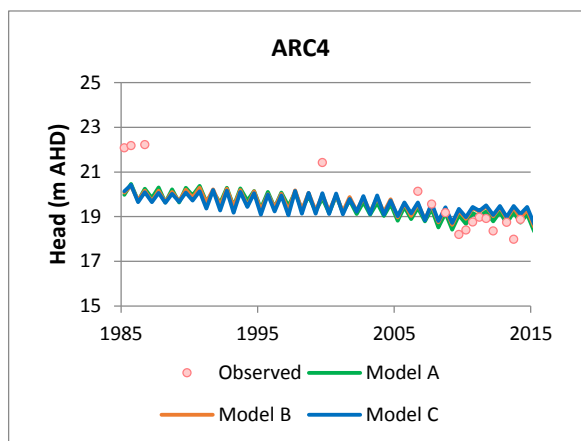
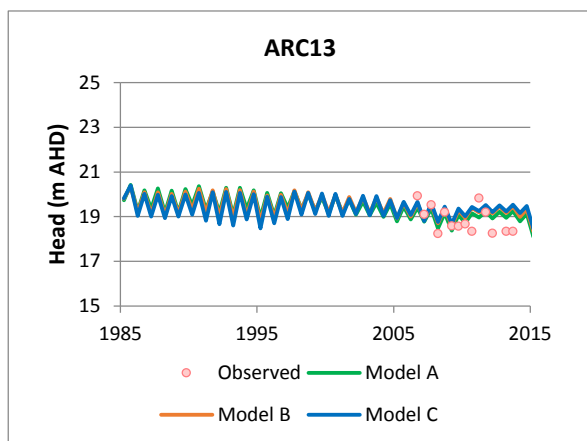
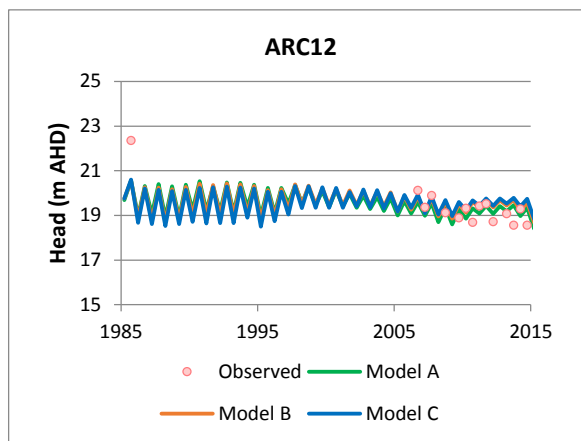
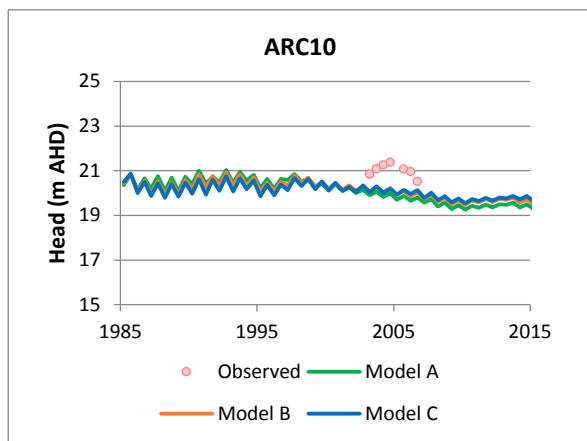
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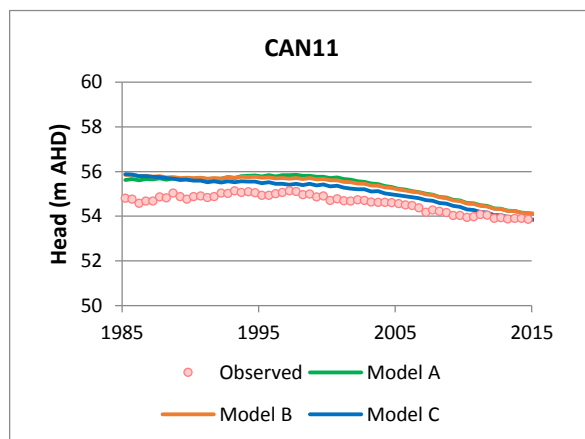
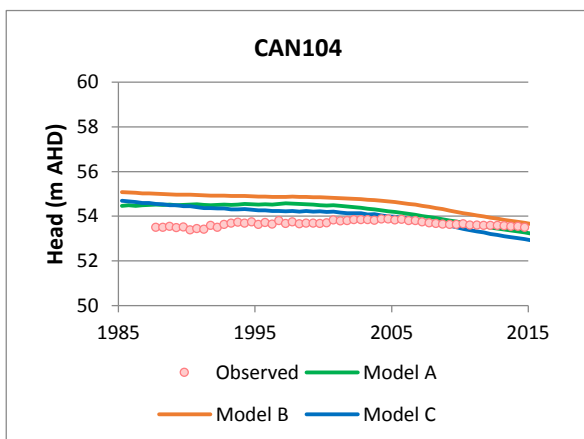
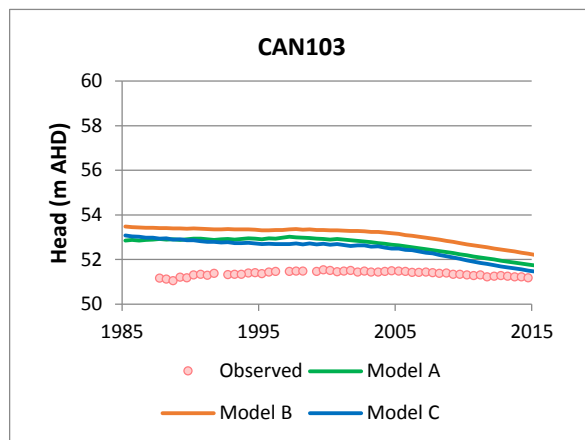
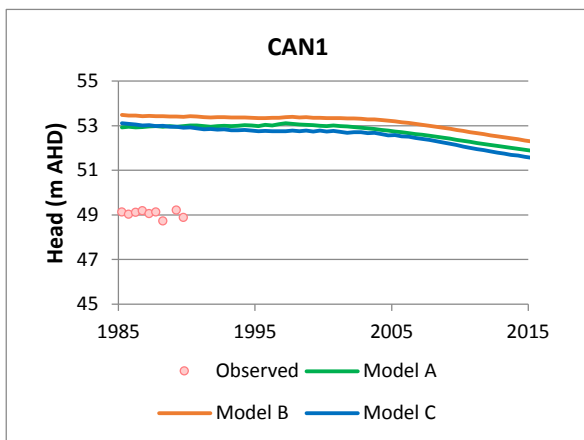
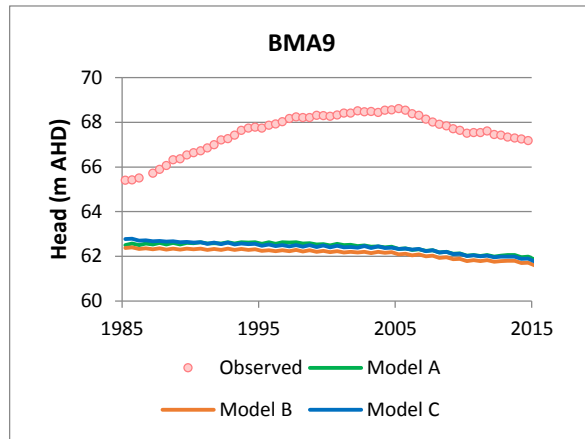
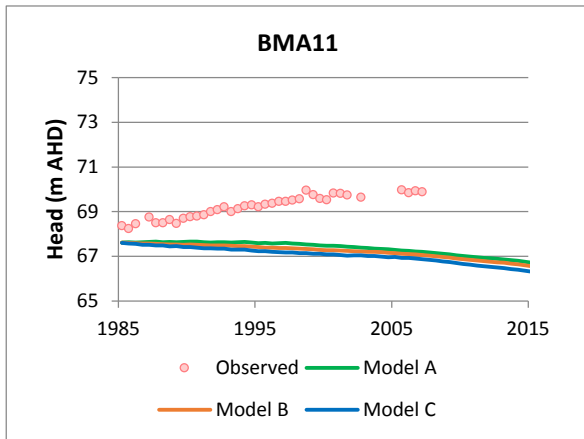
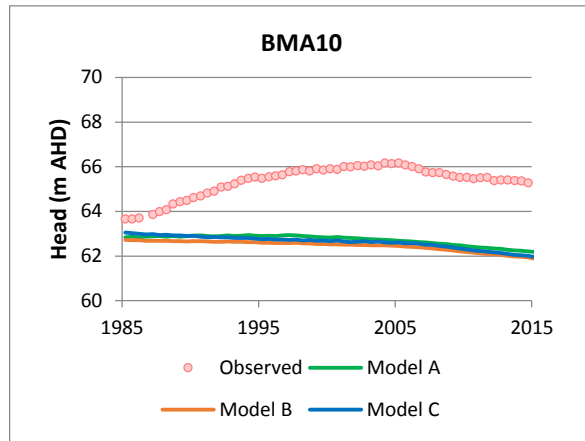
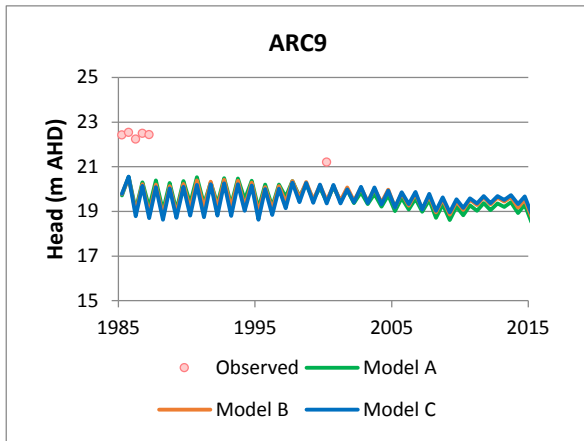
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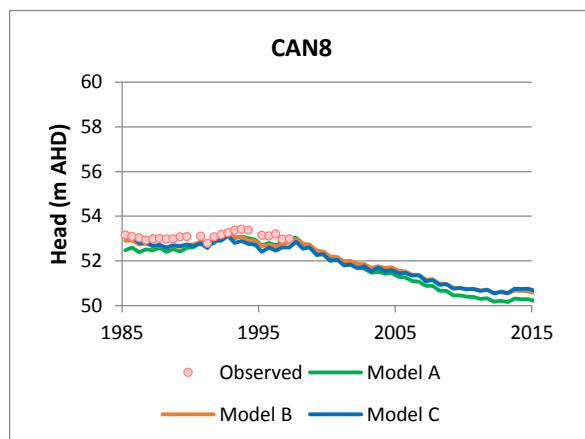
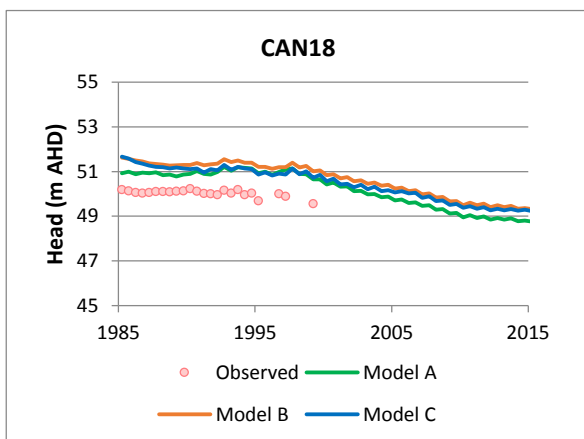
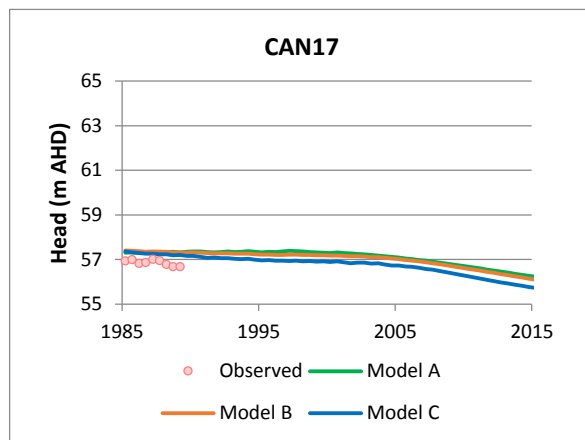
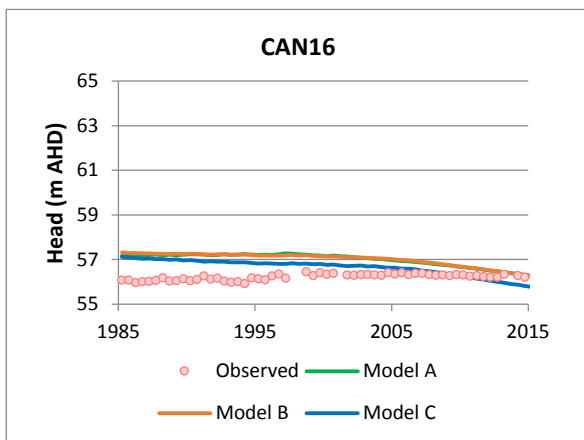
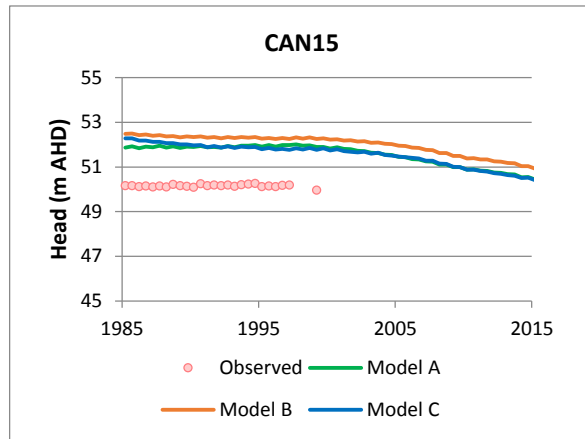
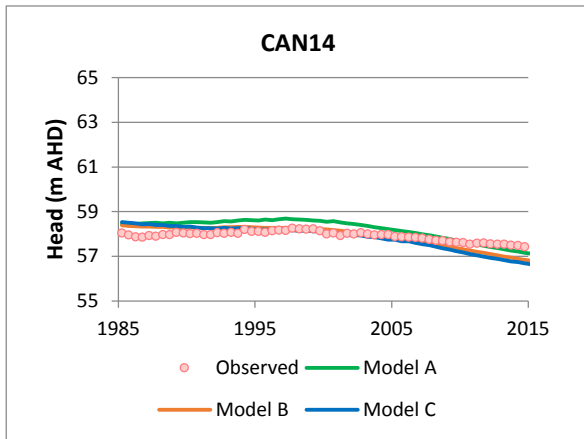
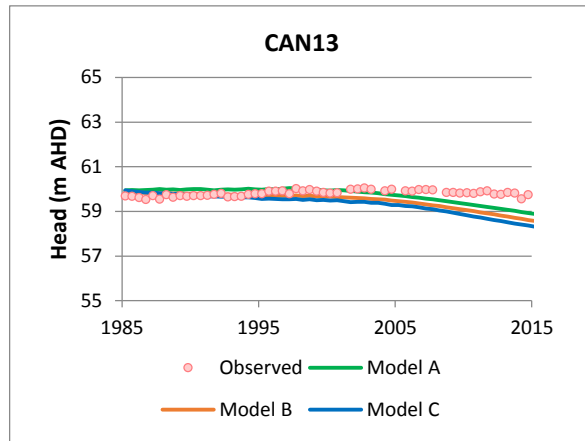
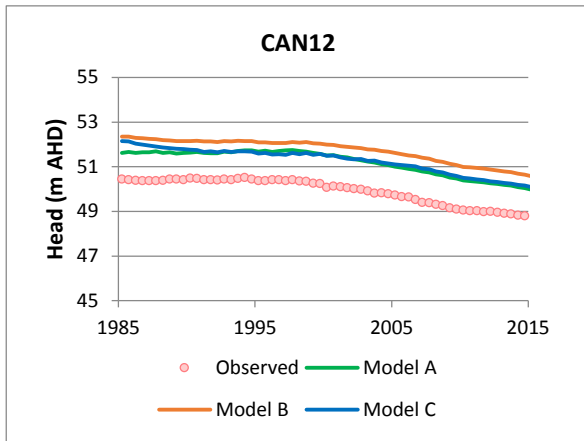
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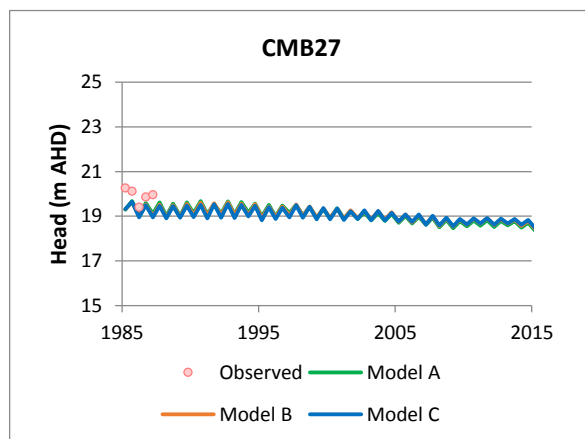
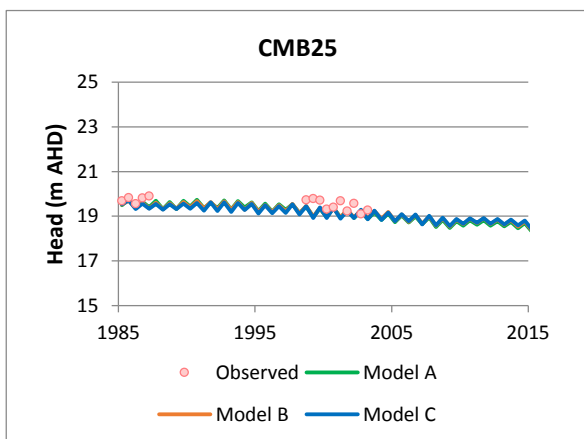
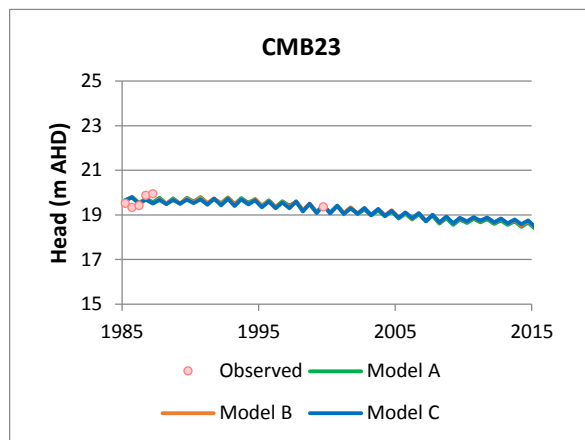
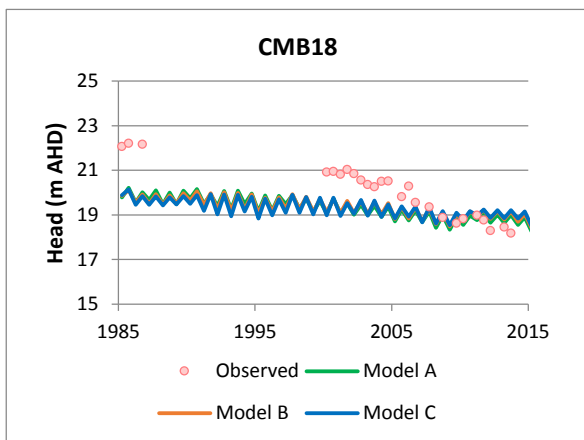
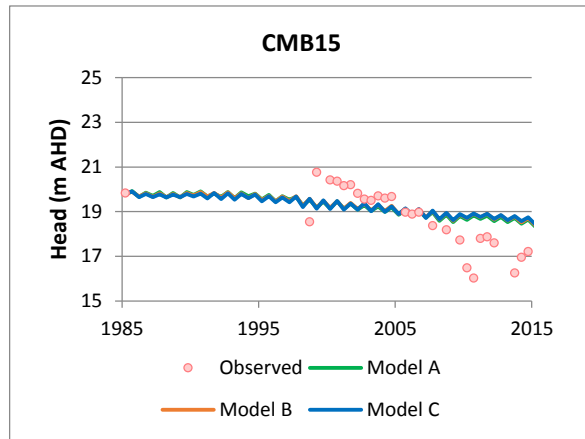
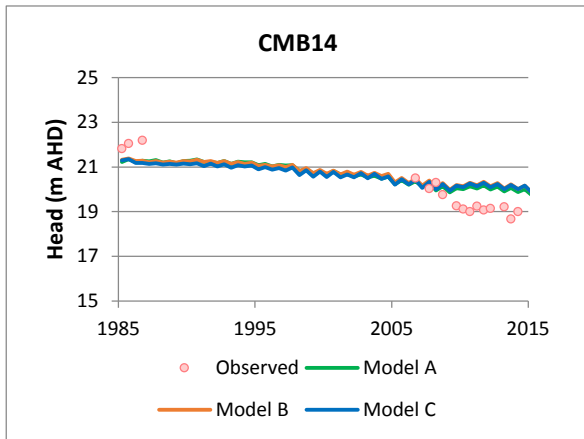
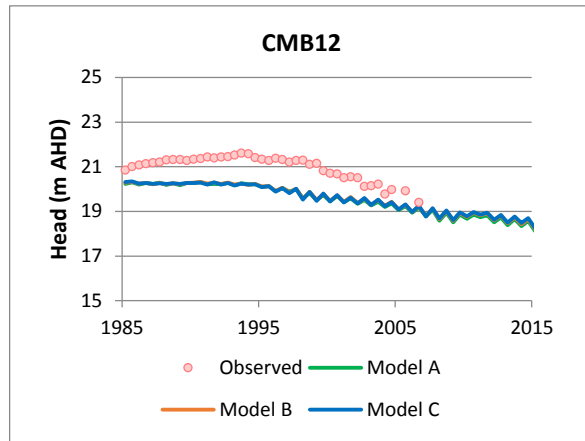
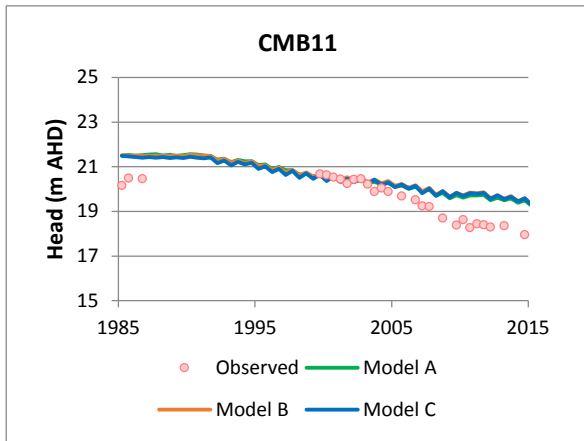
A. Hydrographs of simulated and historical observed hydraulic head

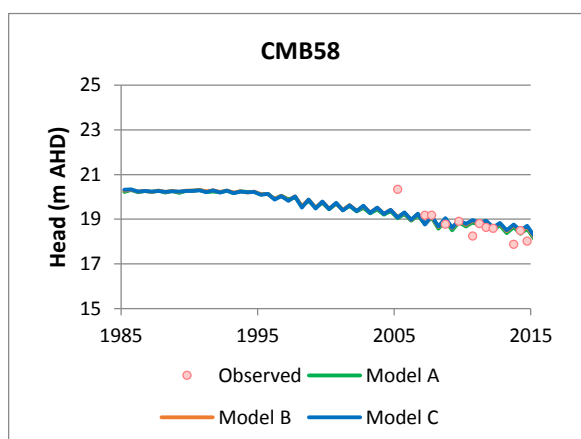
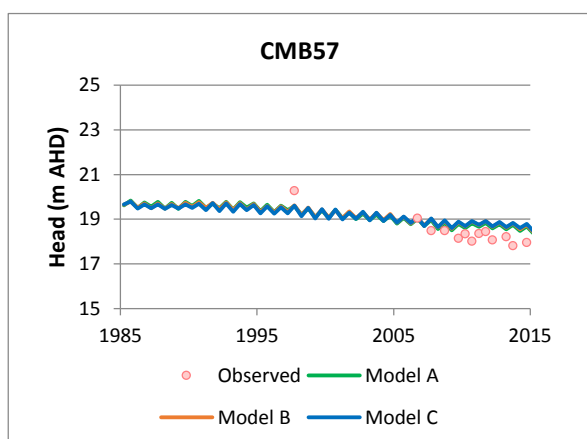
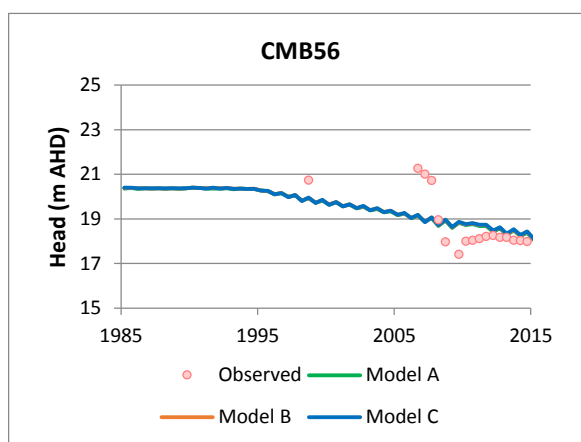
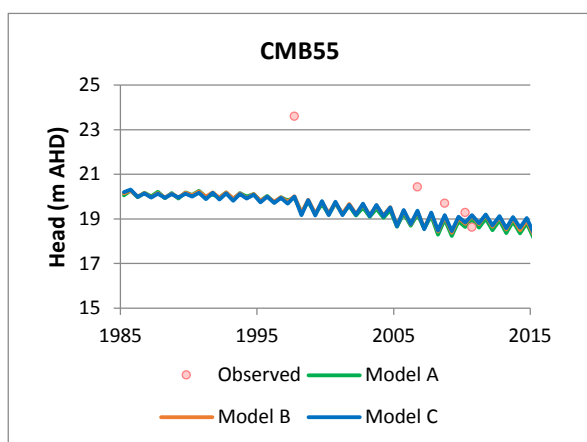
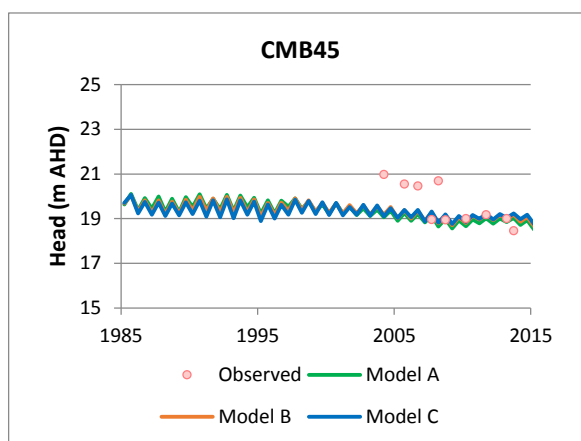
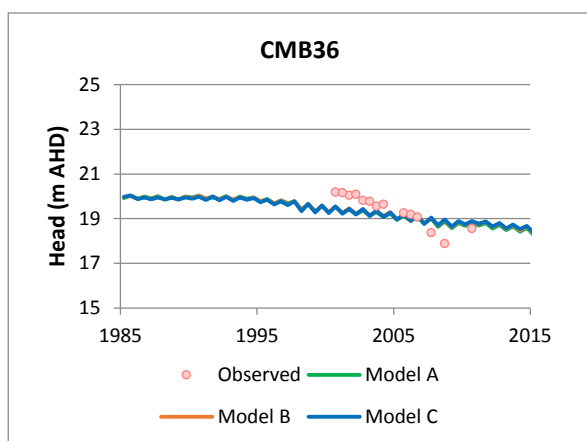
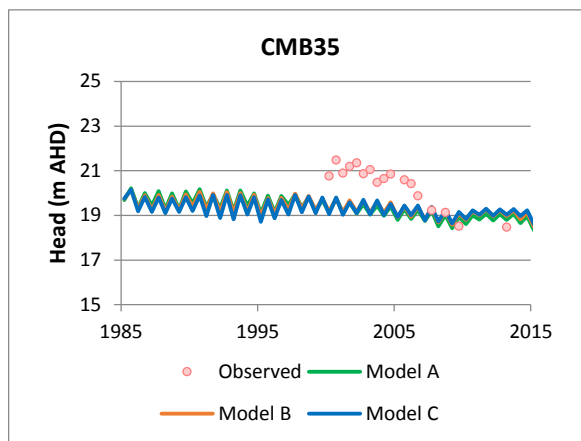
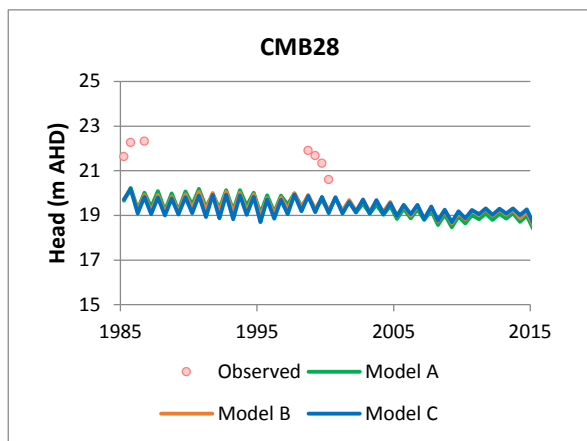
The following section shows the observed and simulated hydrographs for all three calibrated models, for all observation wells used in the Tatiara model domain. These include 149 observation wells from within the Tatiara Prescribed Wells Area (PWA) and 163 from surrounding areas (i.e. Tintinara–Coonalpyn PWA, Victoria, Lower Limestone Coast PWA, Padthaway PWA, and the Hundreds of Laffer and Petherick to the west).

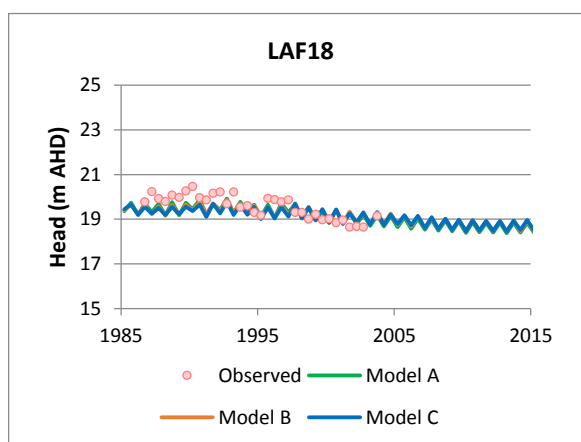
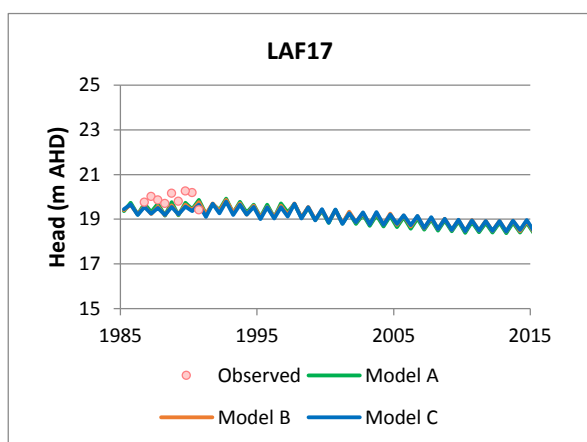
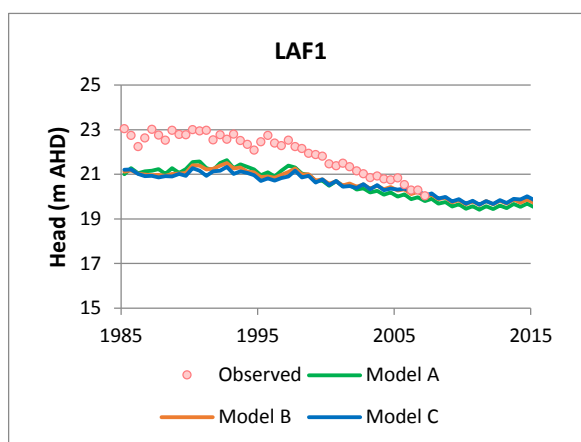
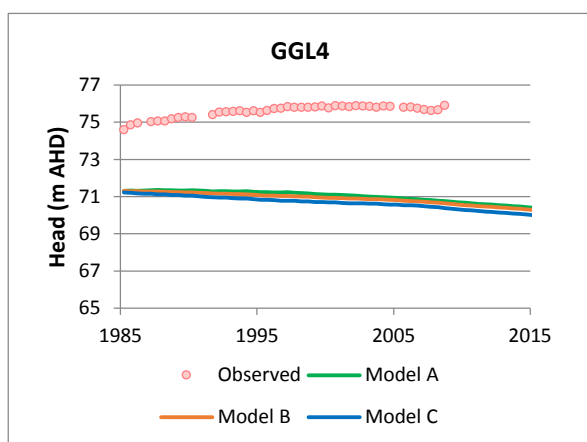
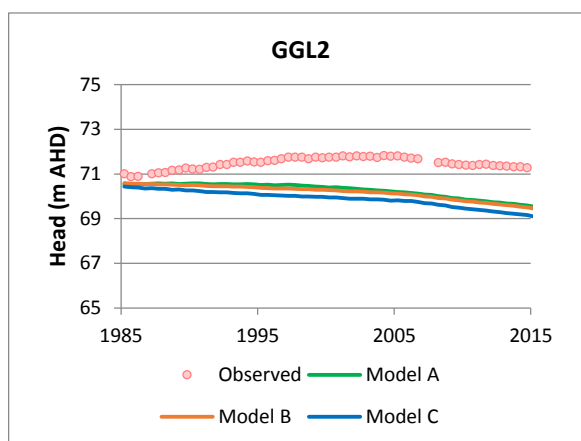
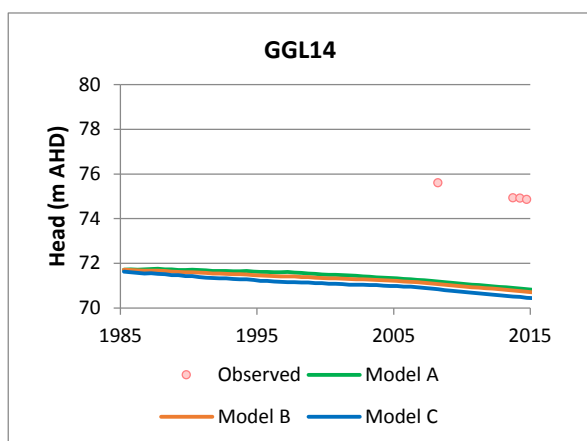
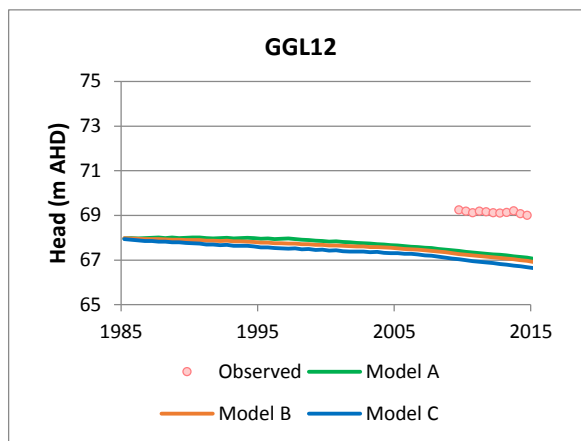
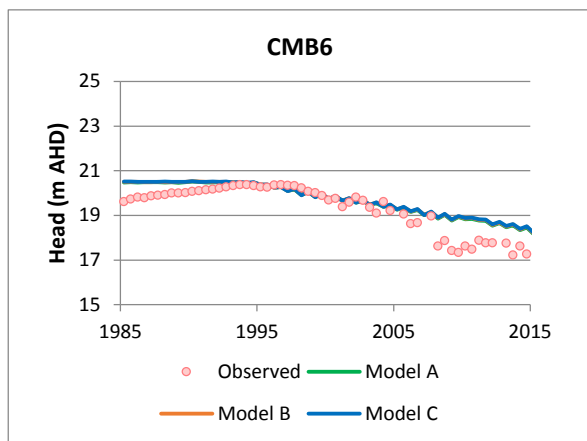


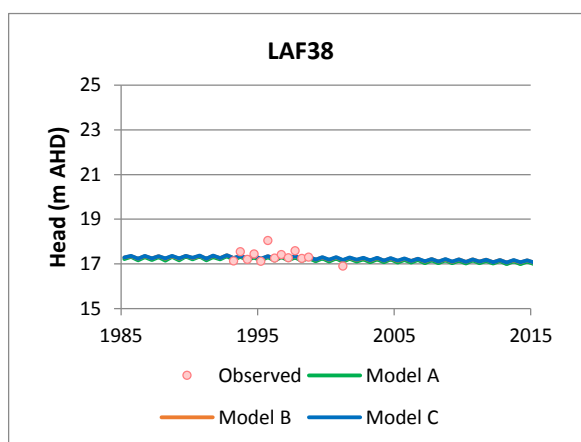
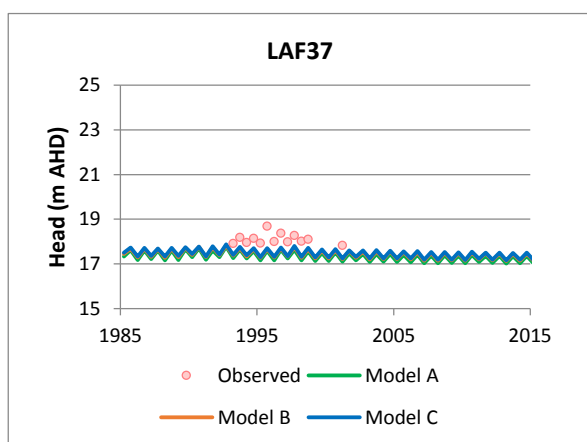
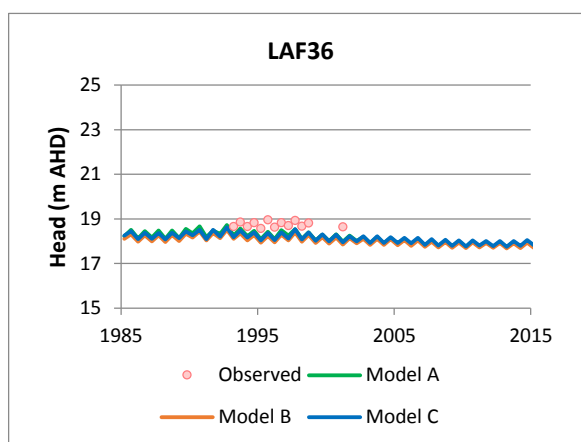
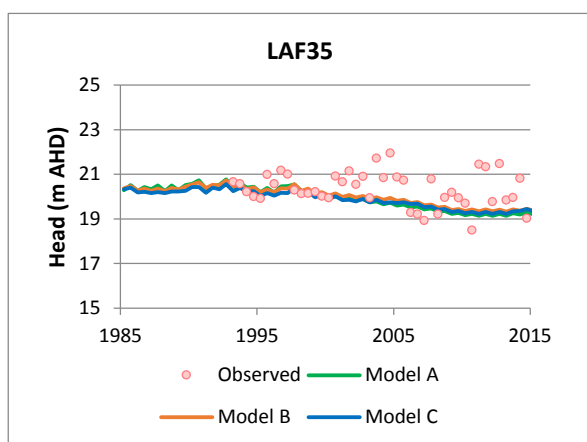
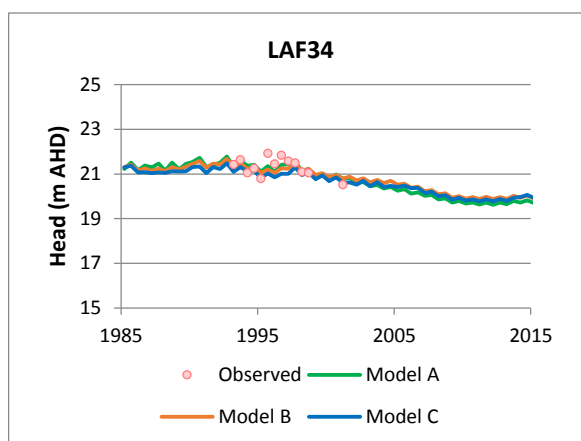
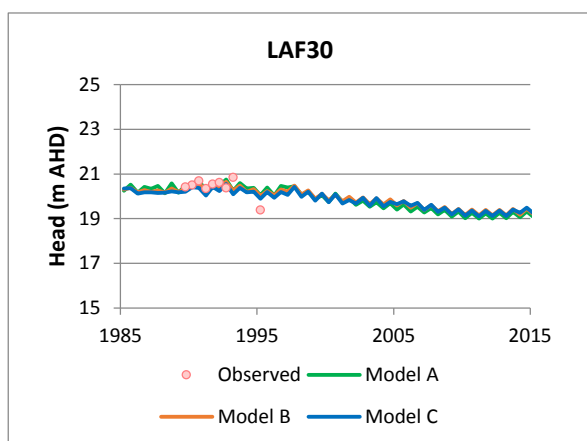
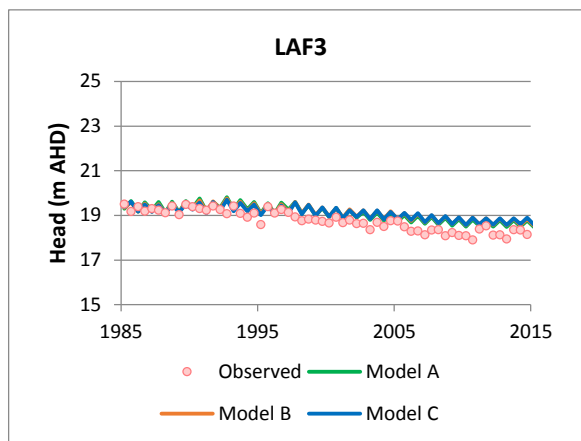
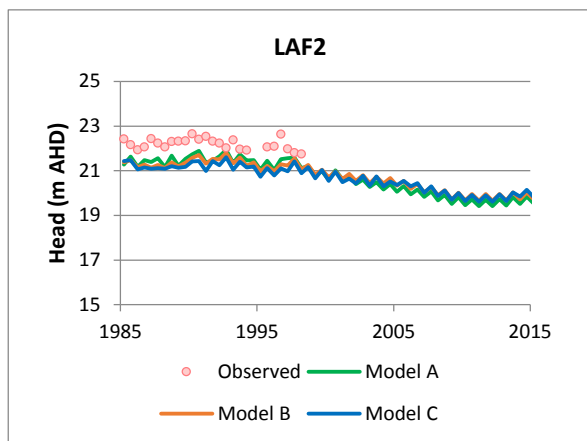


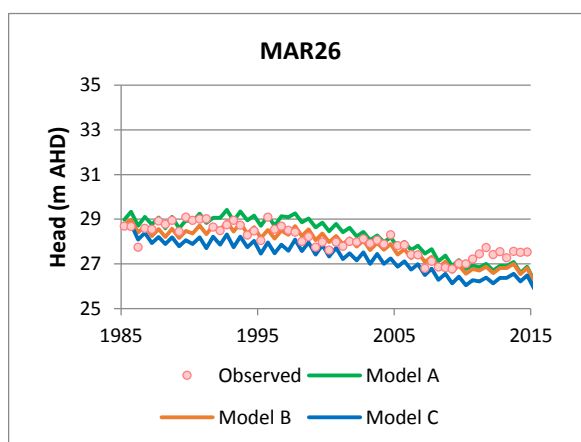
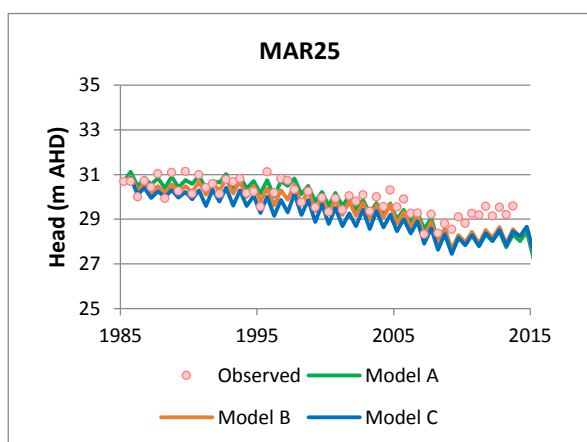
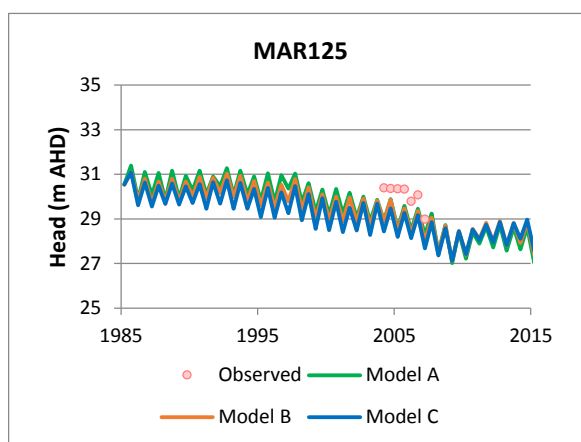
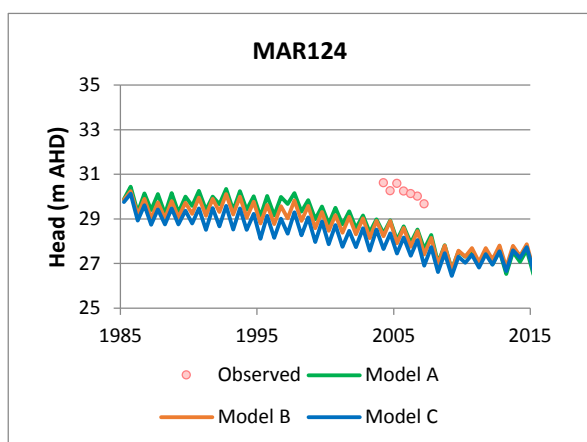
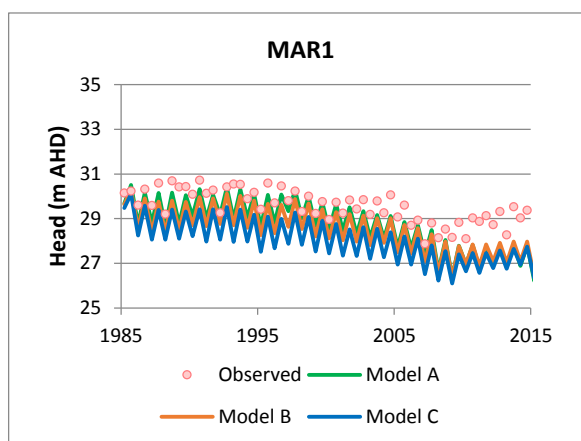
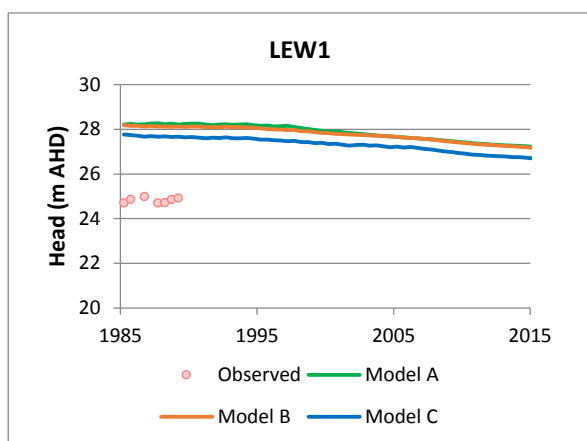
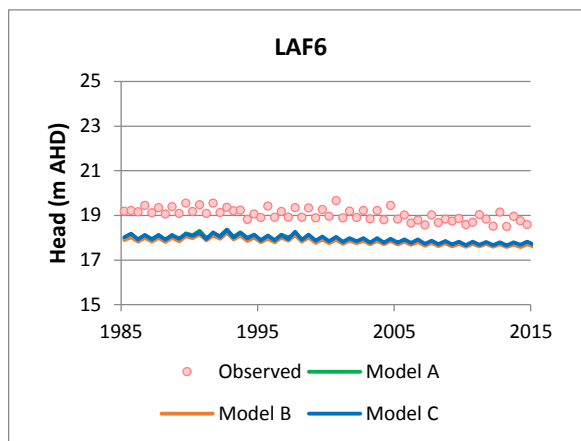
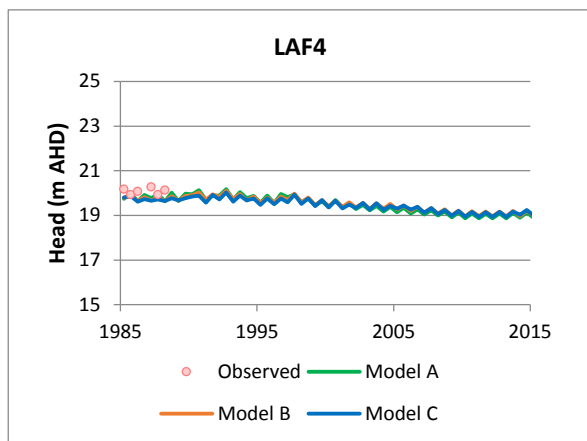


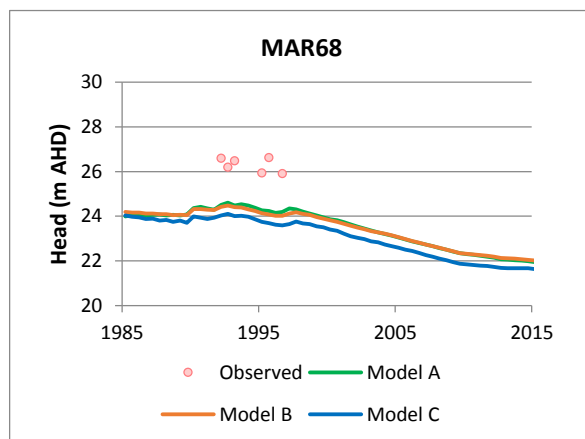
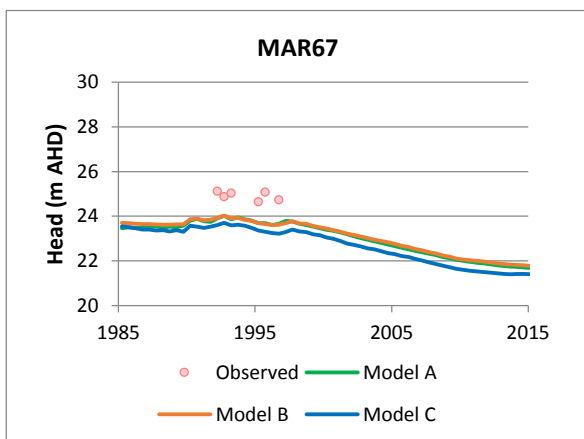
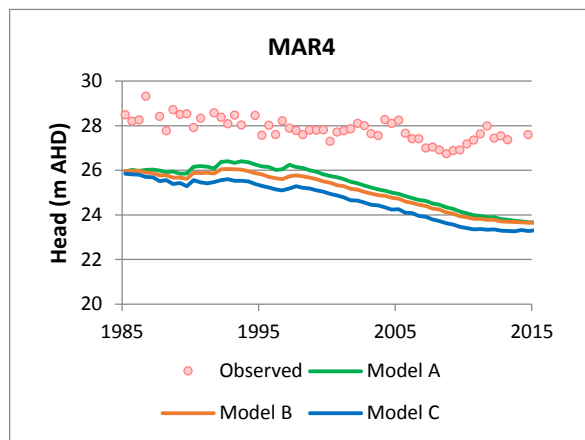
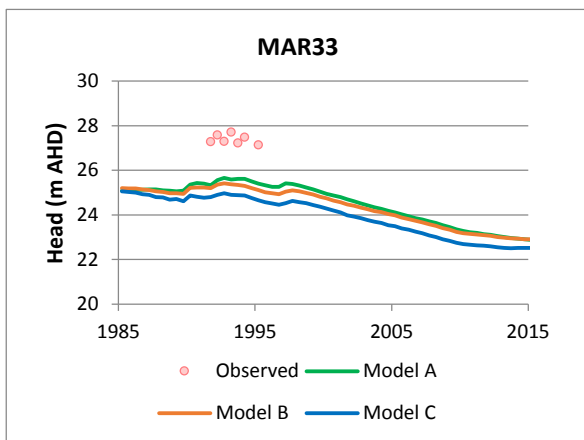
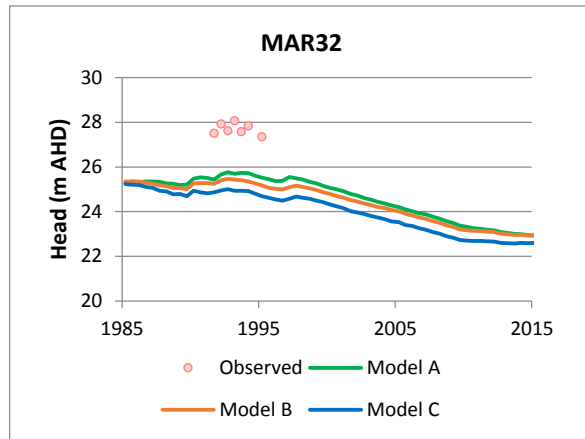
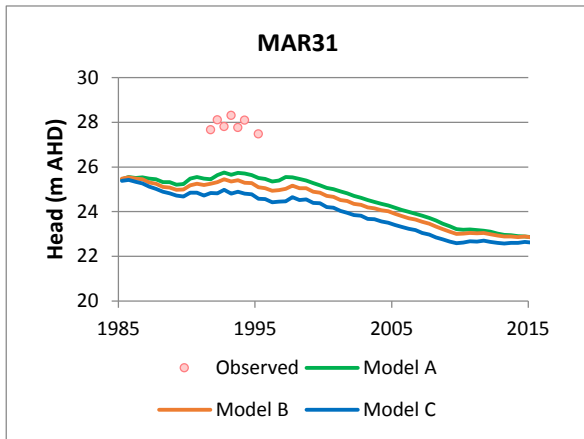
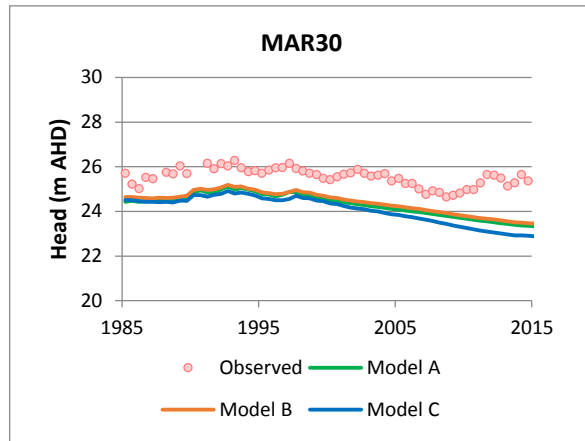
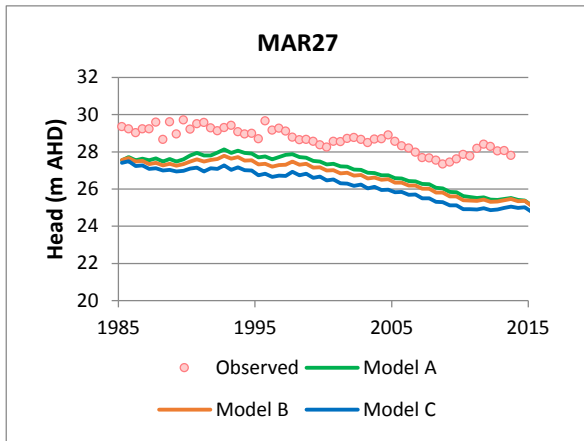


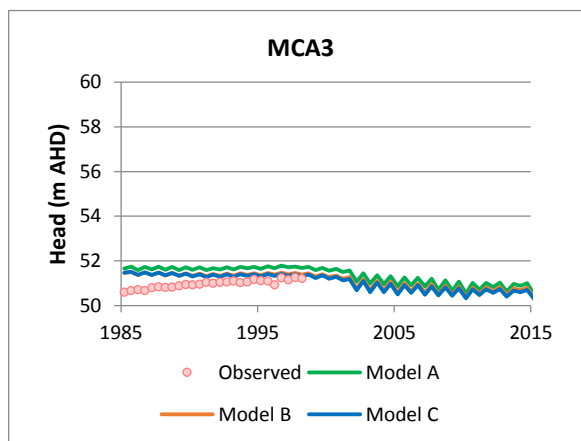
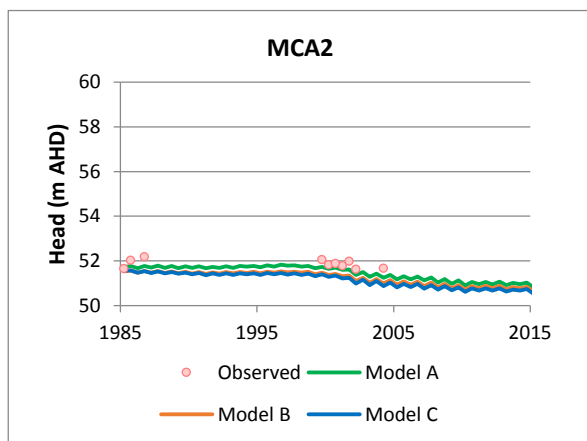
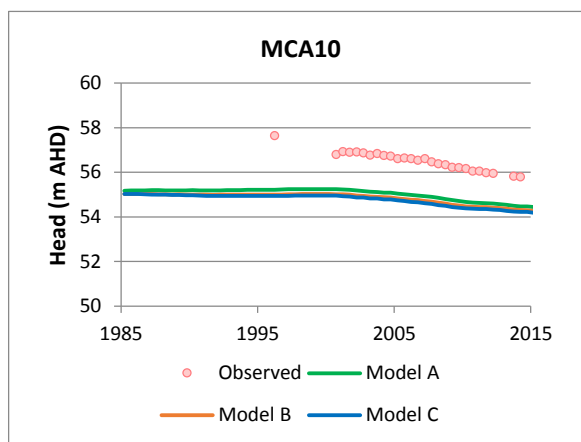
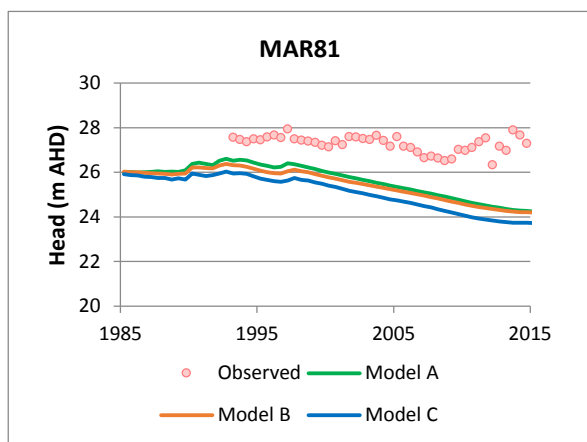
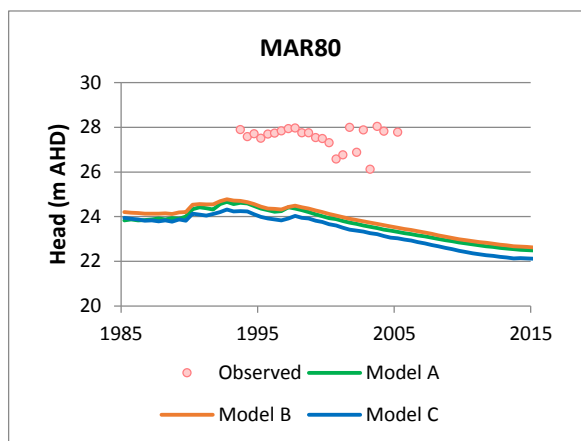
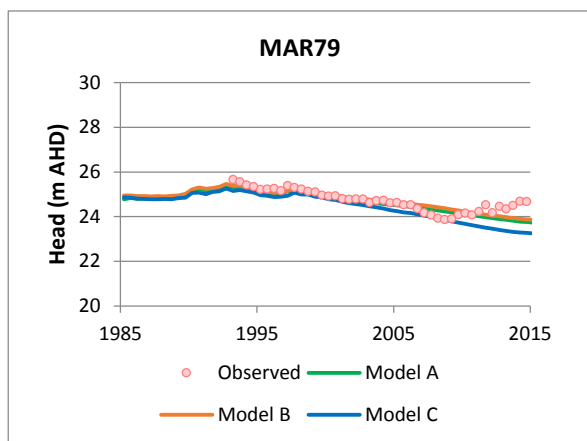
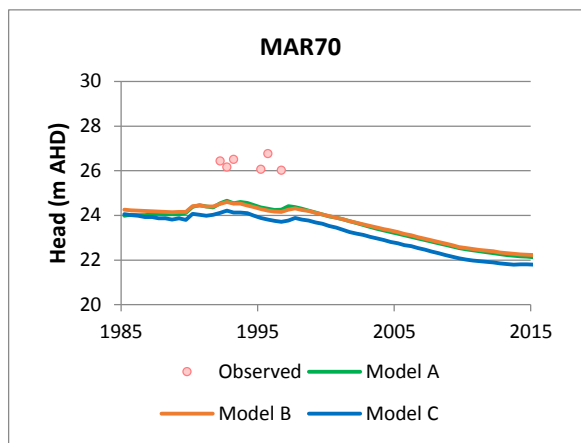
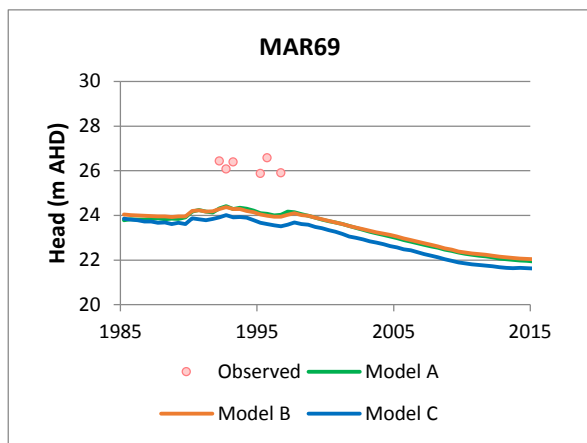


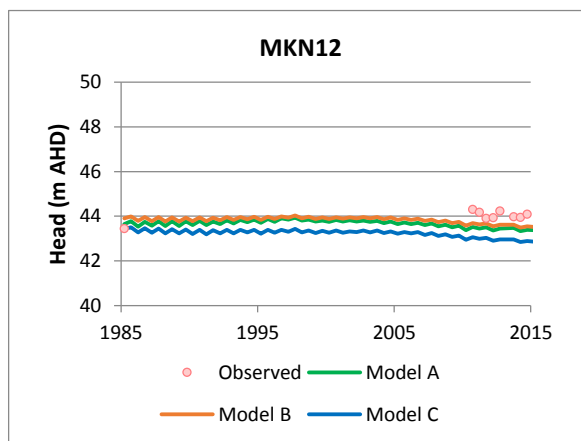
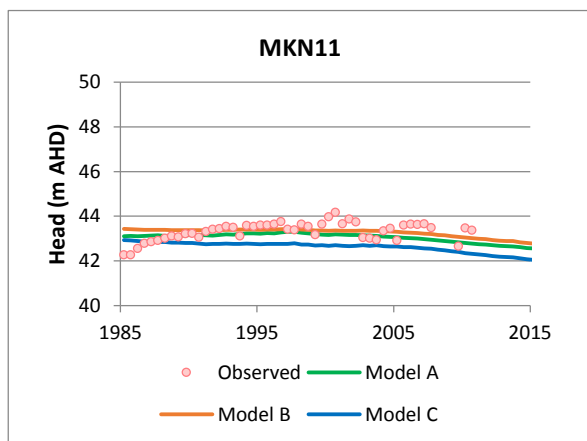
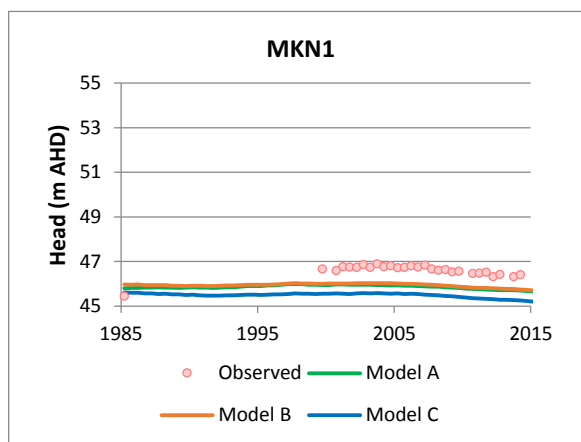
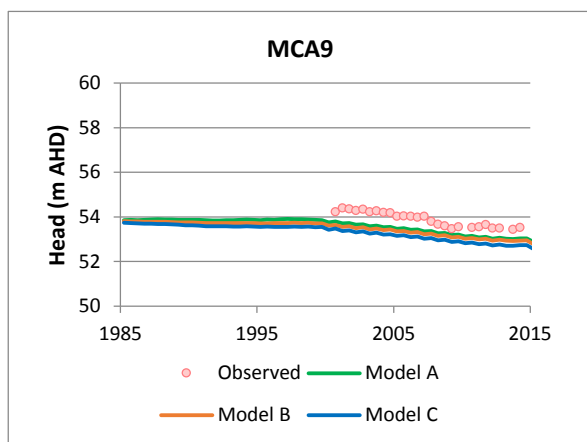
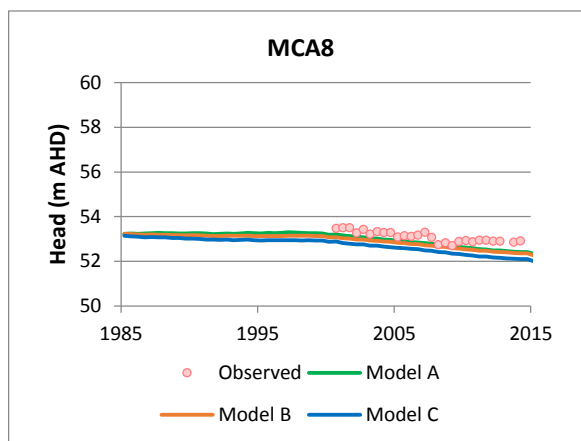
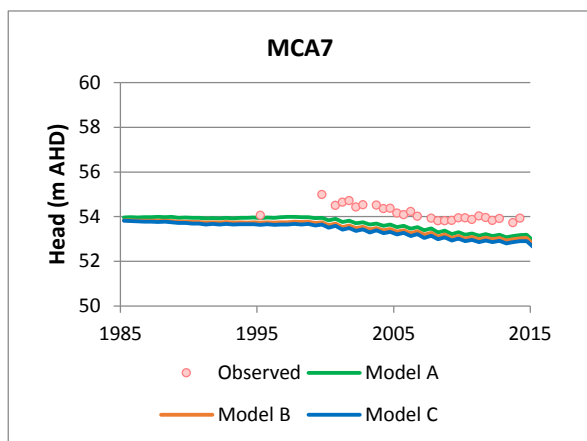
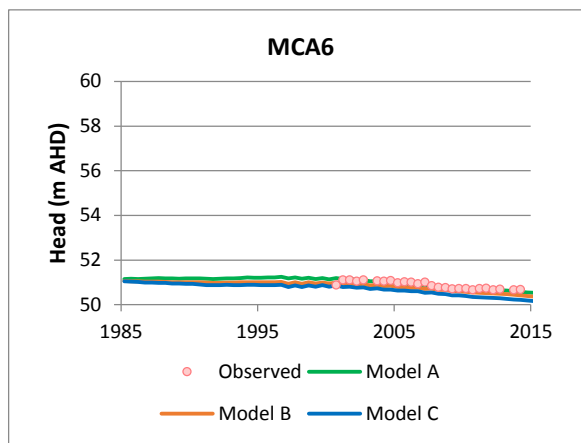
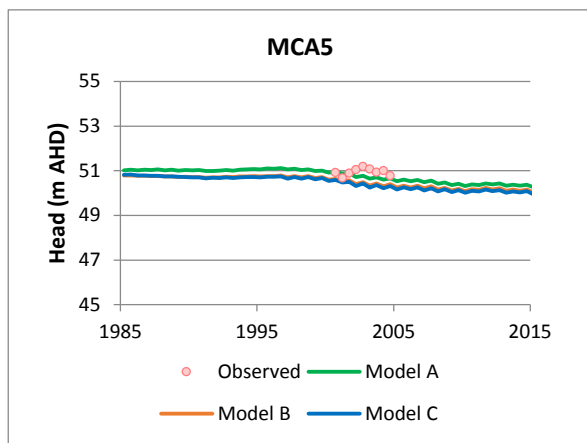


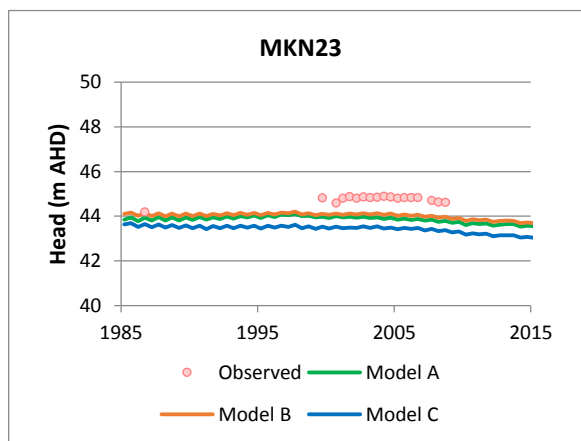
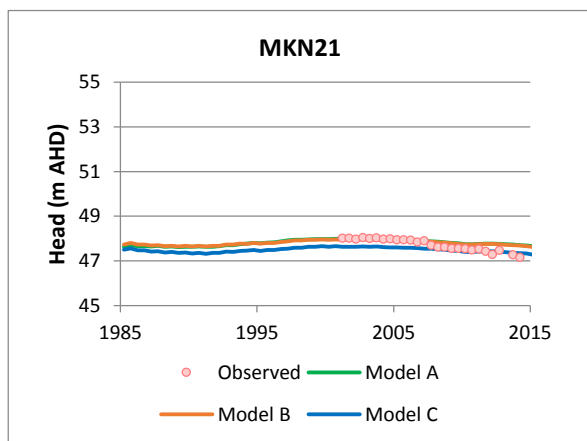
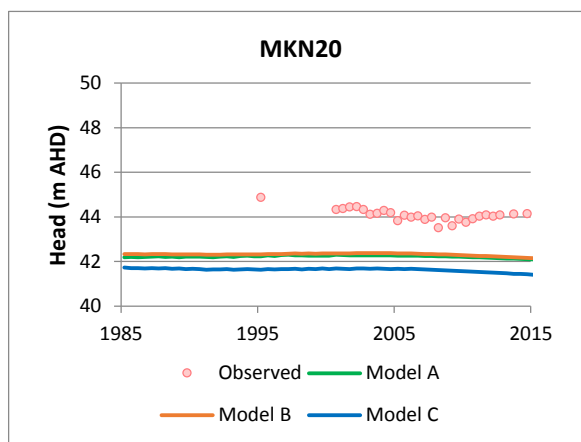
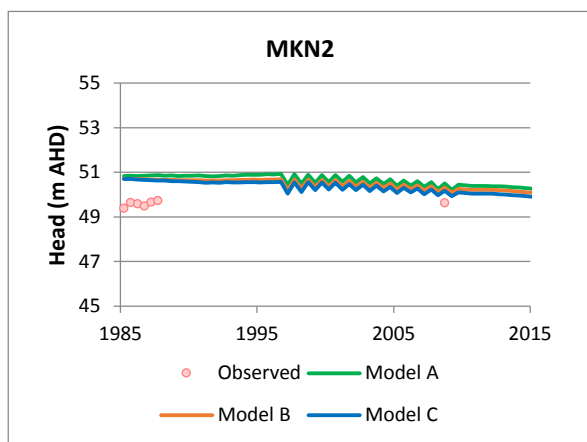
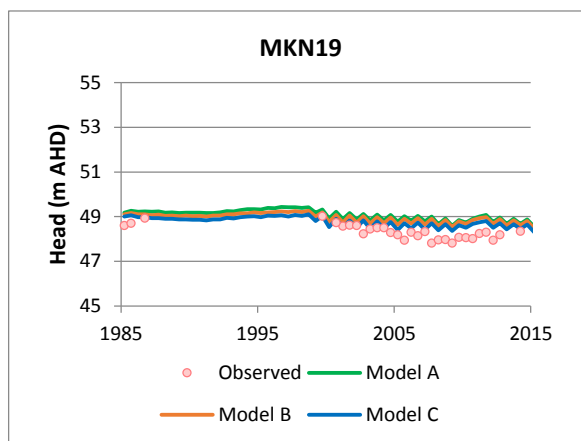
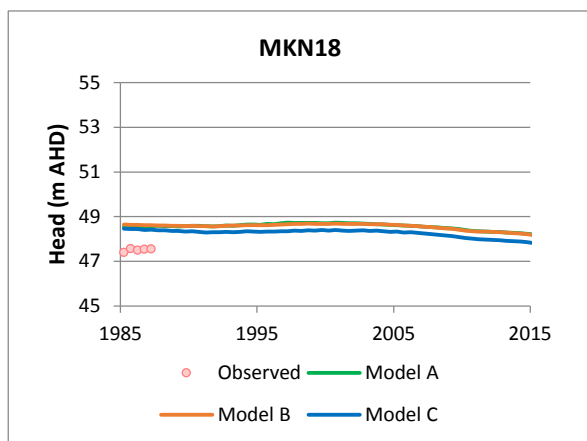
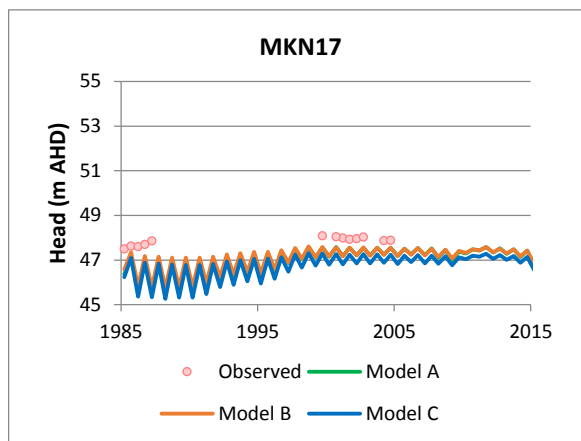
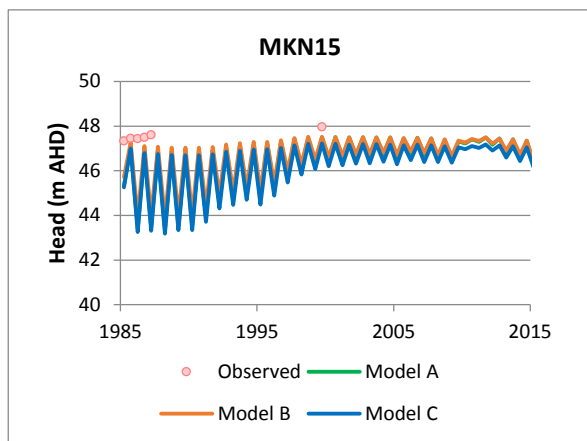


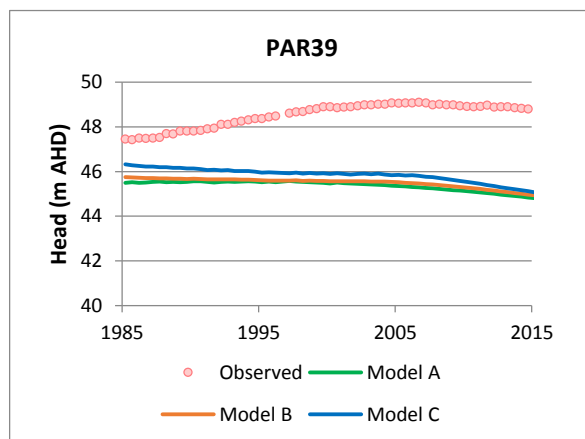
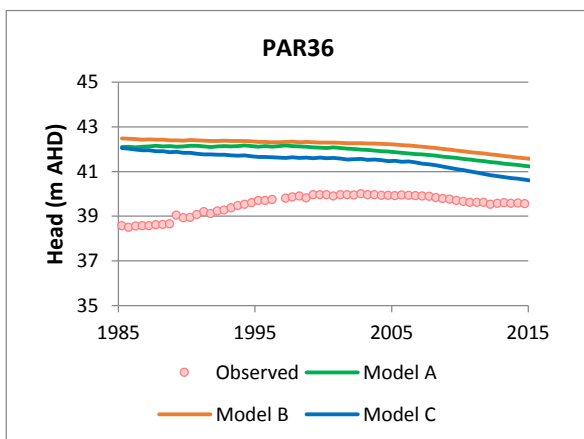
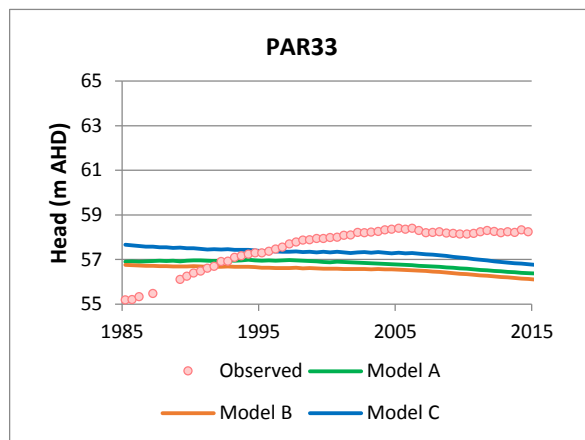
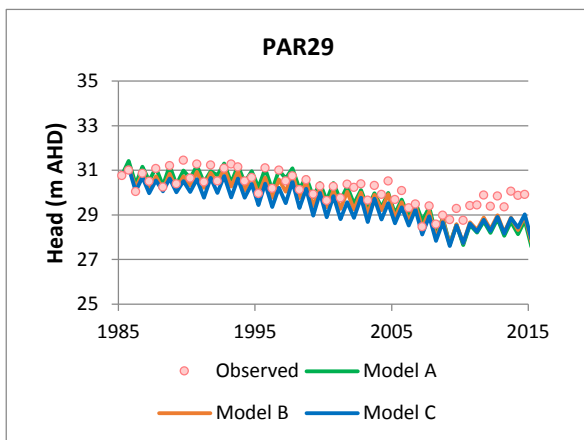
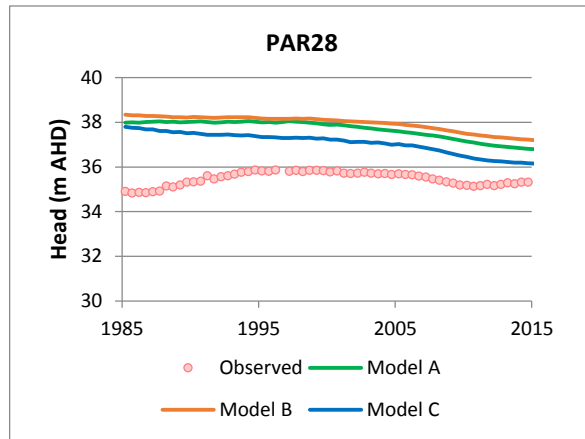
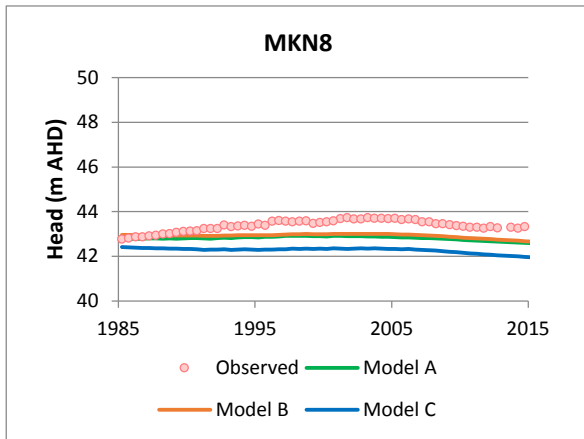
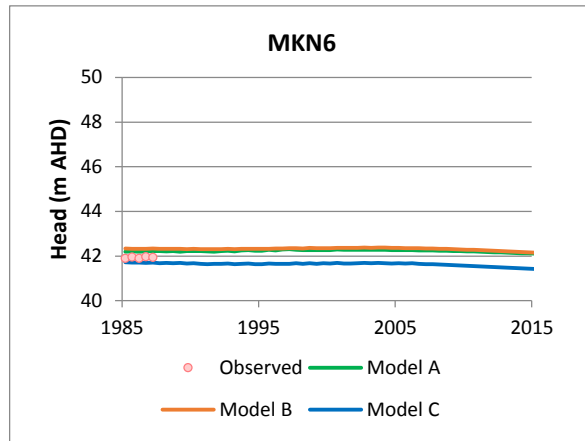
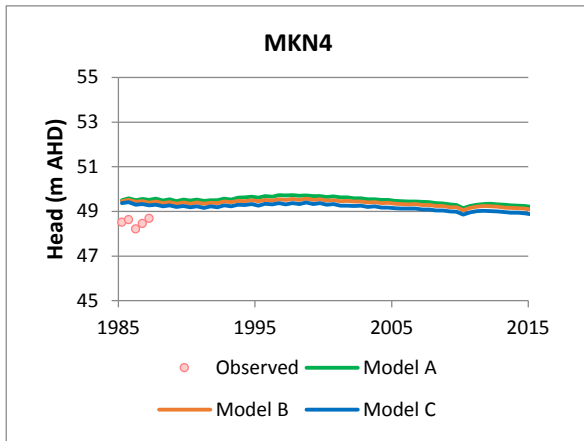


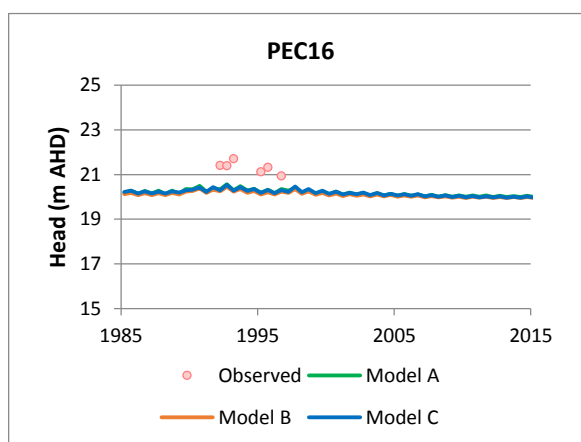
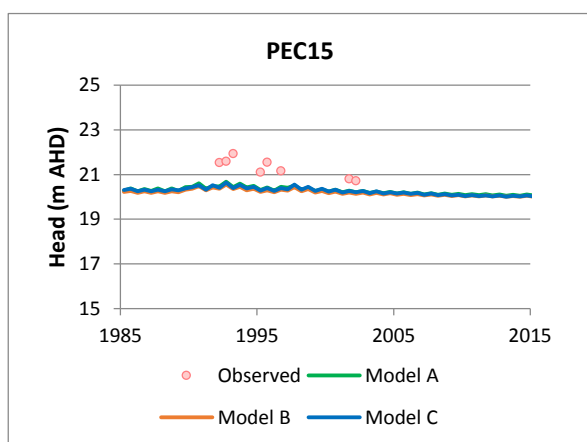
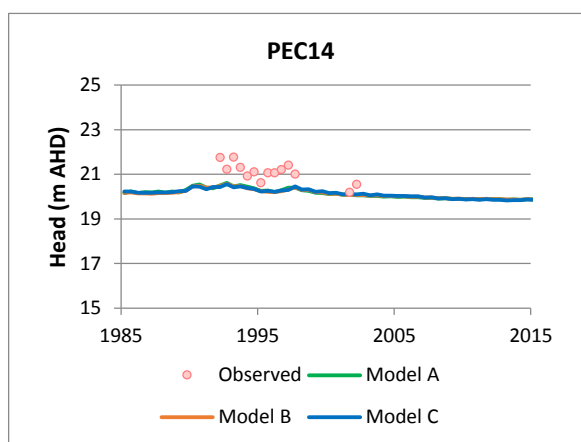
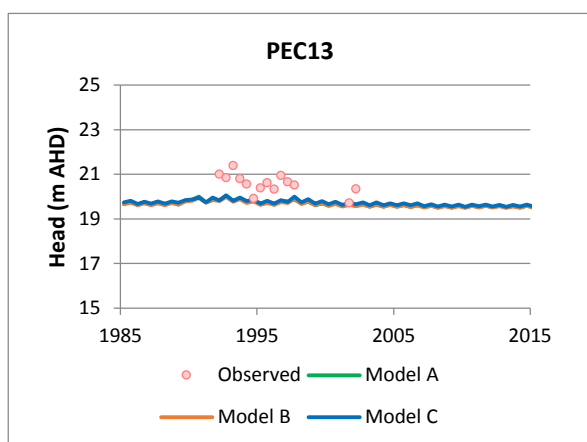
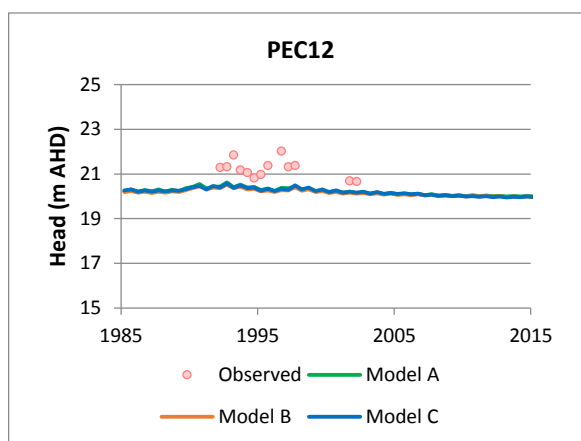
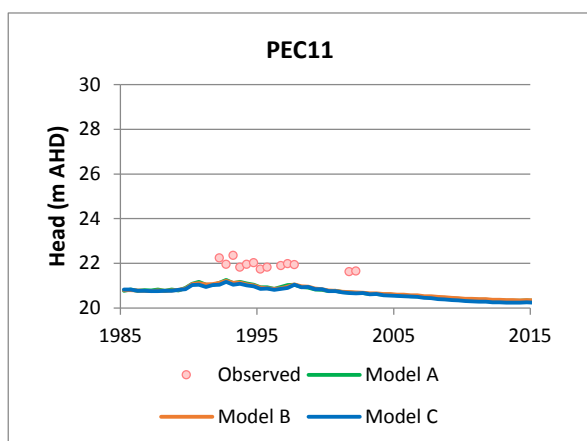
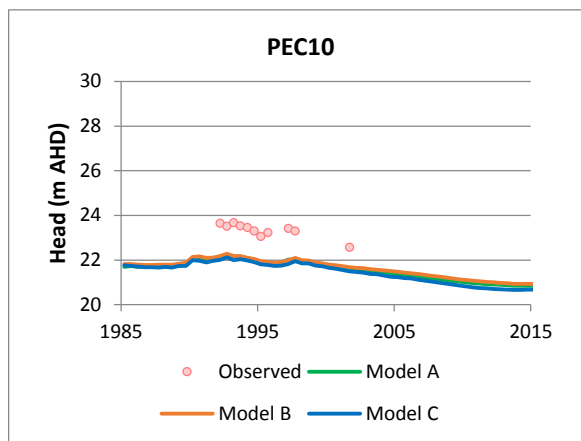
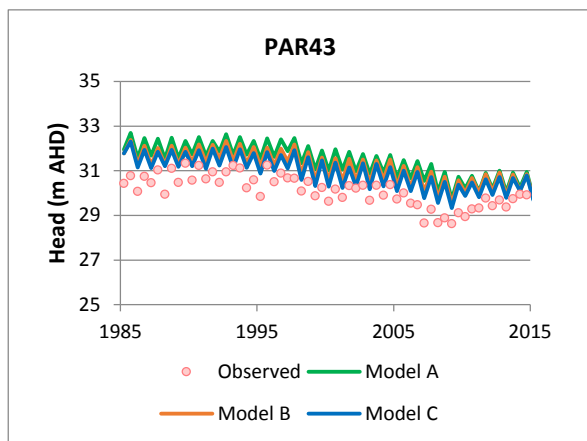


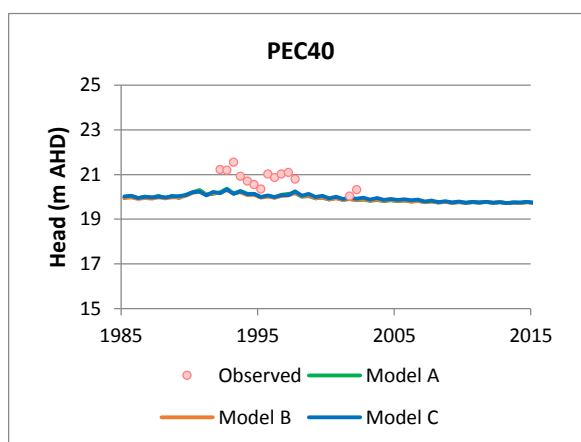
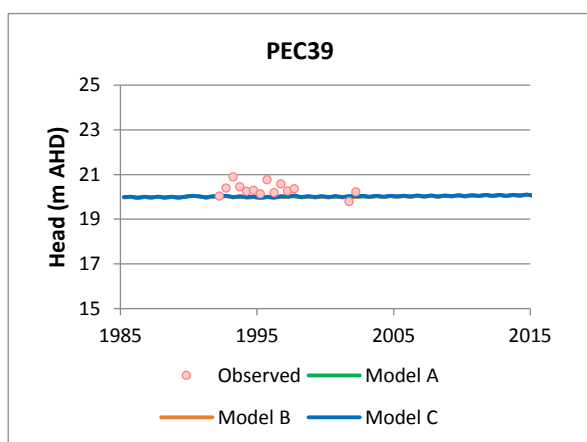
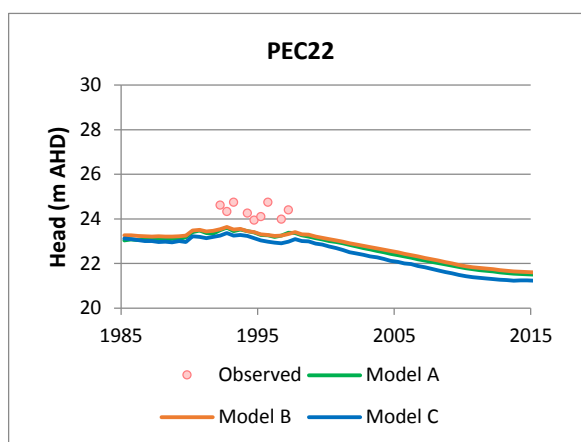
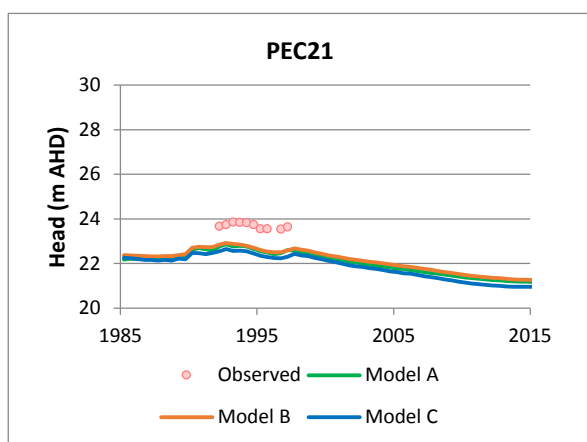
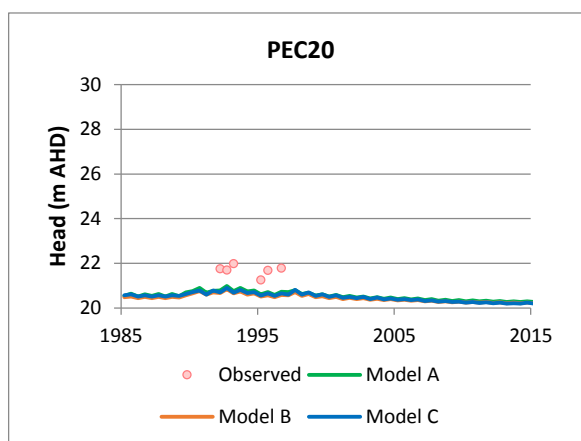
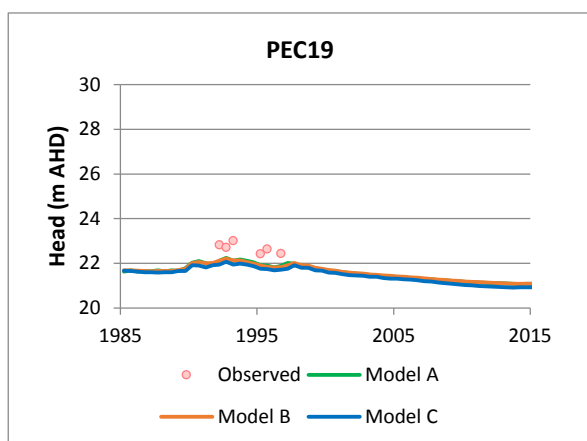
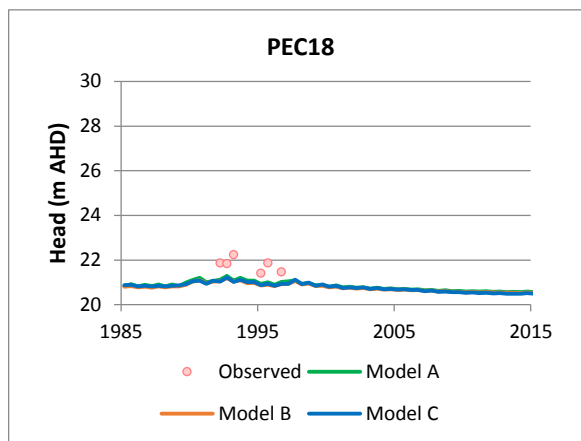
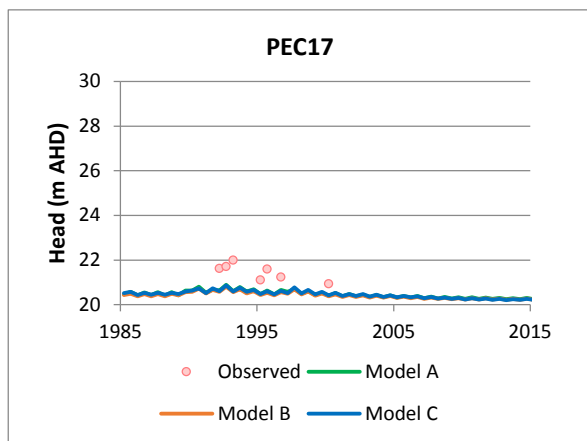


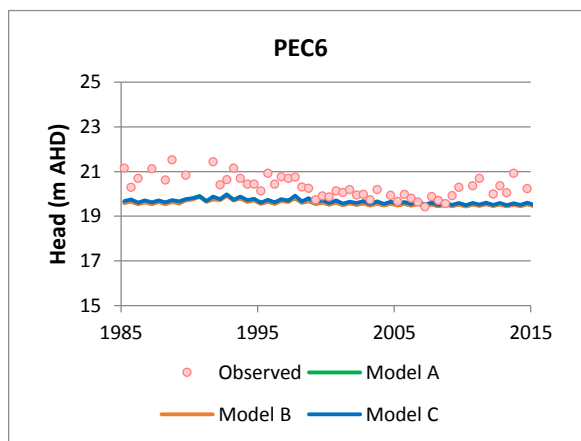
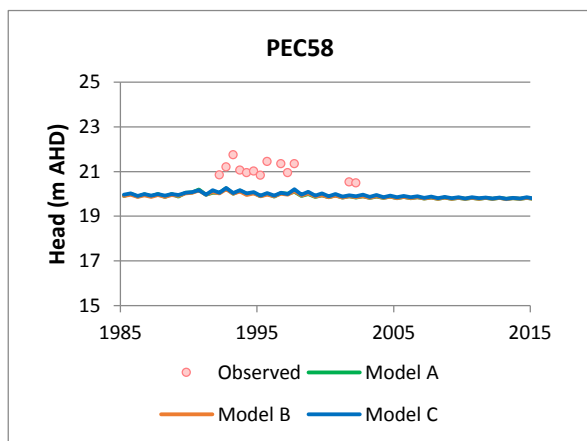
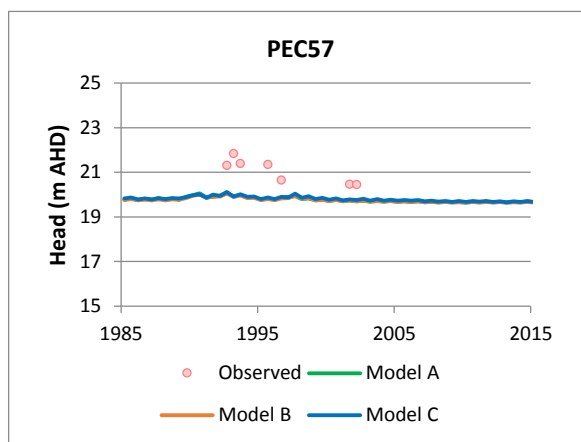
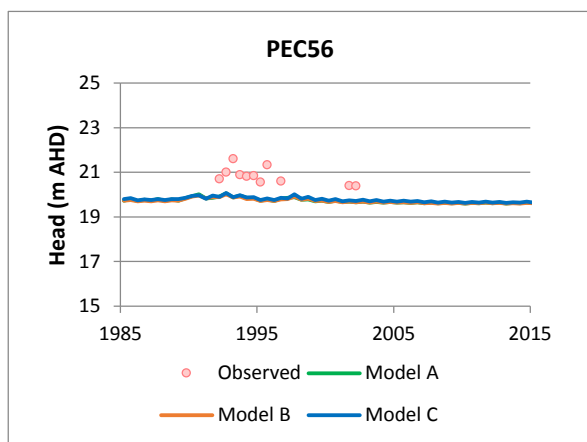
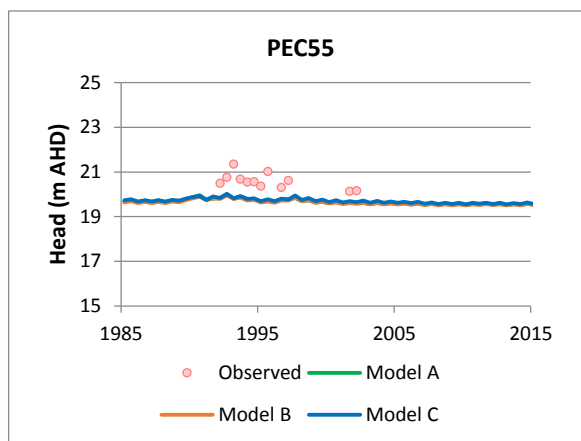
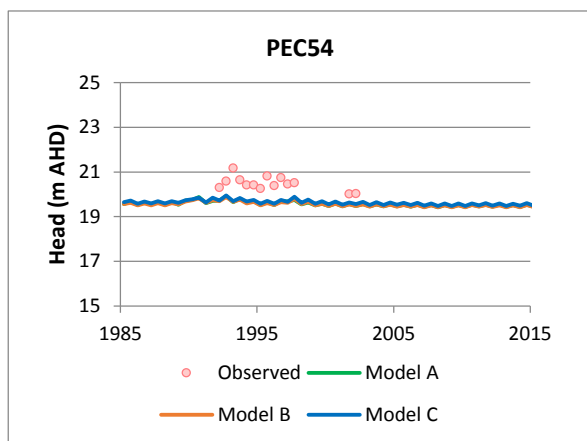
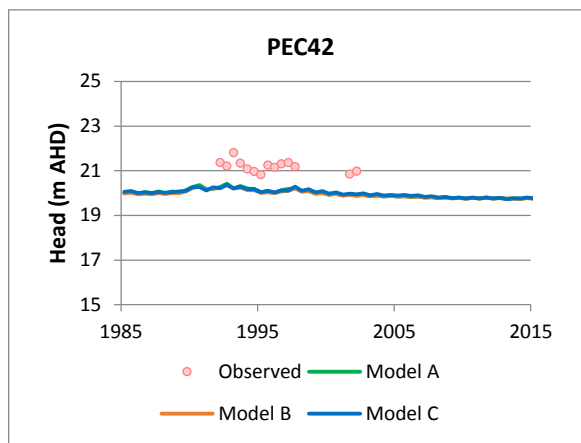
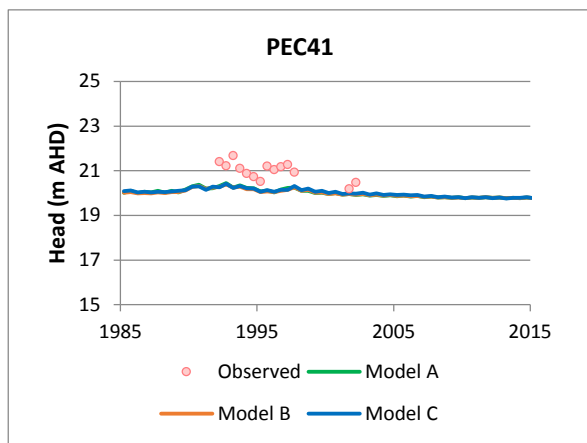


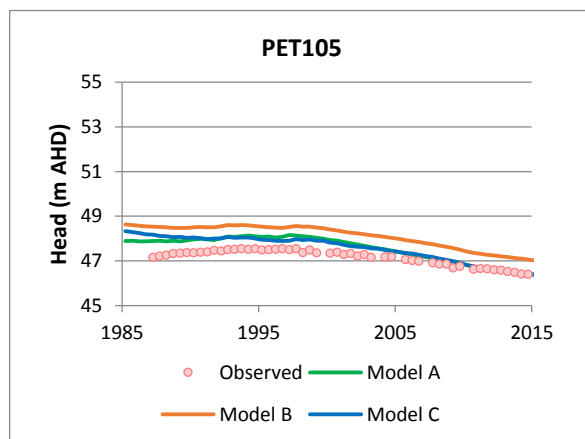
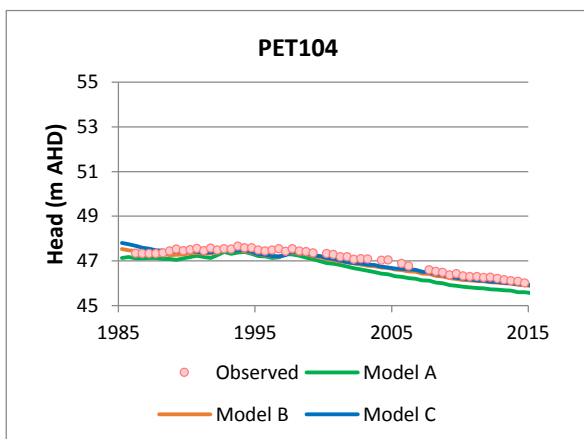
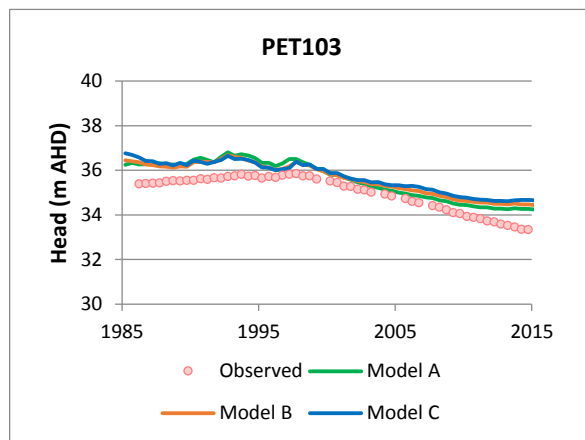
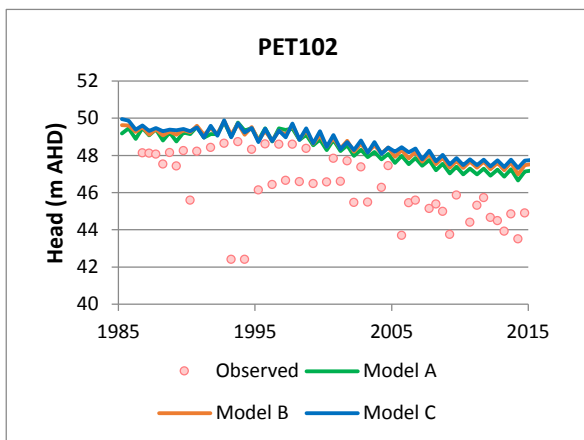
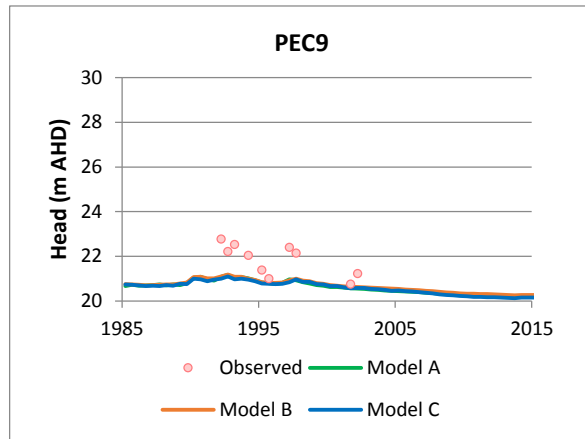
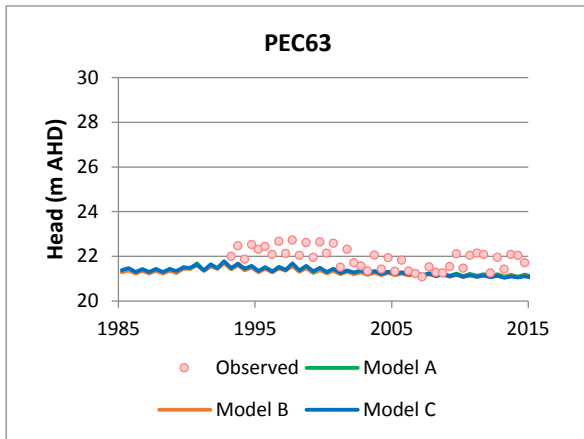
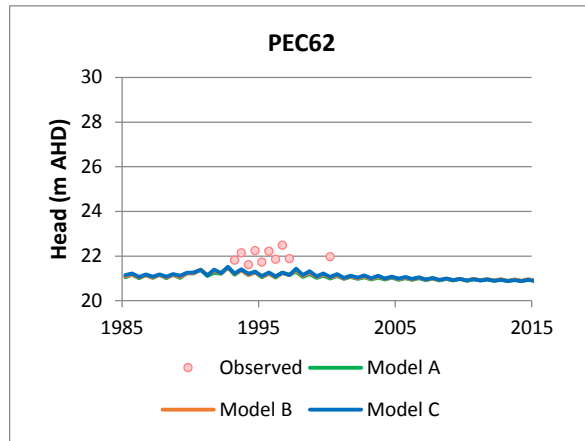
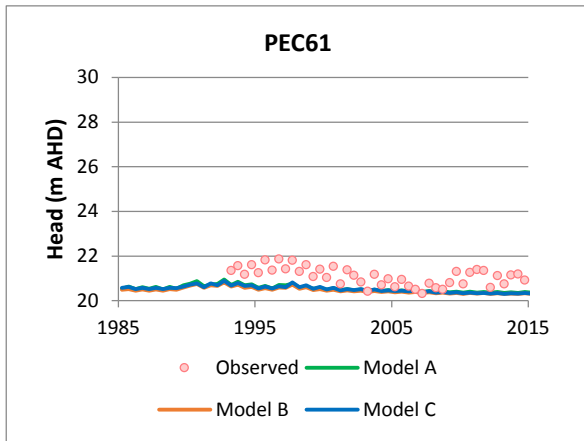


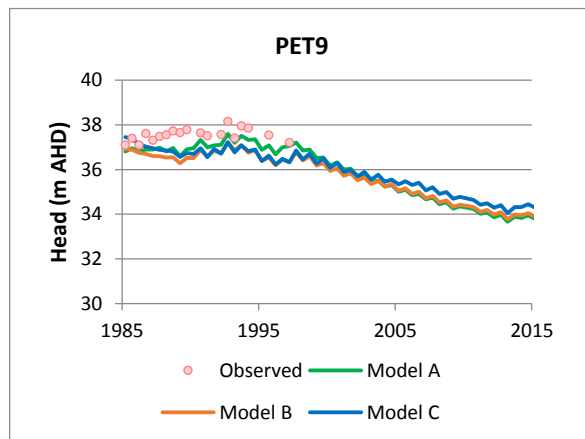
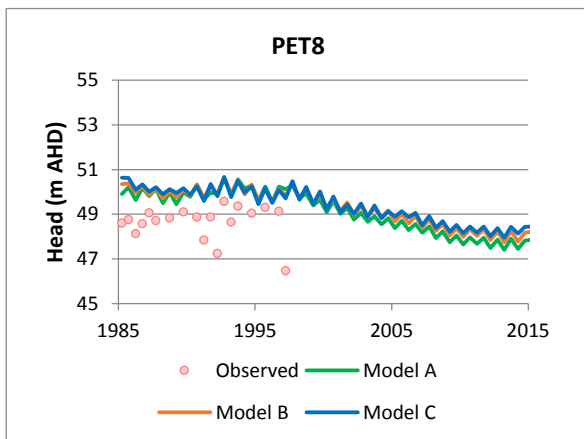
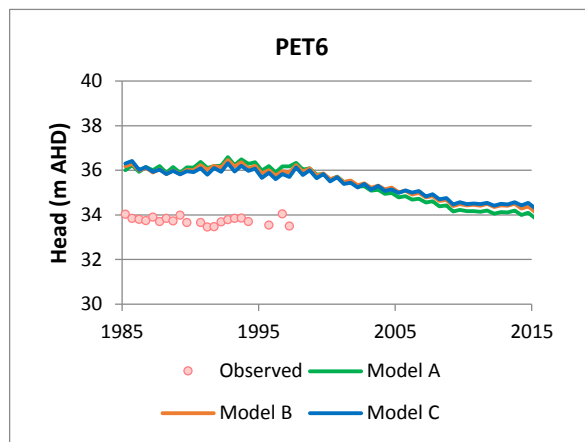
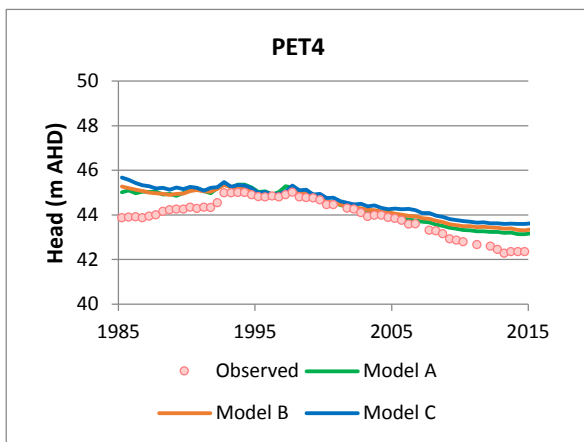
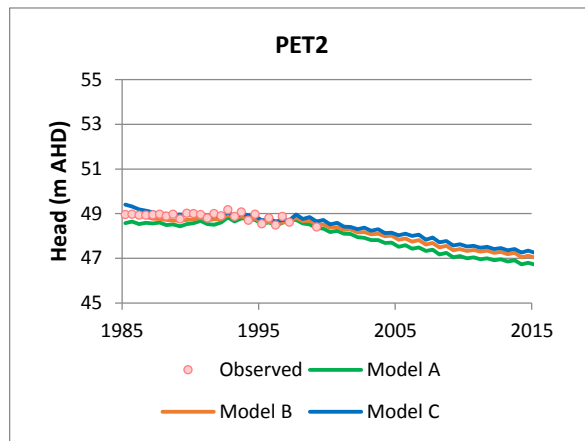
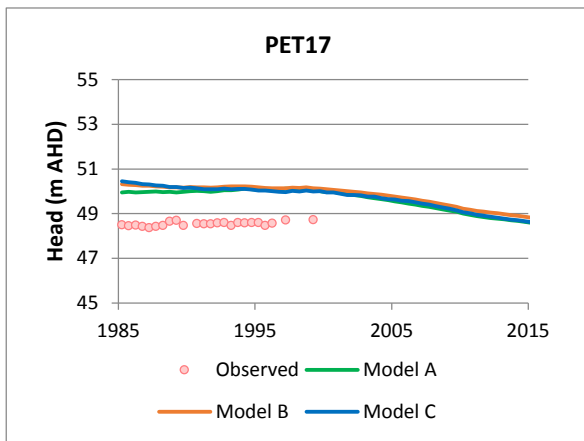
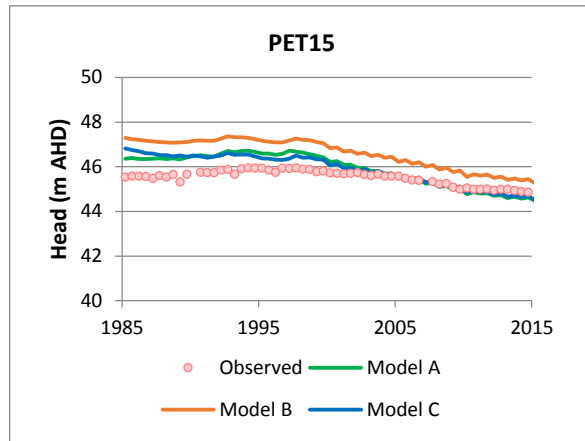
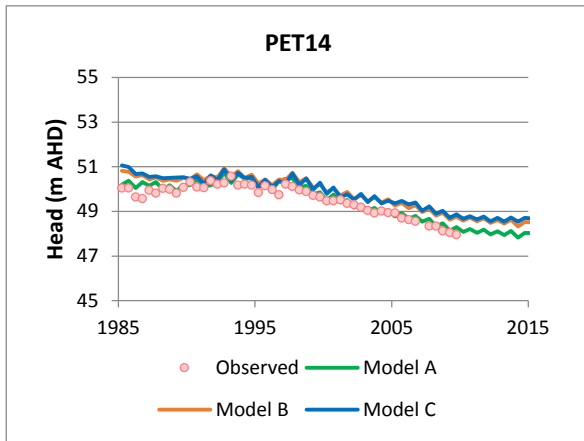


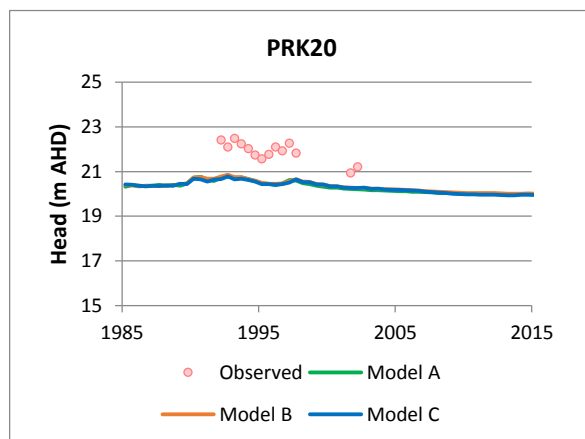
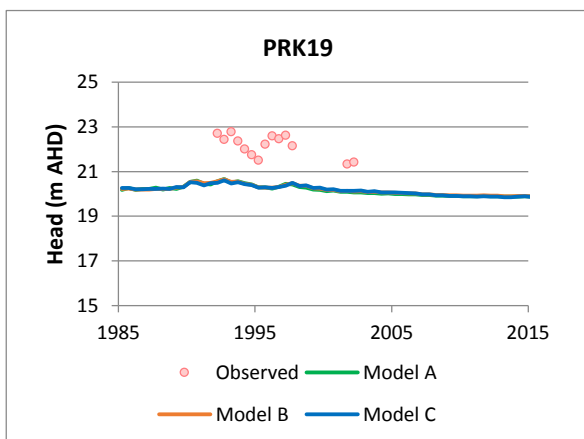
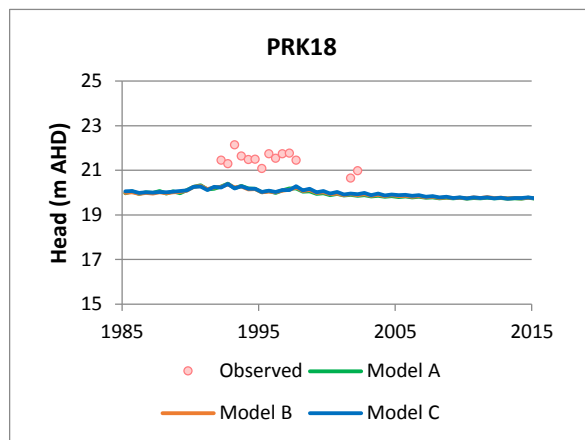
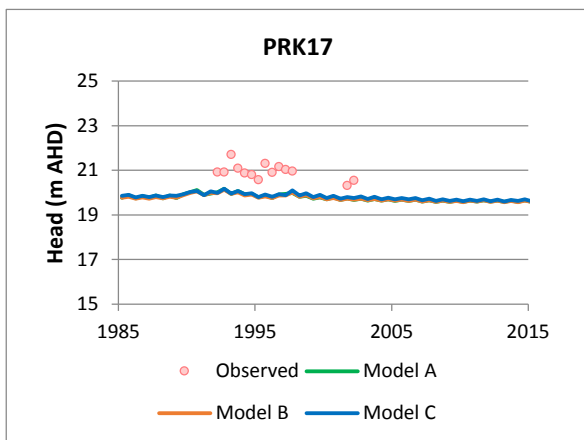
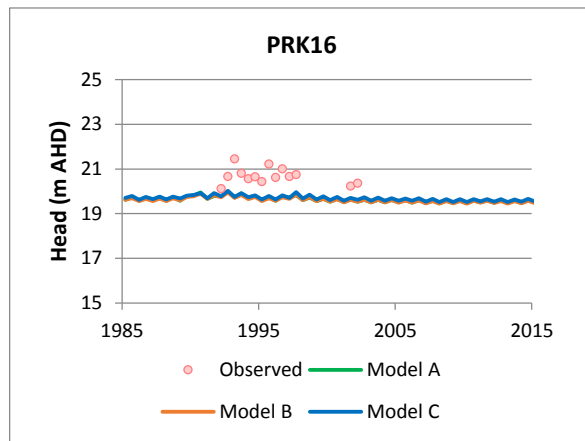
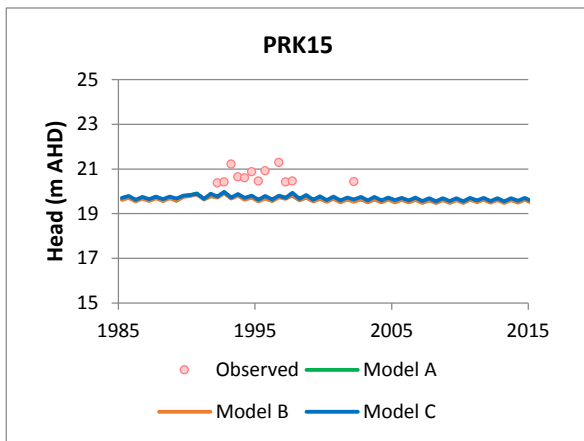
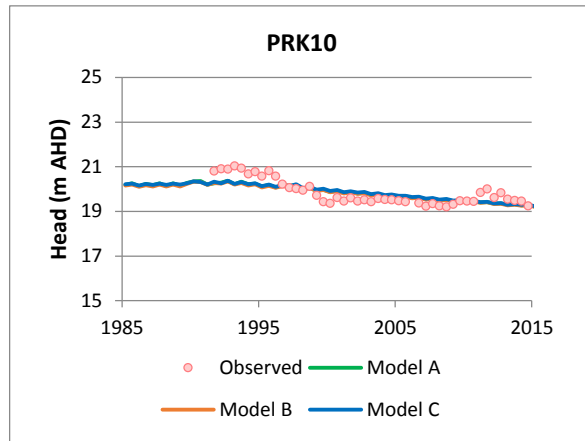
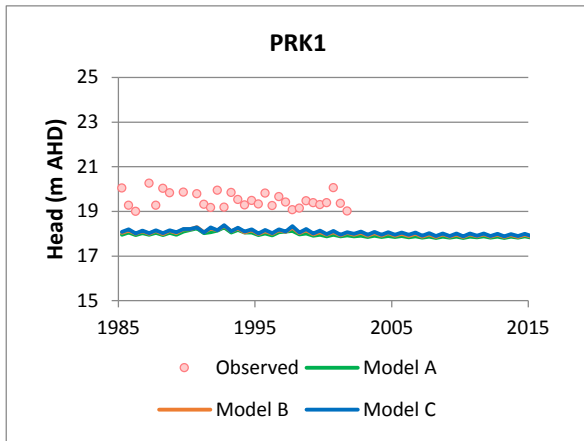


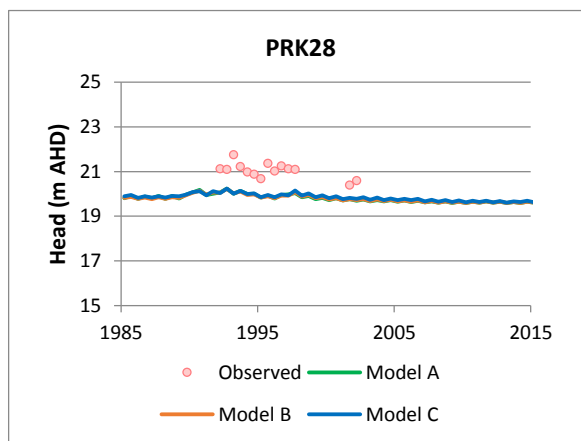
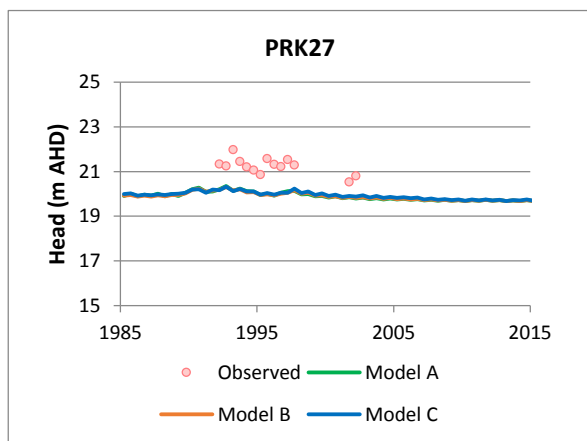
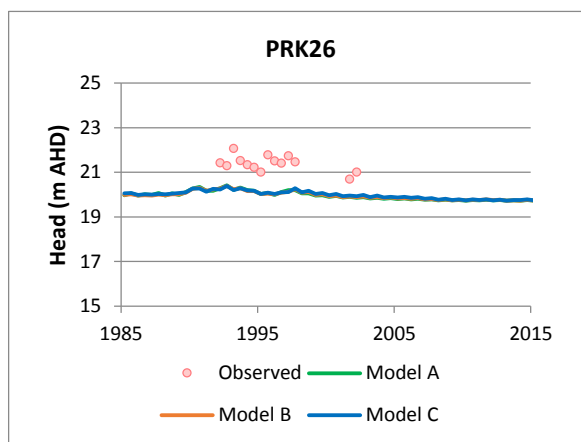
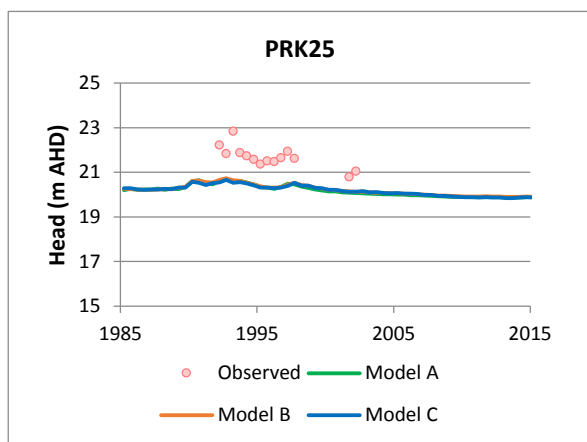
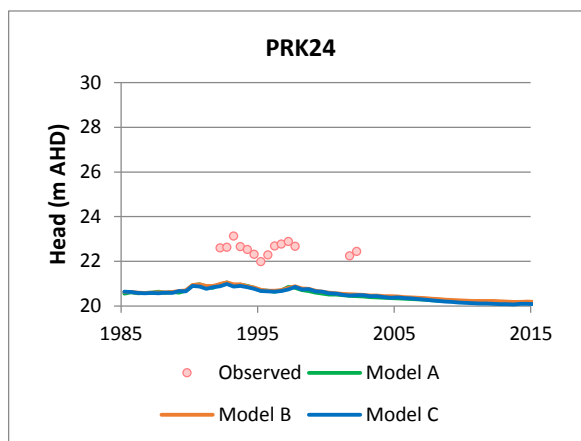
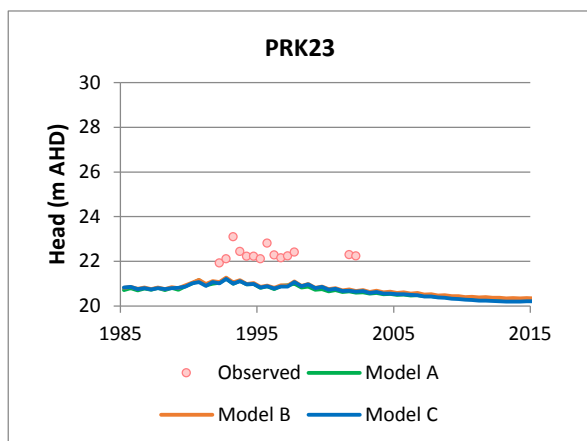
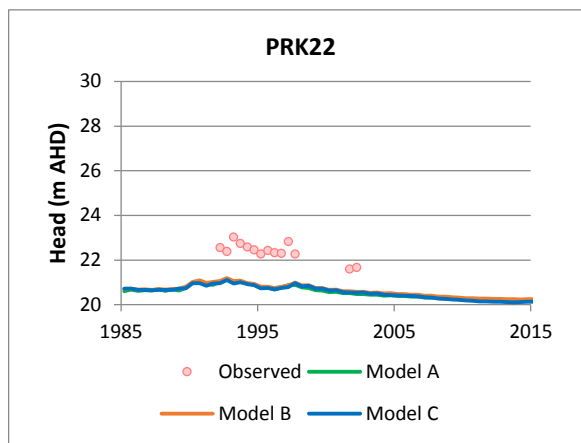
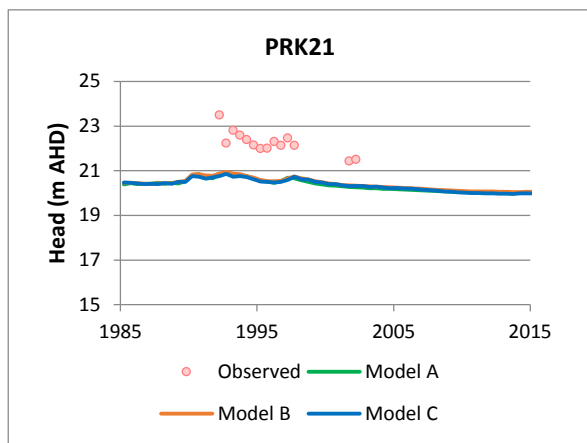


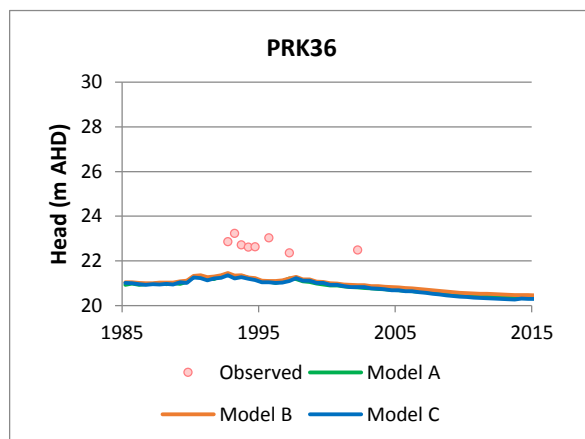
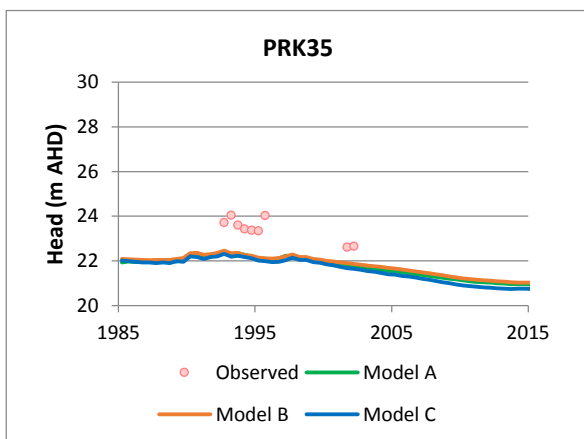
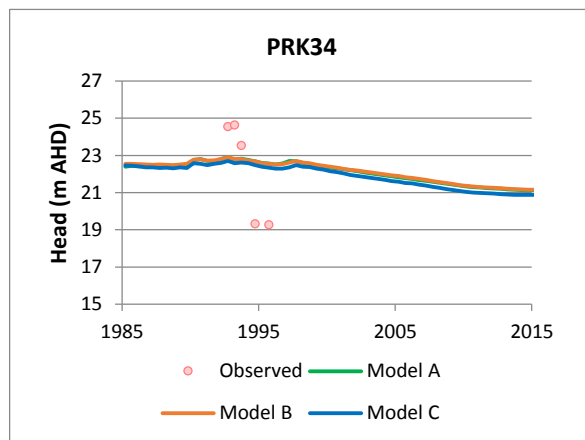
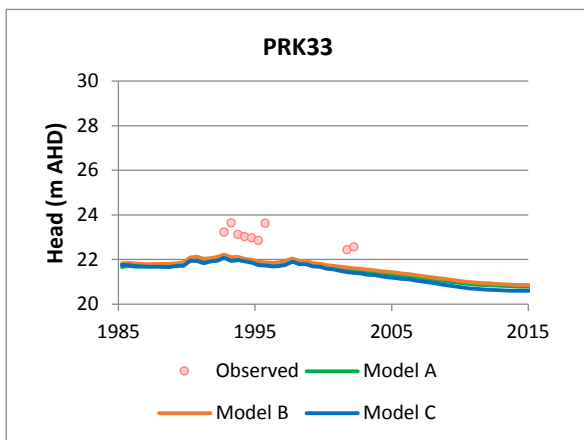
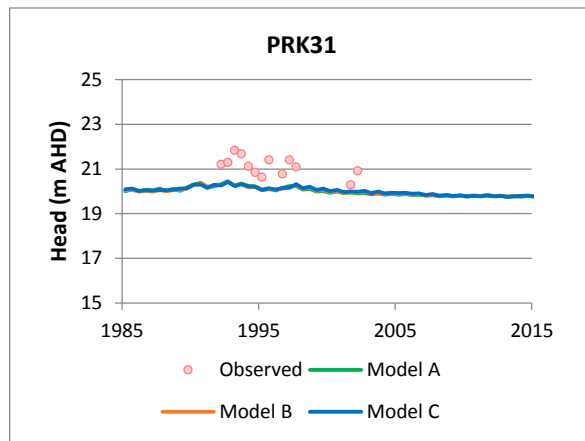
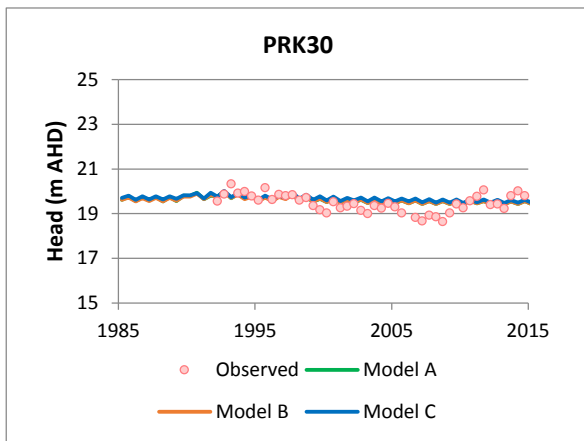
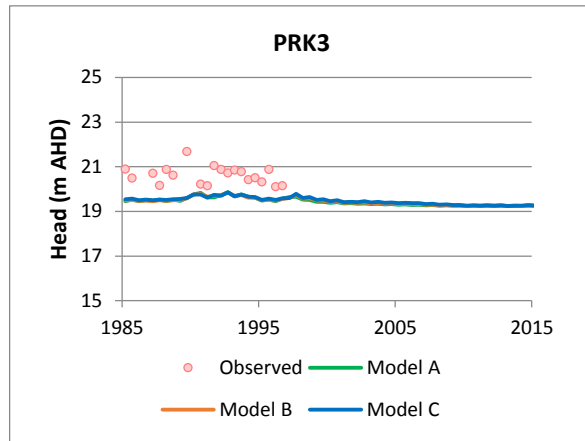
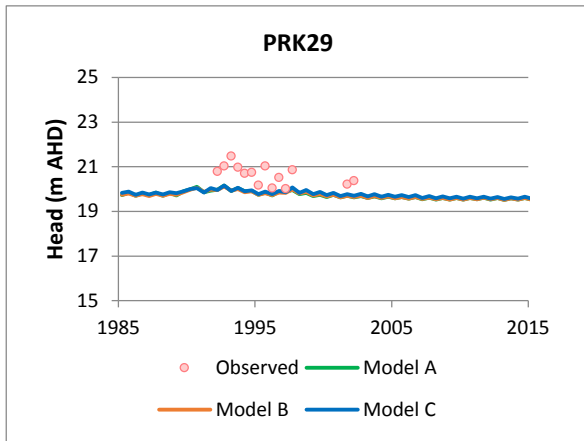


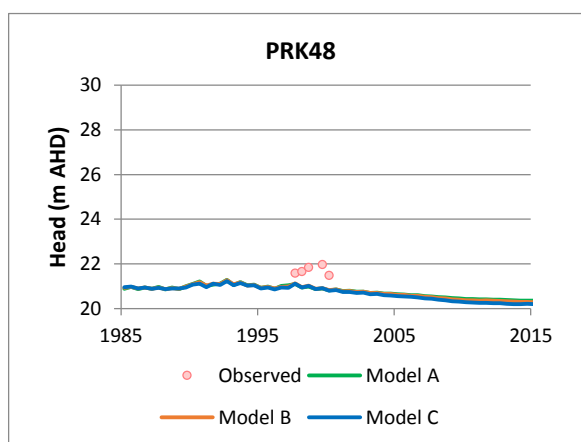
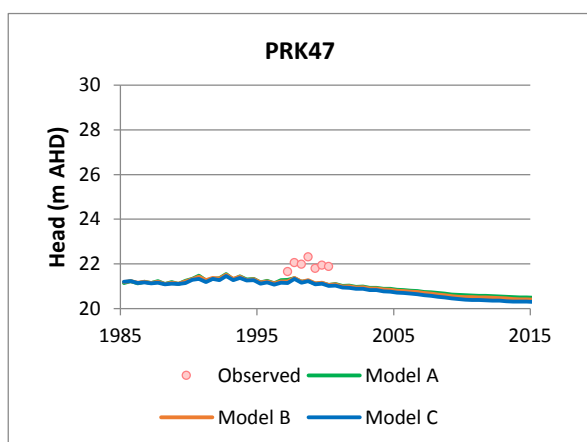
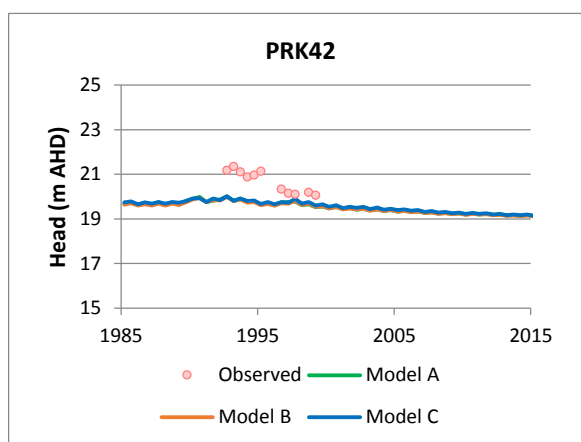
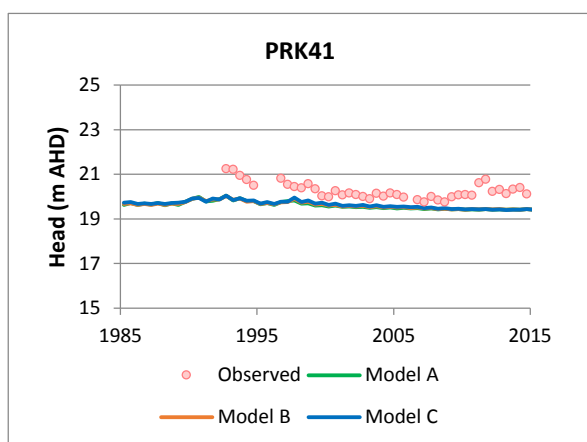
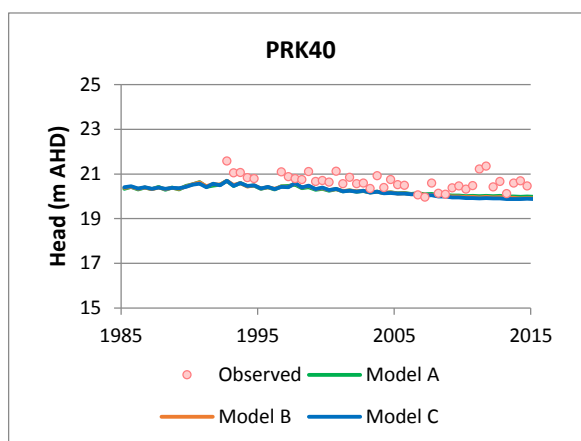
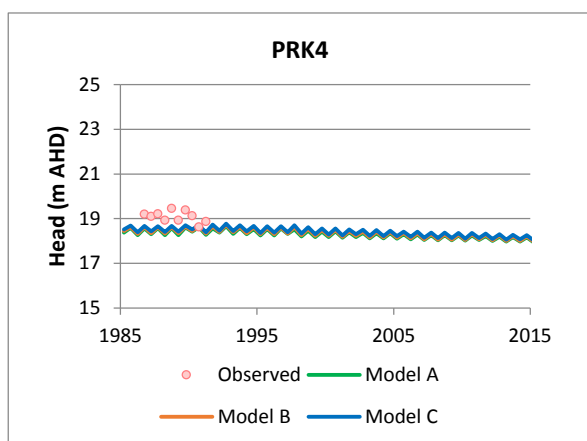
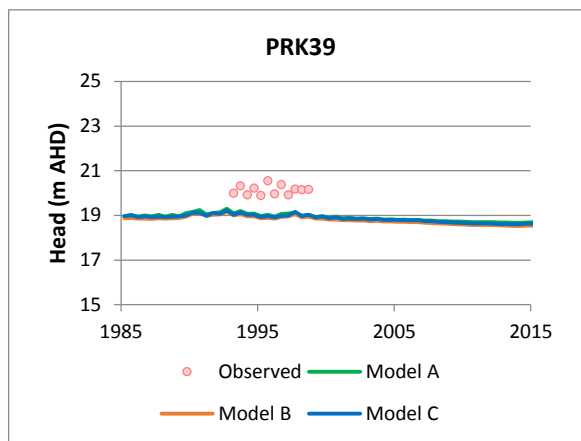
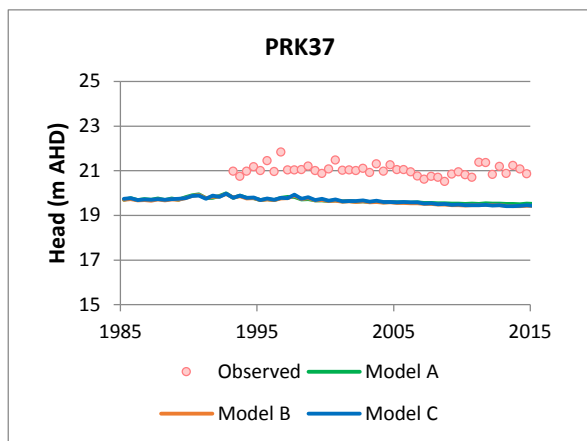


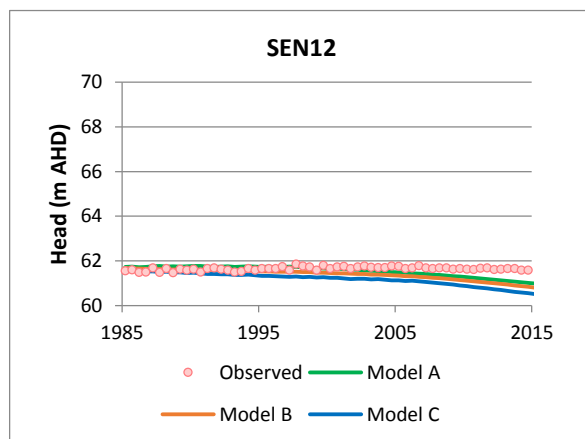
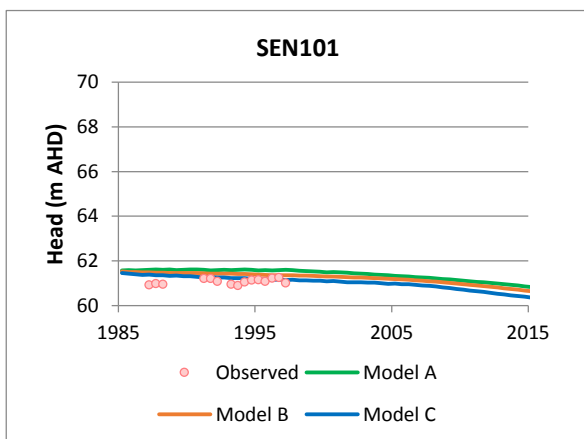
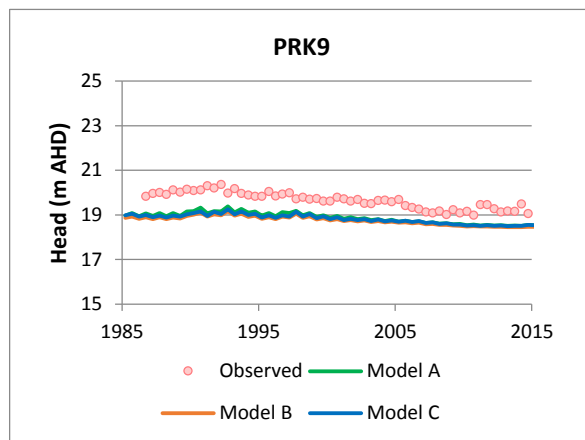
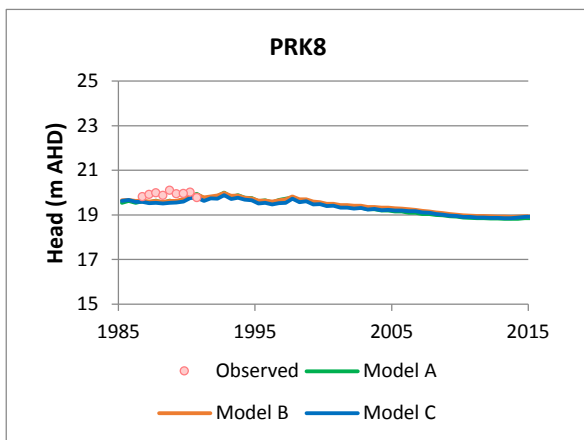
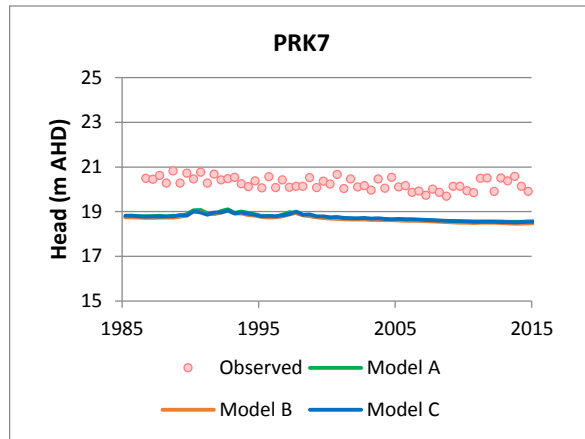
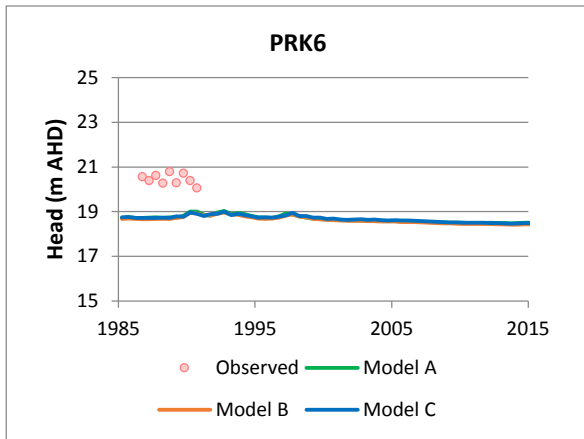
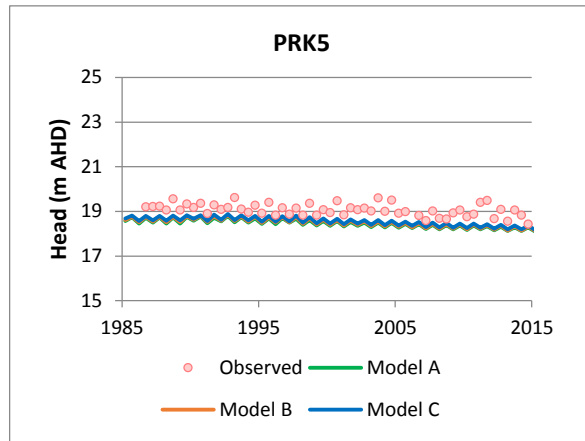
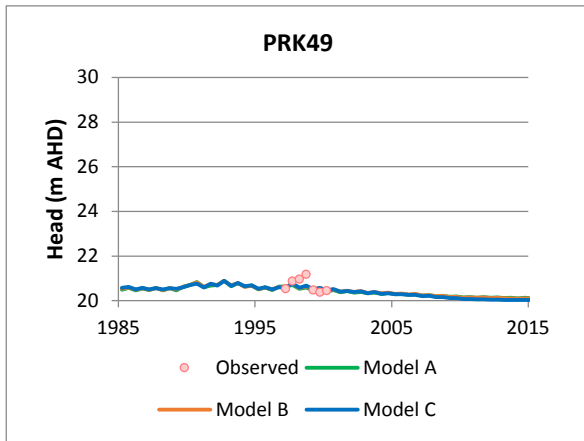


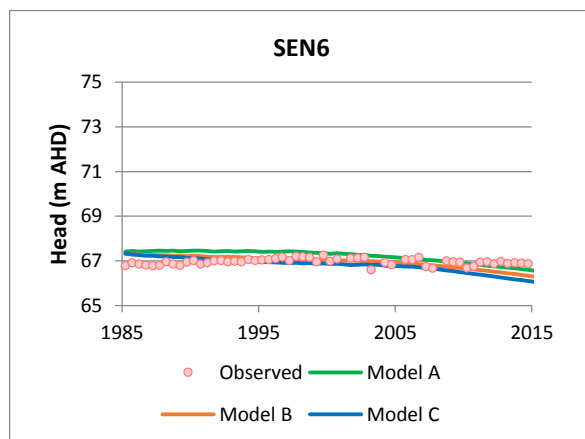
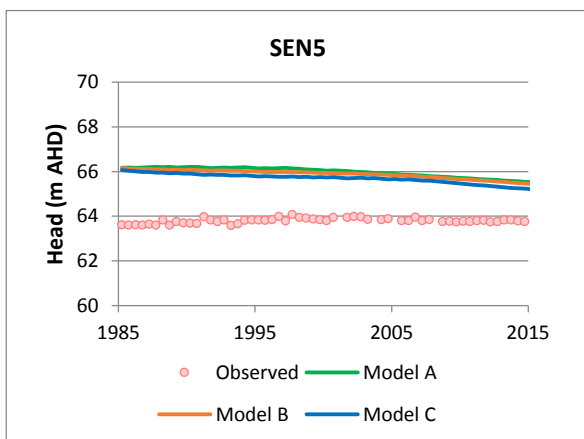
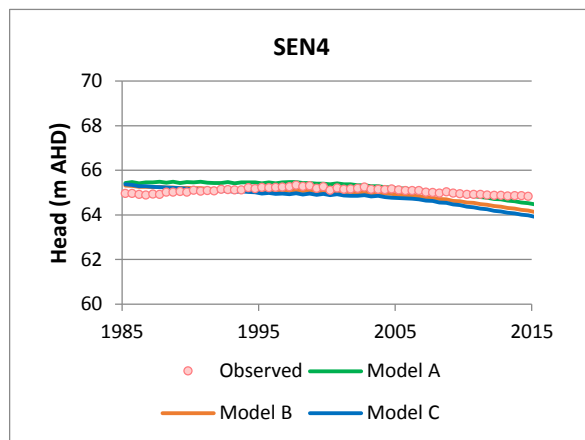
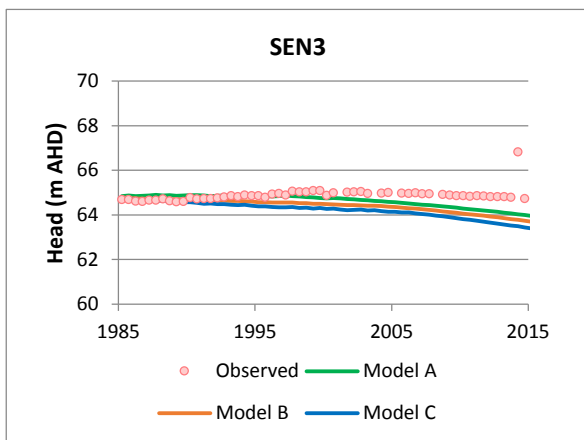
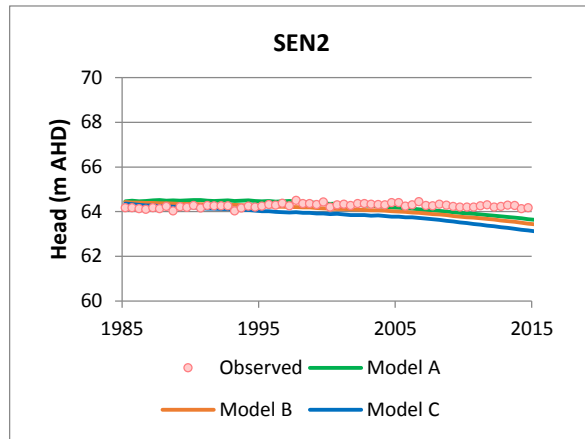
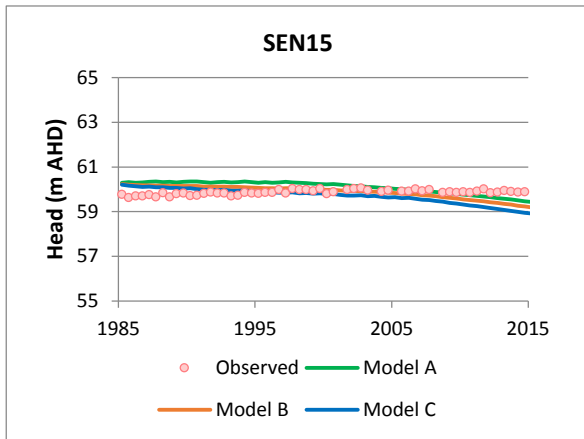
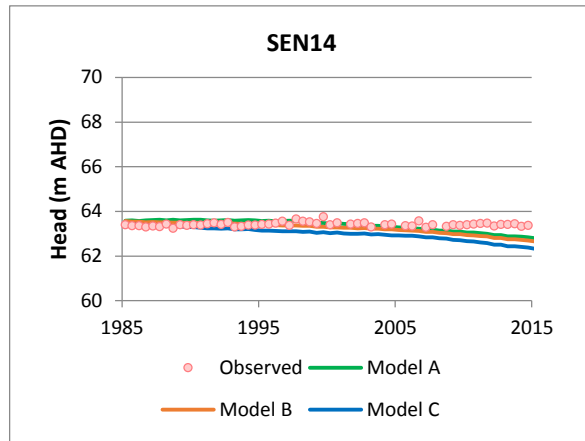
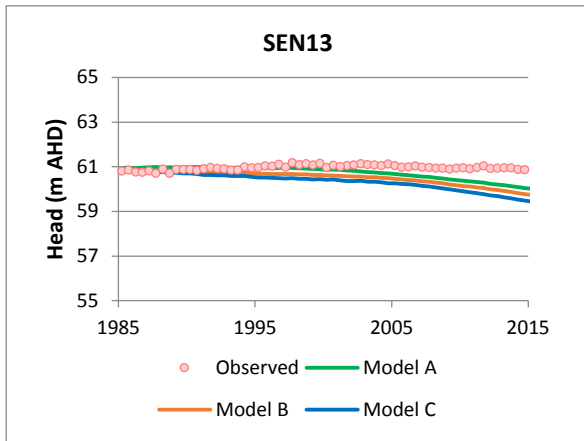


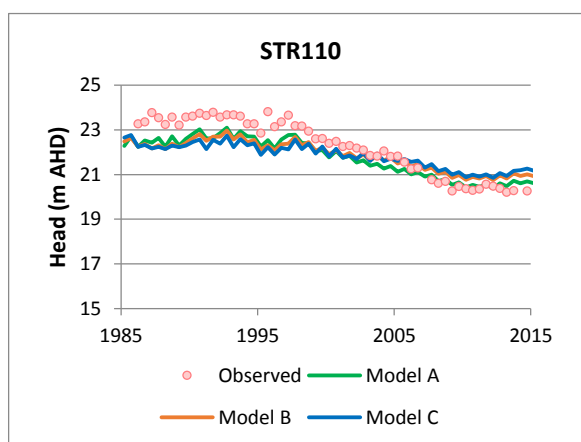
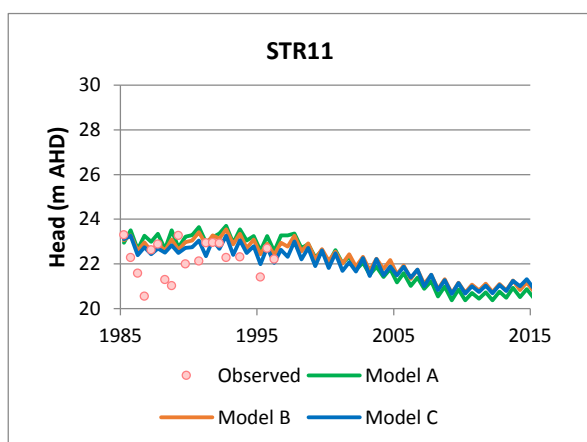
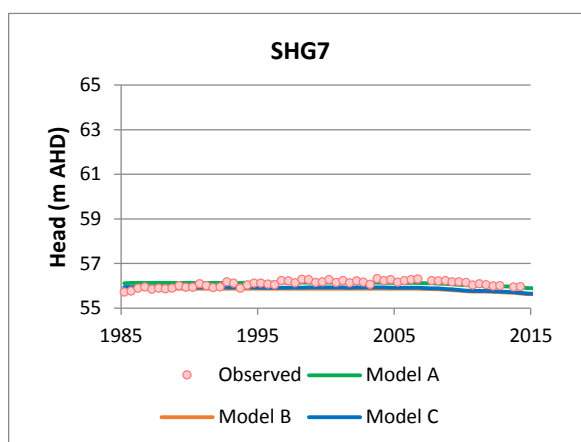
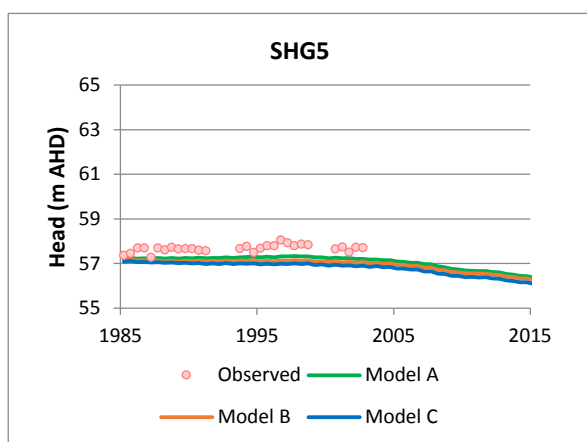
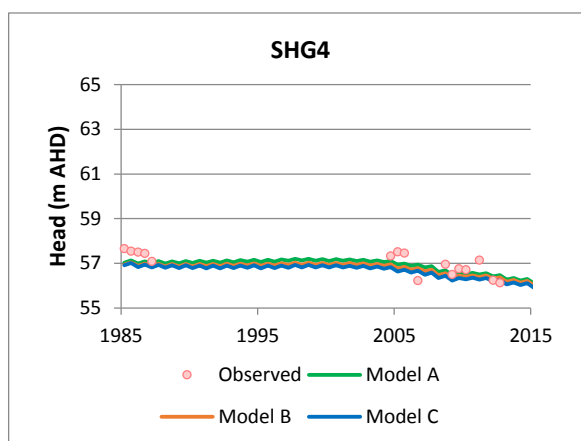
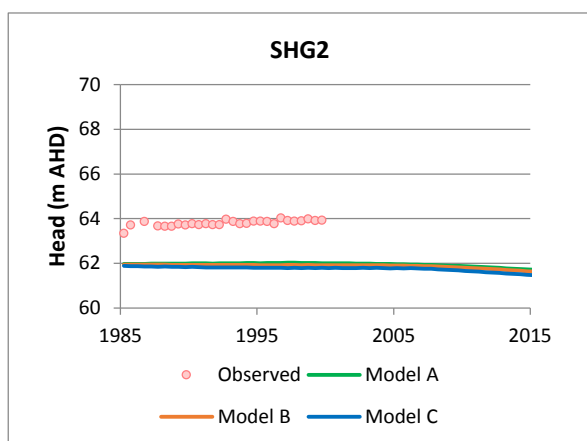
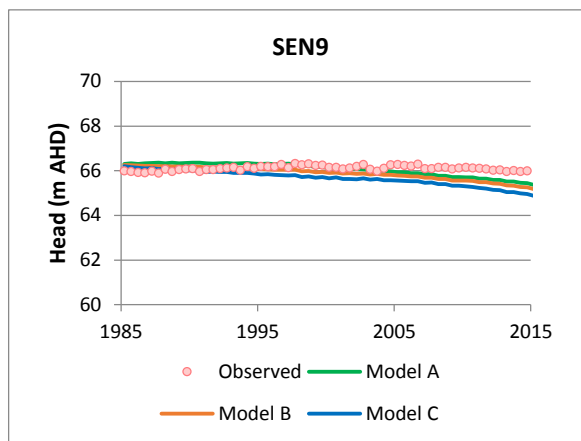
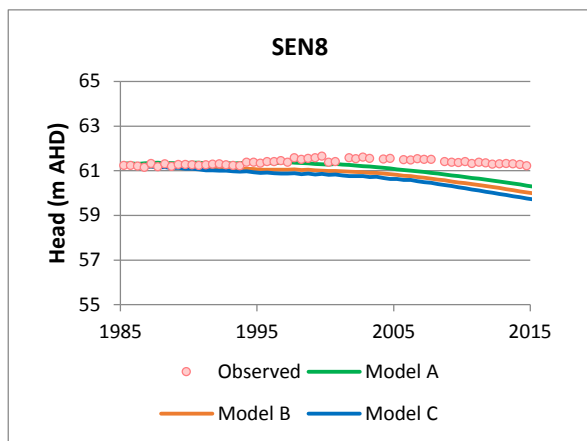


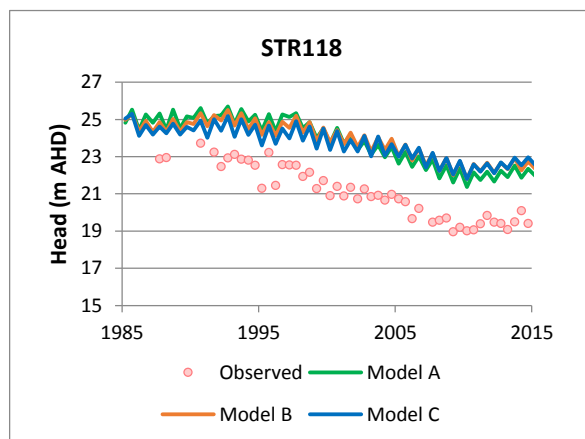
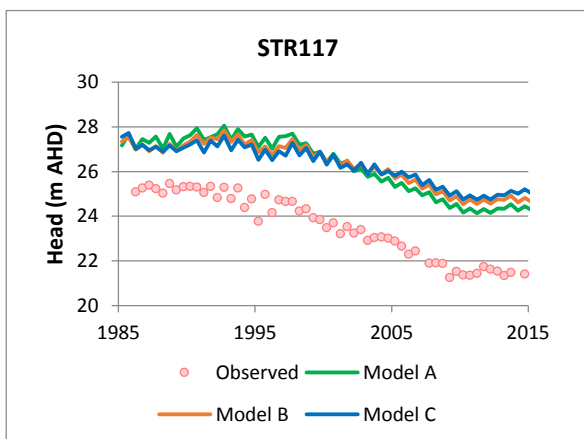
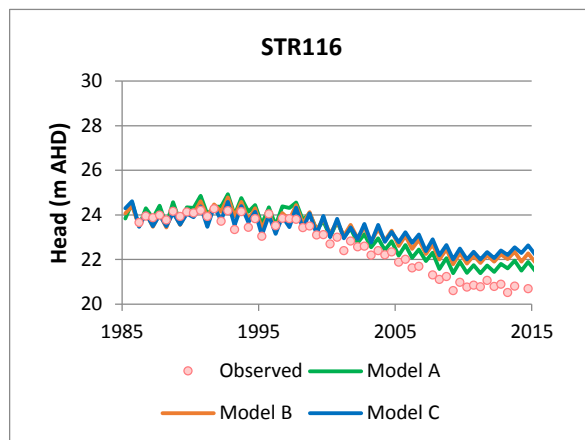
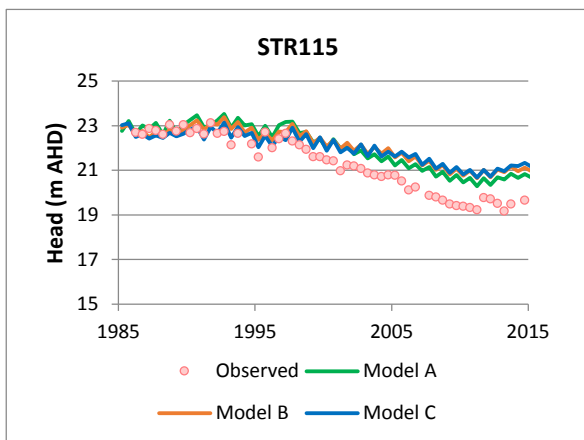
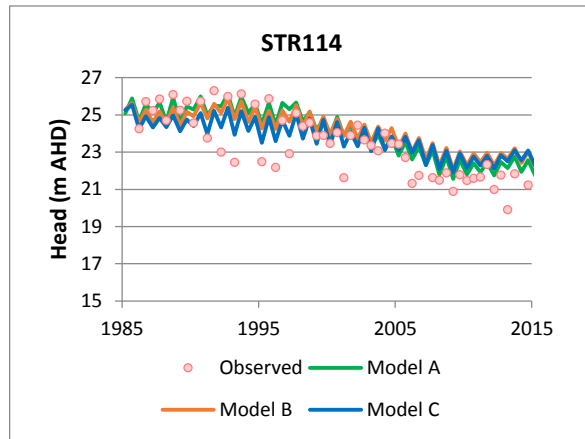
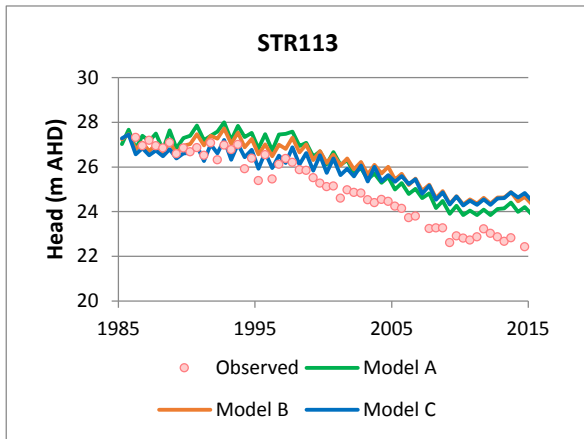
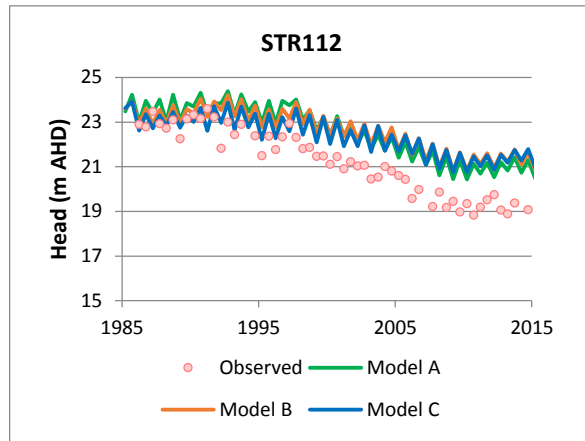
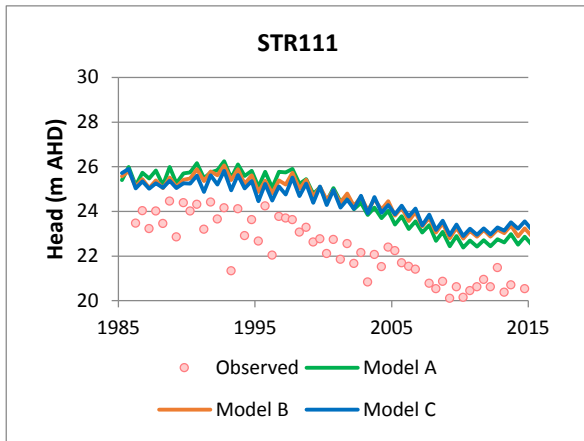


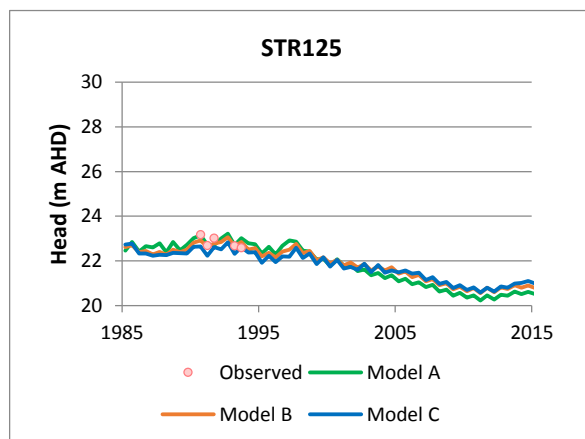
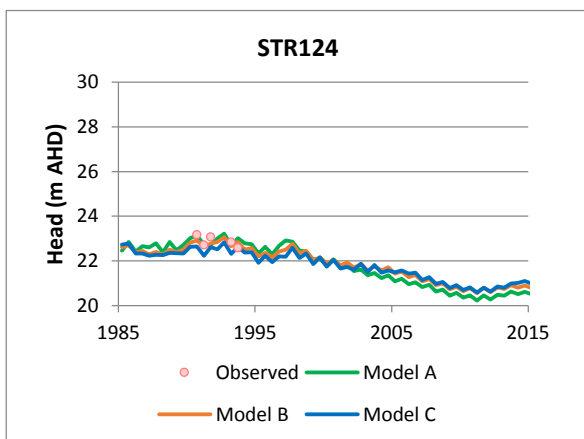
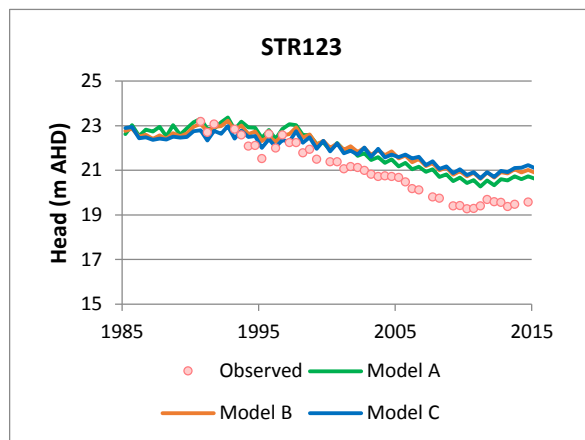
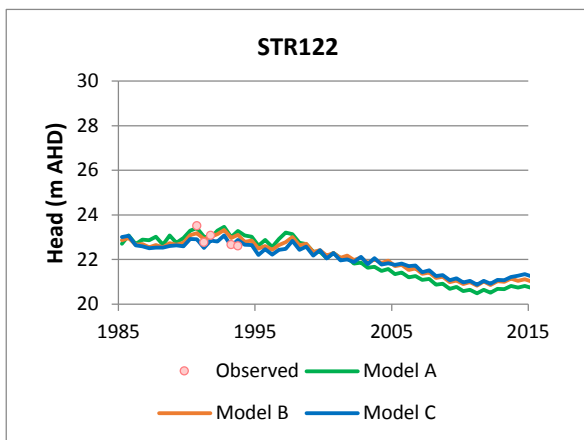
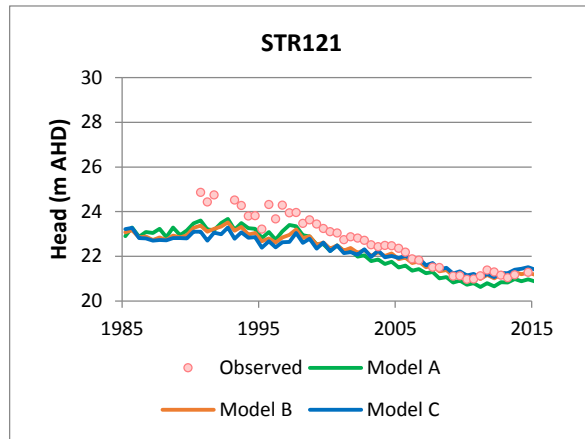
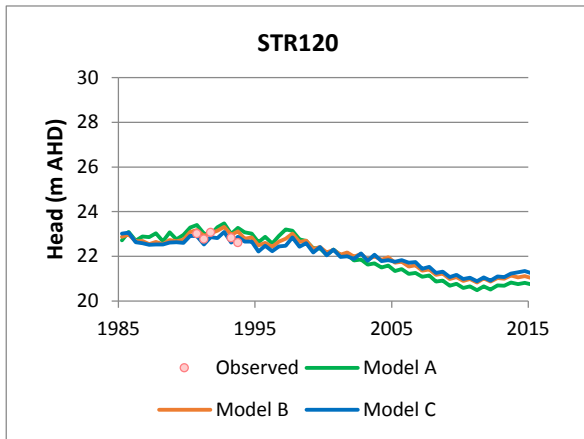
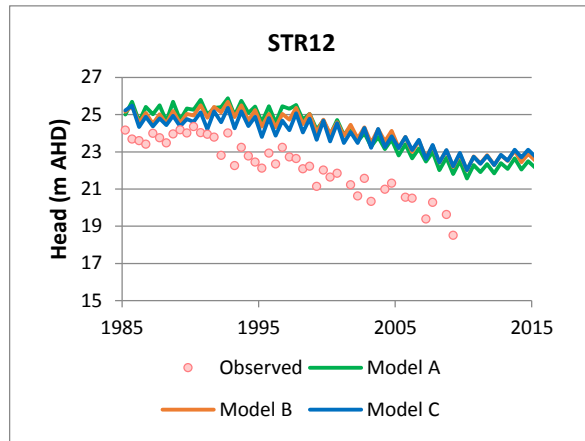
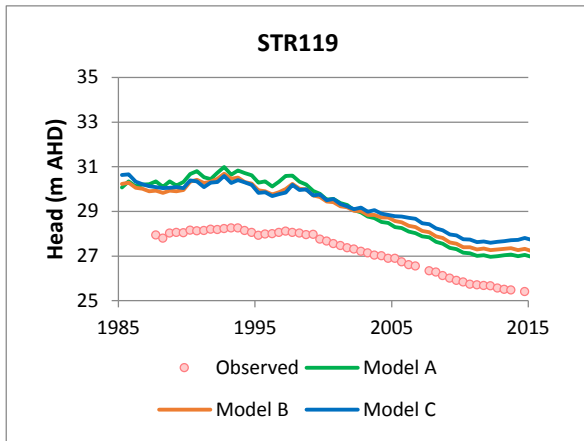


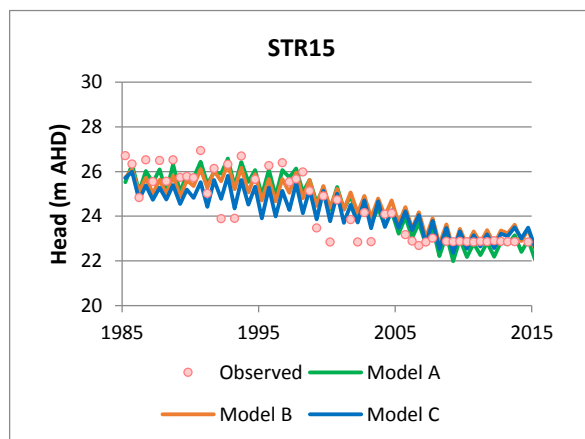
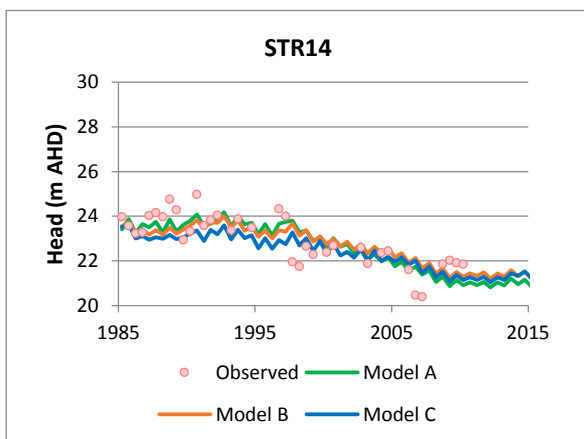
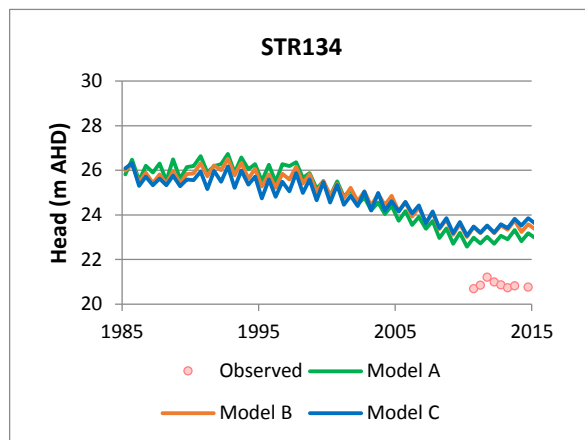
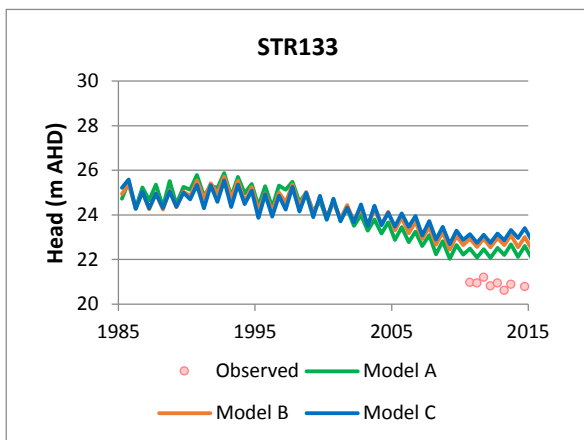
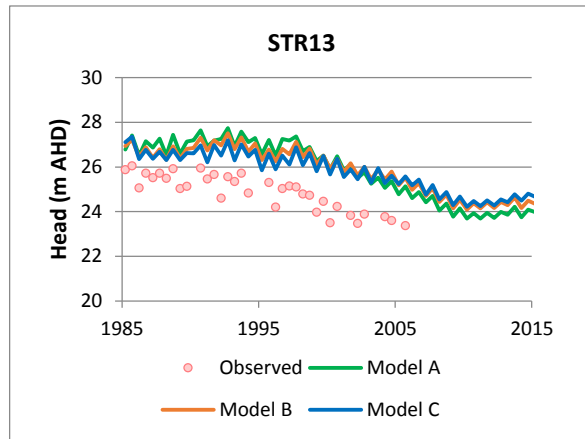
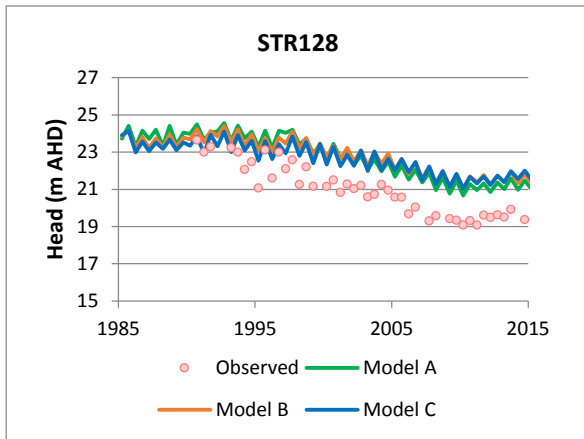
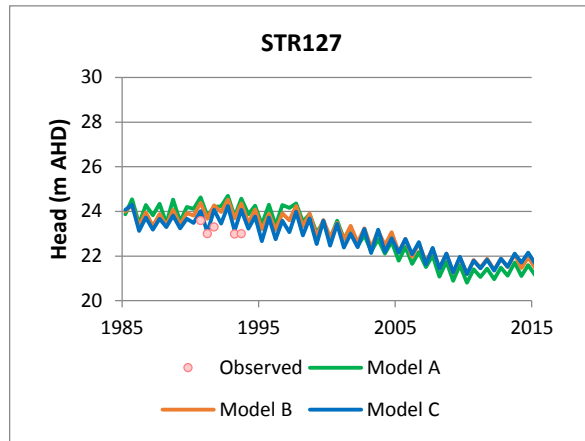
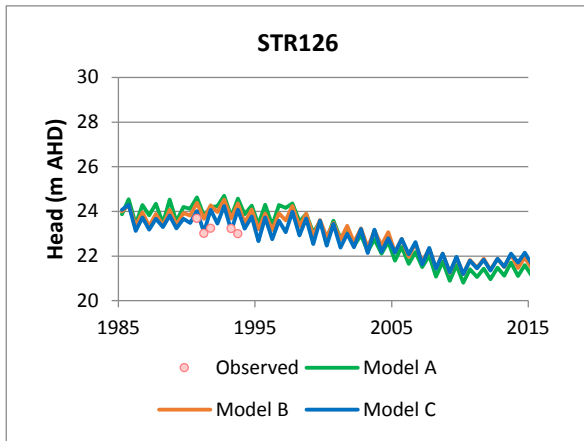


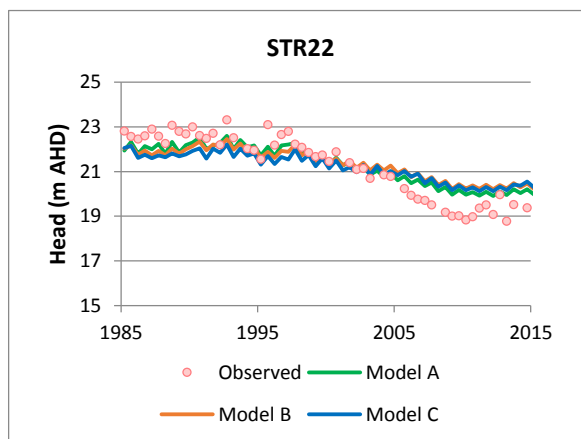
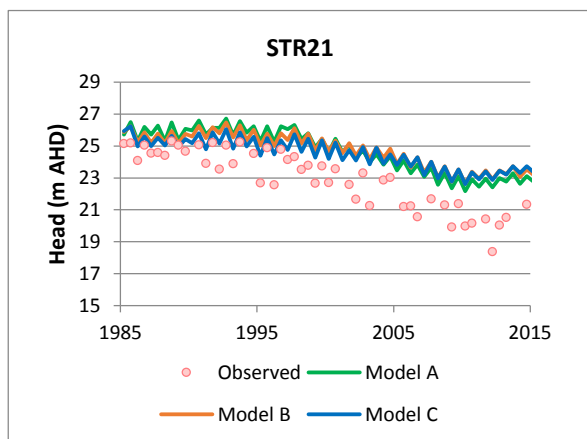
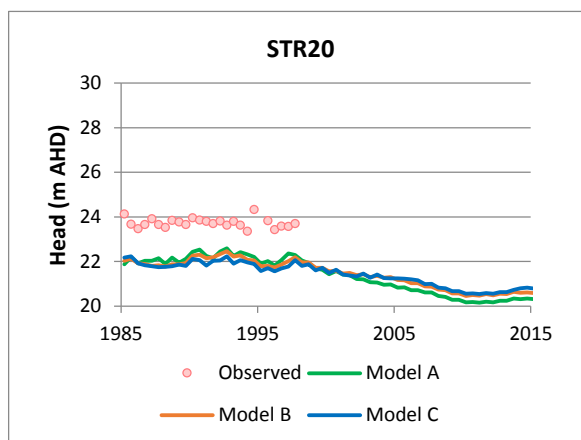
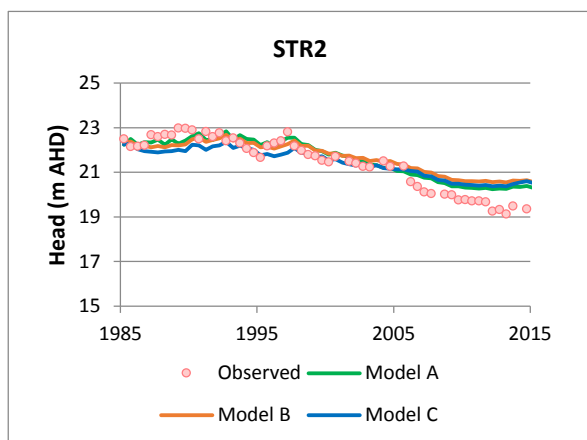
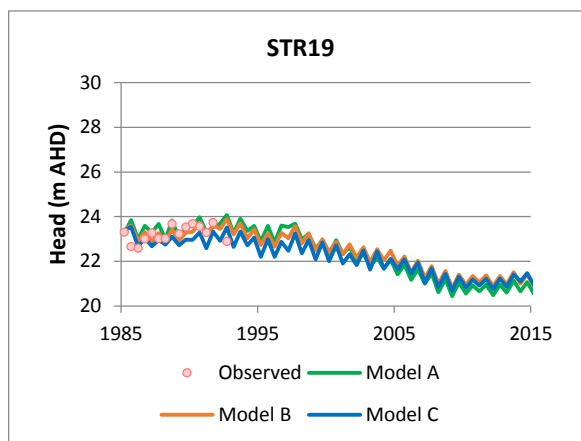
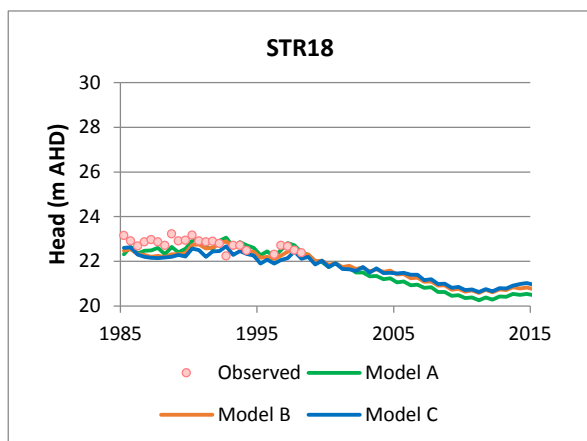
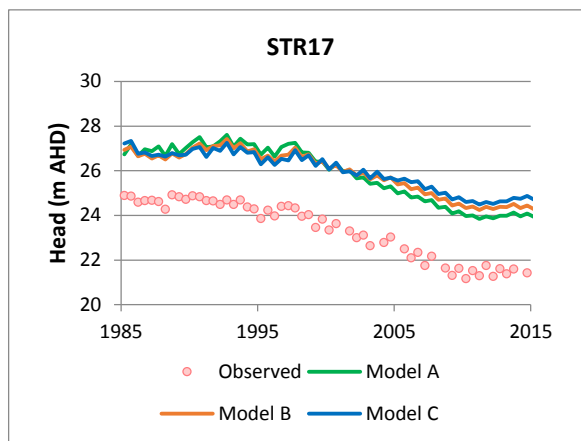
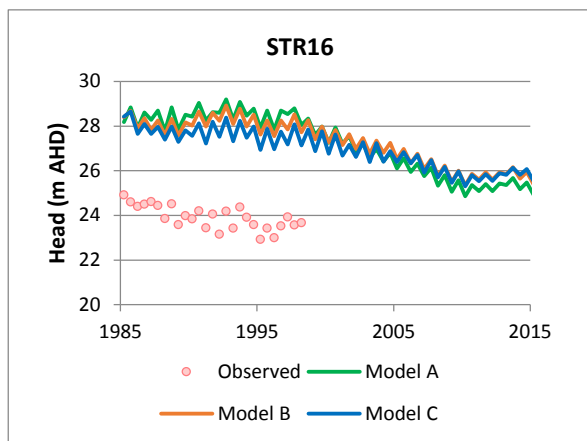


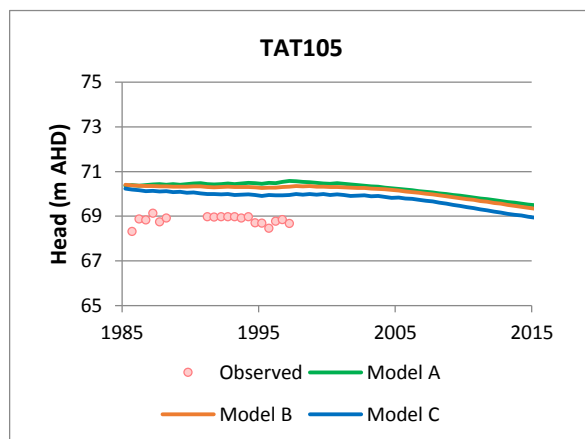
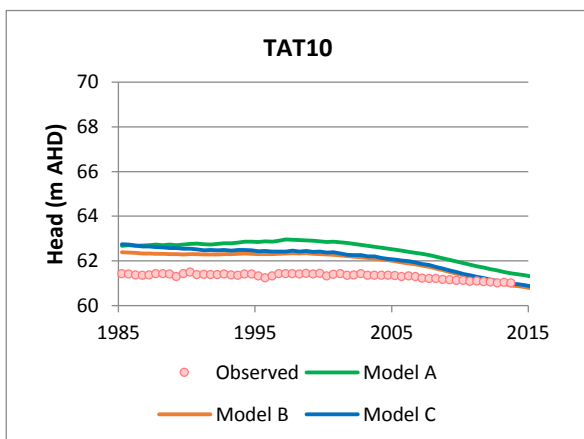
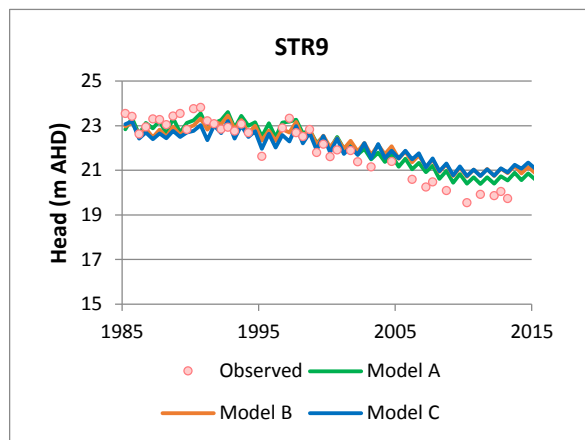
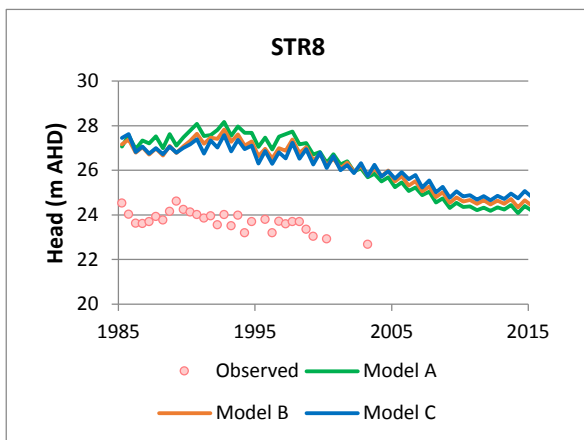
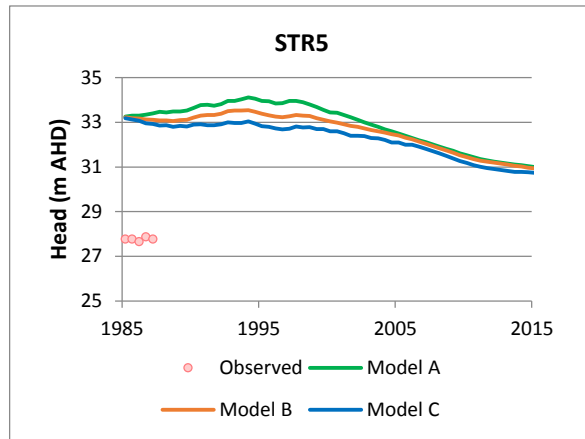
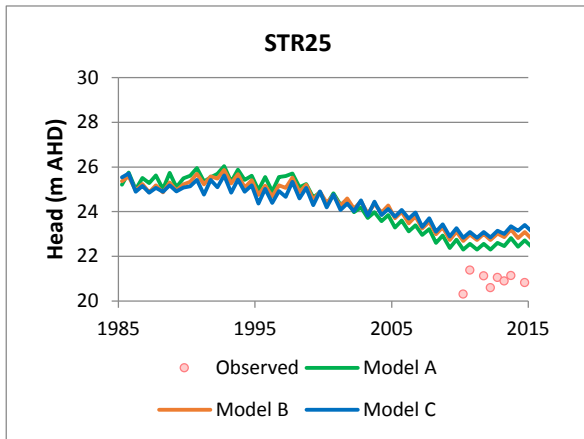
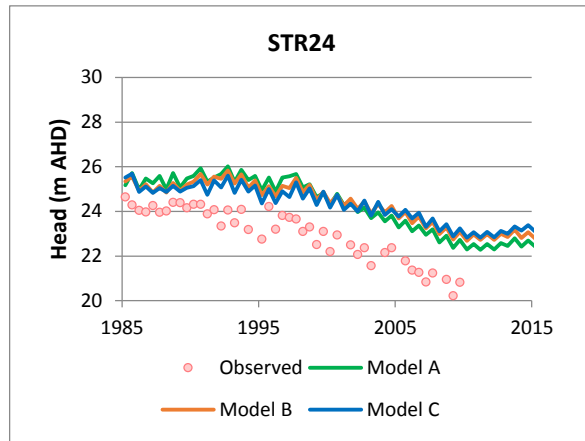
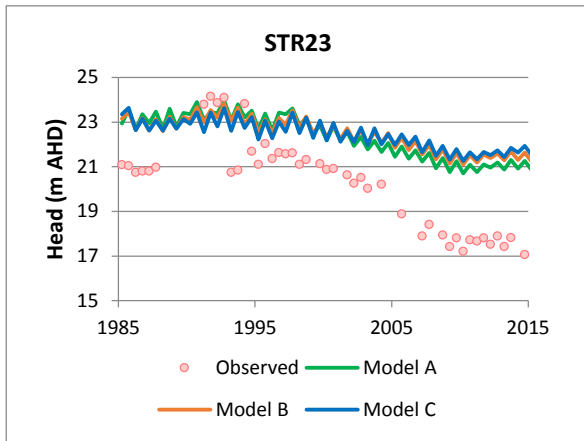


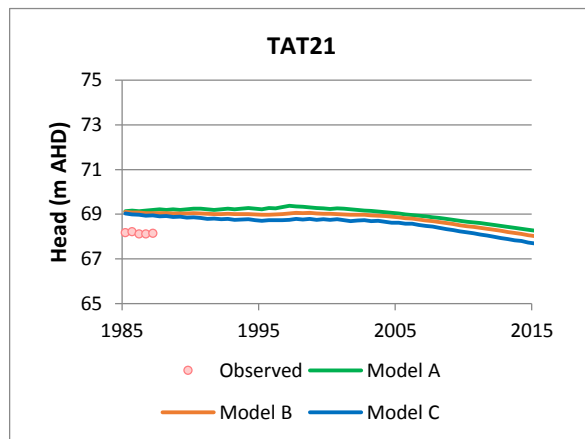
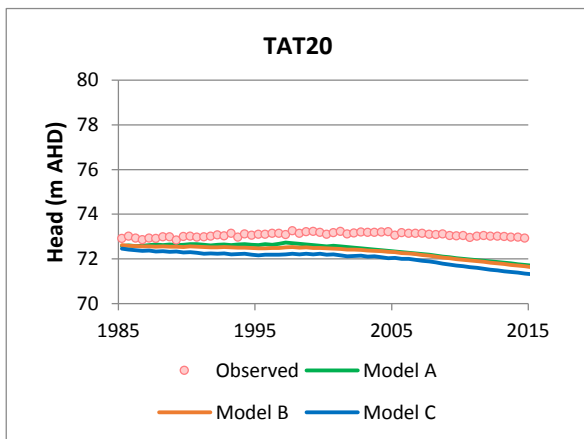
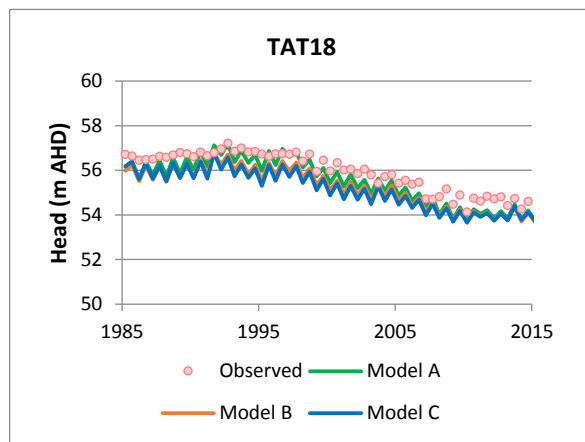
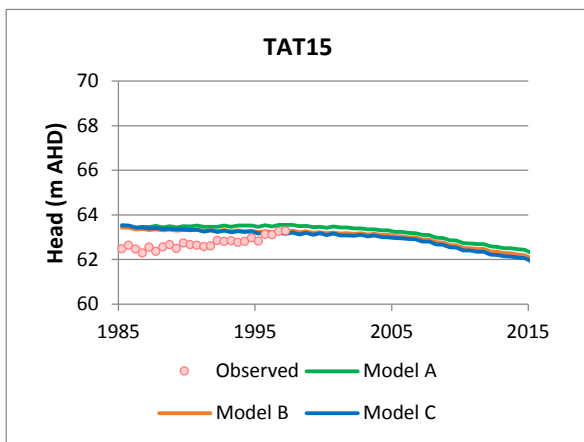
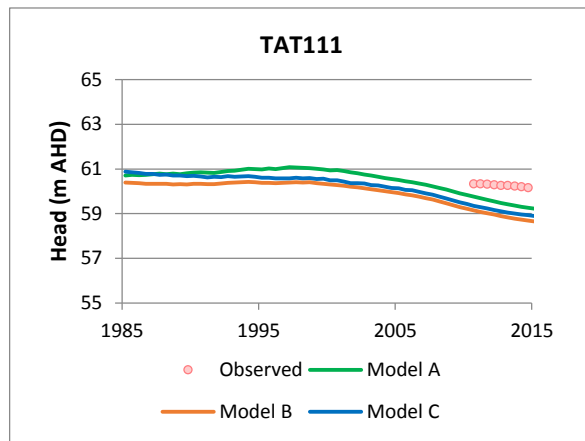
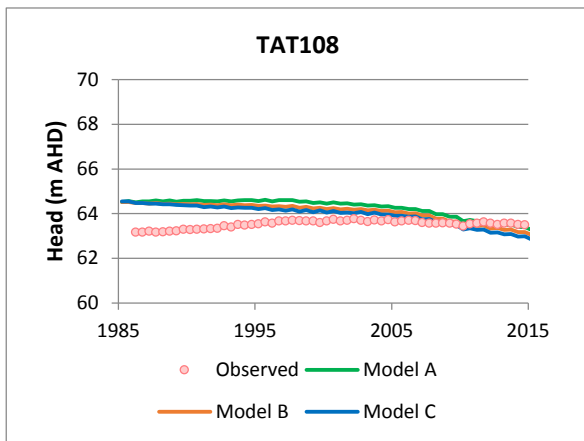
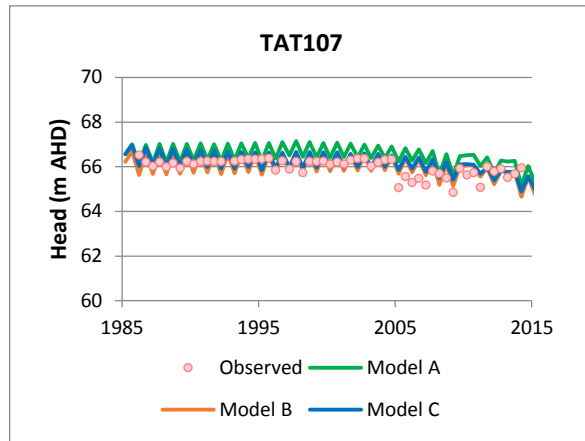
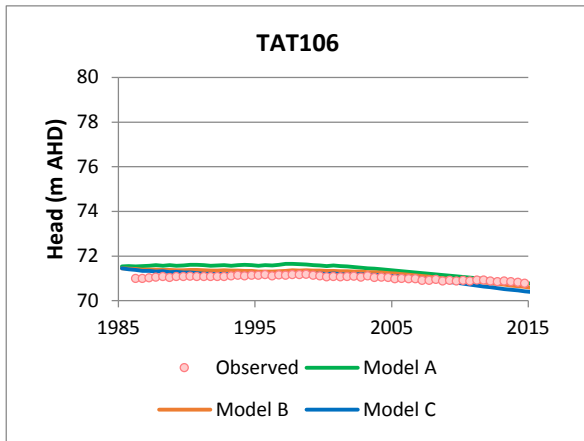


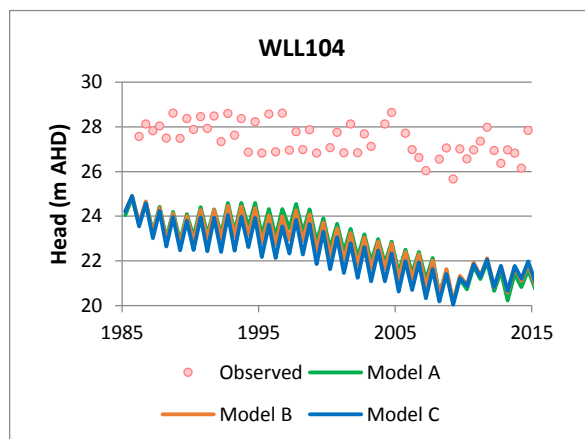
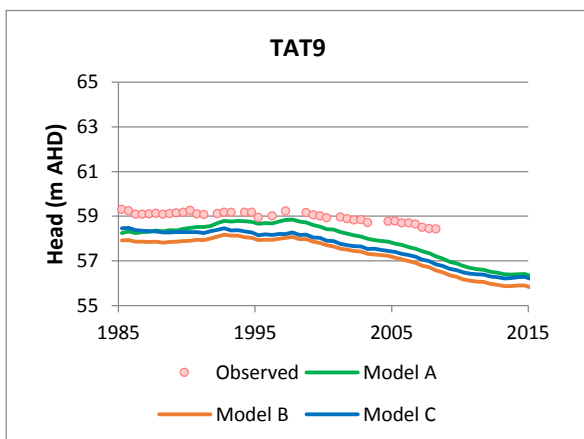
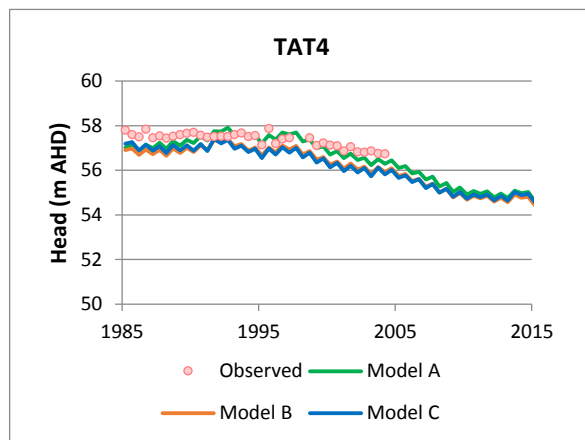
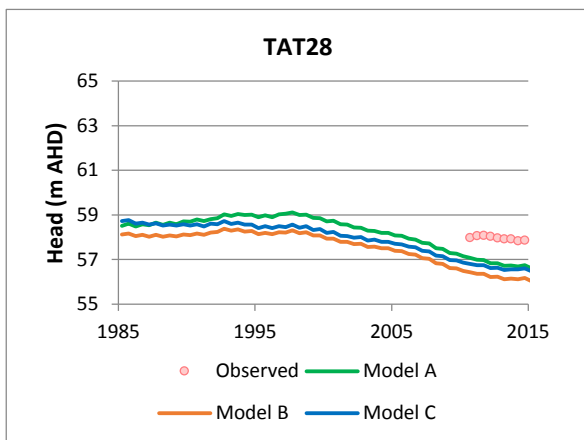
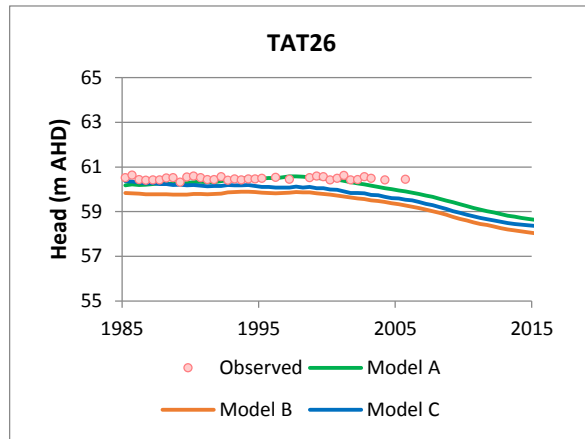
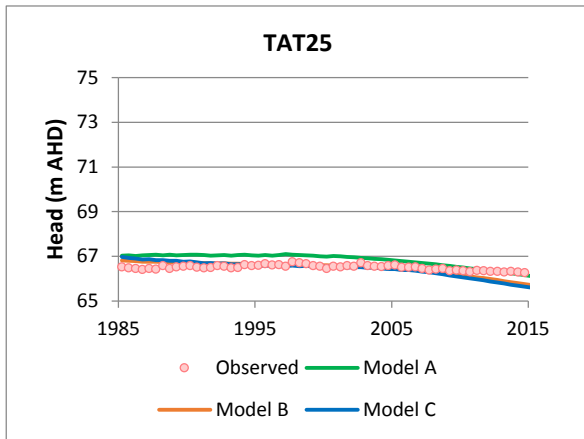
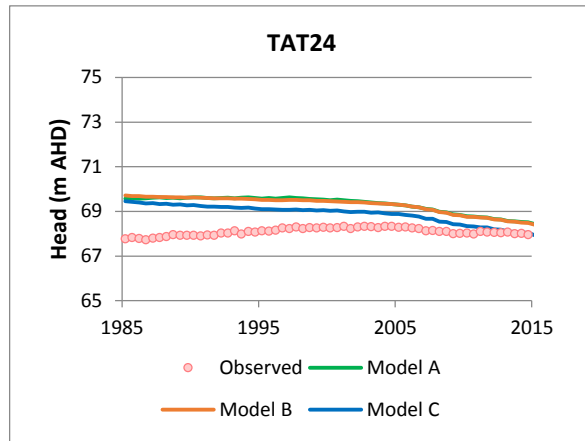
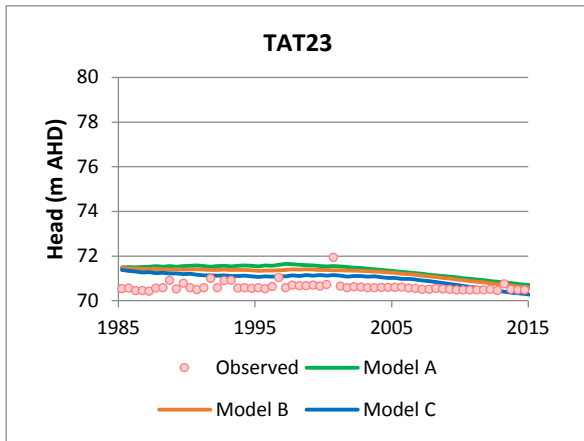


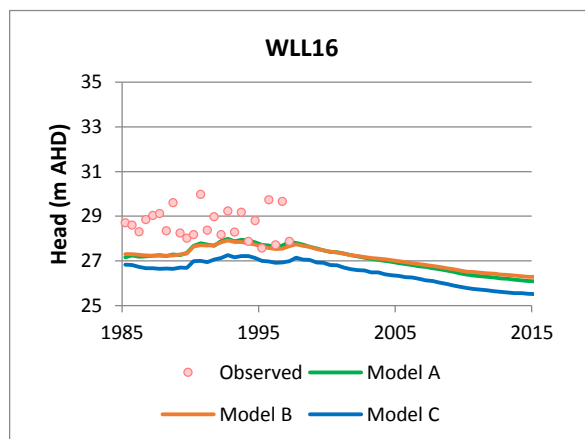
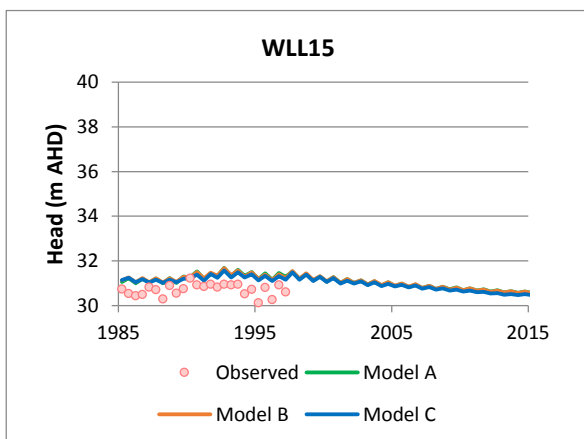
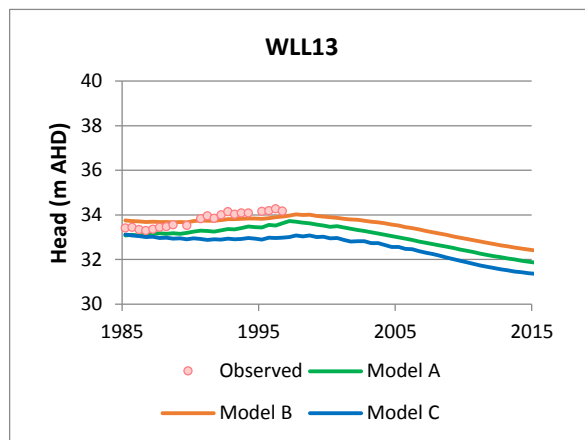
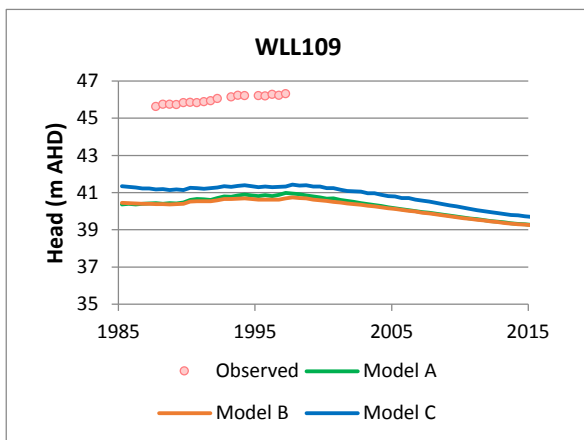
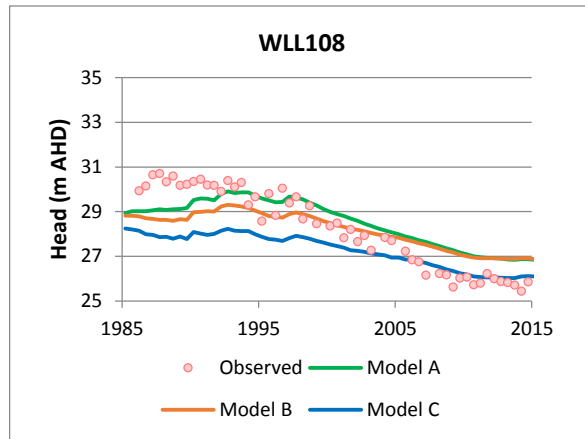
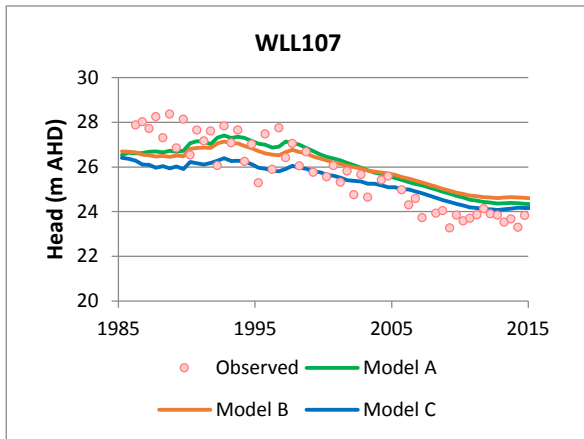
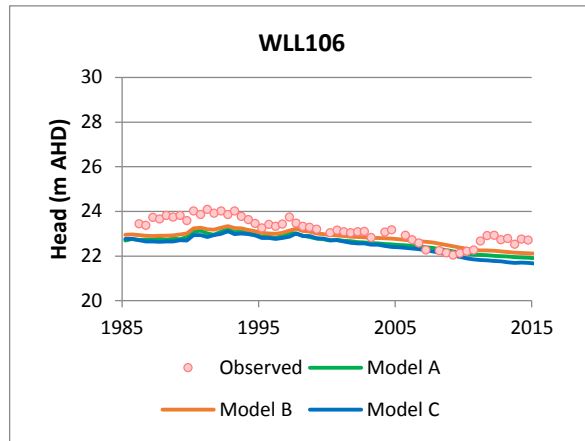
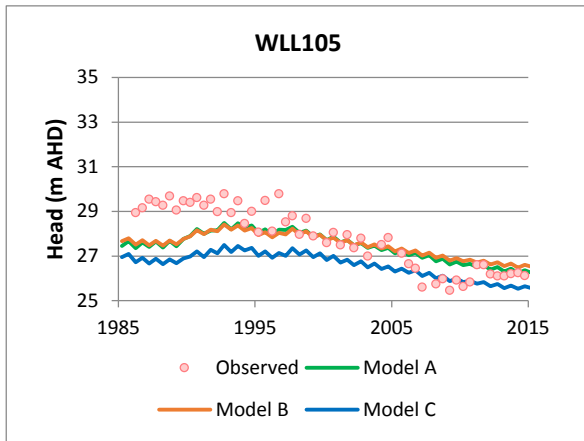


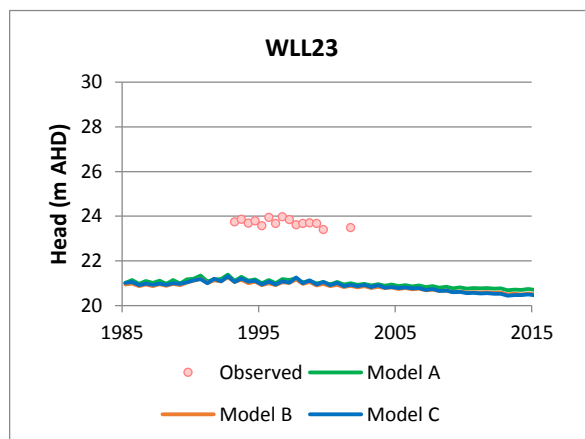
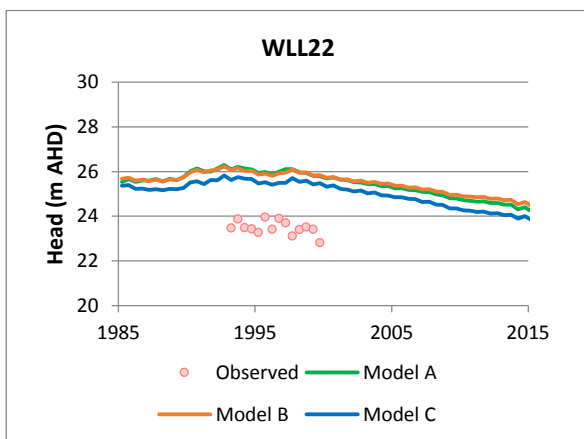
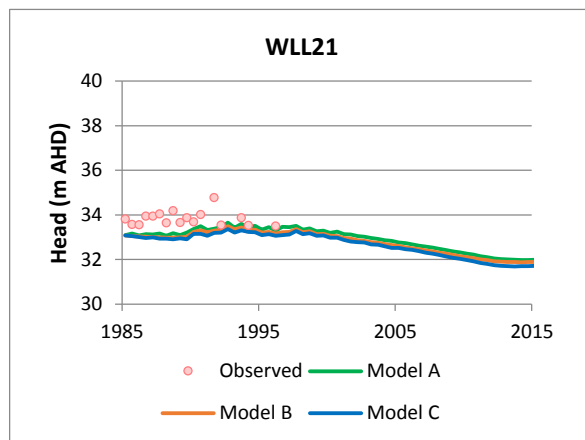
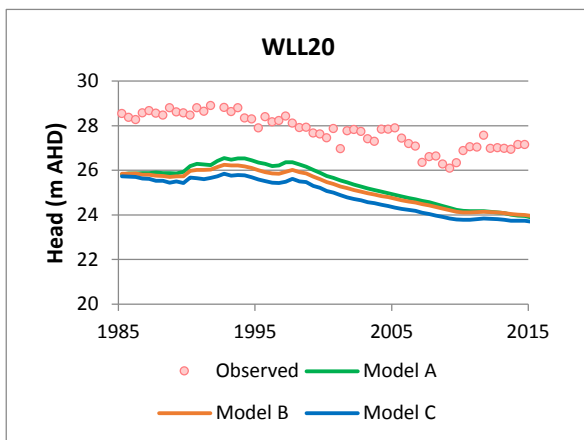
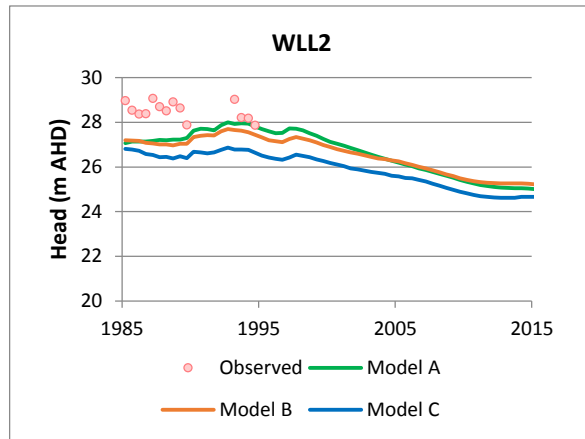
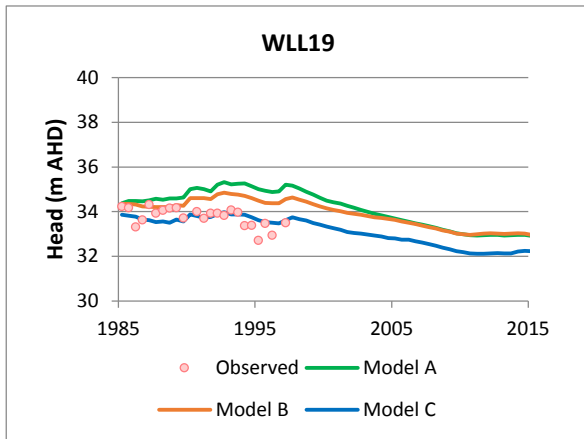
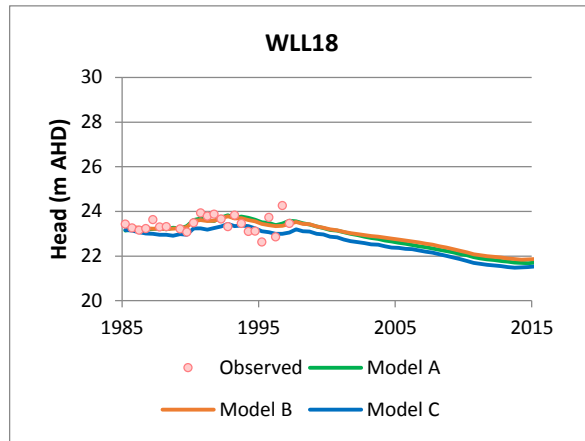
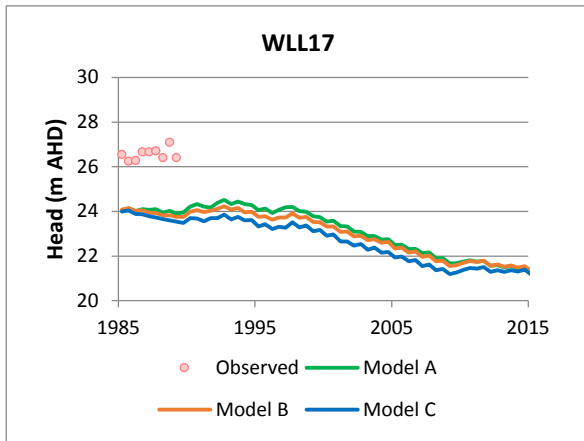


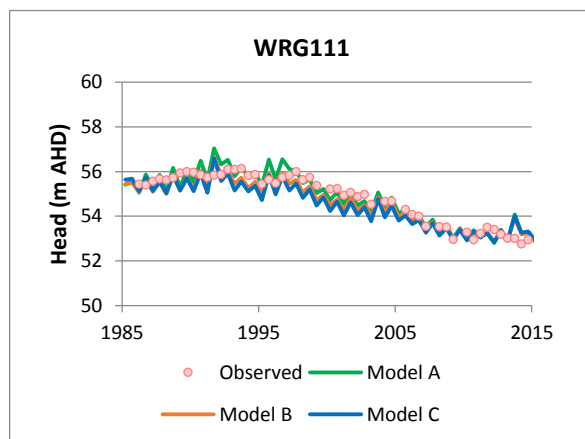
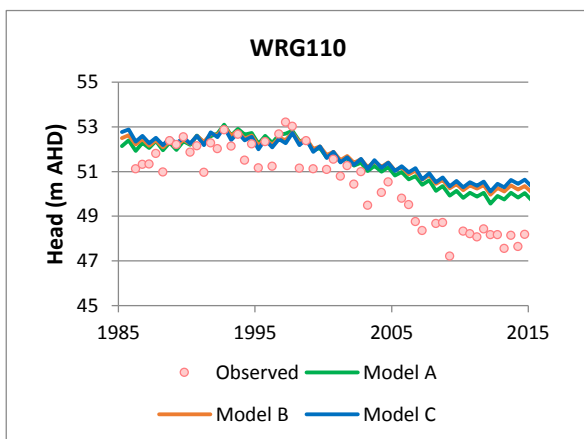
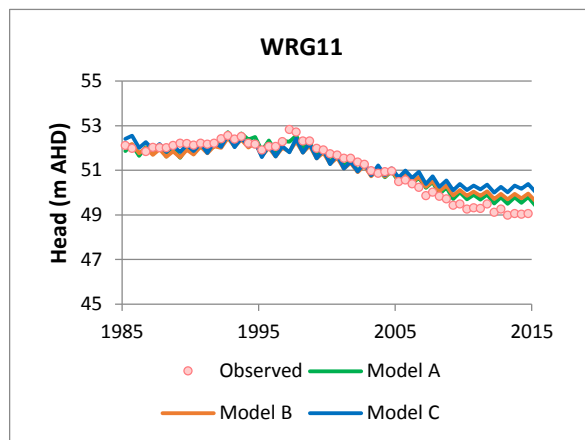
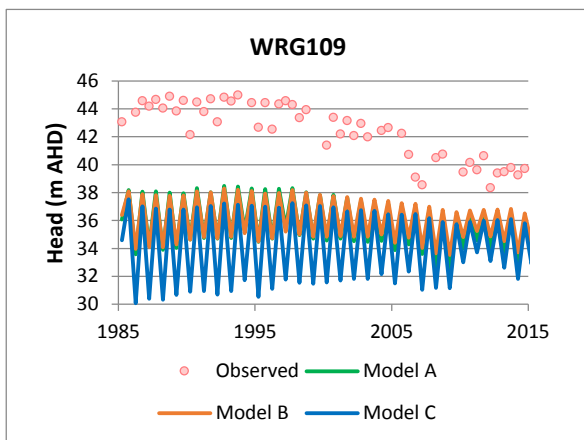
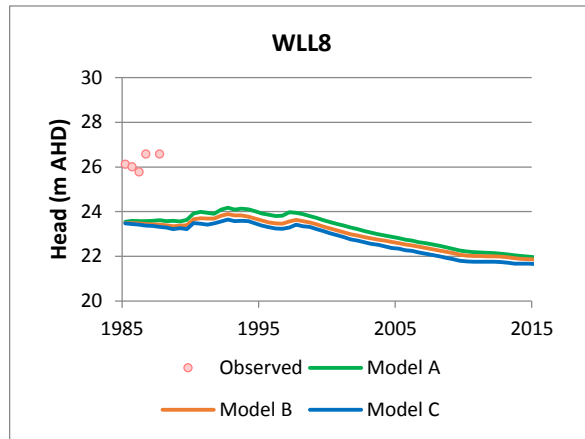
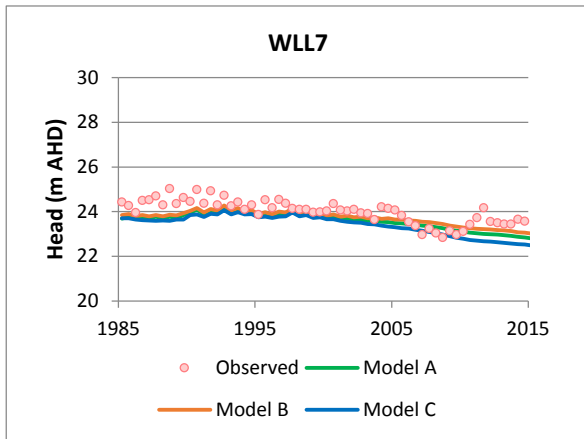
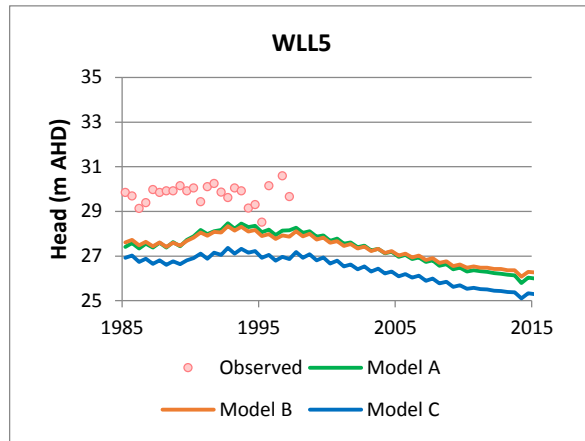
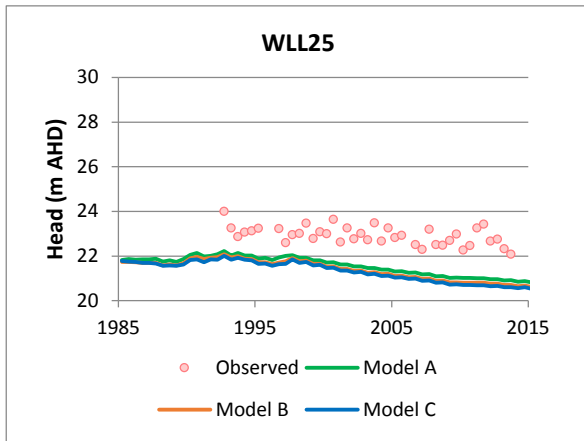


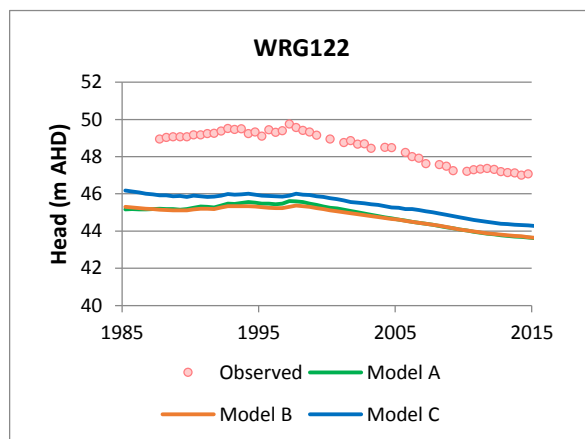
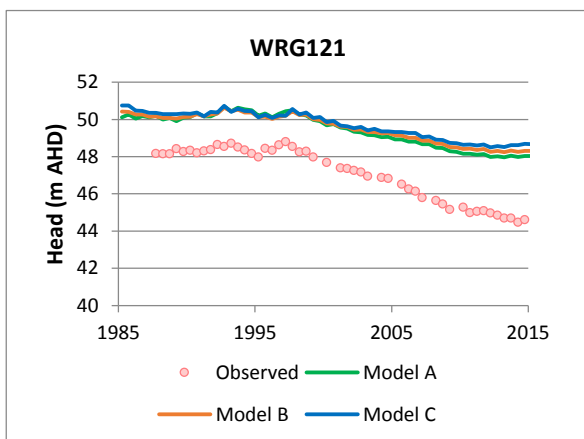
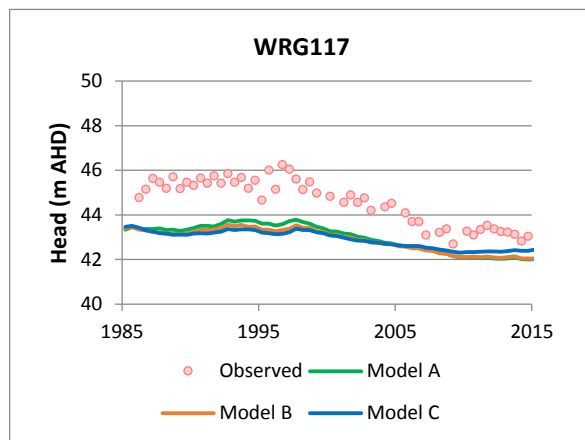
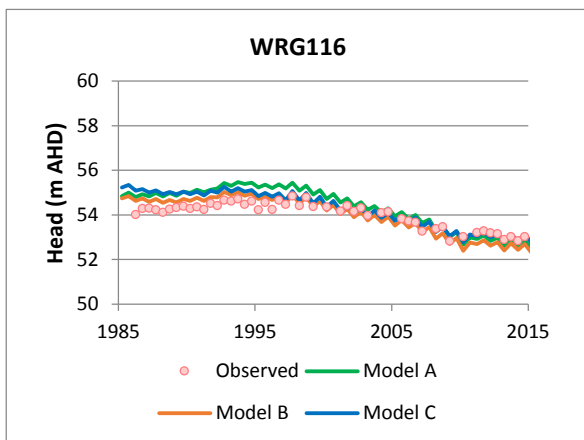
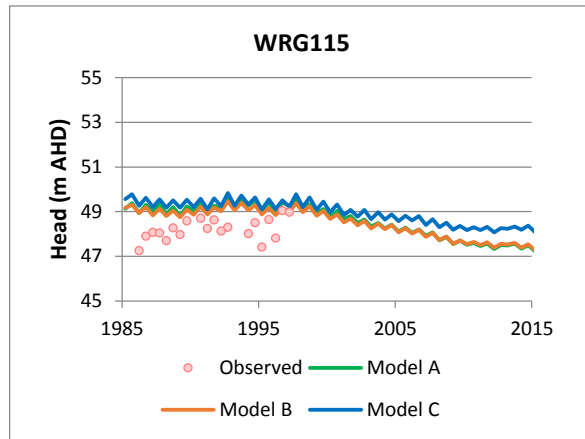
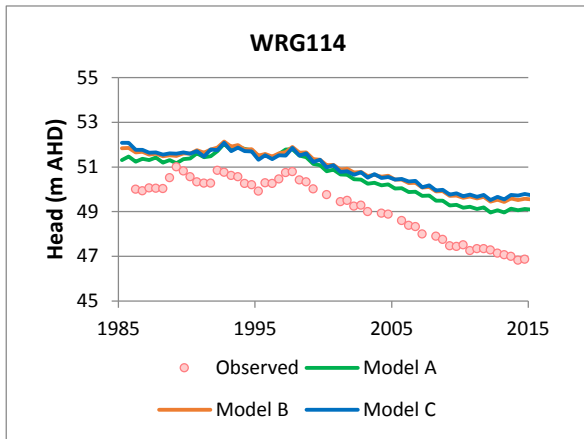
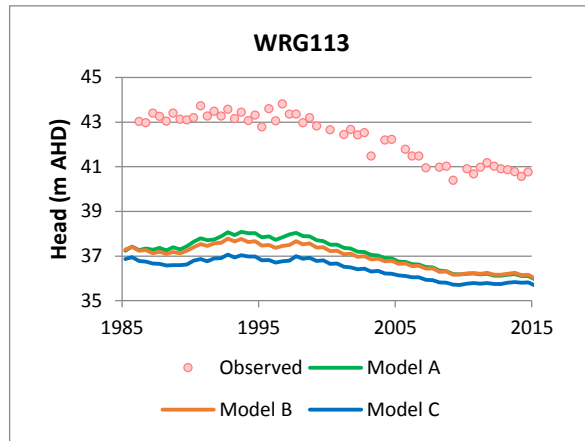
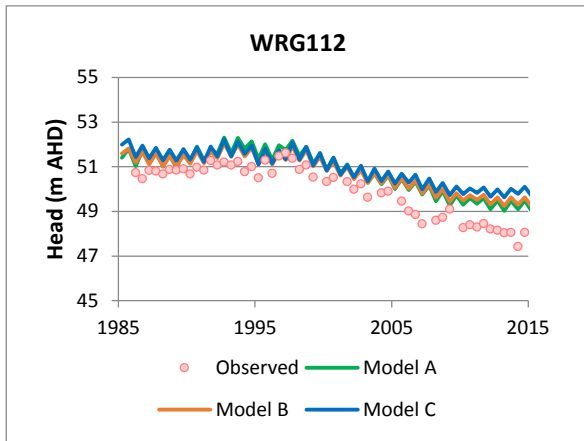


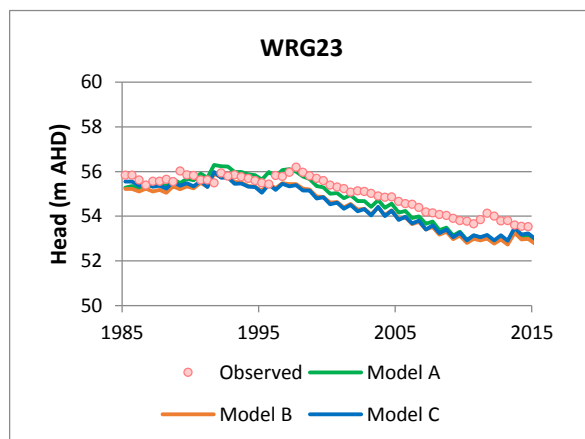
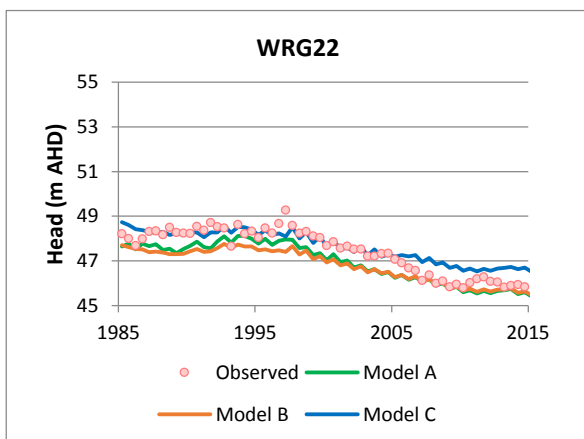
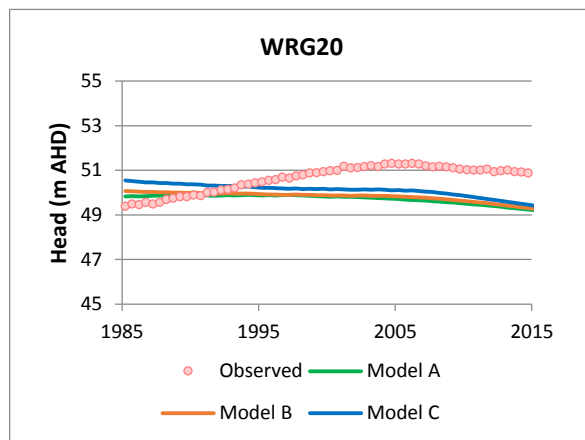
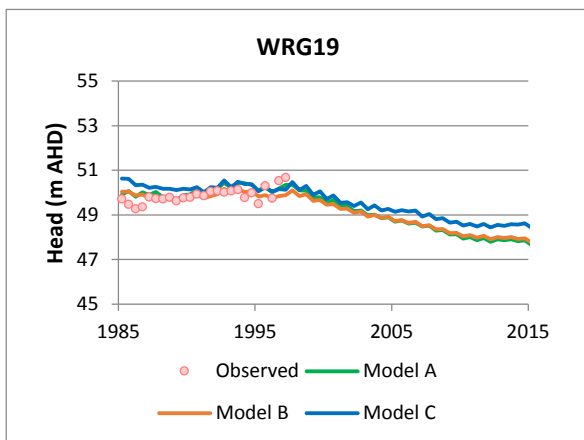
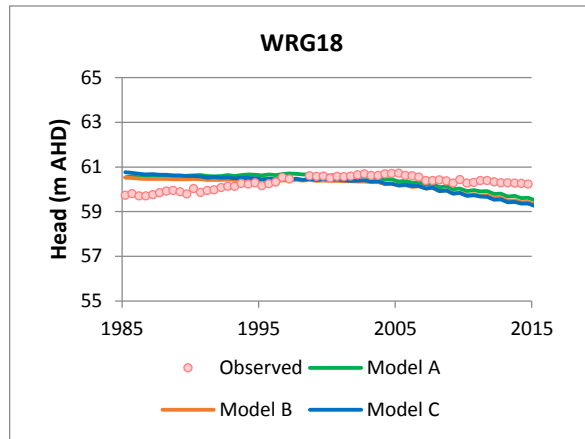
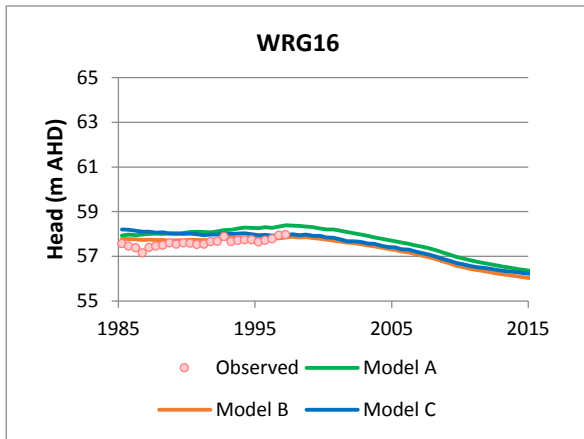
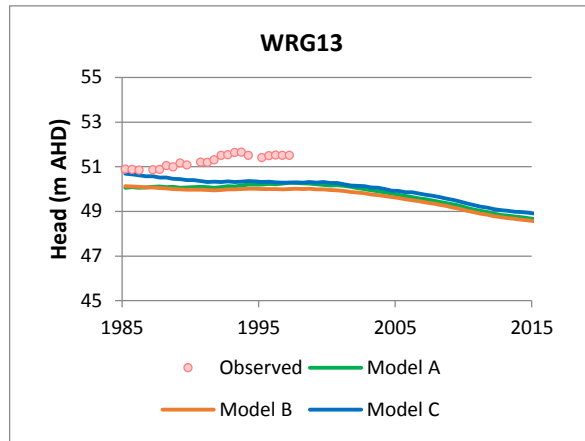
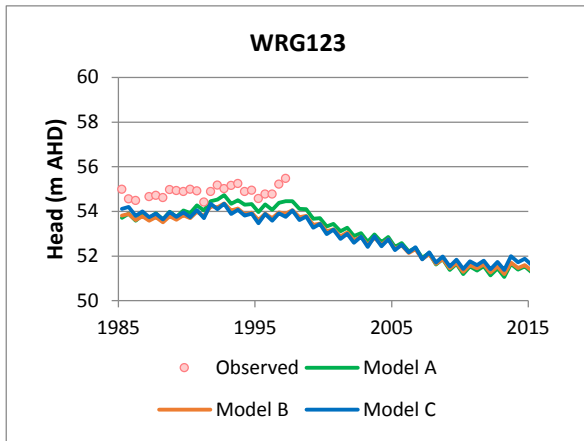


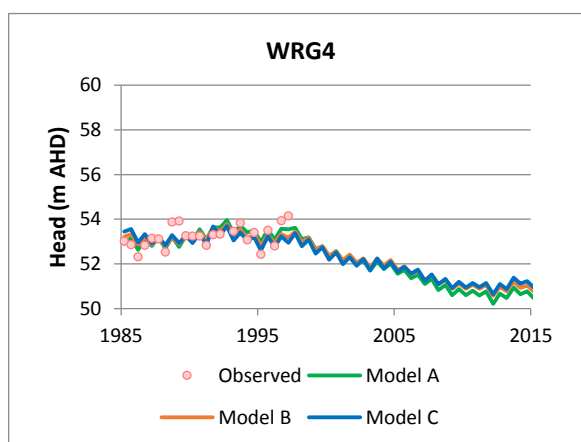
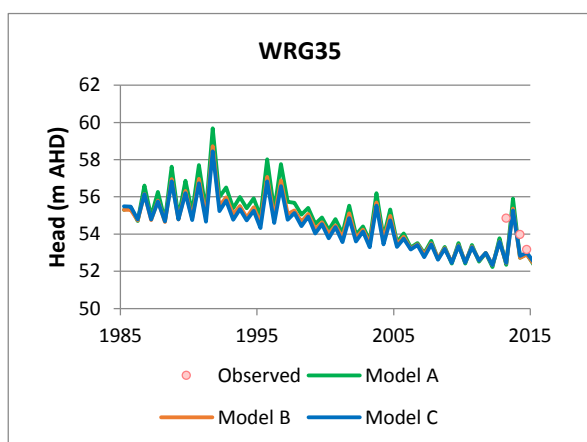
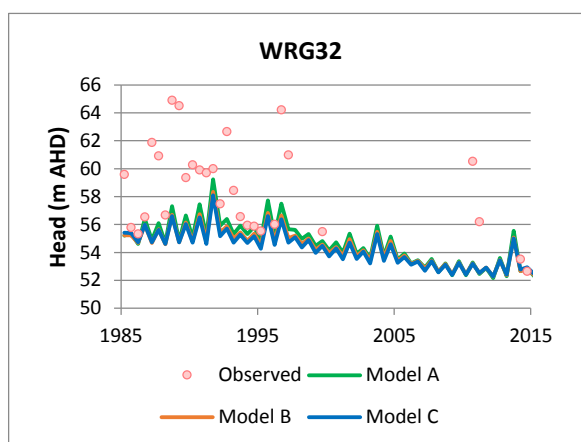
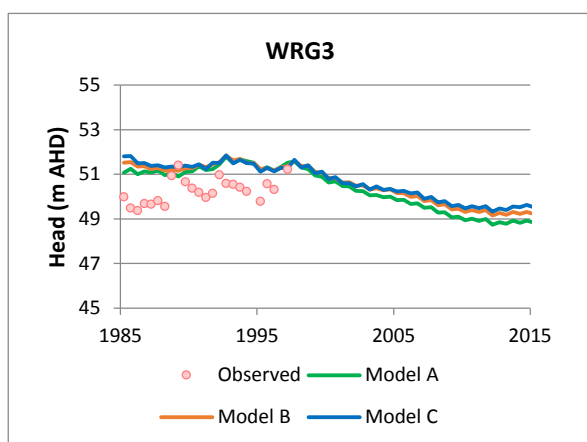
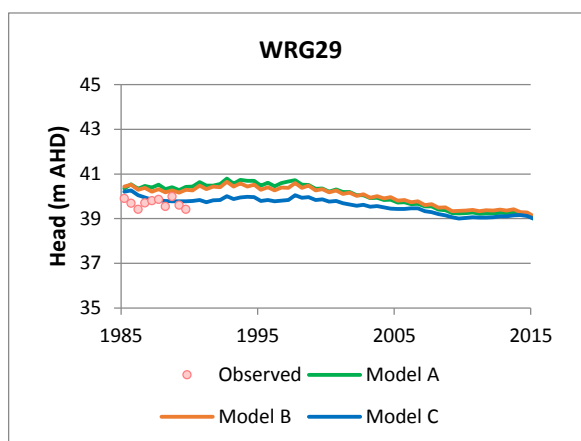
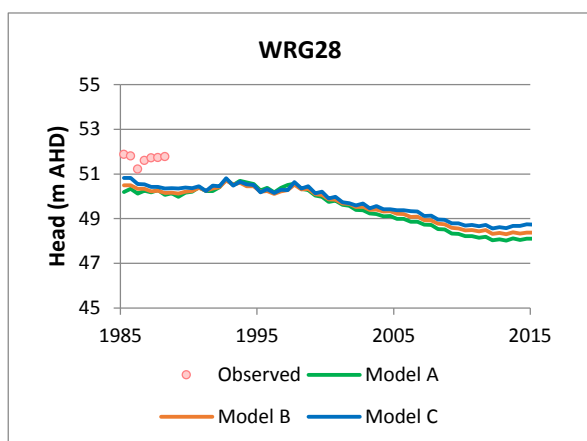
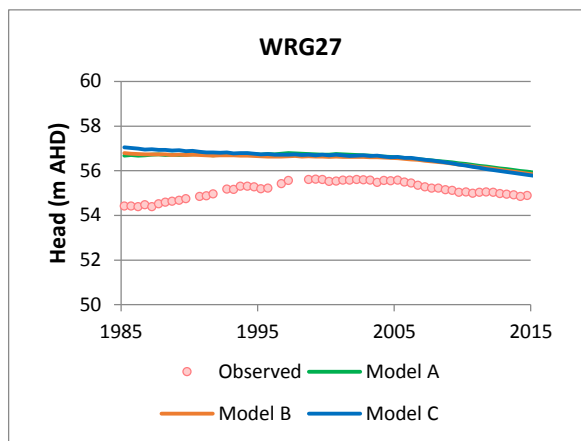
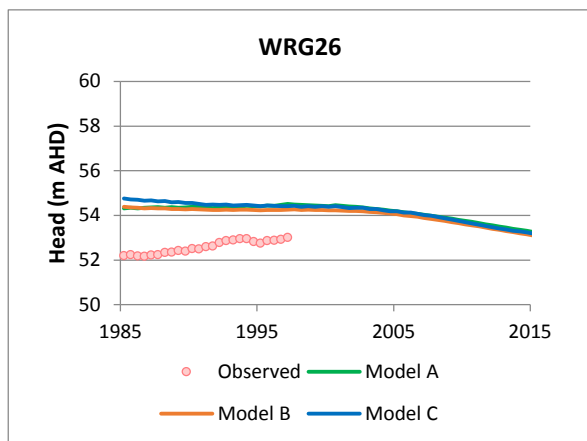


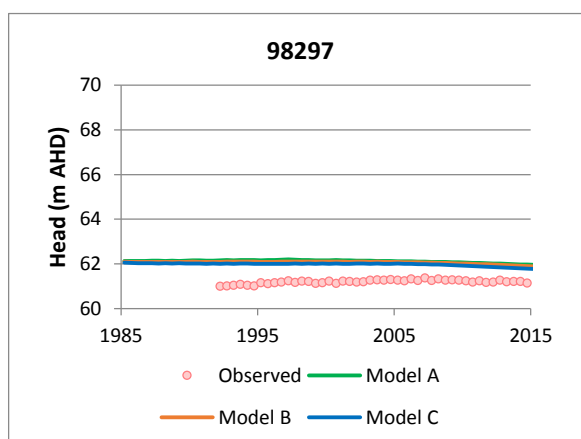
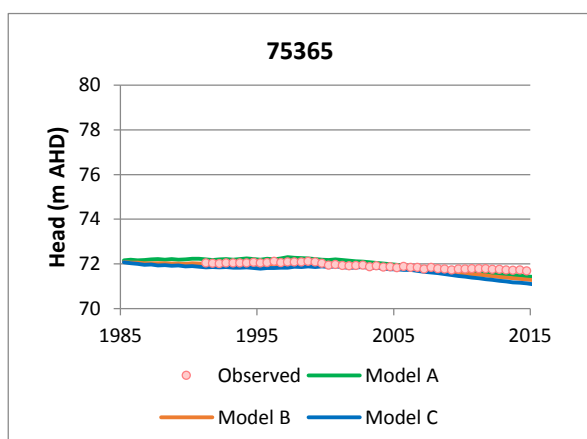
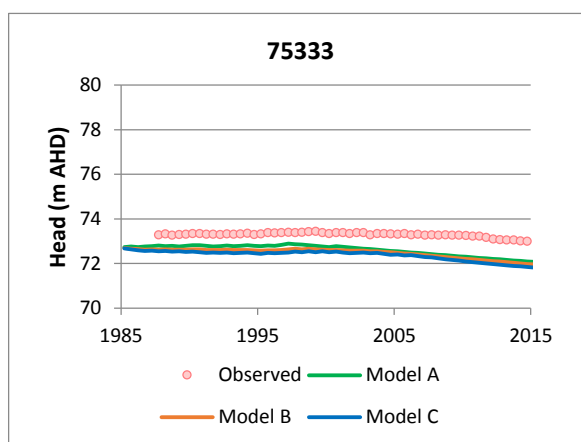
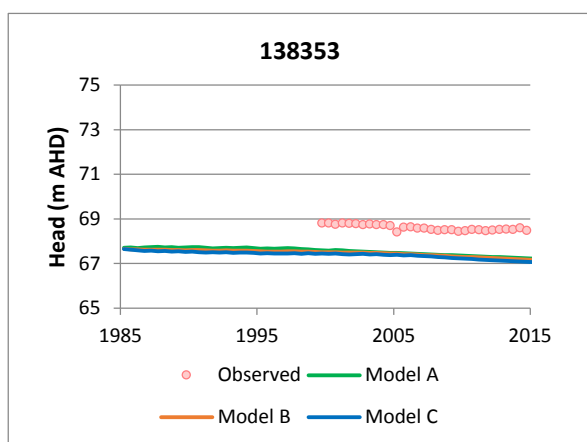
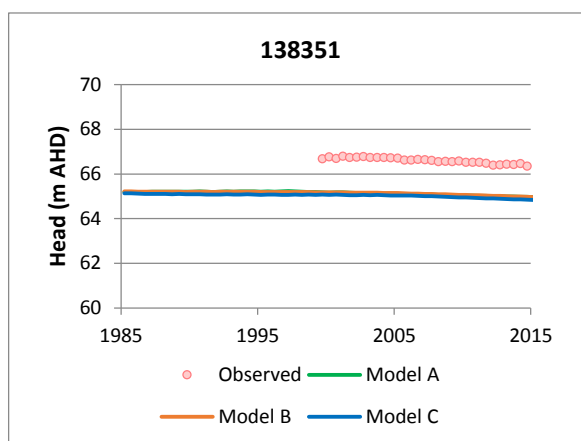
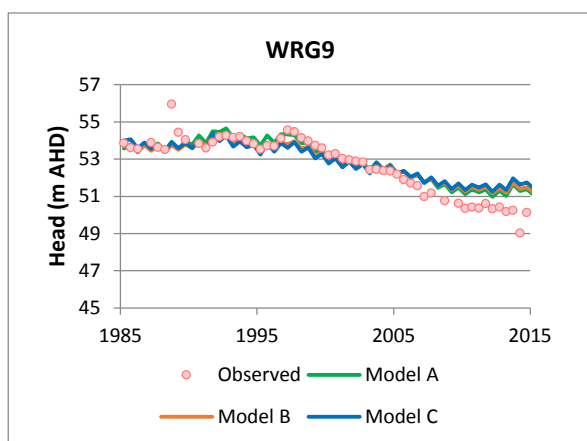
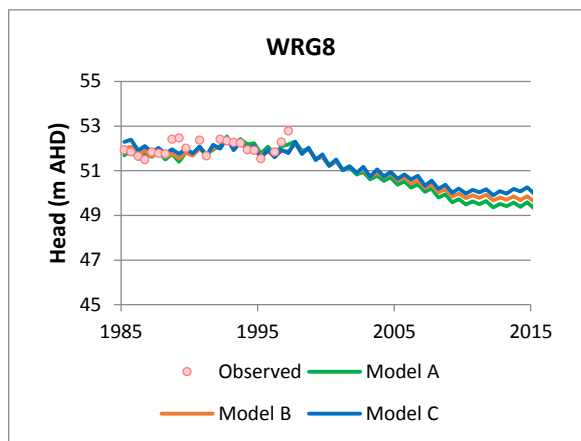
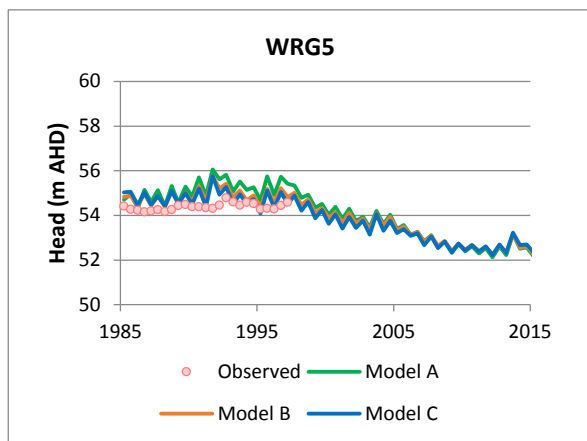












B. GMA groundwater balances in the Tatiara PWA for Models A, B and C

The groundwater balance for the Stirling Groundwater Management Area (GMA) is shown in Figure 1 and summarised in Table 1. The GMA receives most input from diffuse recharge (rainfall and irrigation) which ranges between 79 and 14 GL/y (with an average of 33 GL/y), and also significant throughflow (29–43 GL/y) from the Wirrega and North Pendleton GMAs. The major outputs are groundwater extraction which has ranged from 22–50 GL/y, and shows a decline in recent years as well as throughflow towards the west which has decreased on average from 41 to 28 GL/y, from the period of 1986–2000 to 2001–15. Groundwater evapotranspiration (ET) is seen to decrease from -2 to 0 GL/y as a result of declining groundwater levels. Net storage fluctuates between positive and negative until 1997/8 when it becomes mostly negative due to continued extraction and lower rates of recharge. There are a number of years recently where storage has increased slightly due to higher rainfall recharge but overall since 1997/8, the decrease in storage averages 6 GL/y. The average reduction in groundwater storage between 1997/8 to 2008/9 was 10 GL/y.

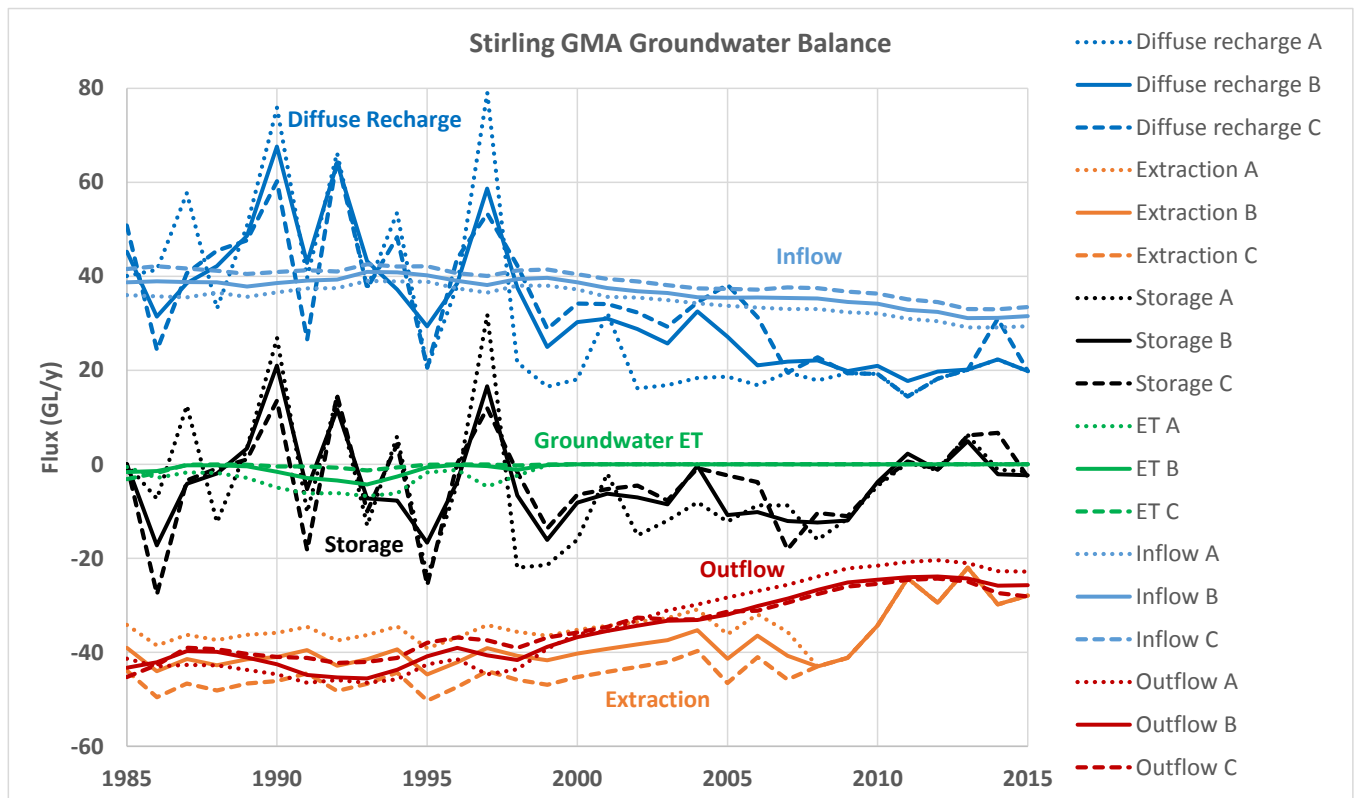


Figure 1. Yearly groundwater balance for the Stirling GMA showing results of all three calibrated models

The groundwater balance for the Willalooka GMA is shown in Figure 2 and summarised in Table 1. The main inputs for the GMA are diffuse recharge (rainfall and irrigation) ranging from 44 to 3 GL/y (with an average of 12 GL/y) and an average inflow of 12 GL/y mostly from the Wirrega GMA to the east. The major outputs are groundwater extraction (ranging from 6–16 GL/y), throughflow to the west and north (total average of 11 GL/y) as well as groundwater ET which decreases from approximately 13 GL/y (1986/2000 average) to 10 GL/y (2001/2015 average) due to falling groundwater levels. Net storage fluctuates between positive and negative until 1997/8 when it becomes permanently negative due to continued extraction and lower recharge. The average reduction in groundwater storage between 1997/8 to 2014/15 was 7 GL/y.

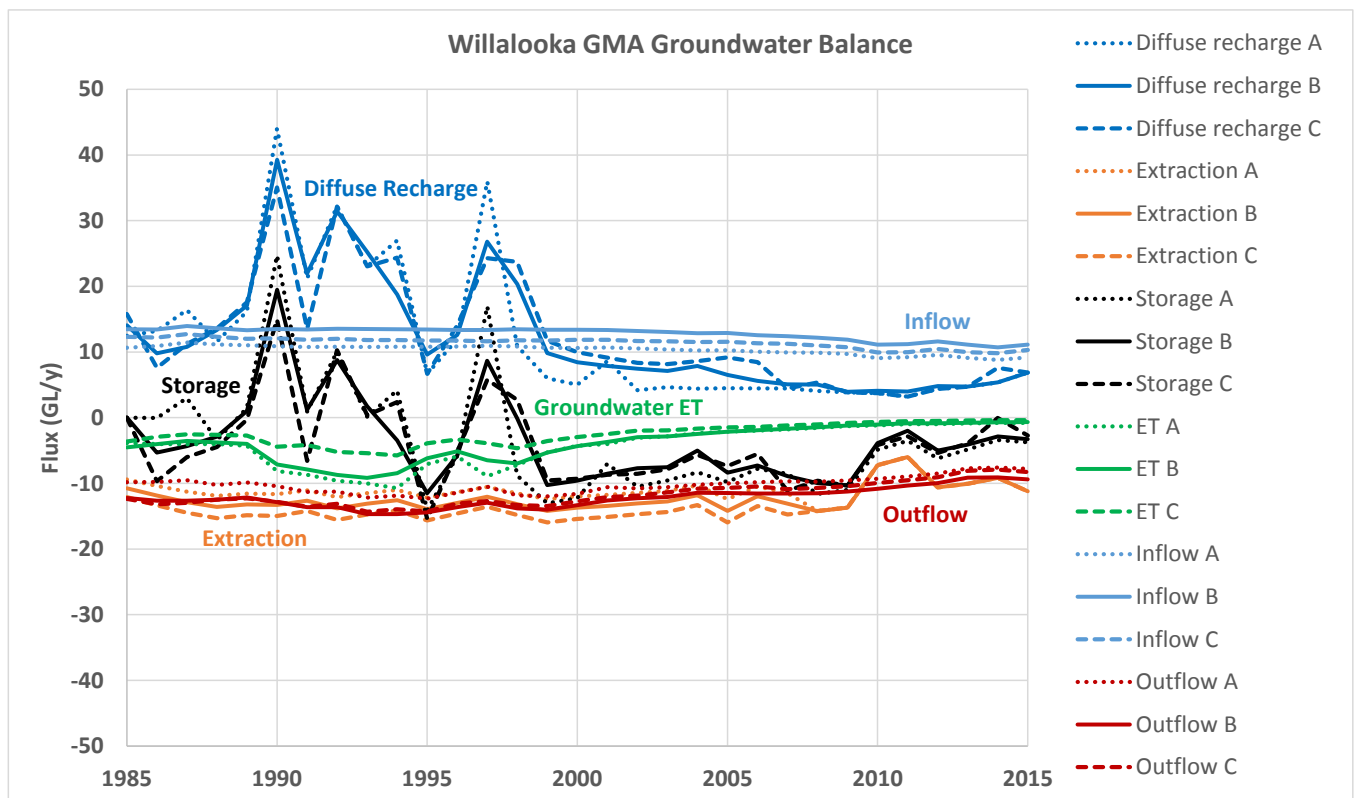


Figure 2. Yearly groundwater balance for the Willalooka GMA showing results of all three calibrated models

The groundwater balance for the North Pendleton GMA is shown in Figure 3 and summarised in Table 1. The GMA is characterised by gradual changes in throughflow and a decline in both recharge and net storage. Throughflow mainly from the Cannawigara GMA averages 19 GL/y while throughflow into the Wirrega and Stirling GMAs decreases on average from 27–23 GL/y (1986–2000 average compared to 2001–15 average). Diffuse recharge averages approximately 10 GL/y from 1986 to 2000 and then declines to an average of 5 GL/y until 2015. These changes contribute to a reduction in net storage (average of 1 GL/y during 1986–2000 and average of 4 GL/y from 2001–2015 respectively) in combination with an increase in groundwater extraction (from 4 to 5 GL/y) which.

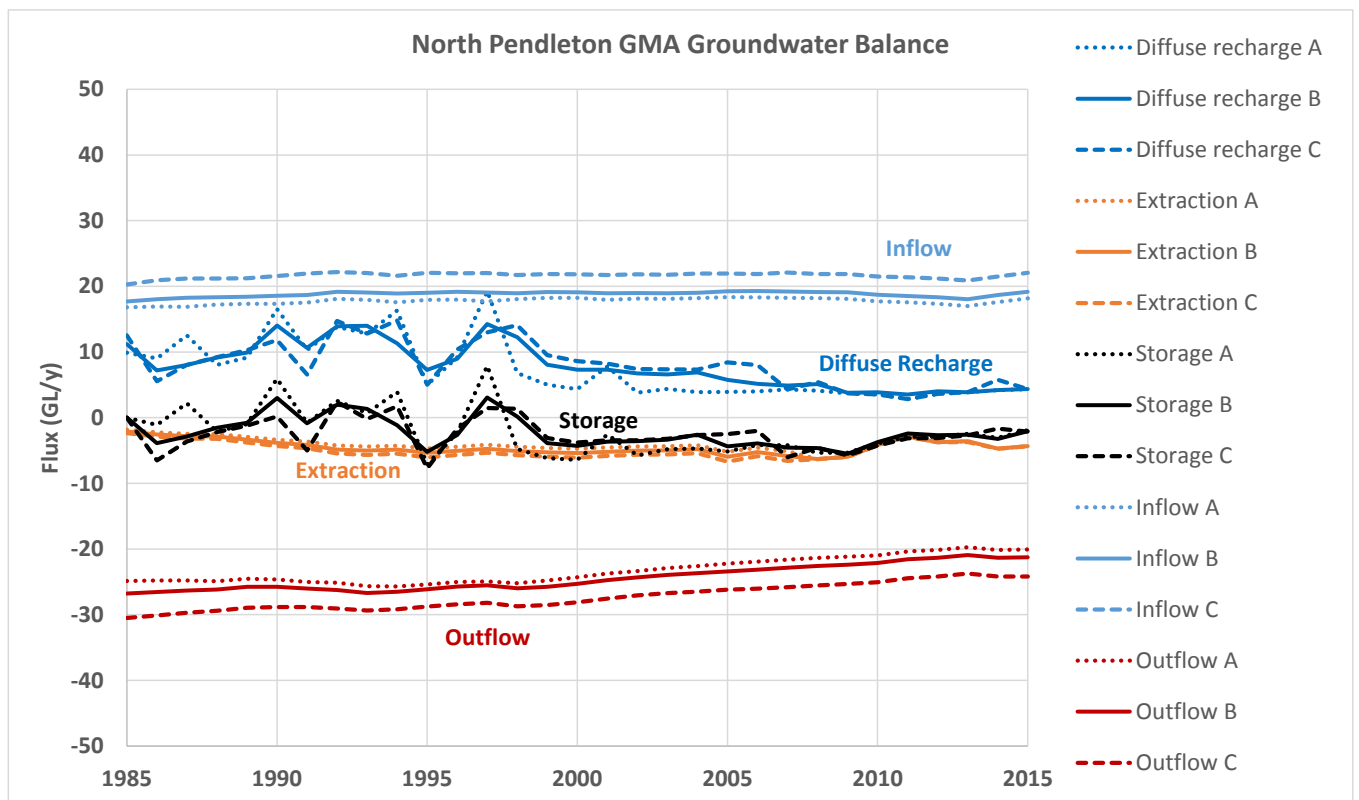


Figure 3. Yearly groundwater balance for the North Pendleton GMA showing results of all three calibrated models

The groundwater balance for the Wirrega GMA is summarised in Table 1 and shown in Figure 4. The mass balance for the Wirrega GMA has many throughflow components being adjacent to five GMAs and two PWAs to the south. The major inputs are diffuse recharge ranging from 646 GL/y (averaging 18 GL/y), point recharge (at Poocher and Mundulla Swamps) which averages 4 GL/y and throughflow from the east and south east ranging from 26–38 GL/y (average 33 GL/y). Diffuse recharge is relatively high between 1986 and 2000 (averaging 24 GL/y) and then shifts towards a lower recharge rate of 11 GL/y (2001–15 average). The major outputs are groundwater extraction which ranges from 13–32 GL/y (average of 25 GL/y) and the slowly declining throughflow towards the west (averaging 33 GL/y). Groundwater ET decreases from 3 GL/y in the first half of the model period to 0 GL/y in the second half of the period due to the declining groundwater levels. Net storage fluctuates between positive and negative until 1997/8 when it becomes permanently negative (with a few recent exceptions) due to continued extraction and lower recharge. The average reduction in groundwater storage between 1997/8 to 2014/15 was 8 GL/y.

The groundwater balance has been split between coastal plain and mallee highland portions in Figure 5 and Figure 6 respectively and also summarised in Table 1. The coastal plain portion contains much larger input and output fluctuations compared to the mallee highland portion which is more stable. Outflow from the mallee highland portion increases on average between the first and second halves of the model period (from 14 to 16 GL/y), while the outflow out of the coastal plain decreases over the same time period (from an average of 36 to 31 GL/y). This indicates that larger storage losses are occurring on the coastal plain portion (on average 3 to 7 GL/y from 1986–2000 and 2001–15 respectively) which draws groundwater from the south and east. Diffuse recharge also declines from an average of 5 to 3 GL/y between the first and last half of the model period.

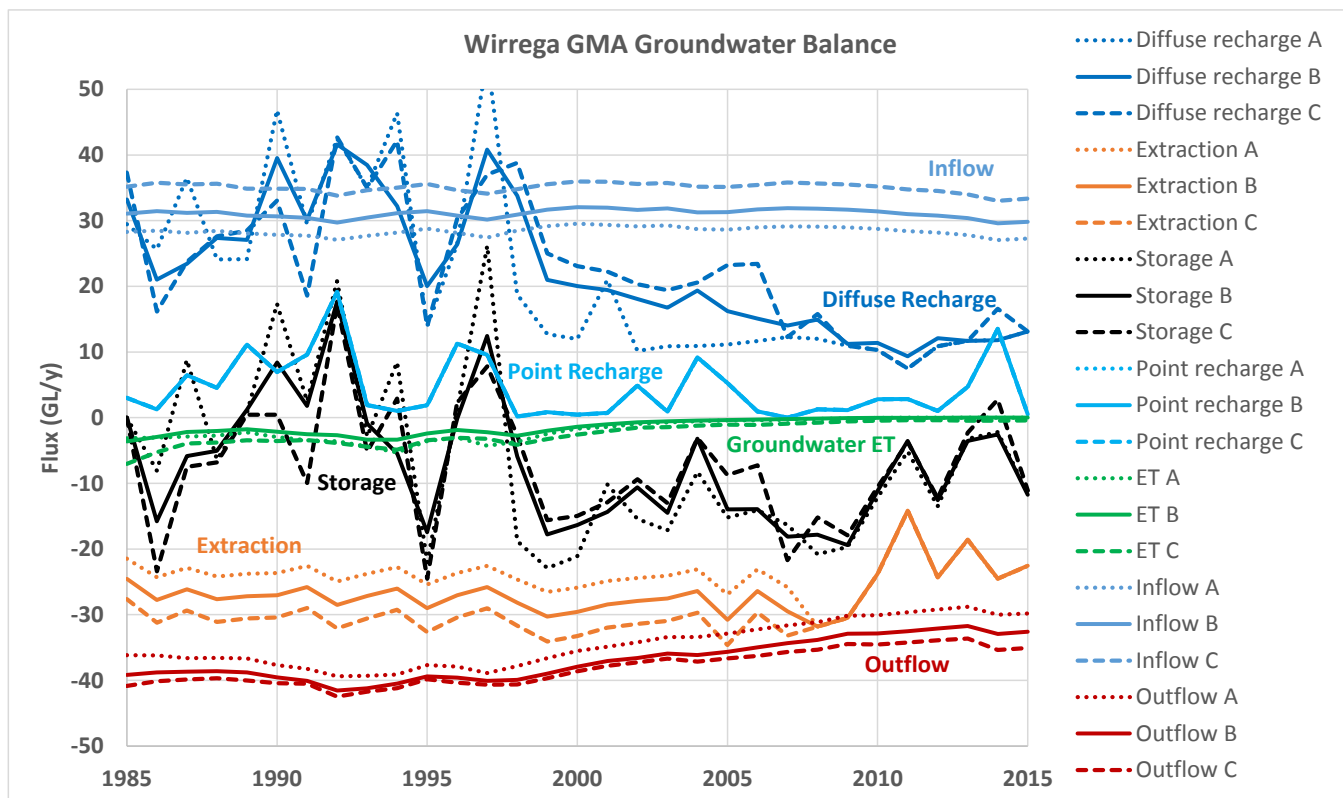


Figure 4. Yearly groundwater balance for the Wirrega GMA showing results of all three calibrated models

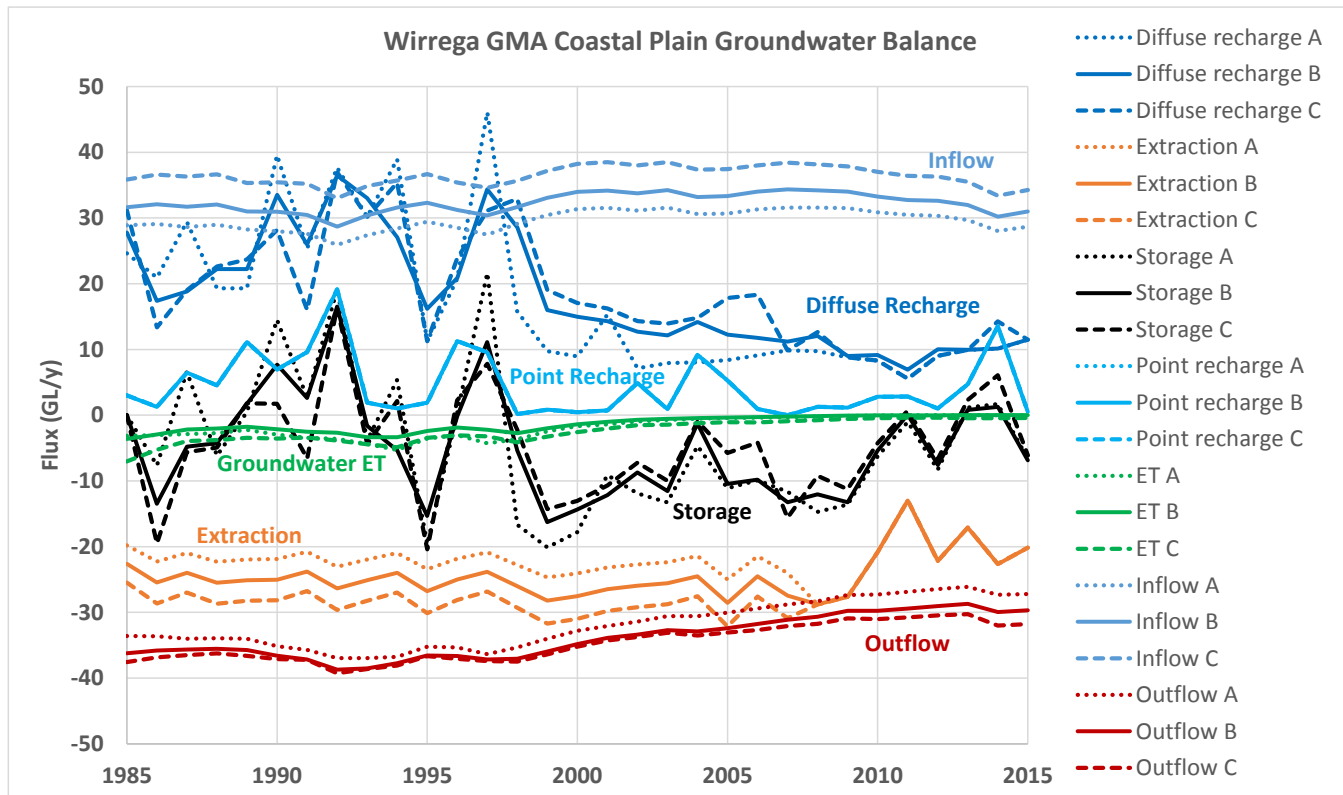


Figure 5. Yearly groundwater balance for the coastal plain portion of the Wirrega GMA showing results of all three calibrated models

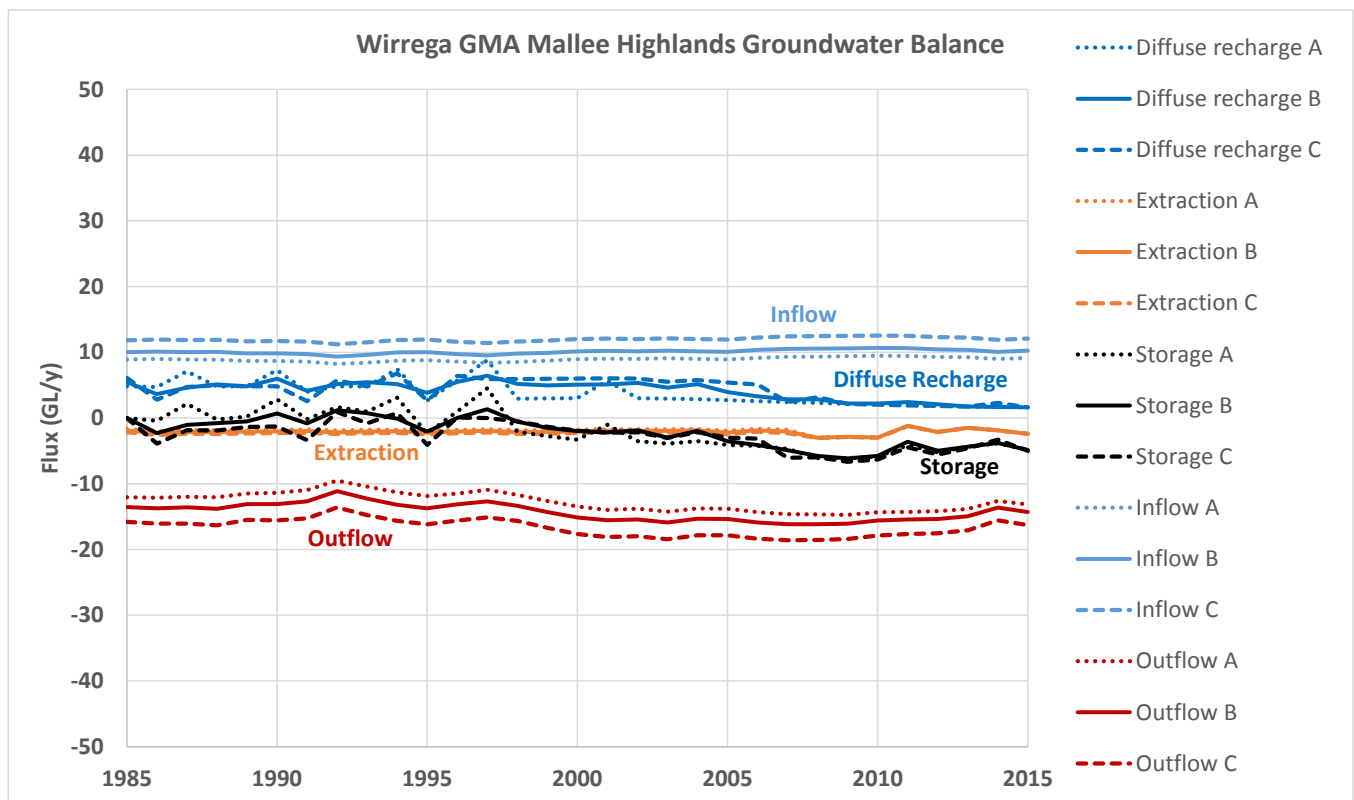


Figure 6. Yearly groundwater balance for the mallee highlands portion of the Wirrega GMA showing results of all three calibrated models

The groundwater balance for the Cannawigara GMA is summarised in Table 3 and shown in Figure 7. The major inputs are throughflow (averaging 15 GL/y) mostly from the Zone 8A GMA and diffuse recharge which reduces on average from 53 GL/y between the periods of 1986–2000 and 2001–15. The primary output is throughflow into North Pendleton GMA which increases from 21–22 GL/y. The decline in storage generally mirrors the decline in recharge and increase in throughflow out of the GMA, changing on average from 1 GL/y to 5 GL/y (between the averaging periods of 1986–2000 and 2001–15).

The groundwater balance for the Shaugh GMA is summarised in Table 3 and shown in Figure 8. The major inputs are throughflow from both Victoria and Zone 8A (averaging a total of 8 GL/y) as well as diffuse recharge which shows only a slight reduction (approximately 0.2 GL/y) over the modelled period. The major outputs are groundwater extraction and throughflow to the west (into the Tintinara–Coonalpyn PWA). Throughflow to the west shows only a very small reduction (of approximately 0.1 GL/y). Groundwater extraction remains relatively constant at 2 GL/y until 2003/4 when it gradually increases to closer to 8 GL/y. Averages from the periods 1986–2000 and 2001–15 change from 25 GL/y. The net storage is similarly relatively stable until 2003/4 when groundwater extraction increases, resulting in an approximately equal rate of change in storage each year (i.e. changing from a stable 0 GL/y to an average reduction of 3 GL/y). Throughflow into the GMA remains constant over this period and does not yet compensate significantly for the increase in extraction.

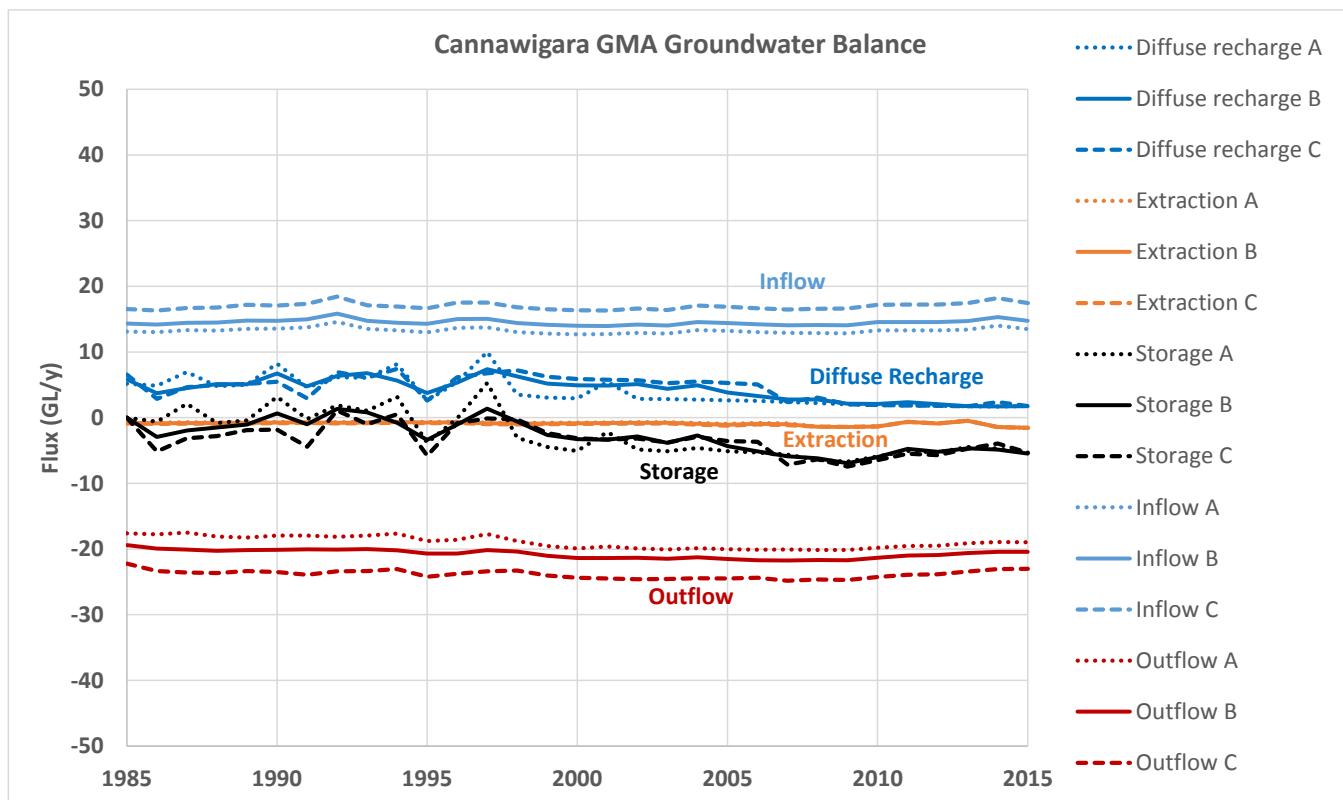


Figure 7. Yearly groundwater balance for the Cannawigara GMA showing results of all three calibrated models

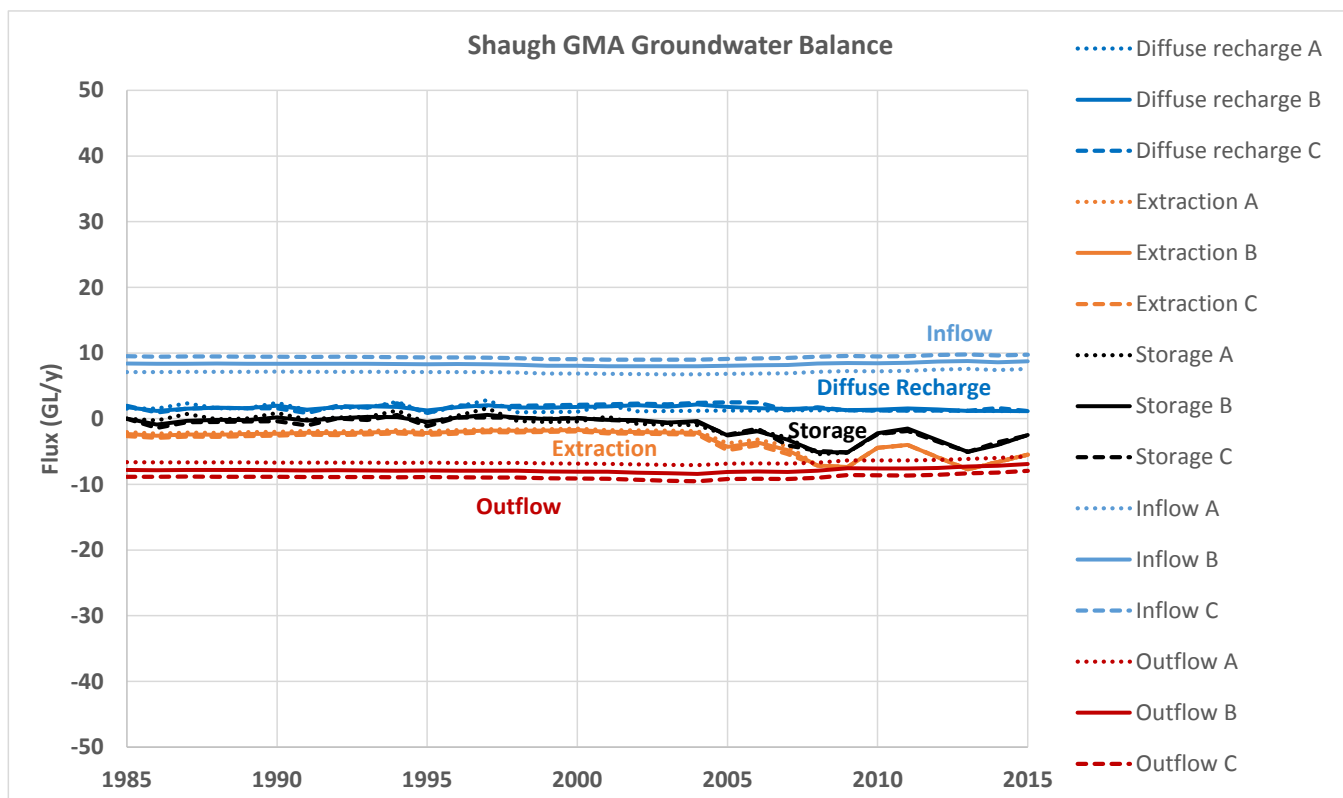


Figure 8. Yearly groundwater balance for the Shaugh GMA showing results of all three calibrated models

The groundwater balance for the Zone 8A GMA is summarised in Table 3 and shown in Figure 9. The major inputs are diffuse recharge (which reduces from 7 to 4 GL/y from the first to last 15-year period) with considerable throughflow from the east and south (7 GL/y) that remains constant. The major outputs are the relatively constant throughflow into the Cannawigara and Shaugh GMAs (16 GL/y), and an increasing groundwater extraction from the late 1990s to 2014/15 of 0 to 2 GL/y. Overall there is on average no net change in storage until the mid-1990s, after which a reduction in storage occurs in all years ranging from 1–9 GL/y and averaging 6 GL/y from 2001–15. These changes in storage approximately mirror the changes in recharge while the recent increasing decline is enhanced by the increase in groundwater extraction. Slight increases in throughflow out of the GMA (into the Cannawigara and Shaugh GMAs) are seen from approximately 2005/6 onwards, likely due to increases in extraction in down-hydraulic gradient GMAs.

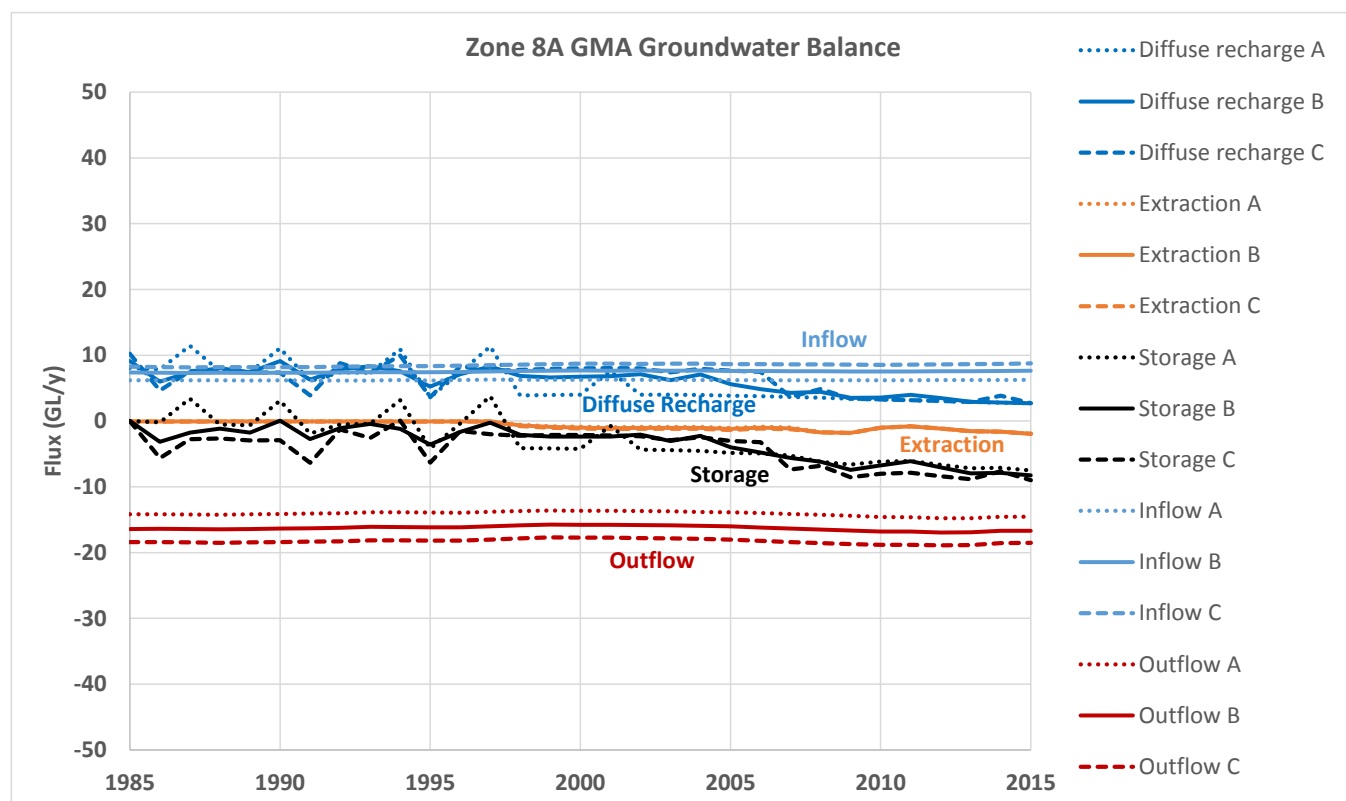


Figure 9. Yearly groundwater balance for the Zone 8A GMA showing results of all three calibrated models

The groundwater balance for the Tatiara GMA is summarised in Table 4 and shown in Figure 10. The major inputs are from throughflow (5 GL/y) and diffuse recharge which reduces from 10 to 5 GL/y over the averaging periods of 1986–2000 and 2001–15. Major outflows are throughflow mostly to the Wirrega GMA (13 GL/y) and groundwater extraction which has increased steadily over the calibration period from approximately 3 to 5 GL/y. There are changes in storage that approximately mirror the changes in recharge until the early 2000s after which storage changes more closely mirror extraction. On average the reduction in storage increases from 1 GL/y to 7 GL/y over the averaging periods of 1986–2000 and 2001–15. Increased throughflow from approximately 1998/9 into the Wirrega GMA also contributes to the reduction in storage as it is not replaced by an equivalent rise in throughflow from the east. This suggests that the increase in throughflow out of the Tatiara GMA is induced by extraction occurring in the Wirrega GMA.

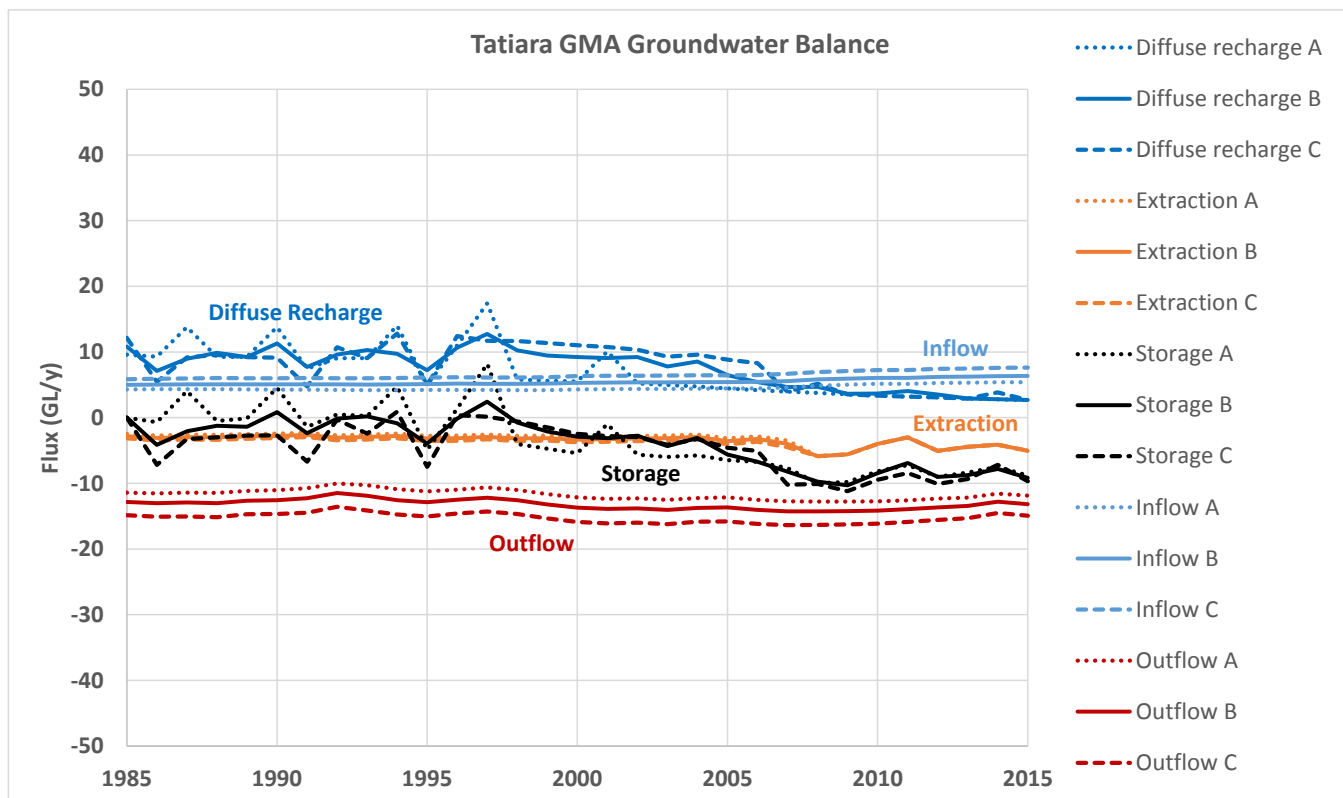


Figure 10. Yearly groundwater balance for the Tatiara GMA showing results of all three calibrated models

Table 1. Summary of groundwater balance components for the Stirling, Willalooka and North Pendleton GMAs

Stirling GMA																					
Date	Diffuse recharge			Extraction			Storage		Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	40	45	51	-34	-39	-44	0	0	0	0	0	0	-1	-2	-3	36	39	42	-41	-43	-45
Steady State (mean)	45			-39			0		0				-2			39			-43		
1986-2000 (A, B, C)	43	42	41	-36	-42	-47	-2	-3	-4	0	0	0	-3	-1	0	37	39	41	-43	-42	-40
1986-2000 (mean)	42			-42			-3		0				-2			39			-41		
2001-2015 (A, B, C)	19	23	26	-32	-35	-37	-6	-5	-4	0	0	0	0	0	0	32	34	36	-26	-28	-29
2001-2015 (mean)	23			-35			-5		0				0			34			-28		
1986-2015 (A, B, C)	31	33	33	-34	-38	-42	-4	-4	-4	0	0	0	-2	-1	0	35	37	39	-35	-35	-34
1986-2015 (mean)	33			-38			-4		0				-1			37			-35		
Willalooka GMA																					
Date	Diffuse recharge			Extraction			Storage		Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	12	14	16	-9	-11	-12	0	0	0	0	0	0	-4	-5	-4	11	13	12	-10	-12	-12
Steady State (mean)	14			-11			0		0				-4			12			-11		
1986-2000 (A, B, C)	19	18	18	-11	-13	-15	0	-1	-2	0	0	0	-7	-6	-4	11	13	12	-11	-13	-13
1986-2000 (mean)	18			-13			-1		0				-6			12			-13		
2001-2015 (A, B, C)	5	6	6	-11	-12	-12	-7	-6	-6	0	0	0	-2	-2	-1	10	12	11	-9	-11	-10
2001-2015 (mean)	6			-12			-7		0				-2			11			-10		
1986-2015 (A, B, C)	12	12	12	-11	-12	-14	-4	-4	-4	0	0	0	-4	-4	-2	10	13	11	-10	-12	-12
1986-2015 (mean)	12			-12			-4		0				-4			12			-11		
North Pendleton GMA																					
Date	Diffuse recharge			Extraction			Storage		Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	10	11	13	-2	-2	-2	0	0	0	0	0	0	0	0	0	17	18	20	-25	-27	-30
Steady State (mean)	11			-2			0		0				0			18			-27		
1986-2000 (A, B, C)	11	10	10	-4	-4	-5	-1	-1	-2	0	0	0	0	0	0	18	19	22	-25	-26	-29
1986-2000 (mean)	10			-4			-1		0				0			19			-27		
2001-2015 (A, B, C)	4	5	6	-5	-5	-5	-4	-4	-3	0	0	0	0	0	0	18	19	22	-21	-23	-26
2001-2015 (mean)	5			-5			-4		0				0			20			-23		
1986-2015 (A, B, C)	7	8	8	-4	-5	-5	-2	-2	-3	0	0	0	0	0	0	18	19	22	-23	-24	-27
1986-2015 (mean)	8			-5			-2		0				0			19			-25		

Table 2. Summary of groundwater balance components for the Wirrega GMA with coastal plain and mallee highland portions

Wirrega GMA																					
Date	Diffuse recharge			Extraction			Storage		Point recharge			Groundwater ET			Inflow			Outflow			
Steady State (A, B, C)	25	28	31	-20	-23	-25	0	0	0	3	3	3	-3	-4	-7	29	32	36	-34	-36	-38
Steady State (mean)		28			-23		0			3			-5			32			-36		
1986-2000 (A, B, C)	25	25	24	-22	-25	-29	-1	-3	-4	6	6	6	-3	-2	-4	29	31	36	-35	-37	-37
1986-2000 (mean)		24			-25		-3			6			-3			32			-36		
2001-2015 (A, B, C)	9	11	12	-22	-24	-25	-8	-7	-6	3	3	3	0	0	-1	31	33	37	-29	-31	-32
2001-2015 (mean)		11			-24		-7			3			0			34			-31		
1986-2015 (A, B, C)	17	18	18	-22	-25	-27	-5	-5	-5	5	5	5	-2	-1	-2	30	32	36	-32	-34	-35
1986-2015 (mean)		18			-25		-5			5			-2			33			-33		
Wirrega GMA Coastal Plain Portion																					
Date	Diffuse recharge			Extraction			Storage		Point recharge			Groundwater ET			Inflow			Outflow			
Steady State (A, B, C)	25	28	31	-20	-23	-25	0	0	0	3	3	3	-3	-4	-7	29	32	36	-34	-36	-38
Steady State (mean)		28			-23		0			3			-5			32			-36		
1986-2000 (A, B, C)	25	25	24	-22	-25	-29	-1	-3	-4	6	6	6	-3	-2	-4	29	31	36	-35	-37	-37
1986-2000 (mean)		24			-25		-3			6			-3			32			-36		
2001-2015 (A, B, C)	9	11	12	-22	-24	-25	-8	-7	-6	3	3	3	0	0	-1	31	33	37	-29	-31	-32
2001-2015 (mean)		11			-24		-7			3			0			34			-31		
1986-2015 (A, B, C)	17	18	18	-22	-25	-27	-5	-5	-5	5	5	5	-2	-1	-2	30	32	36	-32	-34	-35
1986-2015 (mean)		18			-25		-5			5			-2			33			-33		
Wirrega GMA Mallee Highlands Portion																					
Date	Diffuse recharge			Extraction			Storage		Point recharge			Groundwater ET			Inflow			Outflow			
Steady State (A, B, C)	5	5	6	-2	-2	-2	0	0	0	0	0	0	0	0	0	9	10	12	-12	-14	-16
Steady State (mean)		5			-2		0			0			0			10			-14		
1986-2000 (A, B, C)	5	5	5	-2	-2	-2	0	-1	-1	0	0	0	0	0	0	9	10	12	-12	-13	-16
1986-2000 (mean)		5			-2		-1			0			0			10			-14		
2001-2015 (A, B, C)	2	3	4	-2	-2	-2	-4	-4	-4	0	0	0	0	0	0	9	10	12	-14	-15	-18
2001-2015 (mean)		3			-2		-4			0			0			11			-16		
1986-2015 (A, B, C)	4	4	4	-2	-2	-2	-2	-2	-3	0	0	0	0	0	0	9	10	12	-13	-14	-17
1986-2015 (mean)		4			-2		-2			0			0			10			-15		

Table 3. Summary of groundwater balance components for the Cannawigara, Shaugh and Zone 8A GMAs

Cannawigara GMA																					
Date	Diffuse recharge			Extraction				Storage	Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	5	6	7	-1	-1	-1	0	0	0	0	0	0	0	0	0	13	14	17	-18	-19	-22
Steady State (mean)		6			-1			0		0			0			15			-20		
1986-2000 (A, B, C)	5	5	5	-1	-1	-1	0	-1	-2	0	0	0	0	0	0	13	15	17	-18	-20	-24
1986-2000 (mean)		5			-1			-1		0			0			15			-21		
2001-2015 (A, B, C)	2	3	3	-1	-1	-1	-5	-5	-5	0	0	0	0	0	0	13	14	17	-20	-21	-24
2001-2015 (mean)		3			-1			-5		0			0			15			-22		
1986-2015 (A, B, C)	4	4	4	-1	-1	-1	-3	-3	-3	0	0	0	0	0	0	13	15	17	-19	-21	-24
1986-2015 (mean)		4			-1			-3		0			0			15			-21		
Shaugh GMA																					
Date	Diffuse recharge			Extraction				Storage	Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	2	2	2	-2	-2	-3	0	0	0	0	0	0	0	0	0	7	8	10	-7	-8	-9
Steady State (mean)		2			-2			0		0			0			8			-8		
1986-2000 (A, B, C)	2	2	2	-2	-2	-2	0	0	0	0	0	0	0	0	0	7	8	9	-7	-8	-9
1986-2000 (mean)		2			-2			0		0			0			8			-8		
2001-2015 (A, B, C)	1	2	2	-4	-5	-5	-3	-3	-3	0	0	0	0	0	0	7	8	9	-7	-8	-9
2001-2015 (mean)		2			-5			-3		0			0			8			-8		
1986-2015 (A, B, C)	1	2	2	-3	-3	-4	-1	-1	-1	0	0	0	0	0	0	7	8	9	-7	-8	-9
1986-2015 (mean)		2			-3			-1		0			0			8			-8		
Zone 8A GMA																					
Date	Diffuse recharge			Extraction				Storage	Point recharge				Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	8	9	10	0	0	0	0	0	0	0	0	0	0	0	0	6	7	8	-14	-16	-18
Steady State (mean)		9			0			0		0			0			7			-16		
1986-2000 (A, B, C)	7	7	7	0	0	0	-1	-2	-3	0	0	0	0	0	0	6	7	8	-14	-16	-18
1986-2000 (mean)		7			0			-2		0			0			7			-16		
2001-2015 (A, B, C)	4	5	5	-1	-1	-1	-6	-5	-6	0	0	0	0	0	0	6	8	9	-14	-16	-18
2001-2015 (mean)		4			-1			-6		0			0			7			-16		
1986-2015 (A, B, C)	6	6	6	-1	-1	-1	-3	-4	-4	0	0	0	0	0	0	6	8	8	-14	-16	-18
1986-2015 (mean)		6			-1			-4		0			0			7			-16		

Table 4. Summary of groundwater balance components for the Tatiara GMA

Tatiara GMA																					
Date	Diffuse recharge			Extraction			Storage			Point recharge			Groundwater ET			Inflow			Outflow		
Steady State (A, B, C)	10	11	12	-2	-3	-3	0	0	0	0	0	0	0	0	0	4	5	6	-11	-13	-15
Steady State (mean)		11			-3			0			0			0			5			-13	
1986-2000 (A, B, C)	10	10	10	-3	-3	-3	0	-1	-3	0	0	0	0	0	0	4	5	6	-11	-13	-15
1986-2000 (mean)		10			-3			-1			0			0			5			-13	
2001-2015 (A, B, C)	4	5	6	-4	-4	-4	-7	-7	-7	0	0	0	0	0	0	5	6	7	-12	-14	-16
2001-2015 (mean)		5			-4			-7			0			0			6			-14	
1986-2015 (A, B, C)	7	7	8	-3	-4	-4	-4	-4	-5	0	0	0	0	0	0	5	5	6	-12	-13	-15
1986-2015 (mean)		7			-4			-4			0			0			5			-13	

C. Mass balance projections for all extraction scenarios

The groundwater mass balance projections for all scenarios are summarised in Table 5, Table 6 and Table 7 for the Tatiara PWA coastal plain and mallee highland areas respectively. The minimum, **average (bold)** and maximum mass balance components for each of the nine unique projections are shown for each 10-year average. Bar charts are also displayed for each scenario separately for the coastal plain and mallee highlands within the Tatiara PWA on the following pages (Figure 11 through Figure 18). These figures show 10-year average groundwater mass balances and include error bars representing the highest and lowest average values from the nine variations of each scenario.

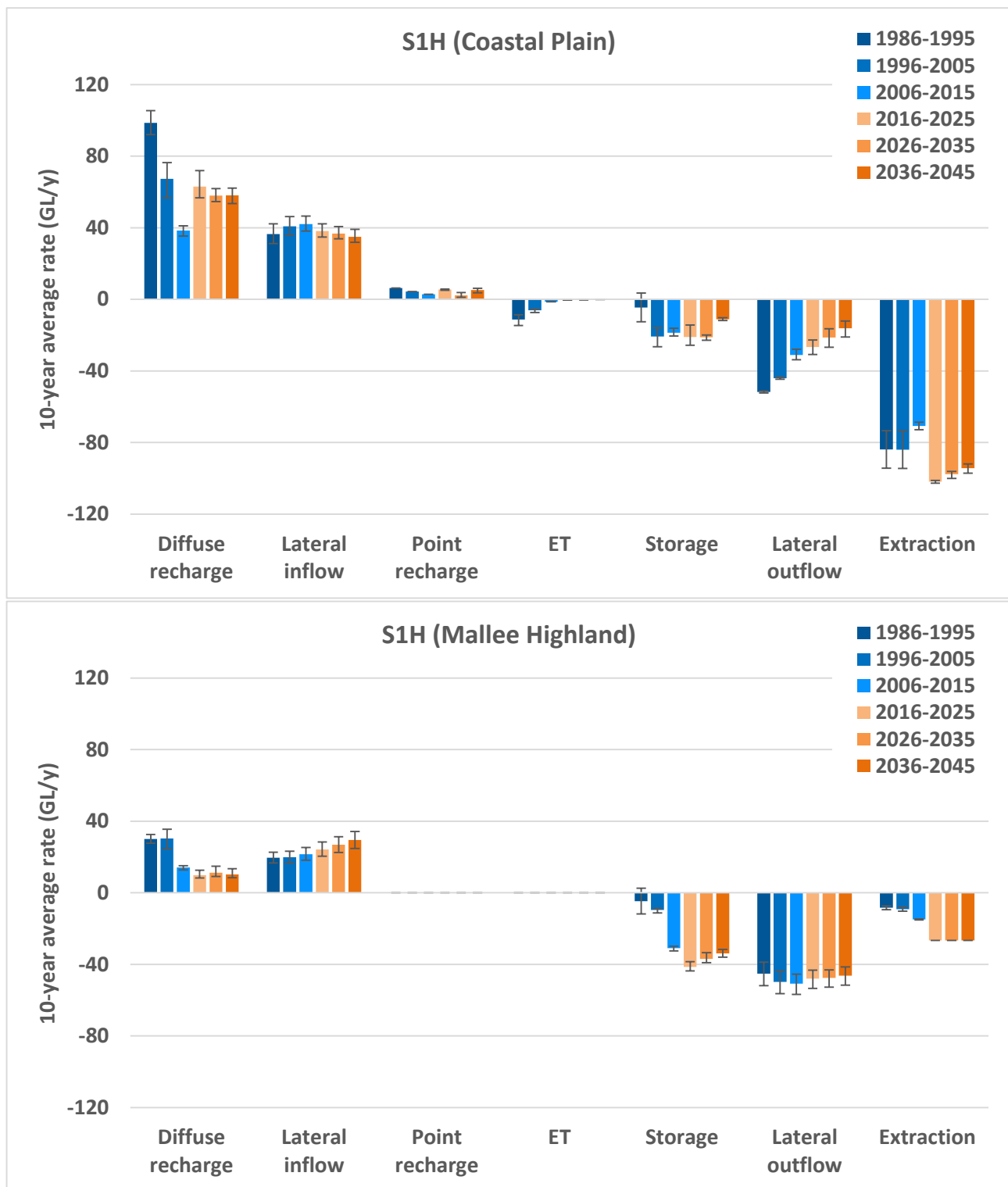


Figure 11. 10-year average groundwater mass balance for full allocation with high carbon emissions scenarios

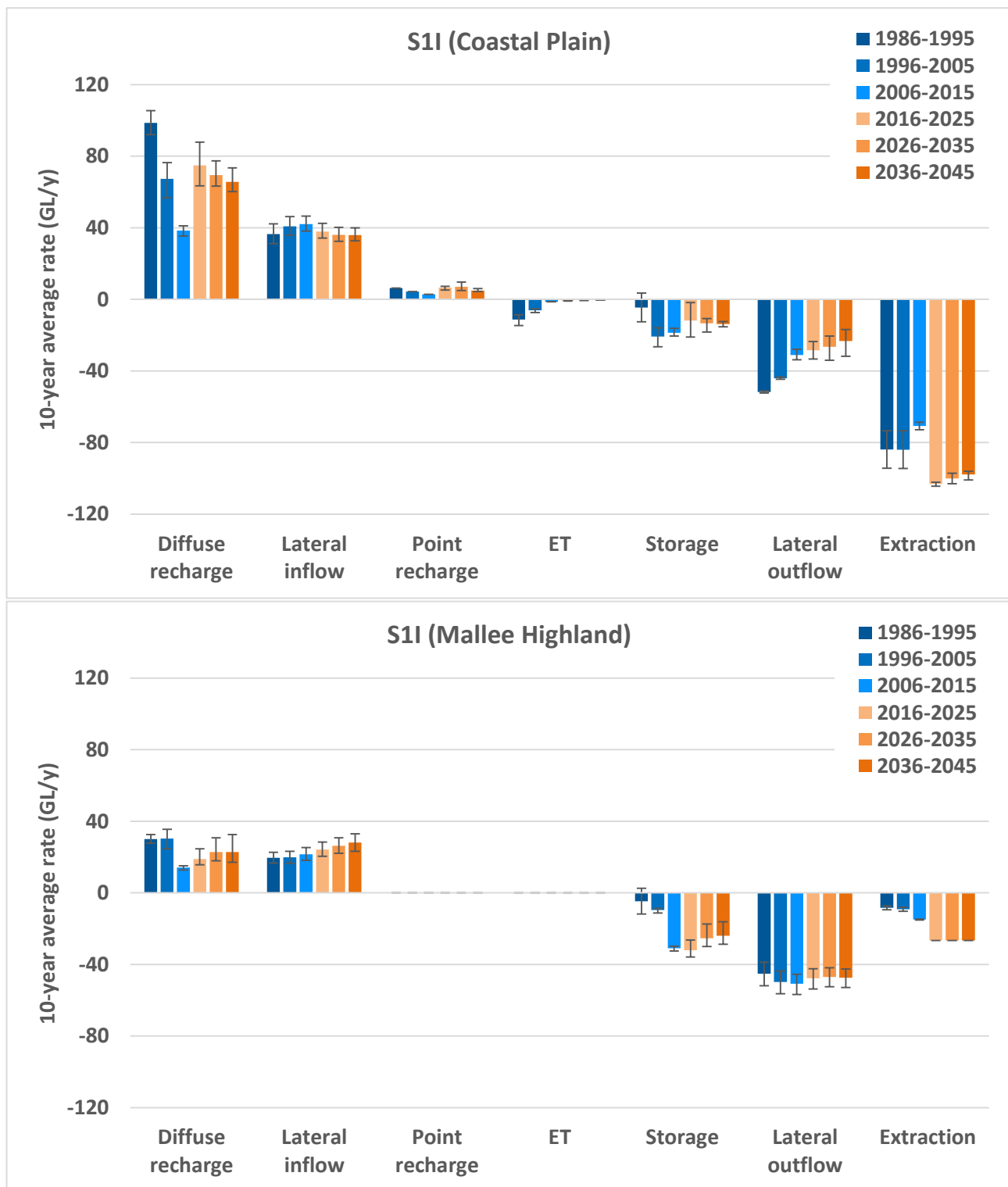


Figure 12. 10-year average groundwater mass balance for full allocation with intermediate carbon emissions scenarios

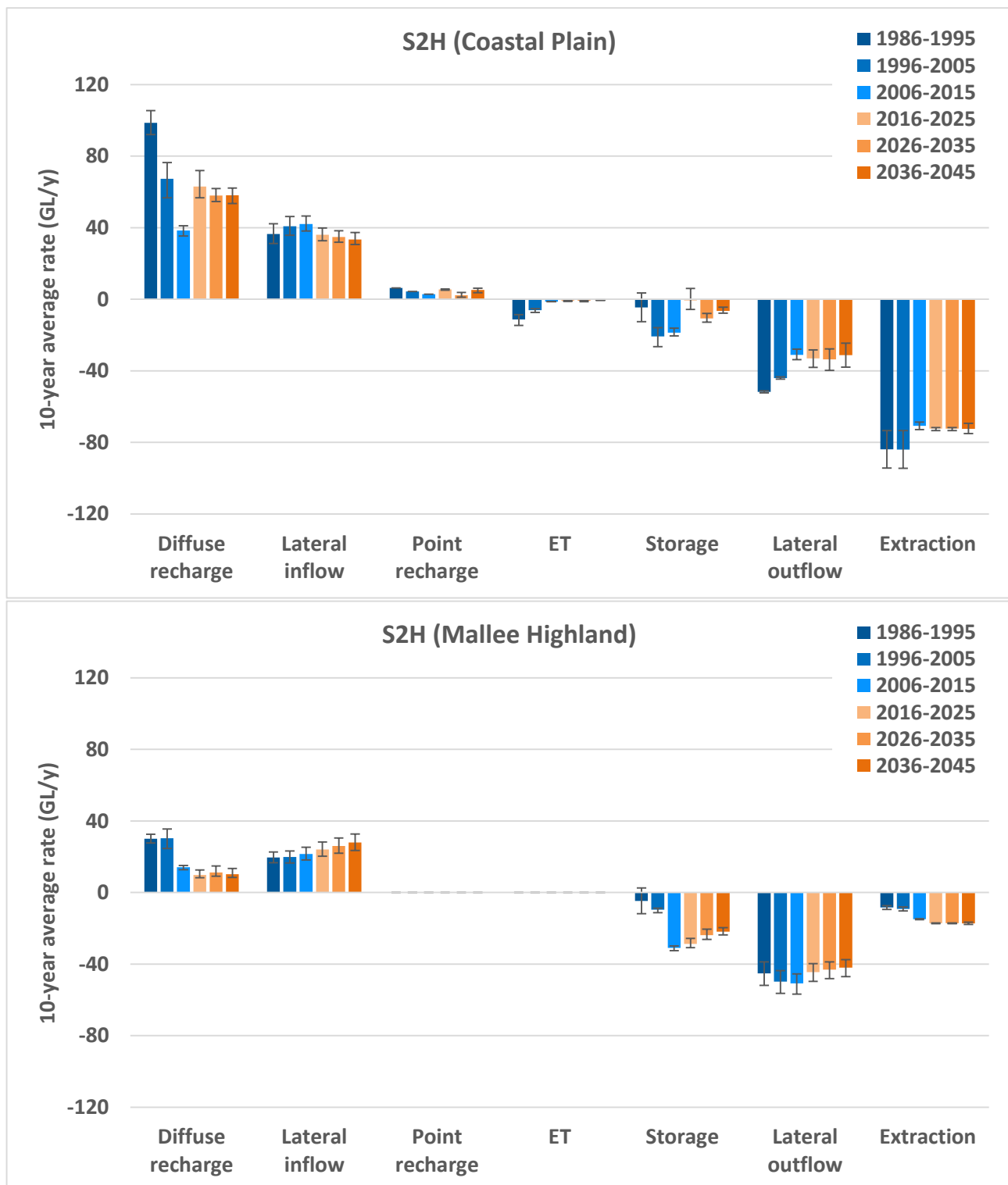


Figure 13. 10-year average groundwater mass balance for periodic extraction with high carbon emissions scenarios

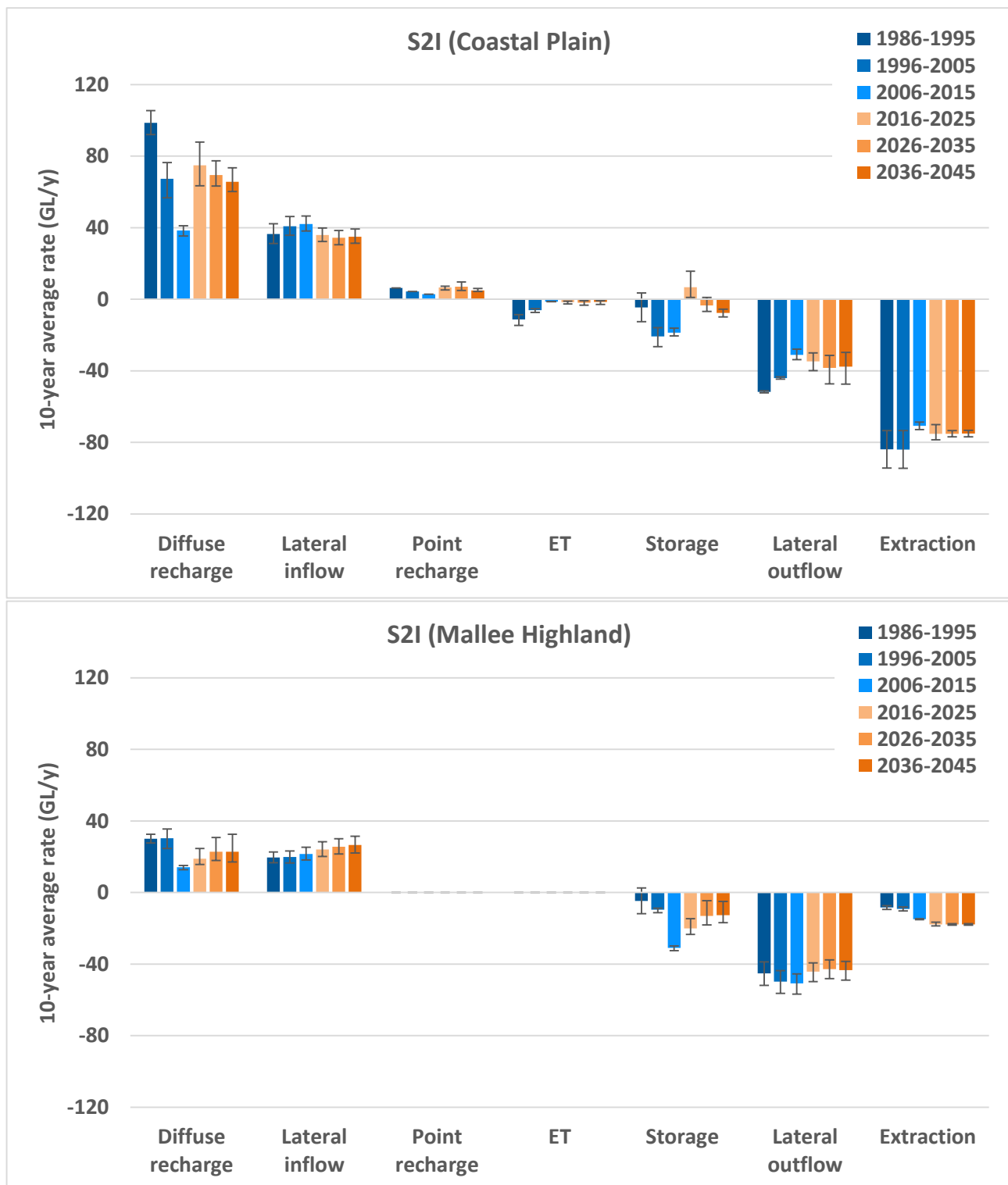


Figure 14. 10-year average groundwater mass balance for periodic extraction with intermediate carbon emissions scenarios

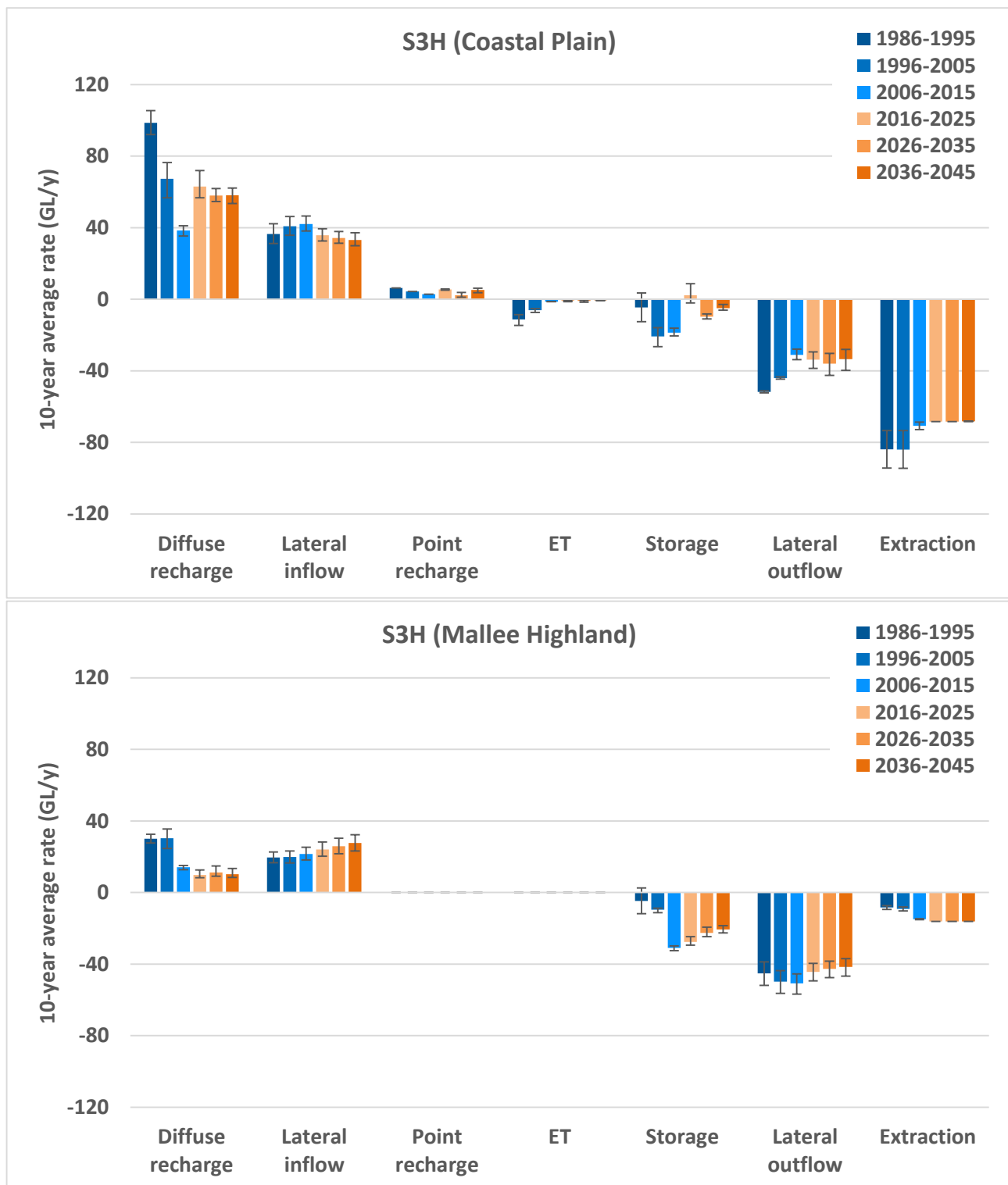


Figure 15. 10-year average groundwater mass balance for current extraction with high carbon emissions scenarios

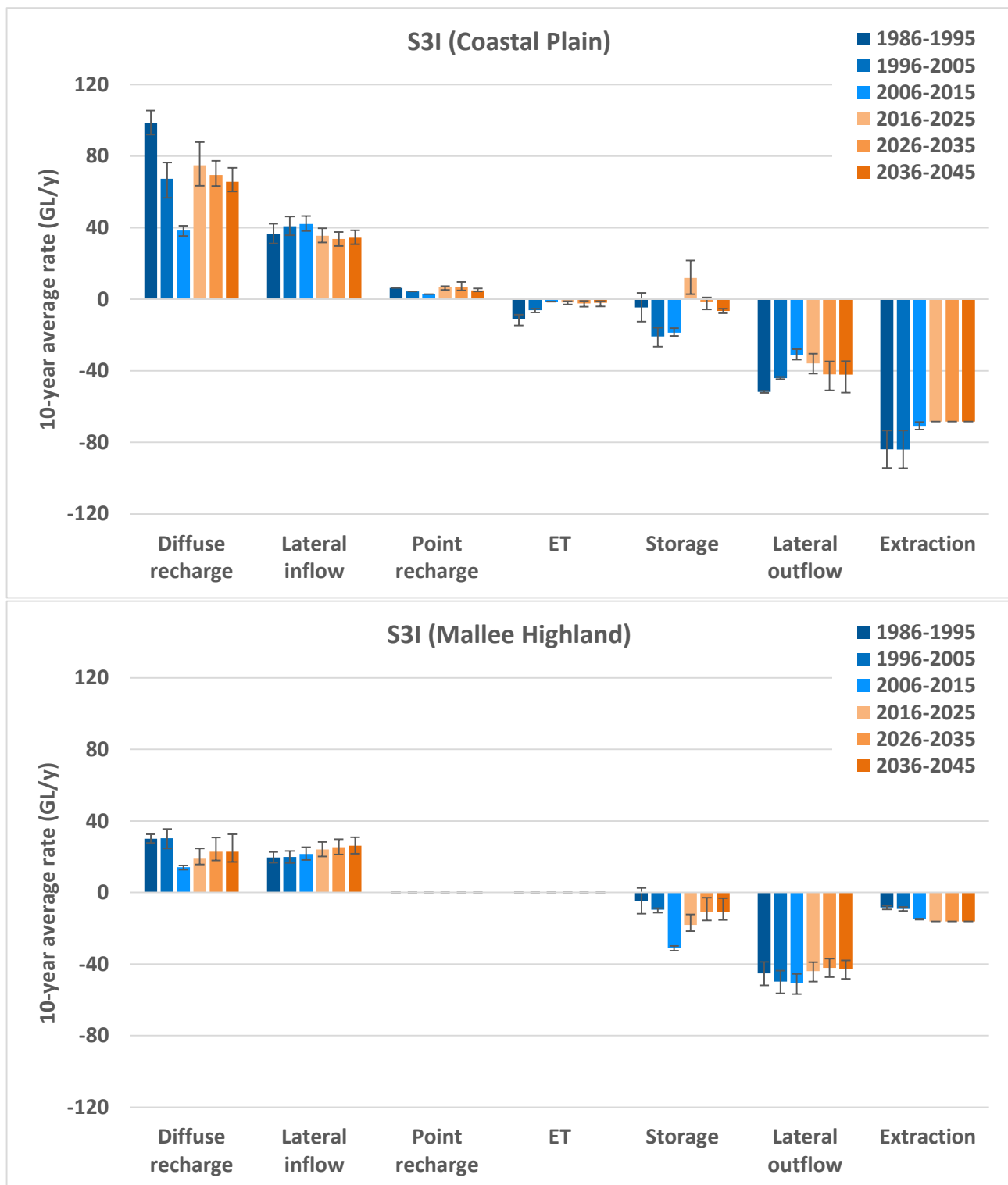


Figure 16. 10-year average groundwater mass balance for current extraction with intermediate carbon emissions scenarios

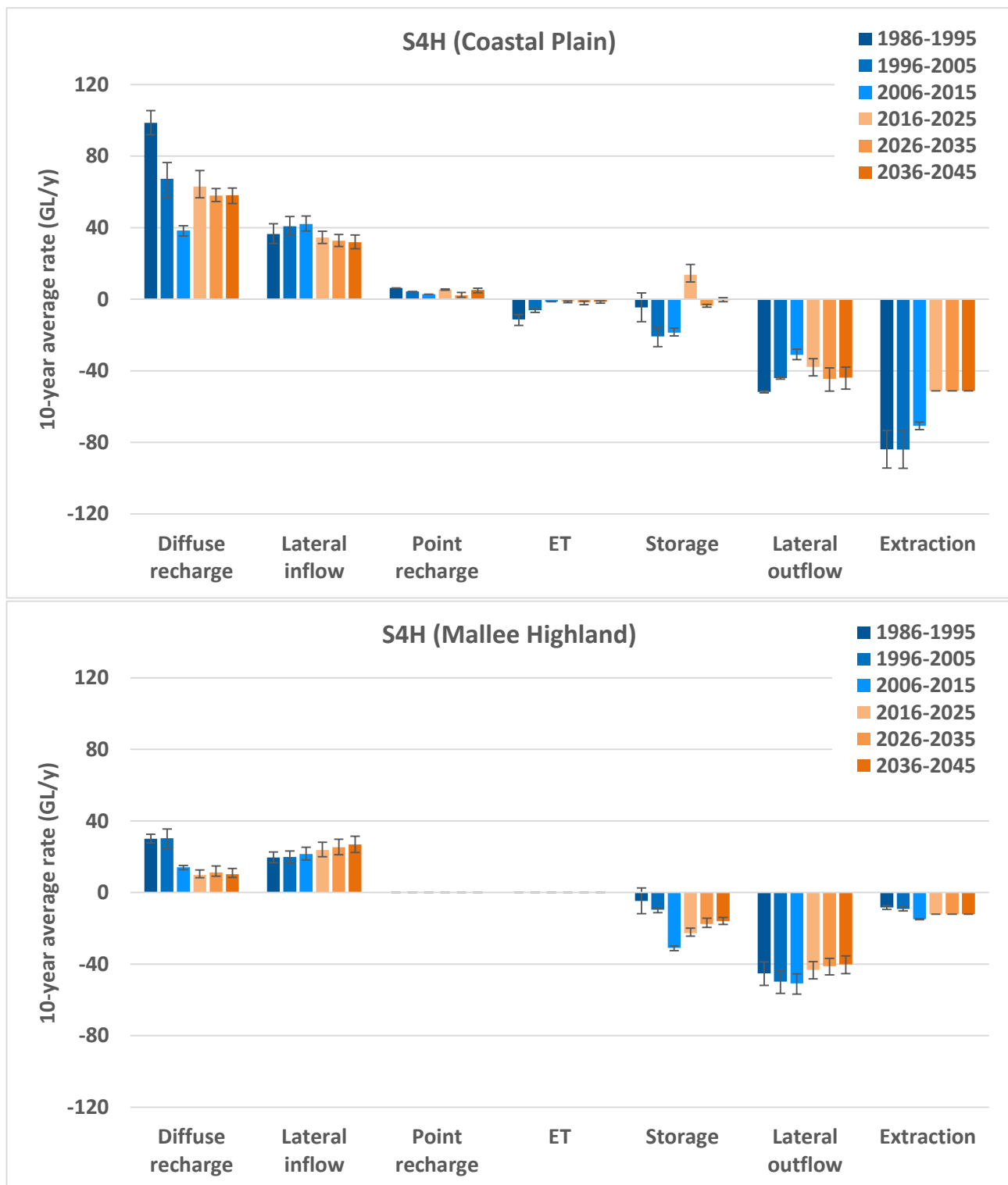


Figure 17. 10-year average groundwater mass balance for lower extraction with high carbon emissions scenarios

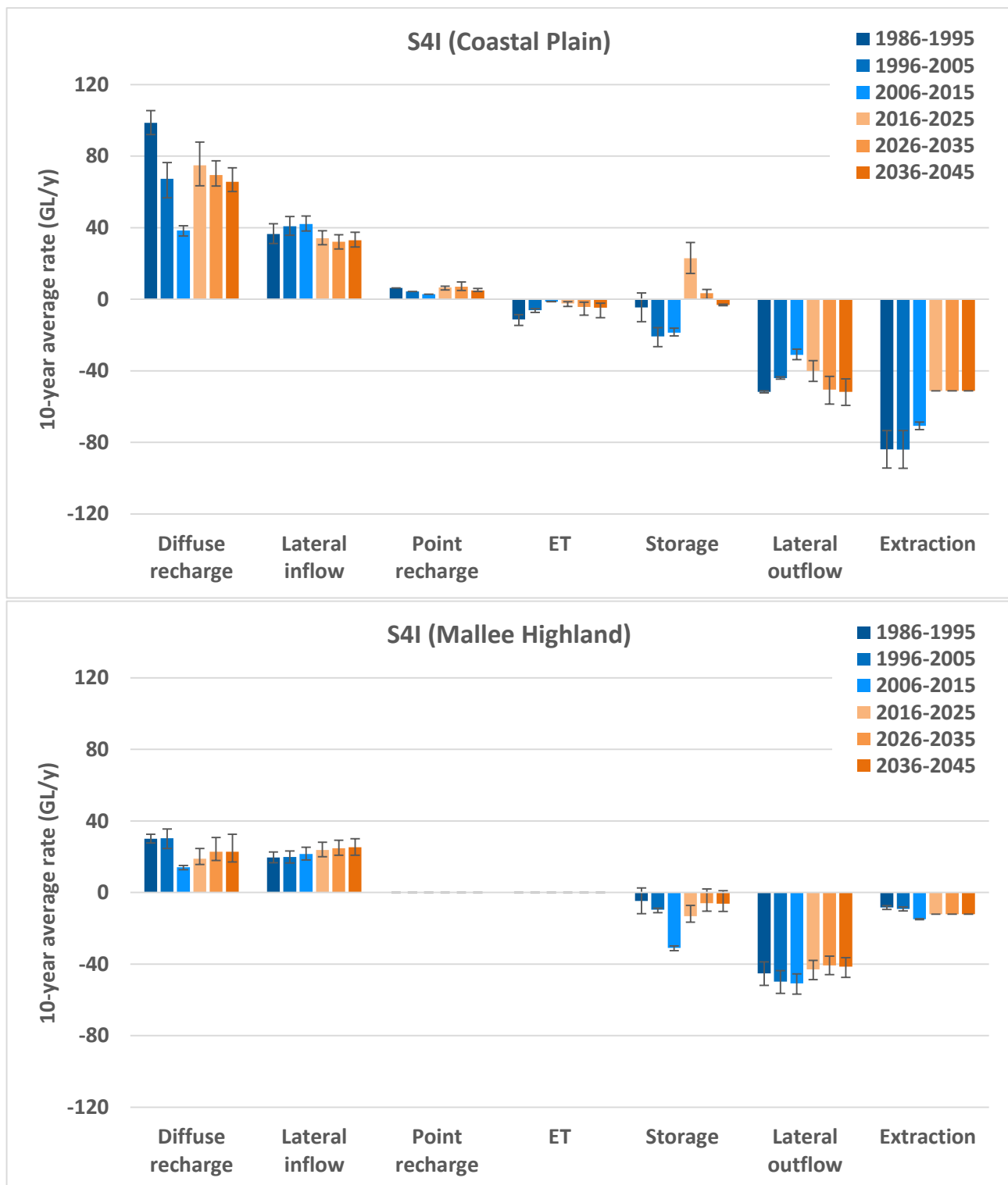


Figure 18. 10-year average groundwater mass balance for lower extraction with intermediate carbon emissions scenarios

Table 5 10-year average groundwater mass balances for the Tatiara PWA showing minimum, average (bold) and maximum flux values

		Diffuse recharge			Extraction			Storage			Point recharge			Groundwater ET			Inflow			Outflow		
Calibration	Steady State	116	132	147	-72	-82	-93	0	0	0	3	3	3	-8	-10	-14	18	21	24	-57	-63	-68
	1986-1995	120	129	138	-81	-92	-104	6	-9	-24	6	6	6	-9	-11	-15	18	21	25	-61	-62	-63
	1996-2005	81	98	112	-81	-93	-105	-25	-30	-38	4	4	4	-5	-6	-7	18	22	25	-53	-55	-56
	2006-2015	48	53	56	-83	-86	-88	-49	-50	-50	3	3	3	-1	-1	-1	20	23	27	-37	-41	-45
S1I	2015-2024	79	94	112	-129	-130	-131	-28	-44	-56	5	7	7	0	-1	-1	22	26	29	-33	-40	-46
	2025-2034	83	92	108	-124	-127	-130	-28	-39	-47	5	7	10	0	0	-1	23	28	32	-31	-39	-47
	2035-2045	78	89	106	-123	-124	-127	-29	-38	-44	4	5	6	0	0	0	25	29	34	-28	-36	-46
S1H	2015-2024	65	73	85	-128	-128	-129	-54	-62	-68	5	6	6	0	0	0	22	26	30	-32	-38	-43
	2025-2034	64	69	77	-123	-124	-127	-54	-58	-61	1	2	4	0	0	0	24	28	32	-27	-33	-40
	2035-2045	62	68	76	-118	-121	-124	-42	-45	-48	4	5	6	0	0	0	26	31	35	-23	-28	-35
S2I	2015-2024	79	94	112	-87	-93	-97	1	-13	-21	5	7	7	-1	-2	-3	21	25	29	-38	-44	-50
	2025-2034	83	92	108	-91	-93	-95	-3	-16	-24	5	7	10	-1	-2	-3	23	27	31	-40	-48	-58
	2035-2045	78	89	106	-91	-93	-95	-10	-20	-26	4	5	6	-1	-1	-3	24	28	33	-38	-47	-58
S2H	2015-2024	65	73	85	-89	-89	-91	-20	-29	-36	5	6	6	-1	-1	-1	21	25	29	-36	-43	-49
	2025-2034	64	69	77	-89	-89	-91	-28	-34	-39	1	2	4	-1	-1	-1	23	27	31	-36	-43	-50
	2035-2045	62	68	76	-86	-90	-93	-26	-28	-31	4	5	6	0	0	-1	25	29	33	-33	-41	-49
S3I	2015-2024	79	94	112	-84	-84	-84	9	-6	-18	5	7	7	-1	-2	-3	21	25	29	-39	-45	-52
	2025-2034	83	92	108	-84	-84	-84	-2	-12	-20	5	7	10	-1	-2	-4	23	27	31	-43	-52	-62
	2035-2045	78	89	106	-84	-84	-84	-8	-17	-23	4	5	6	-1	-2	-4	23	28	32	-43	-52	-63
S3H	2015-2024	65	73	85	-84	-84	-84	-16	-25	-31	5	6	6	-1	-1	-1	21	25	29	-38	-43	-49
	2025-2034	64	69	77	-84	-84	-84	-27	-32	-35	1	2	4	-1	-1	-2	23	27	31	-38	-45	-53
	2035-2045	62	68	76	-84	-84	-84	-21	-26	-29	4	5	6	0	-1	-1	25	29	33	-36	-43	-50
S4I	2015-2024	79	94	112	-63	-63	-63	25	10	-2	5	7	7	-1	-2	-4	21	25	28	-43	-50	-56
	2025-2034	83	92	108	-63	-63	-63	6	-2	-9	5	7	10	-2	-4	-9	22	26	30	-51	-60	-69
	2035-2045	78	89	106	-63	-63	-63	-2	-9	-14	4	5	6	-2	-5	-10	22	27	31	-53	-61	-70
S4H	2015-2024	65	73	85	-63	-63	-63	-1	-9	-14	5	6	6	-1	-1	-2	21	25	28	-41	-47	-53
	2025-2034	64	69	77	-63	-63	-63	-17	-21	-24	1	2	4	-1	-2	-3	22	26	30	-46	-54	-62
	2035-2045	62	68	76	-63	-63	-63	-13	-16	-19	4	5	6	-1	-1	-2	24	28	32	-46	-53	-61

Table 6 10-year average groundwater mass balances for the coastal plain within the Tatiara PWA showing minimum, average (bold) and maximum flux values

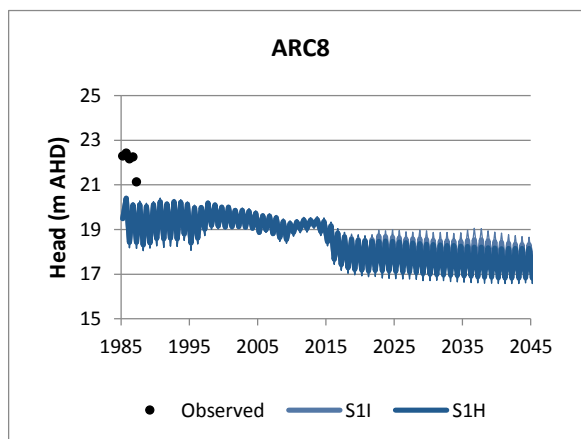
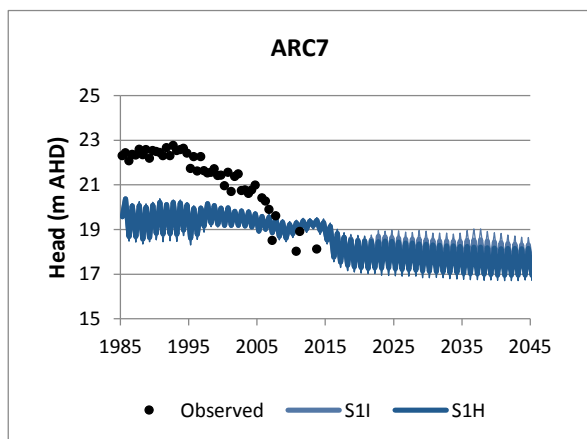
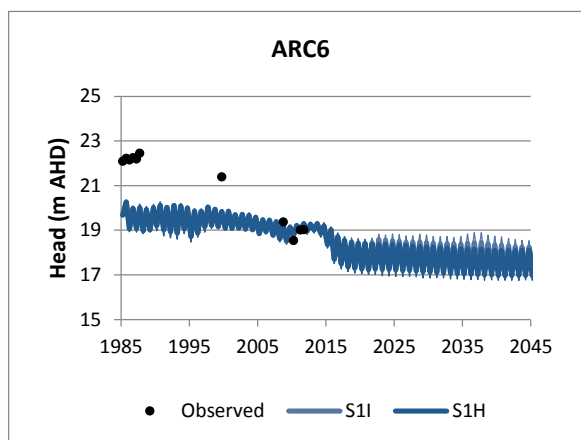
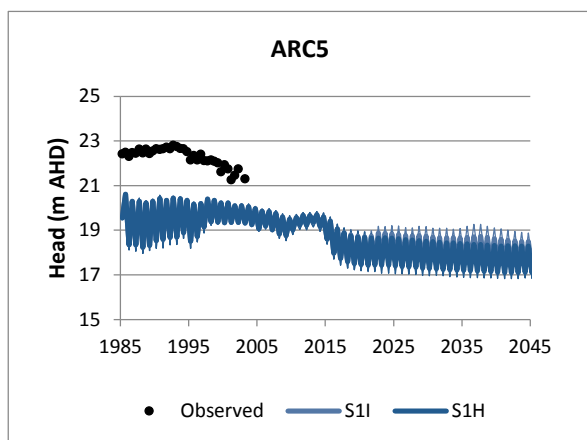
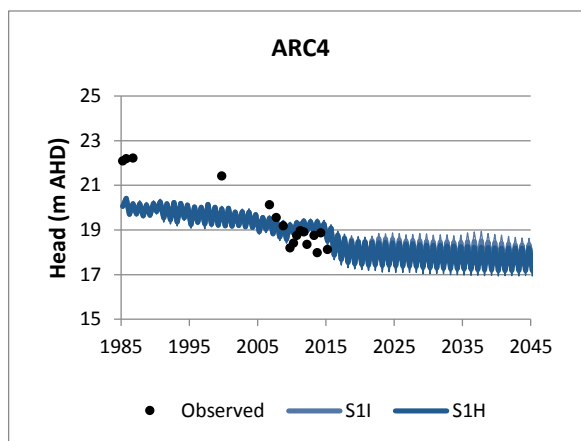
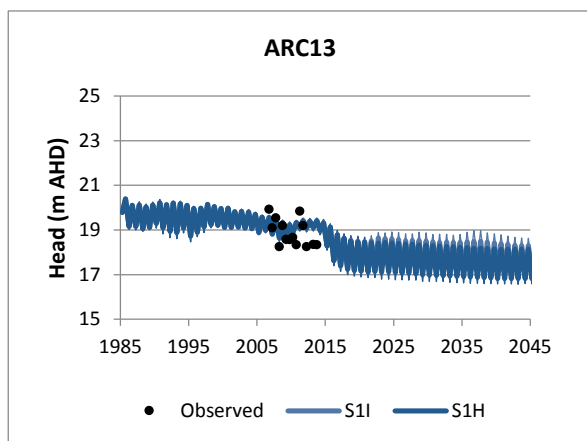
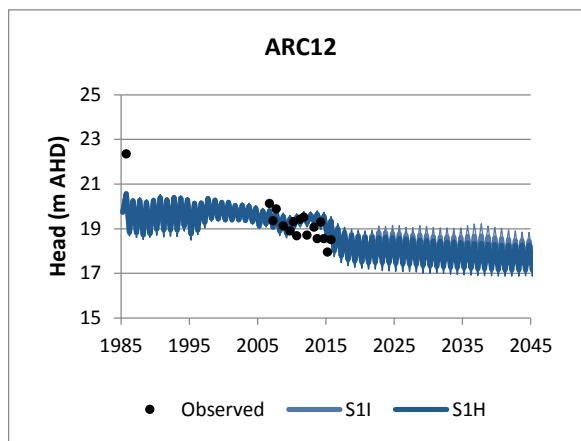
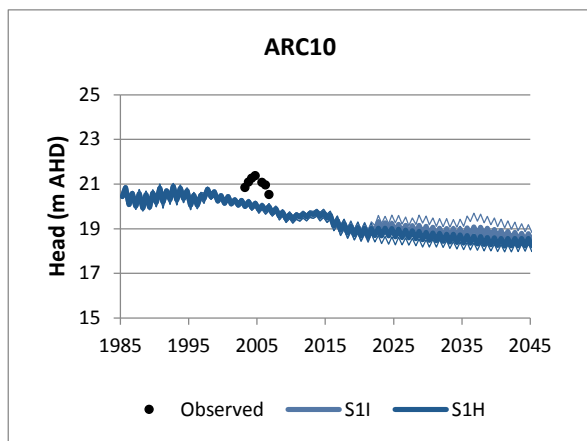
		Diffuse recharge			Extraction			Storage			Point recharge			Groundwater ET			Inflow			Outflow		
Calibration	Steady State	85	97	108	-65	-74	-84	0	0	0	3	3	3	-8	-10	-14	32	36	41	-49	-52	-56
	1986-1995	92	99	106	-73	-84	-94	4	-4	-12	6	6	6	-9	-11	-15	31	36	42	-51	-52	-52
	1996-2005	57	67	76	-73	-84	-94	-16	-21	-26	4	4	4	-5	-6	-7	36	41	46	-43	-44	-45
	2006-2015	35	38	41	-69	-71	-73	-16	-19	-20	3	3	3	-1	-1	-1	38	42	47	-28	-31	-34
S1I	2015-2024	63	75	88	-102	-103	-104	-2	-12	-21	5	7	7	0	-1	-1	34	38	43	-24	-28	-33
	2025-2034	63	69	77	-97	-100	-103	-11	-13	-18	5	7	10	0	0	-1	32	36	40	-20	-26	-34
	2035-2045	60	66	73	-96	-98	-101	-12	-14	-15	4	5	6	0	0	0	33	36	40	-17	-23	-32
S1H	2015-2024	57	63	72	-101	-102	-103	-14	-21	-26	5	6	6	0	0	0	35	38	42	-23	-27	-31
	2025-2034	55	58	62	-96	-98	-100	-20	-21	-23	1	2	4	0	0	0	34	37	41	-16	-21	-27
	2035-2045	54	58	62	-92	-94	-97	-10	-11	-12	4	5	6	0	0	0	32	35	39	-12	-16	-21
S2I	2015-2024	63	75	88	-70	-75	-79	16	7	1	5	7	7	-1	-2	-3	32	36	40	-30	-35	-40
	2025-2034	63	69	77	-73	-75	-77	1	-3	-7	5	7	10	-1	-2	-3	31	34	38	-31	-38	-47
	2035-2045	60	66	73	-73	-75	-77	-6	-8	-10	4	5	6	-1	-1	-3	31	35	39	-30	-38	-47
S2H	2015-2024	57	63	72	-72	-72	-73	6	-1	-6	5	6	6	-1	-1	-1	33	36	40	-28	-33	-38
	2025-2034	55	58	62	-72	-72	-73	-8	-11	-13	1	2	4	-1	-1	-1	32	35	38	-28	-34	-40
	2035-2045	54	58	62	-69	-72	-75	-4	-6	-8	4	5	6	0	0	-1	31	33	37	-24	-31	-38
S3I	2015-2024	63	75	88	-68	-68	-68	22	12	3	5	7	7	-1	-2	-3	32	35	40	-30	-36	-41
	2025-2034	63	69	77	-68	-68	-68	1	-2	-6	5	7	10	-1	-2	-4	30	34	38	-35	-42	-51
	2035-2045	60	66	73	-68	-68	-68	-5	-6	-8	4	5	6	-1	-2	-4	31	34	39	-35	-42	-52
S3H	2015-2024	57	63	72	-68	-68	-68	9	2	-2	5	6	6	-1	-1	-1	33	36	39	-29	-34	-39
	2025-2034	55	58	62	-68	-68	-68	-8	-10	-11	1	2	4	-1	-1	-2	31	34	38	-30	-36	-42
	2035-2045	54	58	62	-68	-68	-68	-3	-5	-6	4	5	6	0	-1	-1	30	33	37	-28	-33	-40
S4I	2015-2024	63	75	88	-51	-51	-51	32	23	14	5	7	7	-1	-2	-4	30	34	38	-34	-40	-46
	2025-2034	63	69	77	-51	-51	-51	5	3	0	5	7	10	-2	-4	-9	28	32	36	-43	-50	-59
	2035-2045	60	66	73	-51	-51	-51	-3	-3	-4	4	5	6	-2	-5	-10	29	33	37	-45	-52	-59
S4H	2015-2024	57	63	72	-51	-51	-51	20	14	10	5	6	6	-1	-1	-2	31	34	38	-33	-38	-43
	2025-2034	55	58	62	-51	-51	-51	-3	-4	-4	1	2	4	-1	-2	-3	30	33	36	-38	-45	-51
	2035-2045	54	58	62	-51	-51	-51	1	0	-1	4	5	6	-1	-1	-2	28	32	36	-38	-44	-50

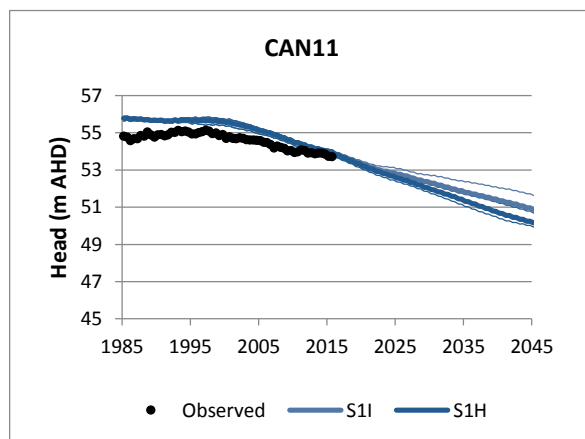
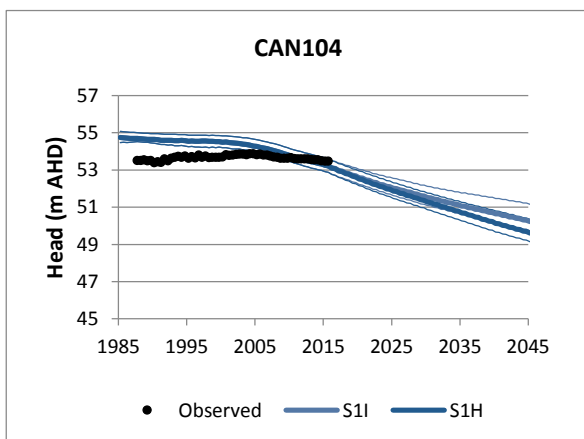
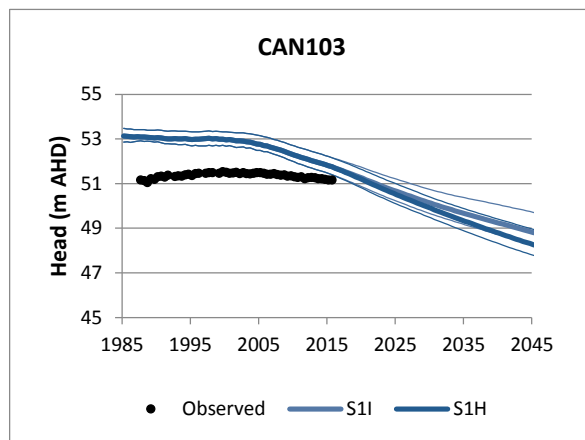
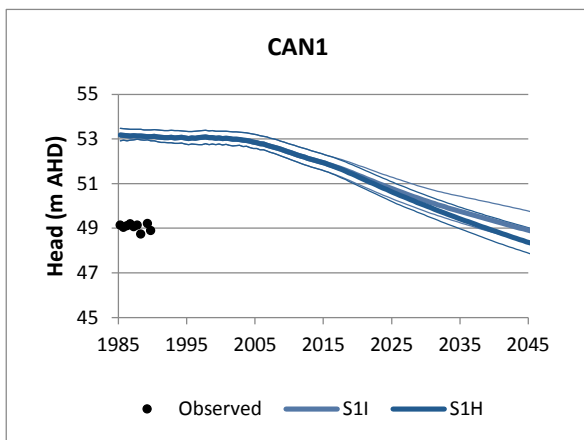
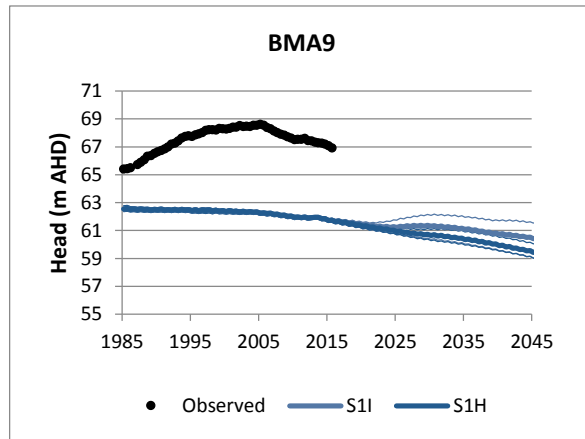
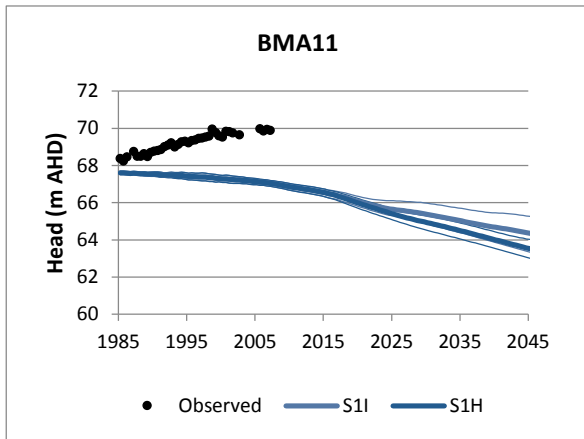
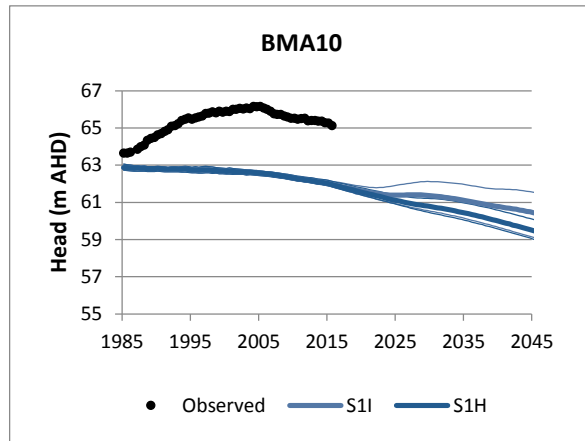
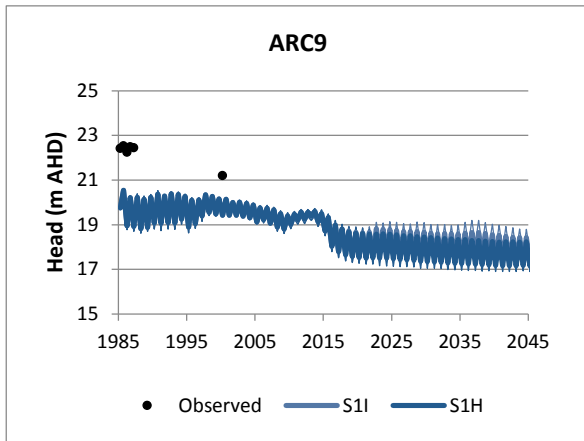
Table 7 10-year average groundwater mass balances for the mallee highland within the Tatiara PWA showing minimum, average (bold) and maximum flux values

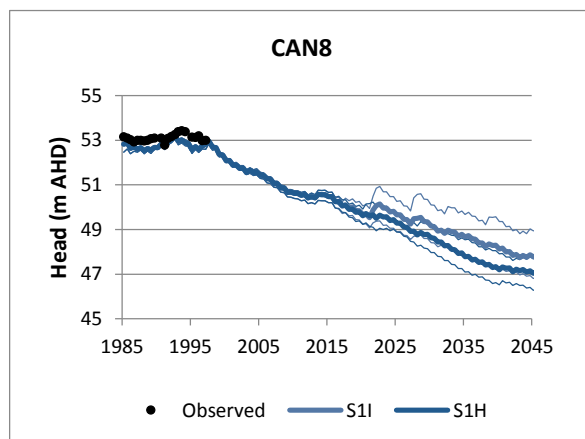
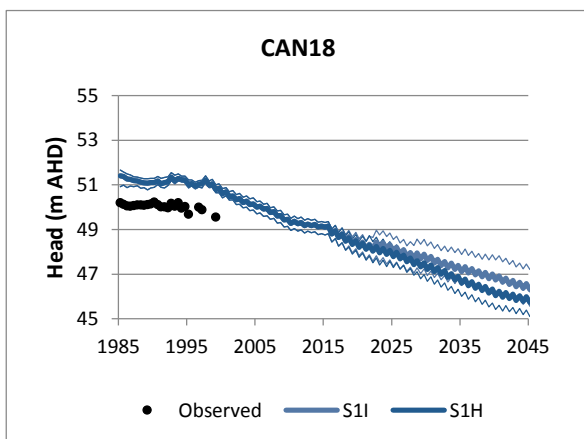
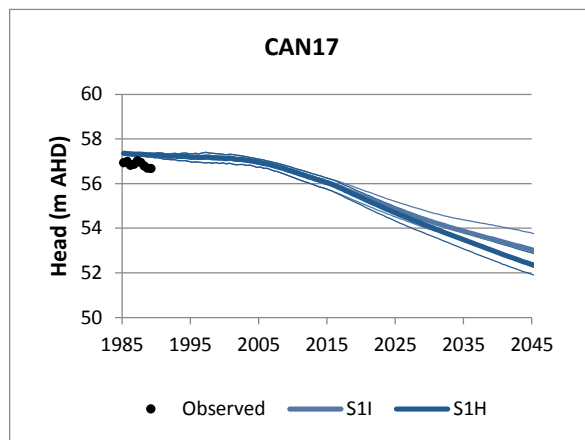
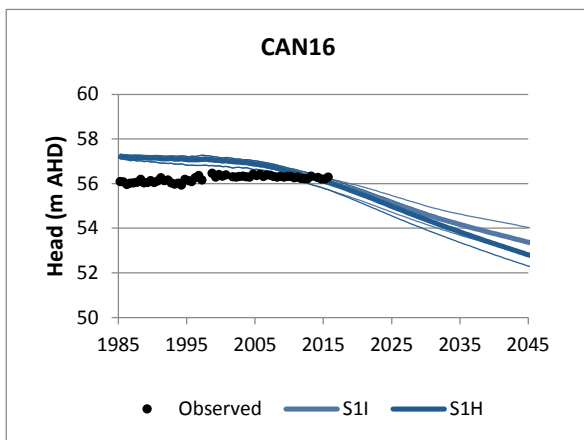
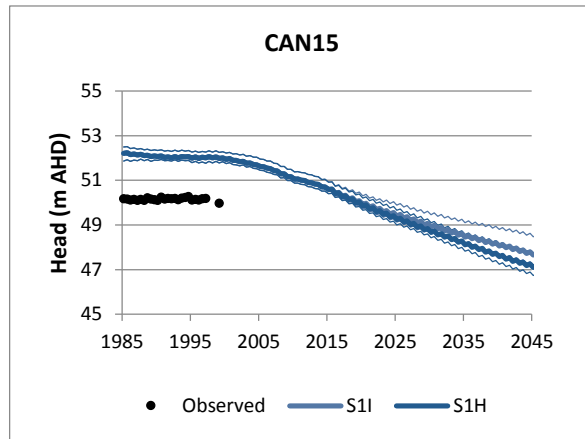
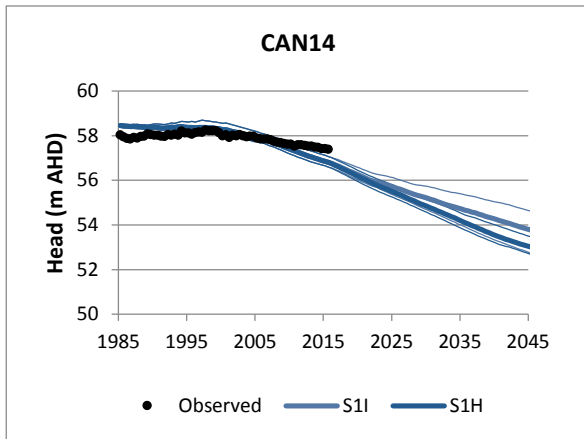
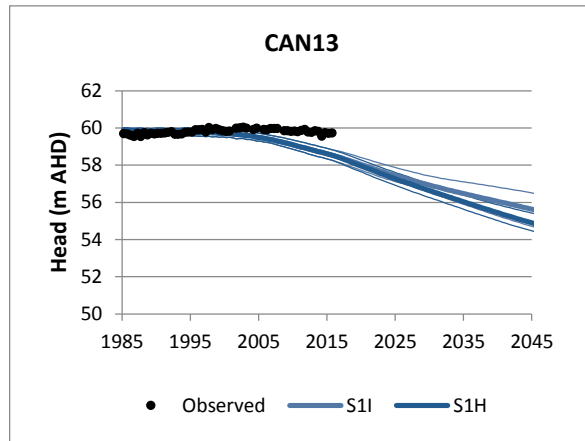
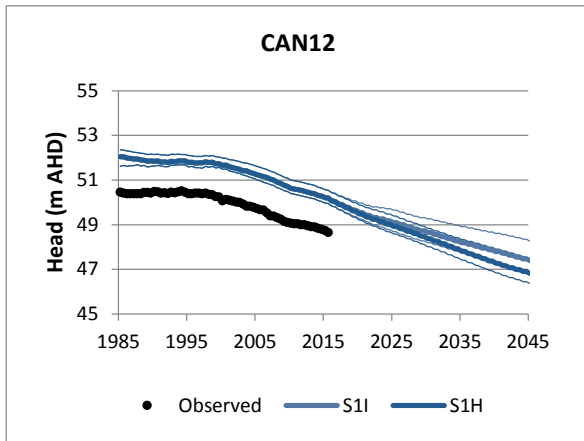
		Diffuse recharge			Extraction			Storage			Point recharge			Groundwater ET			Inflow			Outflow		
Calibration	Steady State	31	35	39	-7	-8	-9	0	0	0	0	0	0	0	0	0	17	19	22	-40	-45	-51
	1986-1995	28	30	33	-7	-8	-9	3	-5	-12	0	0	0	0	0	0	17	20	23	-39	-45	-52
	1996-2005	25	30	36	-8	-9	-10	-9	-10	-11	0	0	0	0	0	0	17	20	23	-44	-50	-56
	2006-2015	13	14	15	-15	-15	-15	-30	-31	-32	0	0	0	0	0	0	18	22	25	-45	-51	-57
S1I	2015-2024	16	19	25	-27	-27	-27	-26	-32	-36	0	0	0	0	0	0	20	24	28	-42	-48	-54
	2025-2034	18	23	31	-27	-27	-27	-17	-25	-30	0	0	0	0	0	0	22	26	31	-42	-47	-52
	2035-2045	17	23	33	-27	-27	-27	-16	-24	-29	0	0	0	0	0	0	23	28	33	-42	-47	-53
S1H	2015-2024	8	10	13	-27	-27	-27	-38	-41	-44	0	0	0	0	0	0	20	24	28	-43	-48	-53
	2025-2034	9	11	15	-27	-27	-27	-34	-37	-39	0	0	0	0	0	0	23	27	31	-43	-48	-53
	2035-2045	8	10	13	-27	-27	-27	-32	-34	-36	0	0	0	0	0	0	25	30	34	-41	-46	-52
S2I	2015-2024	16	19	25	-17	-18	-19	-15	-20	-23	0	0	0	0	0	0	20	24	28	-39	-44	-50
	2025-2034	18	23	31	-17	-18	-18	-4	-13	-18	0	0	0	0	0	0	22	26	30	-38	-43	-48
	2035-2045	17	23	33	-17	-18	-18	-5	-13	-17	0	0	0	0	0	0	22	27	32	-39	-43	-49
S2H	2015-2024	8	10	13	-17	-17	-17	-26	-29	-31	0	0	0	0	0	0	20	24	28	-40	-45	-50
	2025-2034	9	11	15	-17	-17	-17	-20	-24	-26	0	0	0	0	0	0	22	26	31	-39	-43	-48
	2035-2045	8	10	13	-17	-17	-18	-20	-22	-24	0	0	0	0	0	0	23	28	33	-38	-42	-47
S3I	2015-2024	16	19	25	-16	-16	-16	-12	-18	-22	0	0	0	0	0	0	20	24	28	-39	-44	-50
	2025-2034	18	23	31	-16	-16	-16	-3	-11	-16	0	0	0	0	0	0	21	25	30	-37	-42	-47
	2035-2045	17	23	33	-16	-16	-16	-3	-11	-15	0	0	0	0	0	0	22	26	31	-38	-43	-48
S3H	2015-2024	8	10	13	-16	-16	-16	-25	-28	-29	0	0	0	0	0	0	20	24	28	-40	-44	-49
	2025-2034	9	11	15	-16	-16	-16	-19	-23	-25	0	0	0	0	0	0	22	26	30	-38	-43	-48
	2035-2045	8	10	13	-16	-16	-16	-18	-21	-23	0	0	0	0	0	0	23	28	32	-37	-42	-47
S4I	2015-2024	16	19	25	-12	-12	-12	-7	-13	-17	0	0	0	0	0	0	20	24	28	-38	-43	-49
	2025-2034	18	23	31	-12	-12	-12	2	-6	-10	0	0	0	0	0	0	21	25	29	-36	-41	-46
	2035-2045	17	23	33	-12	-12	-12	1	-6	-11	0	0	0	0	0	0	21	25	30	-36	-41	-47
S4H	2015-2024	8	10	13	-12	-12	-12	-20	-23	-24	0	0	0	0	0	0	20	24	28	-39	-43	-48
	2025-2034	9	11	15	-12	-12	-12	-14	-18	-20	0	0	0	0	0	0	21	25	30	-37	-41	-46
	2035-2045	8	10	13	-12	-12	-12	-14	-16	-18	0	0	0	0	0	0	22	27	31	-35	-40	-45

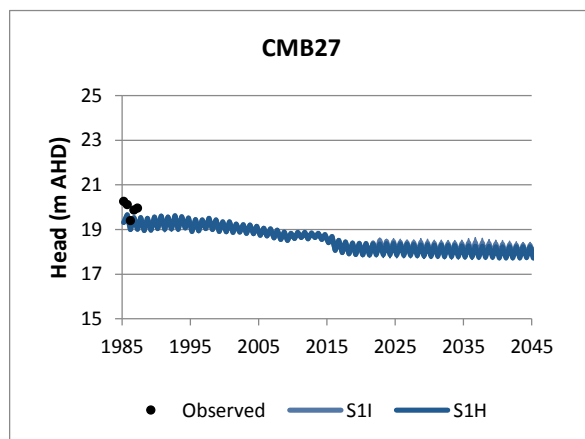
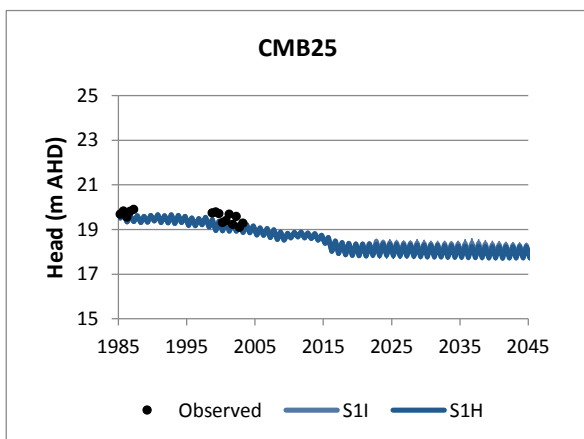
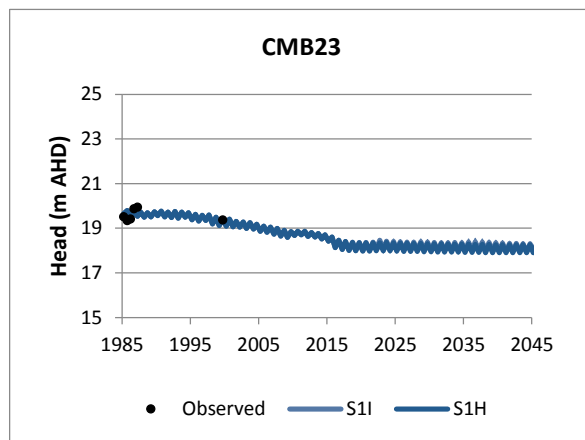
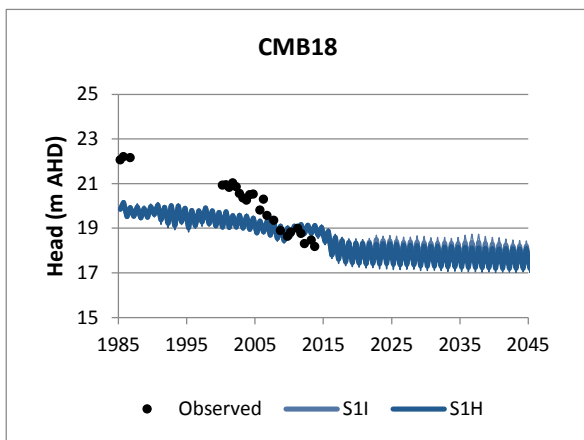
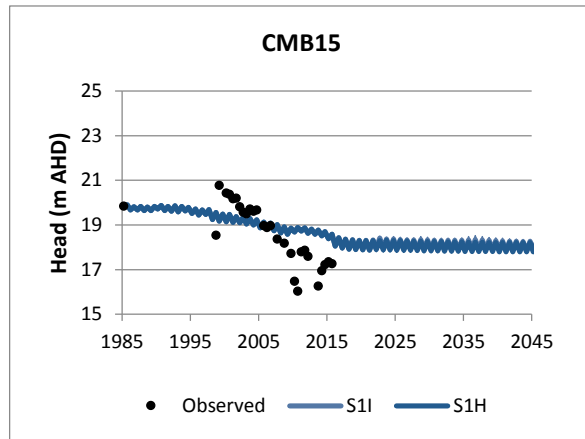
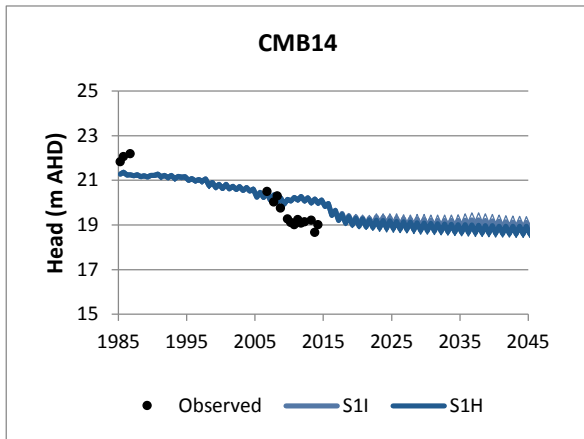
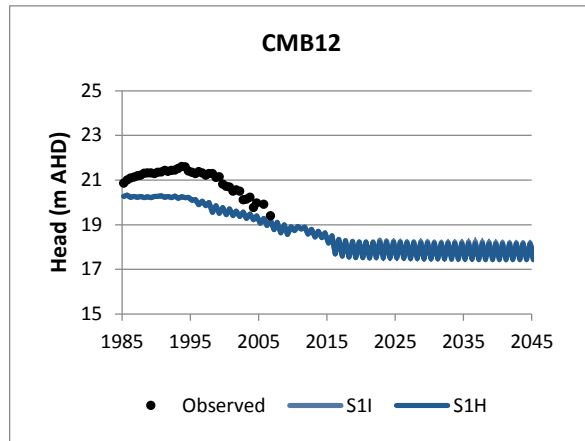
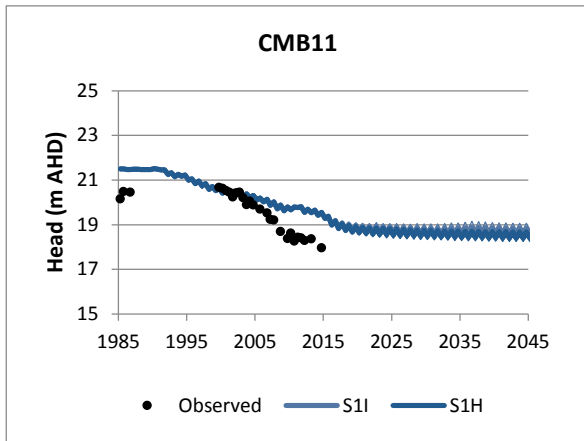
D. Hydrograph projections for full allocation with both intermediate and high carbon emission climates (S1I and S1H)

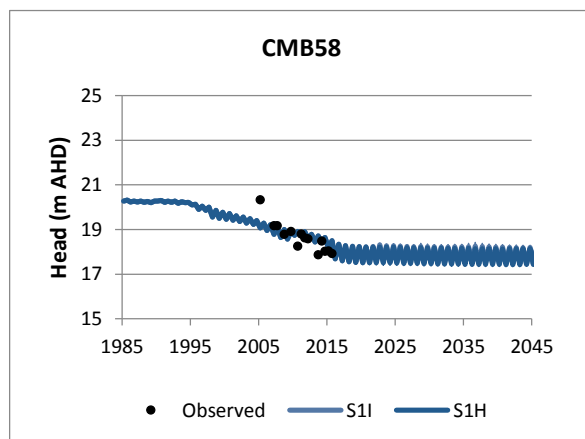
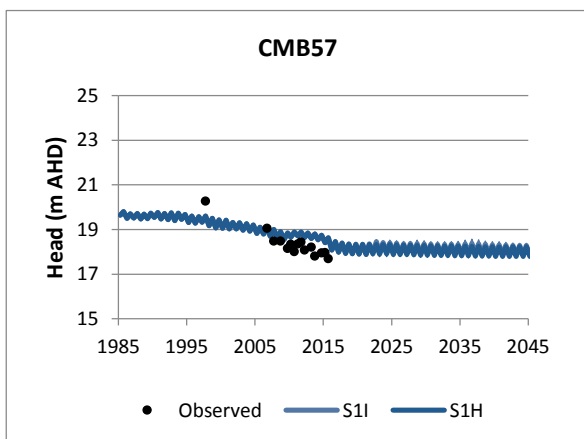
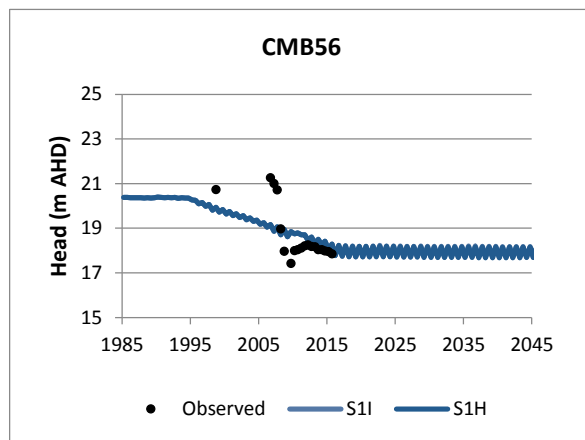
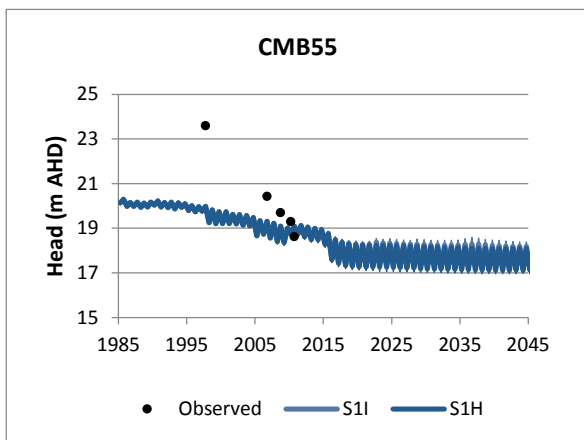
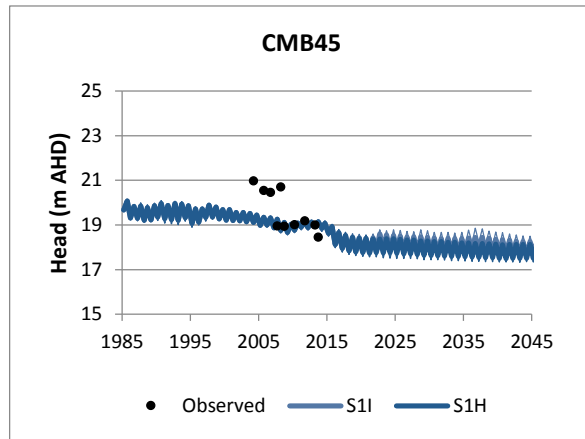
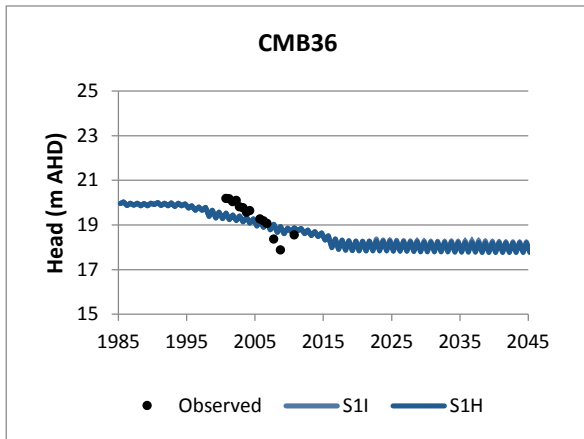
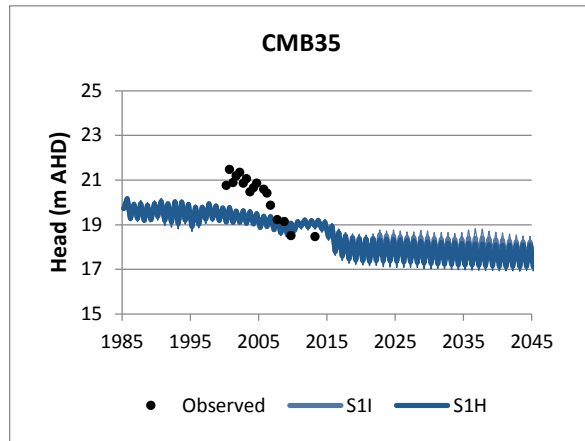
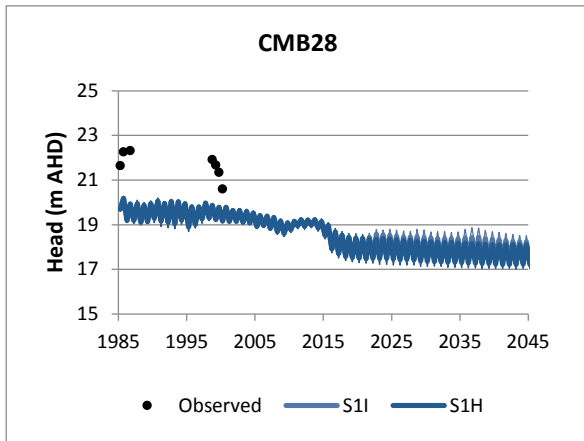
The following section shows the average (thick line), maximum and minimum (thin lines) projected groundwater levels for the full allocation scenario with both intermediate and high carbon emission climate projections.

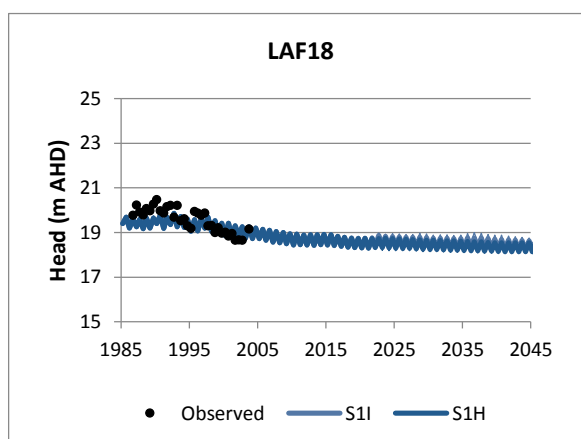
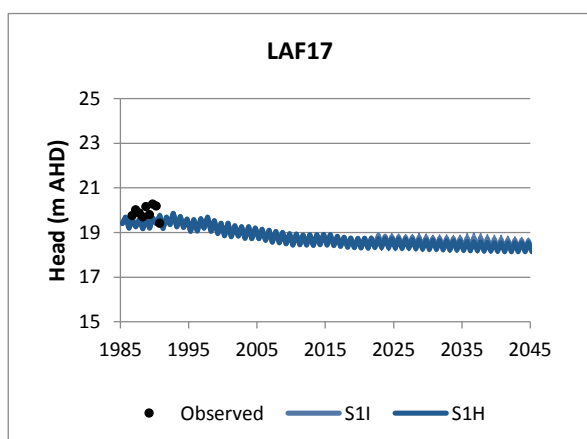
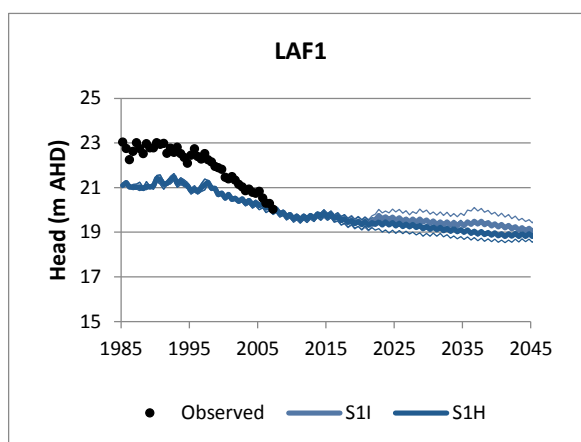
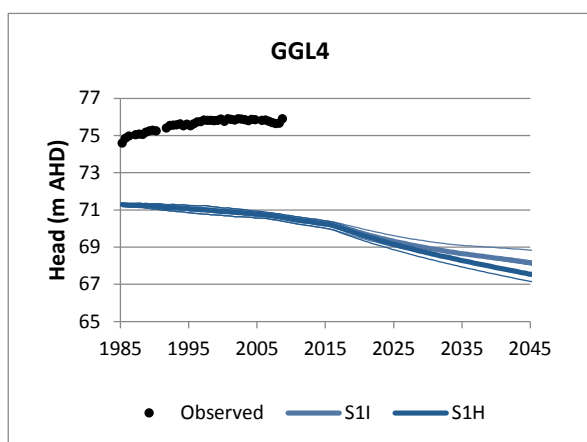
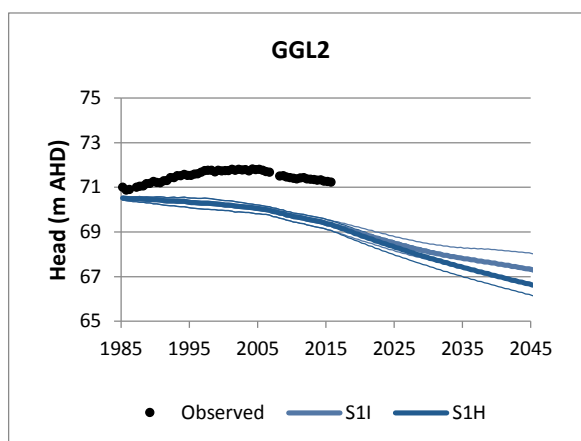
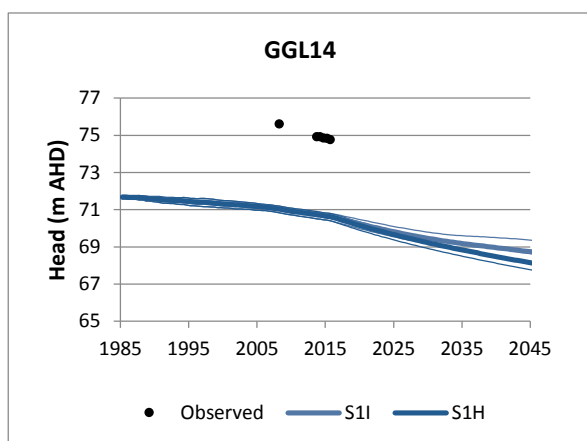
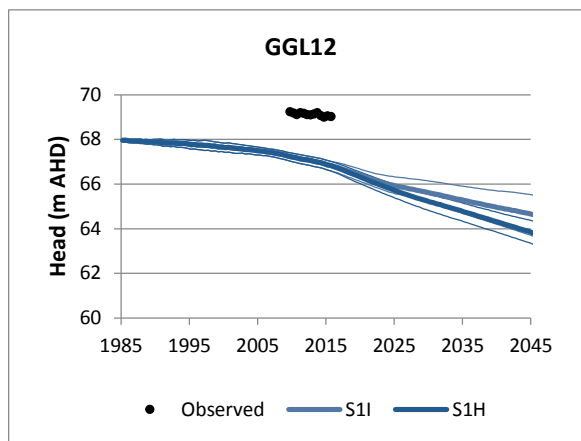
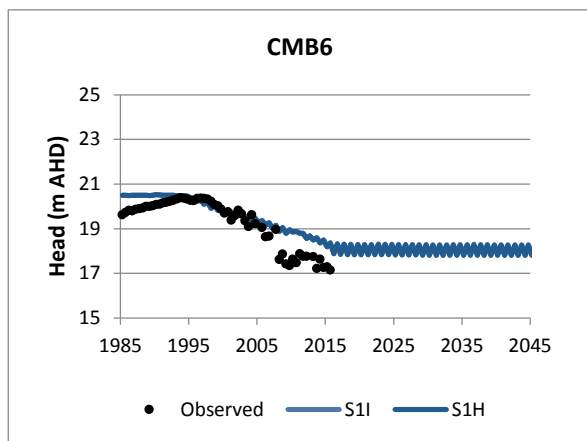


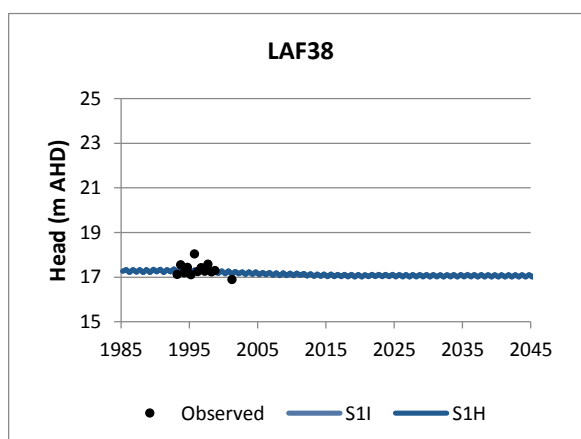
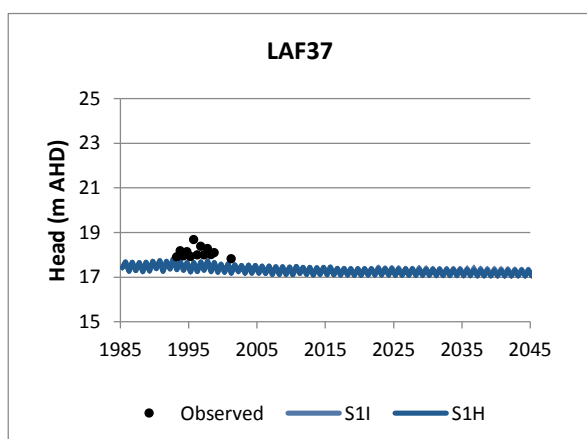
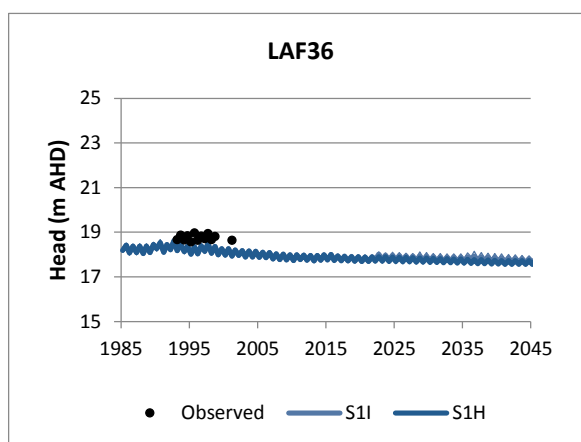
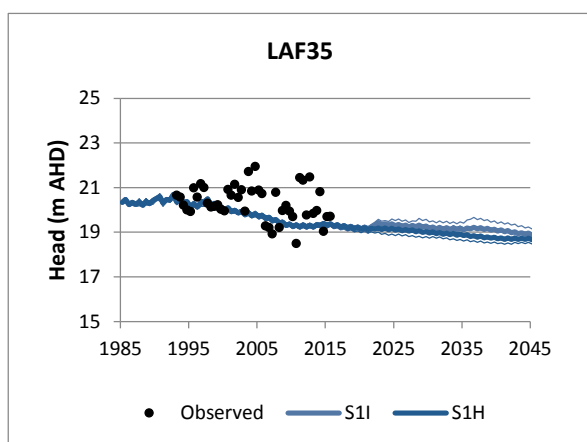
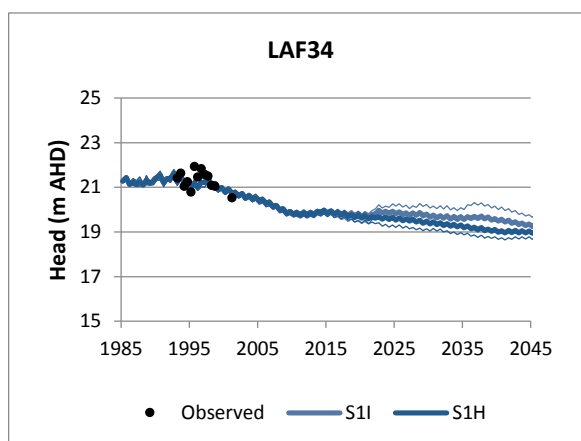
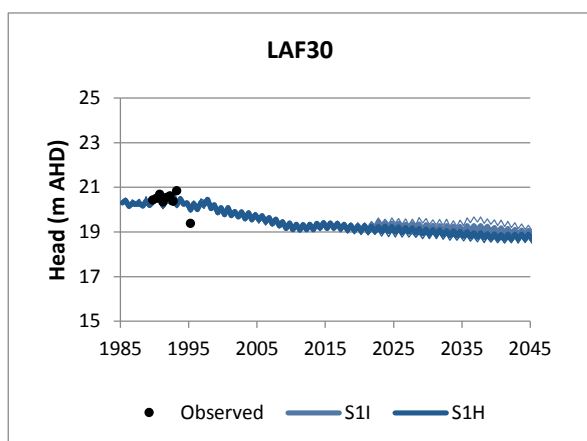
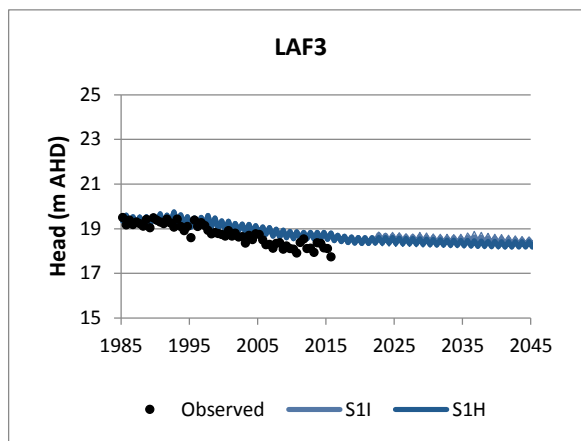
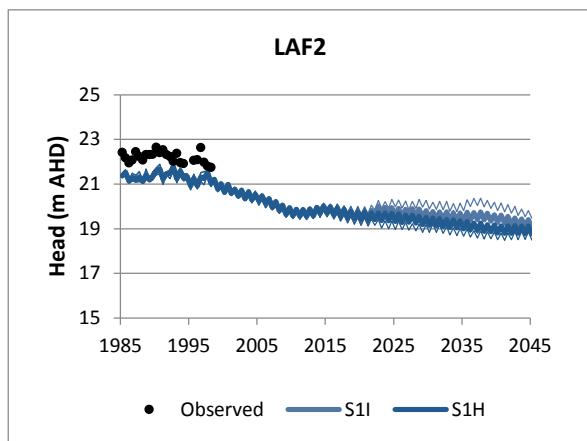


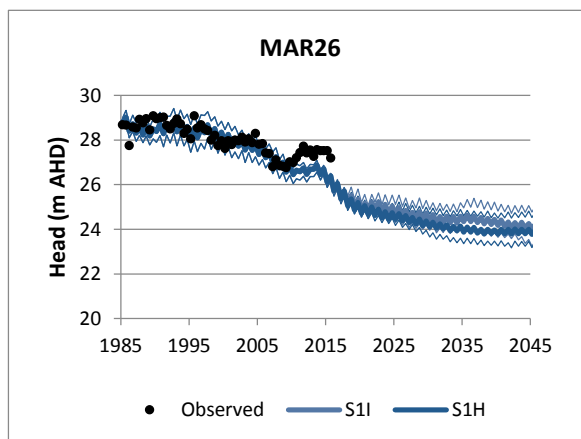
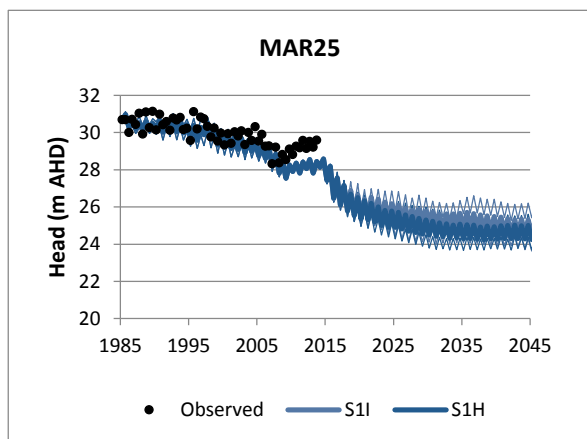
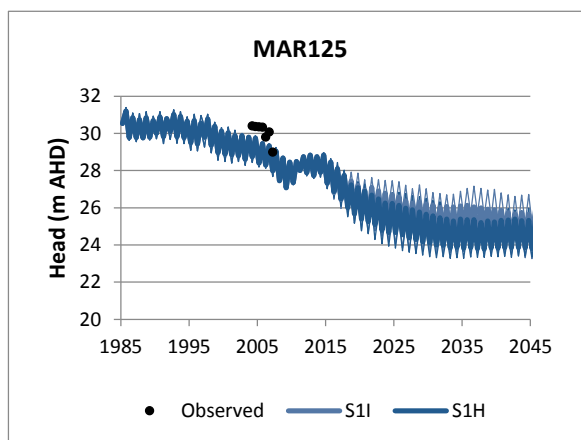
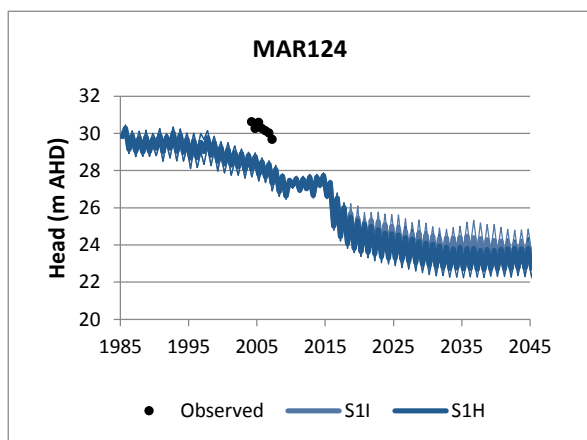
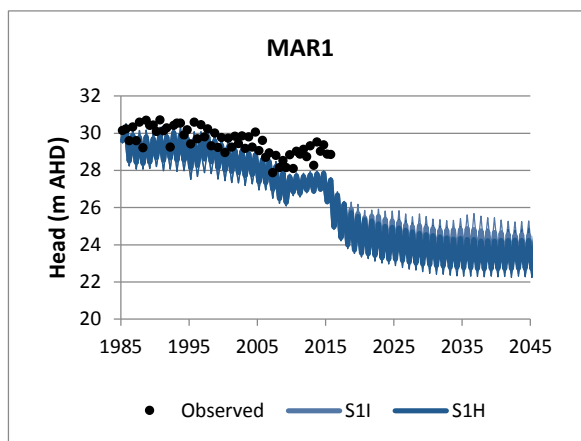
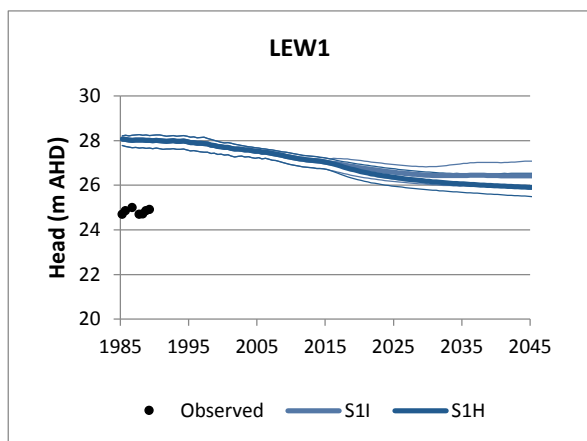
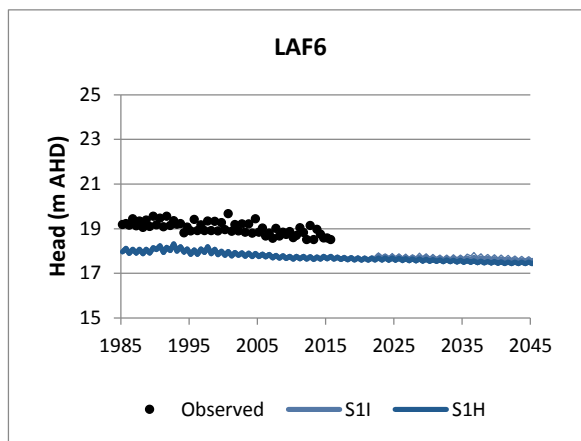
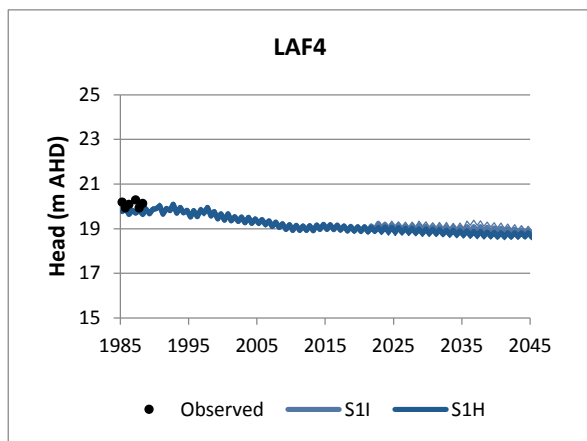


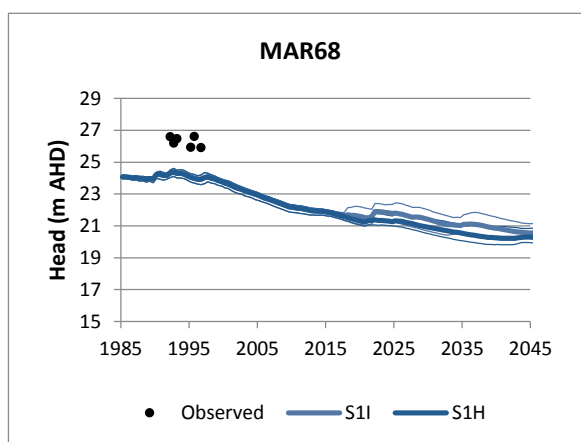
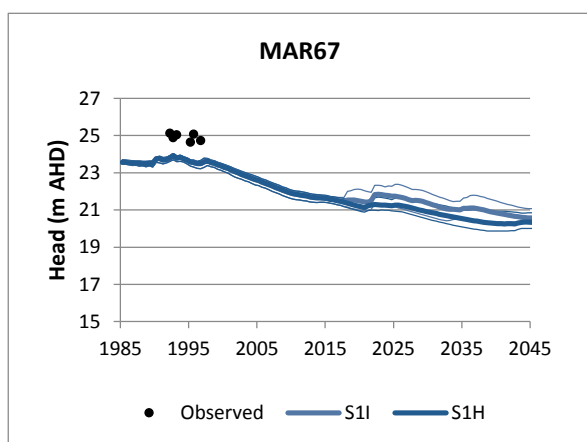
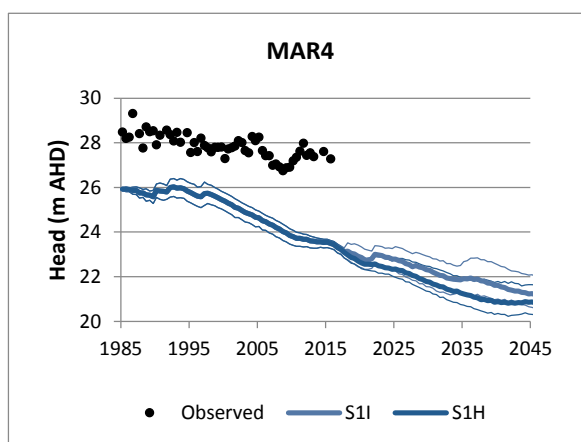
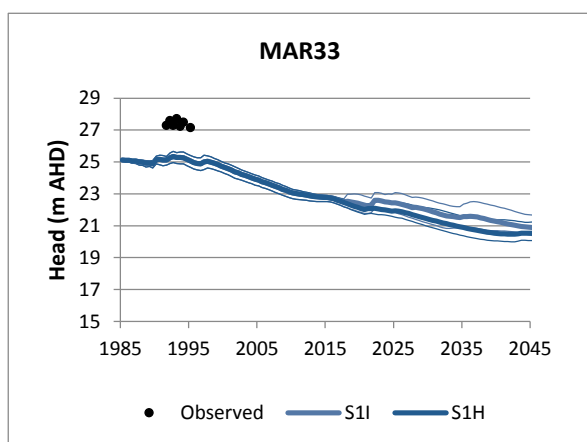
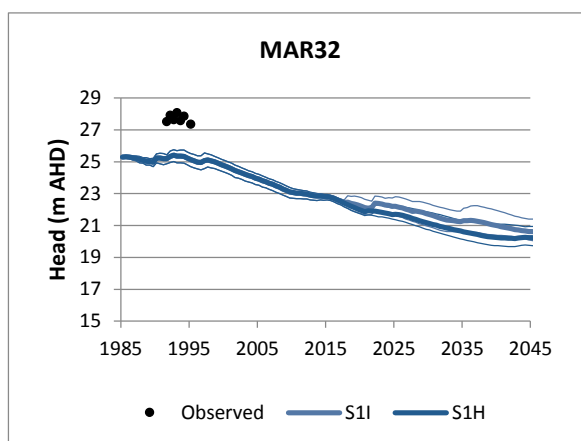
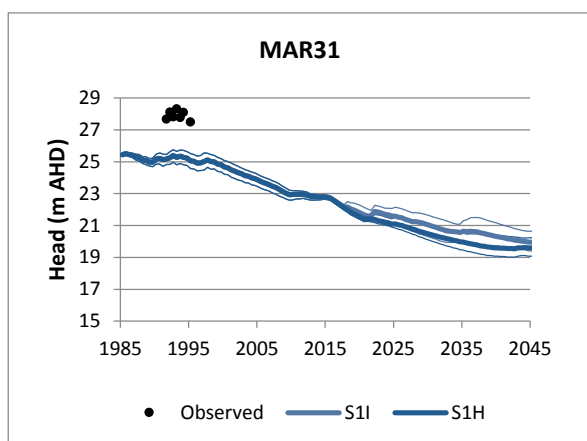
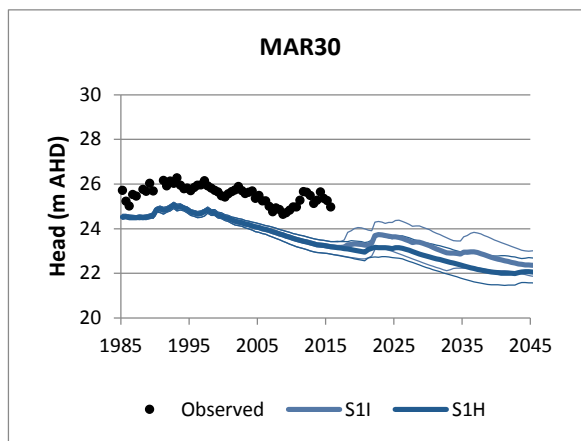
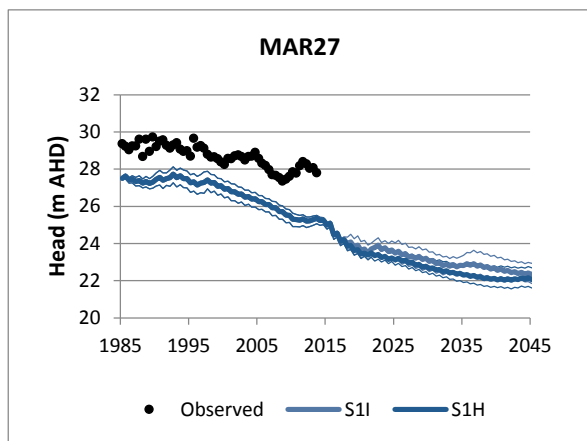


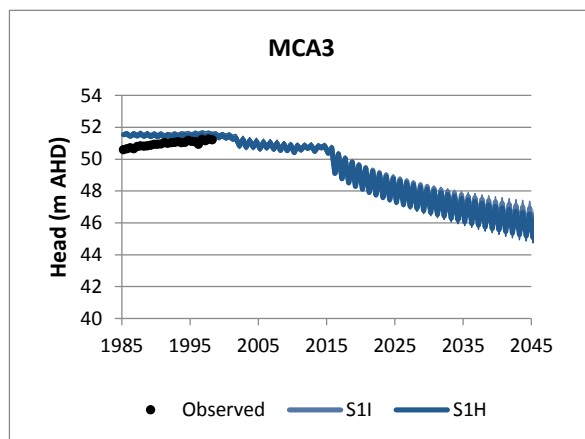
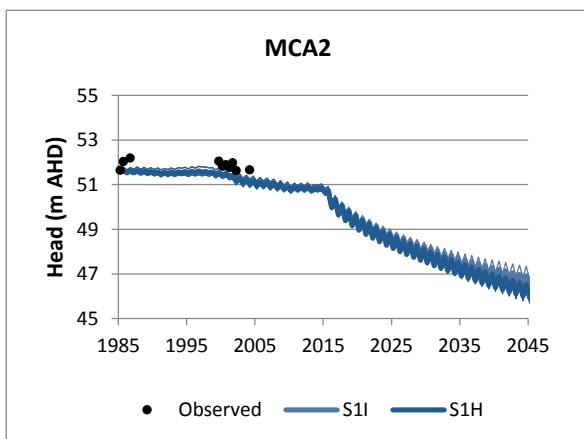
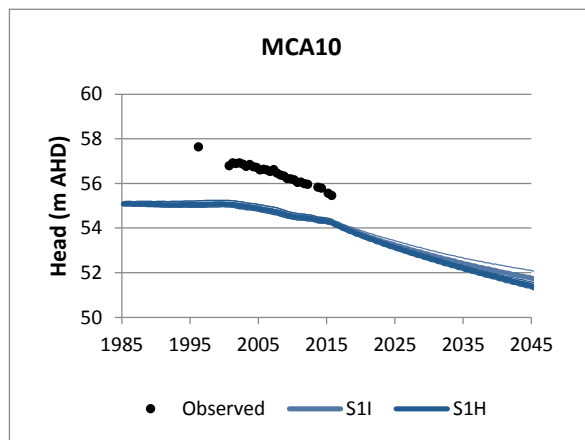
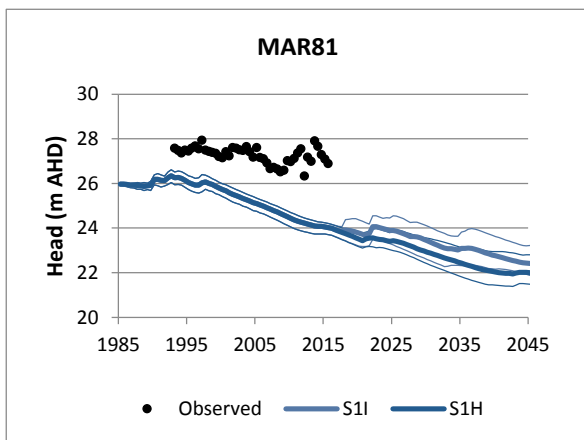
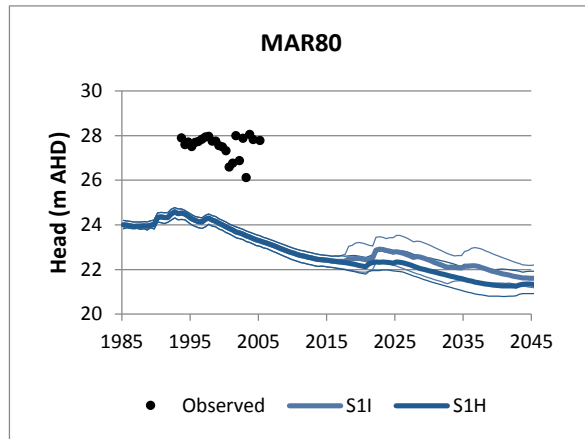
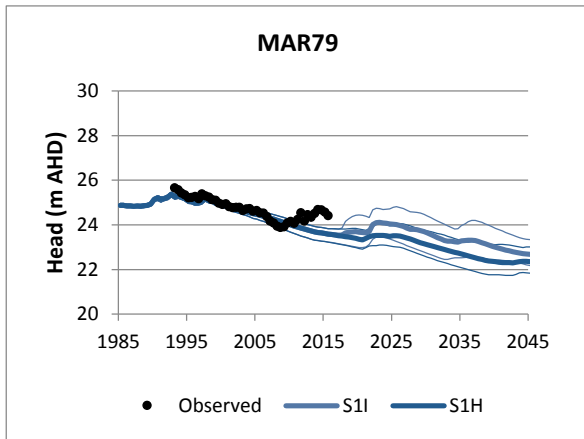
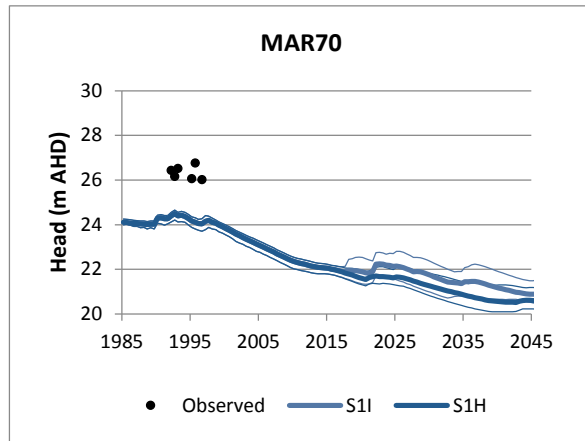
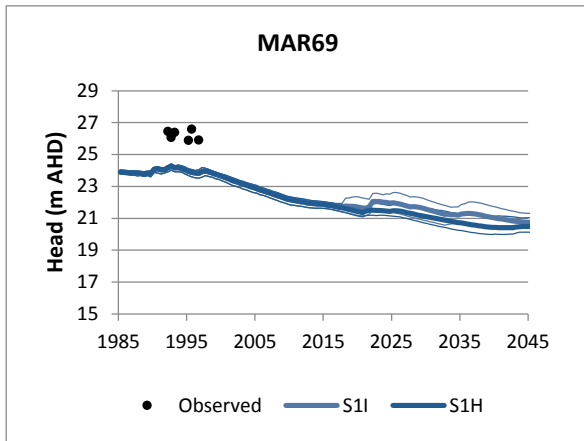


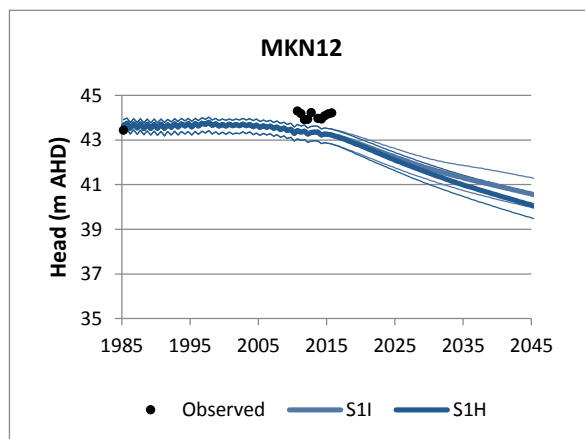
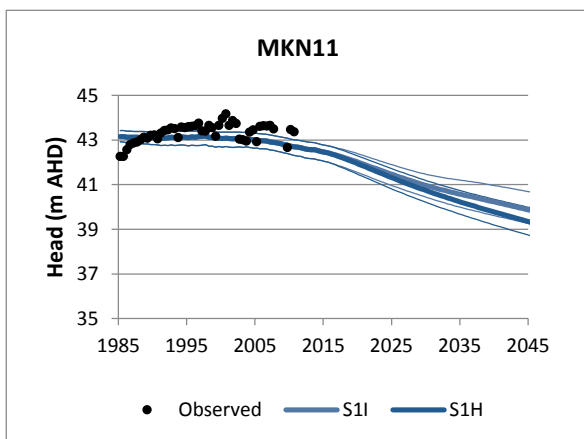
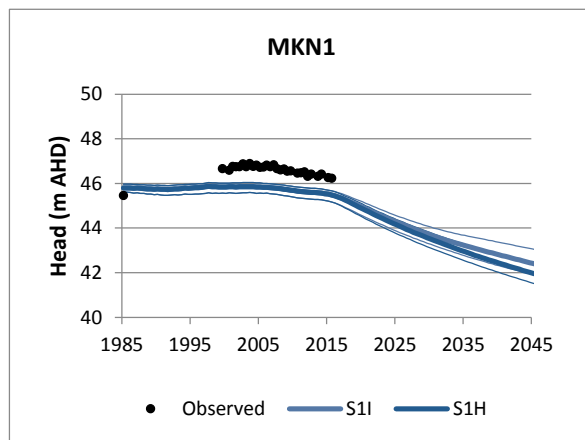
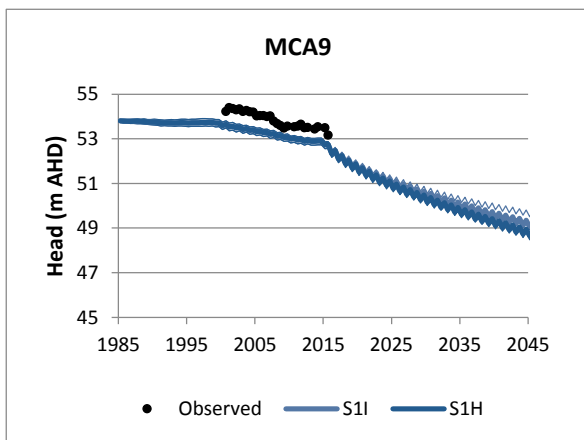
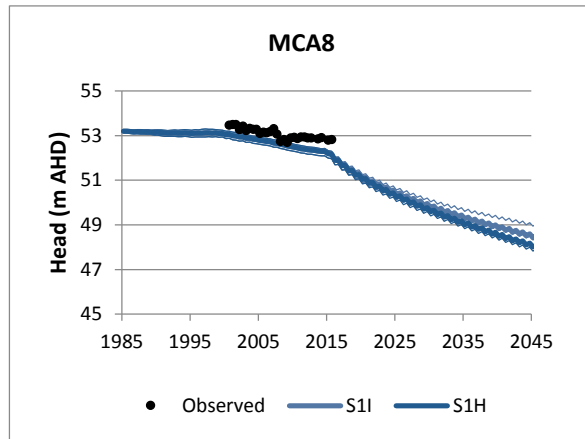
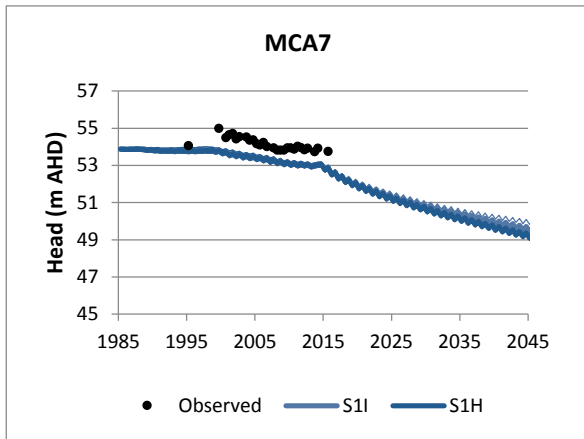
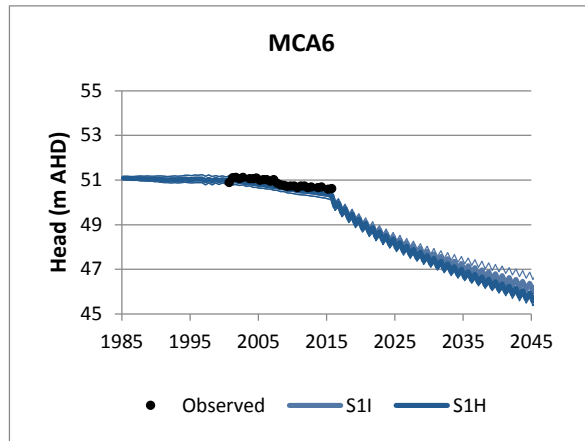
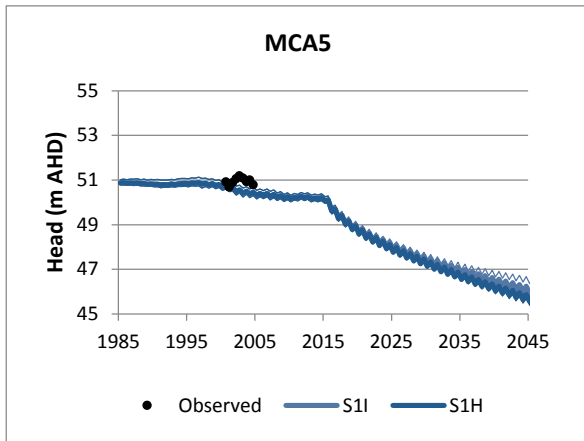


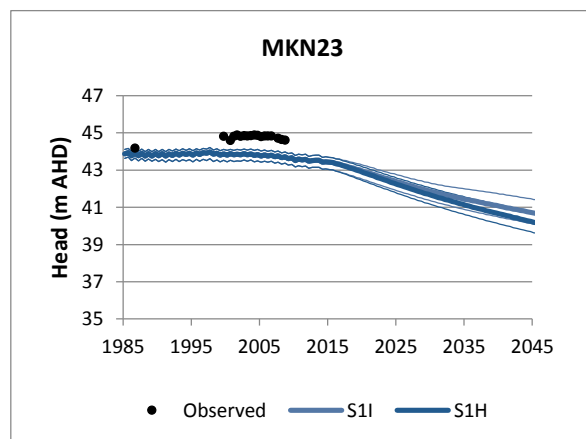
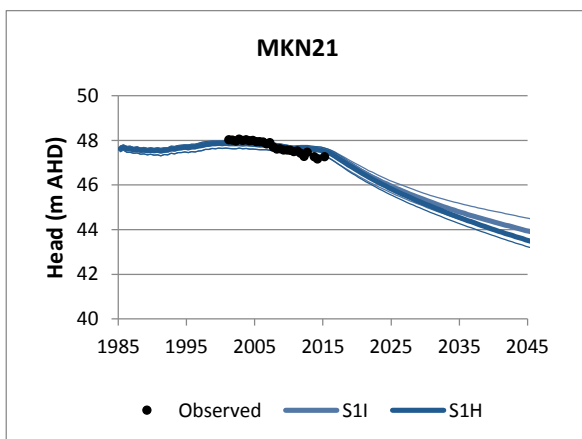
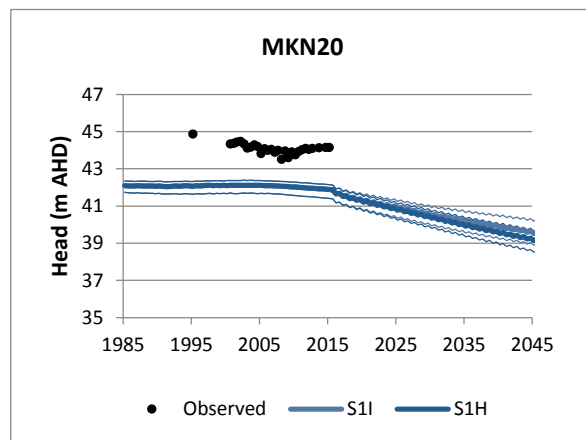
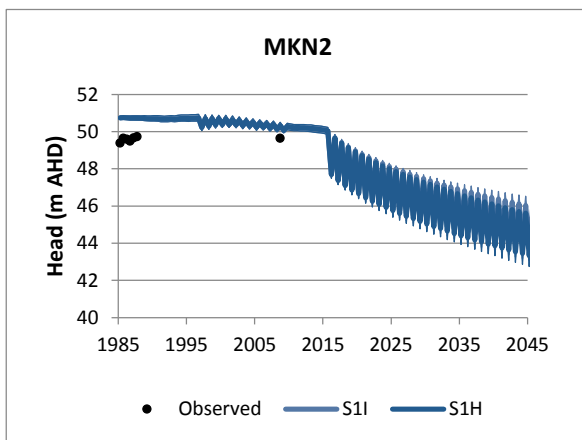
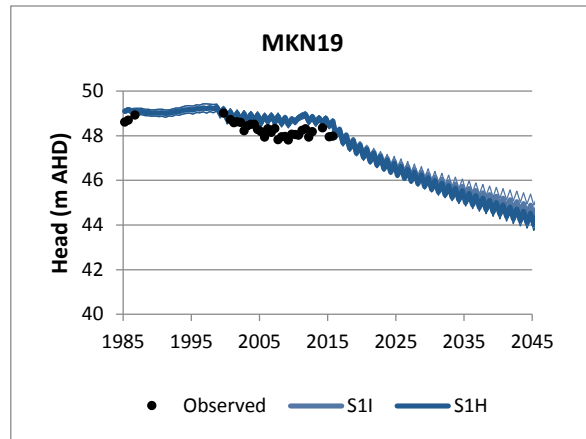
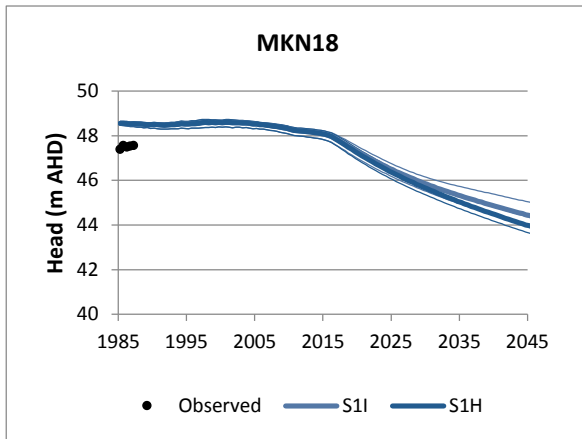
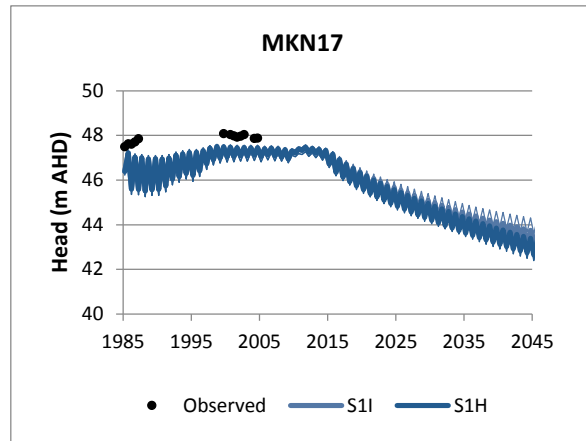
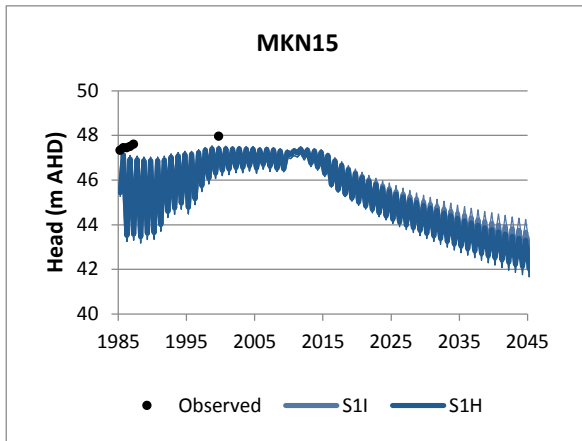


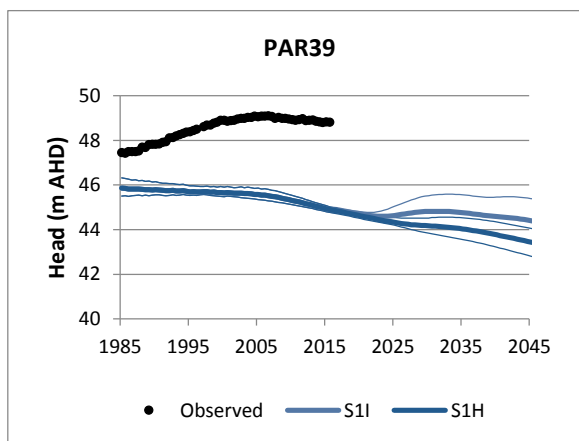
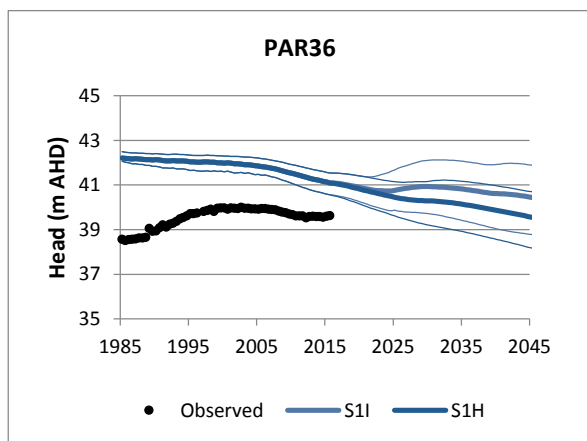
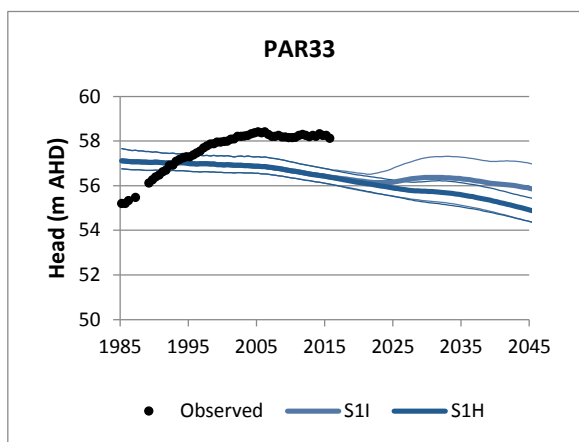
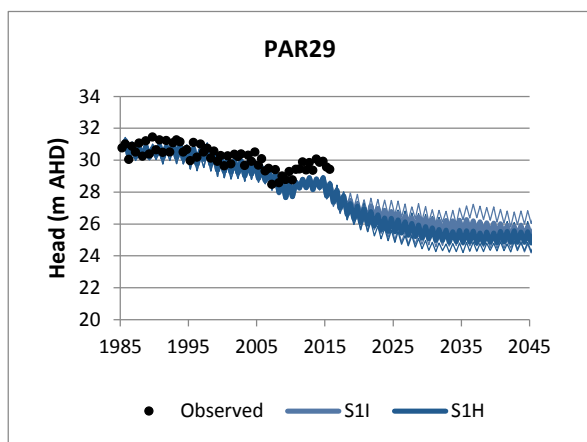
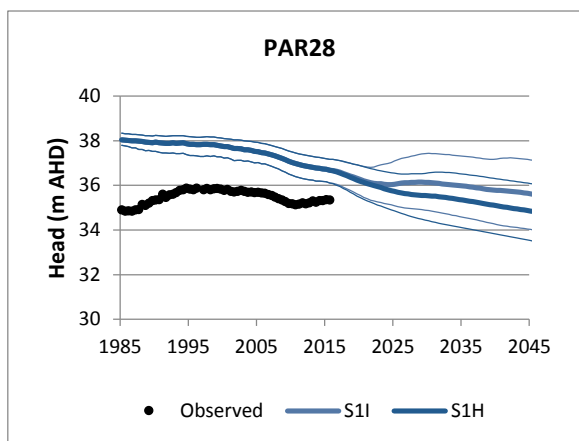
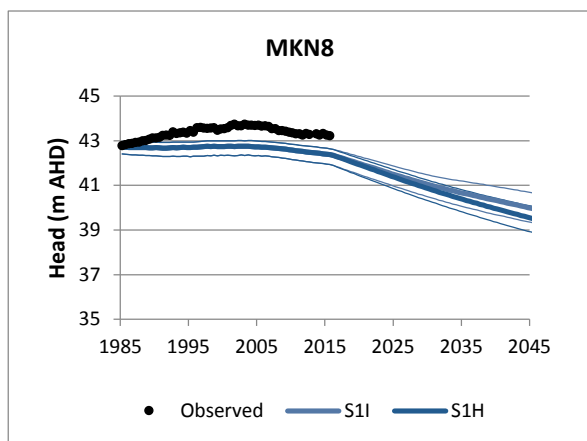
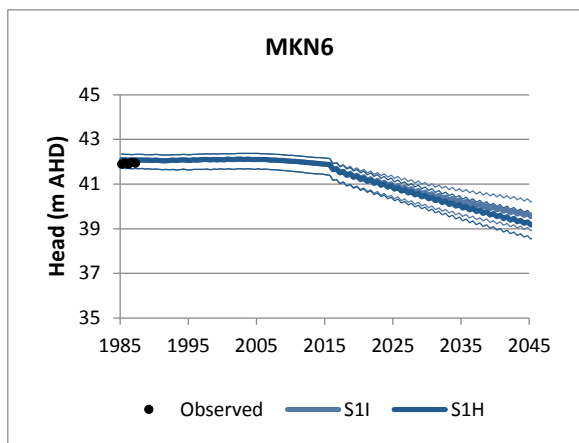
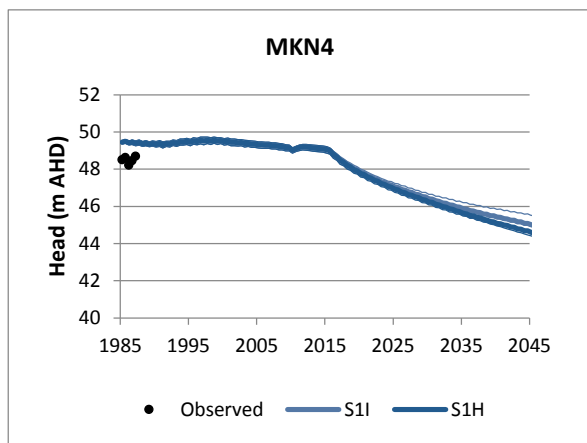


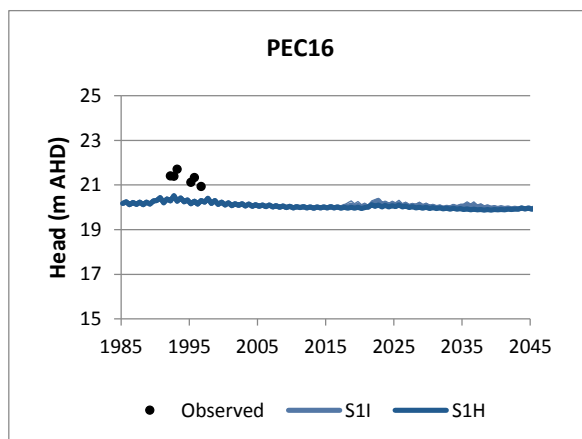
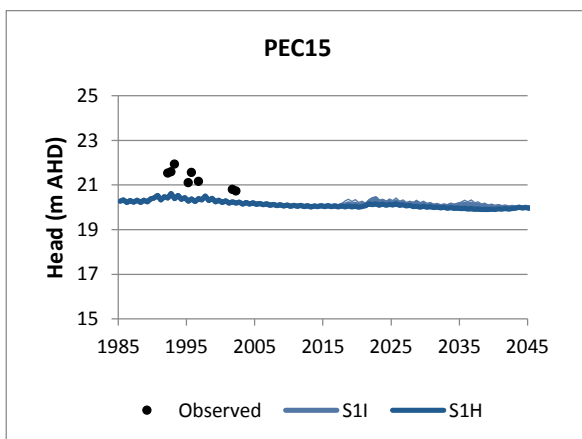
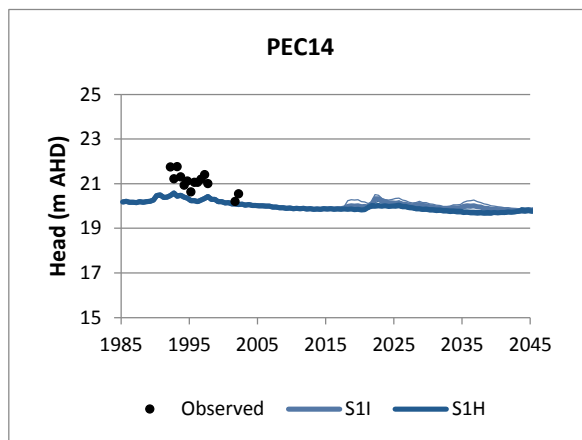
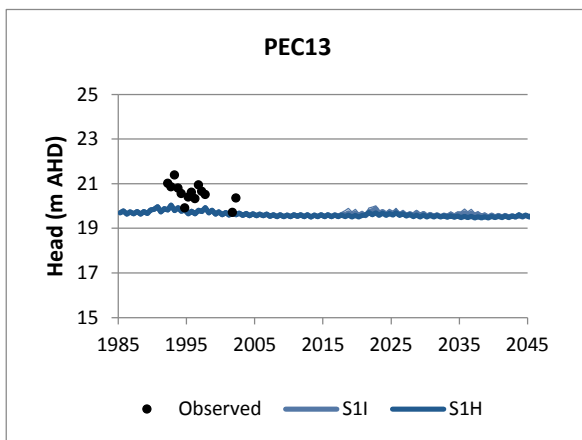
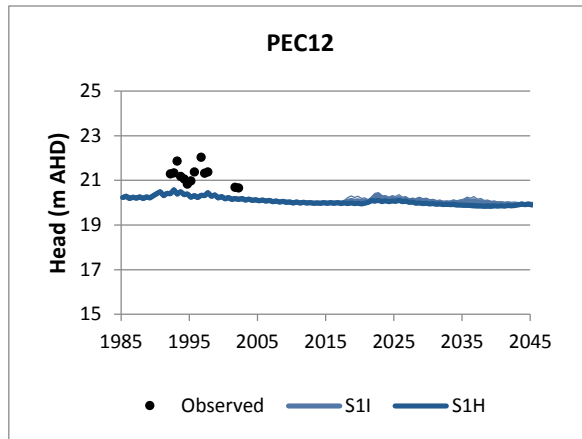
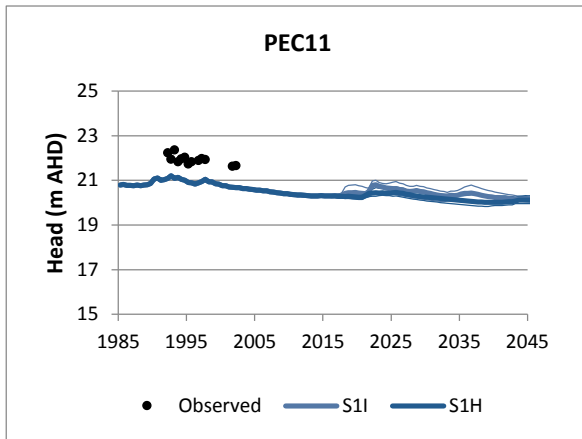
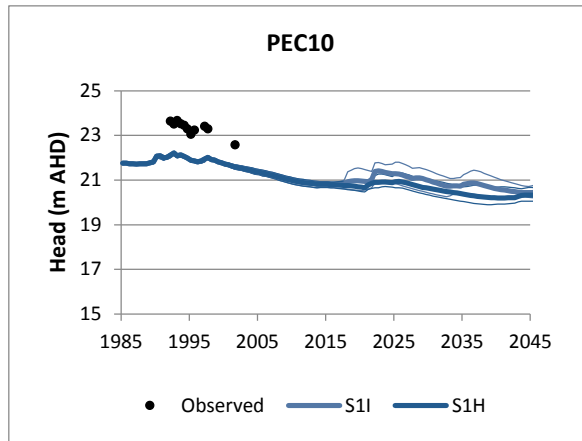
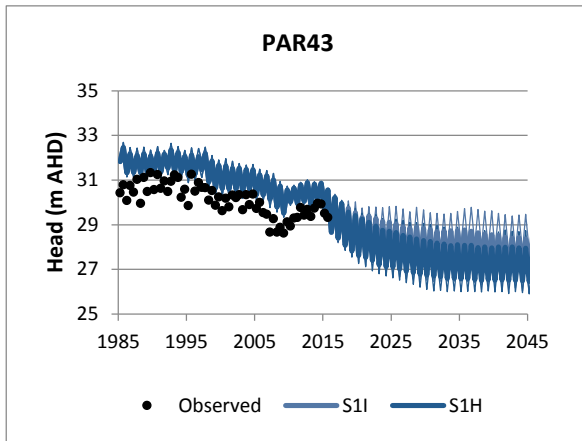


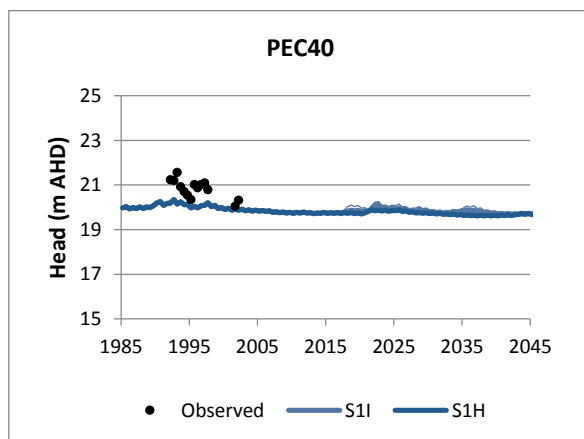
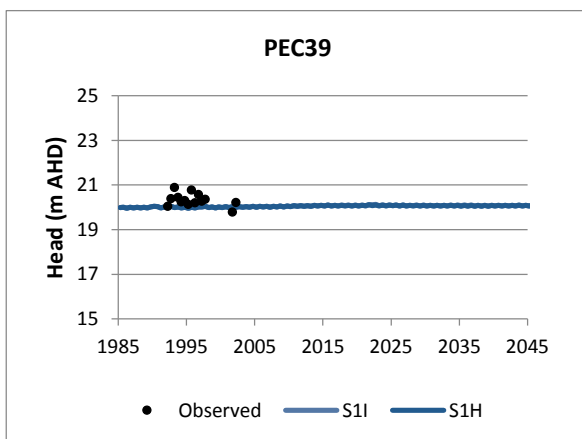
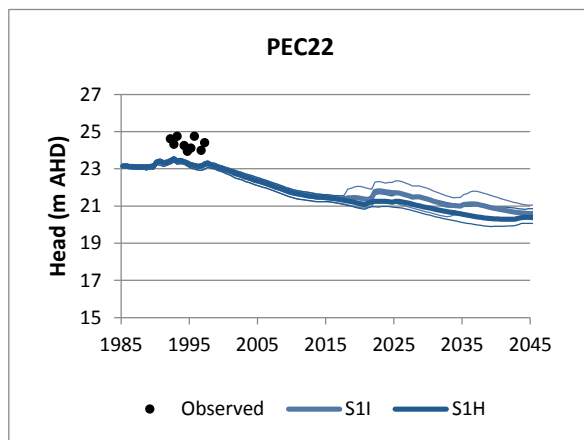
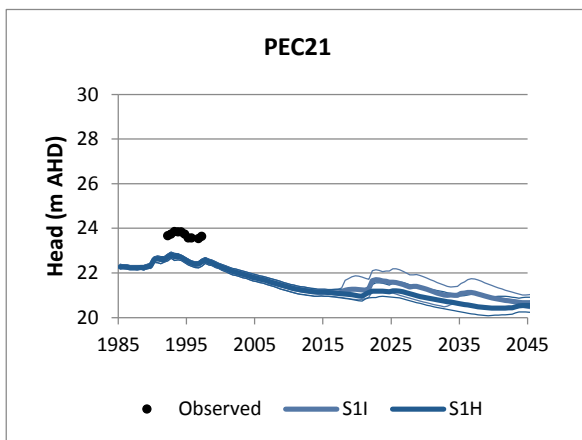
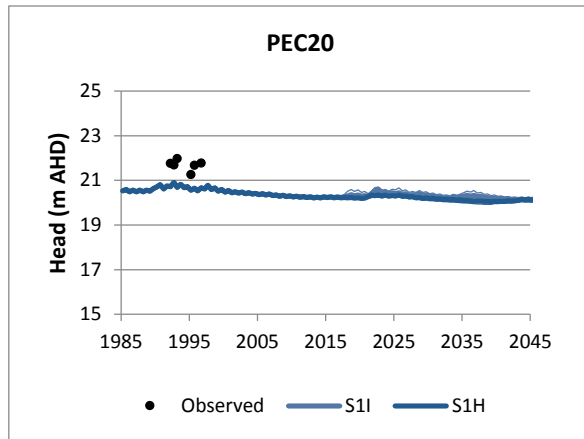
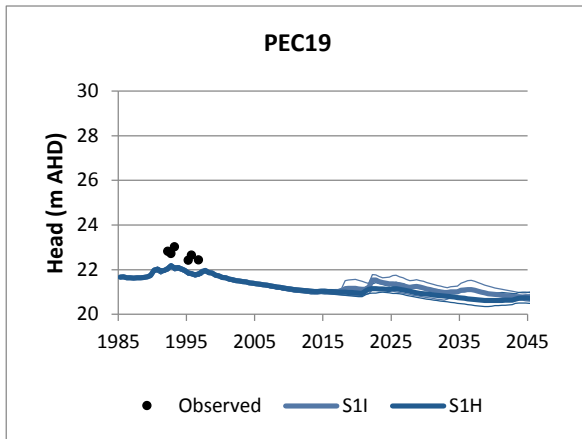
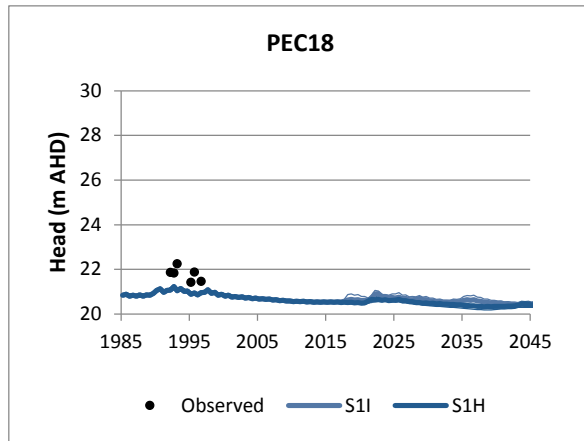
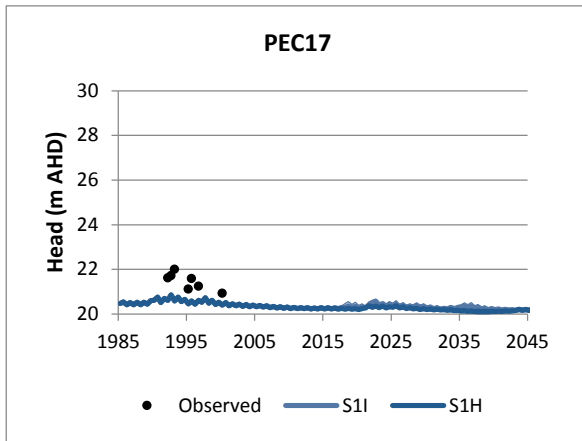


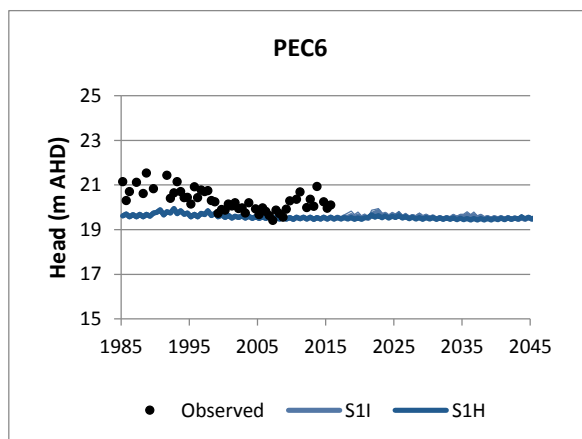
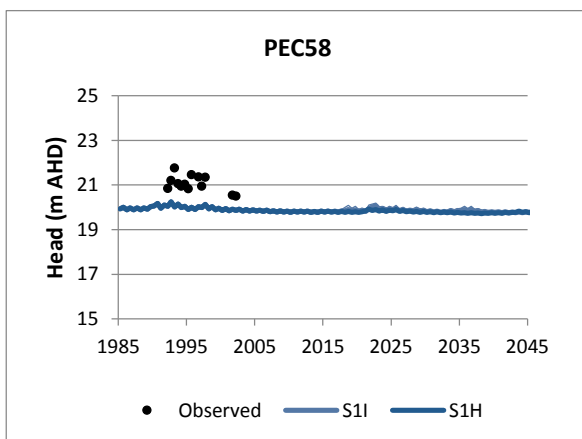
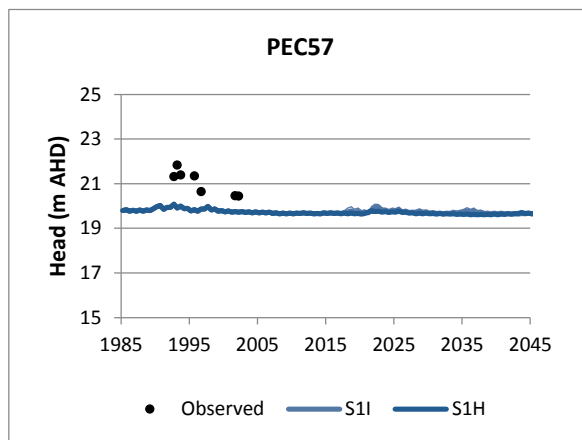
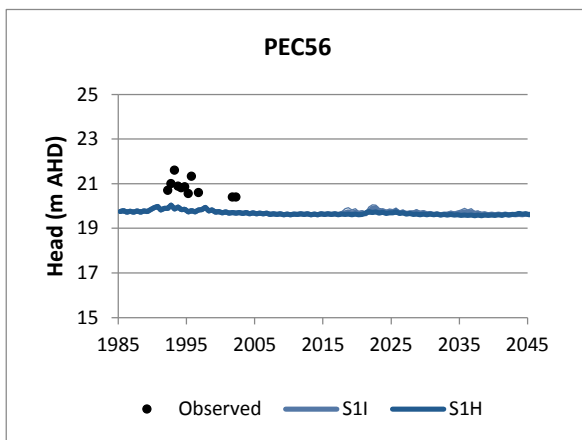
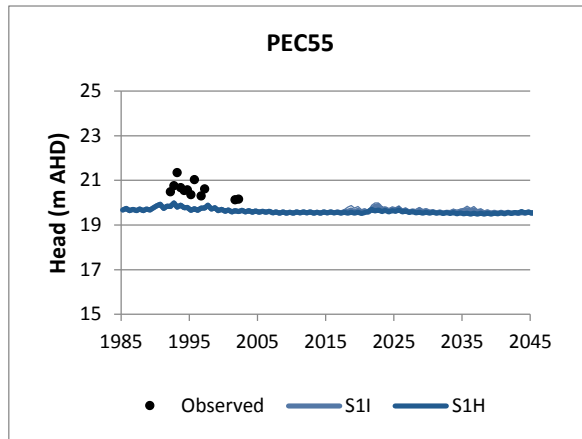
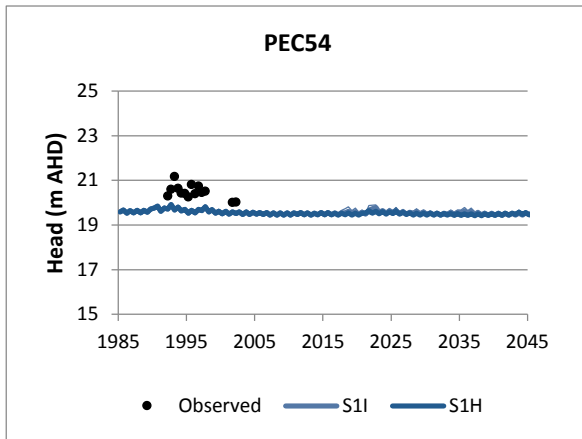
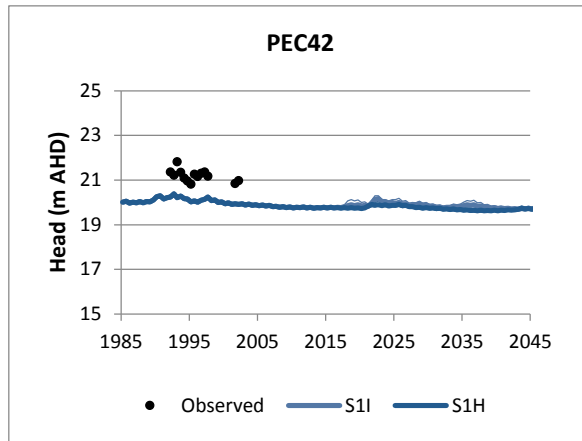
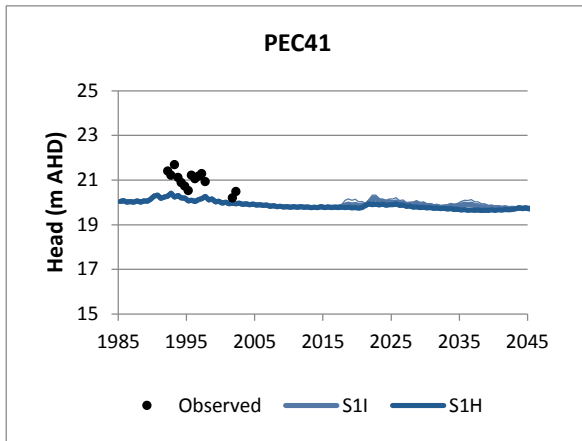


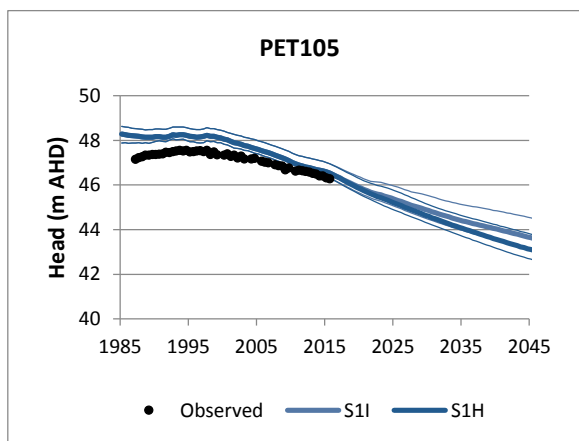
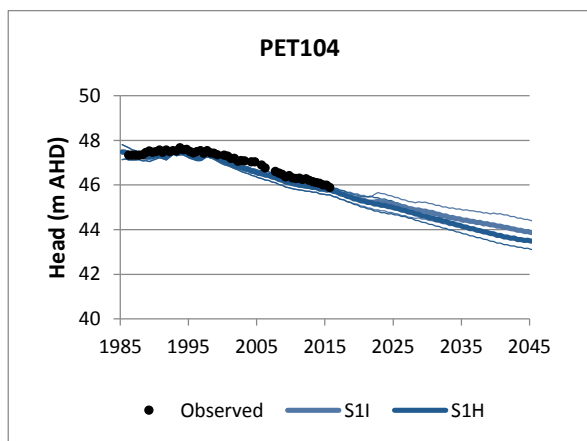
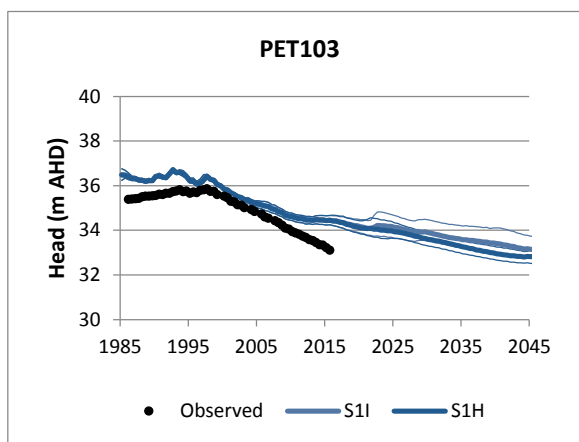
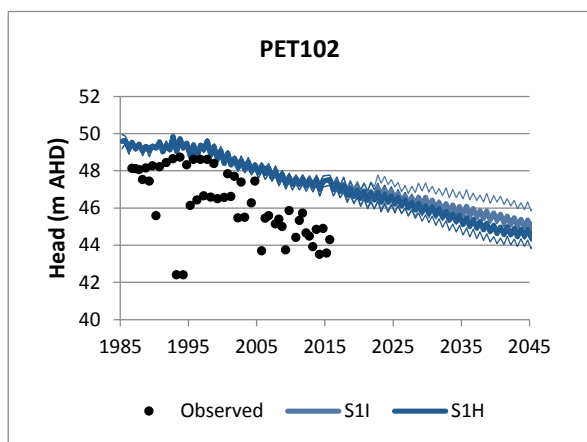
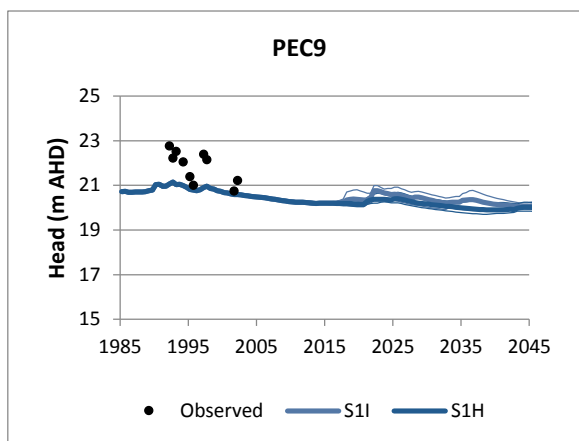
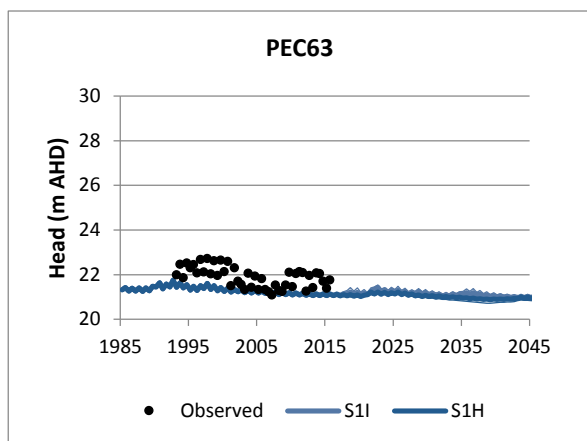
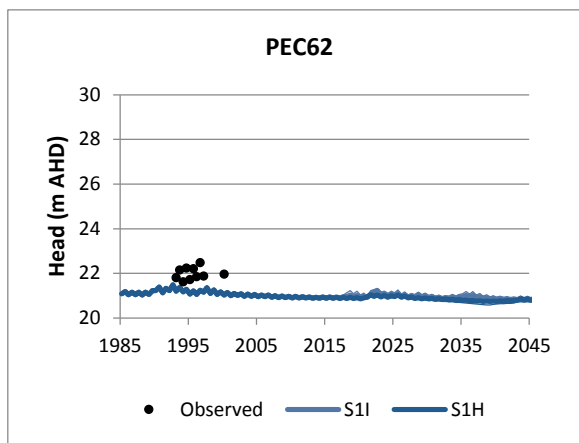
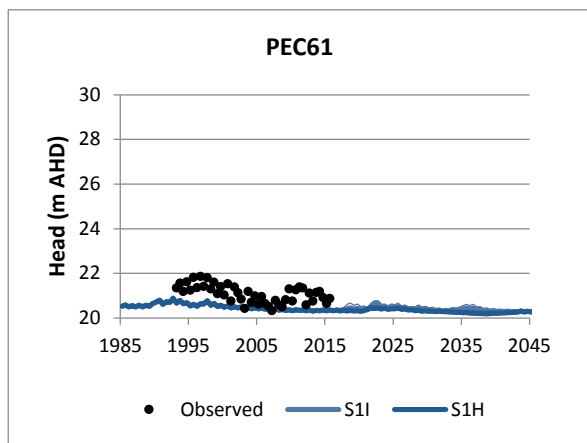


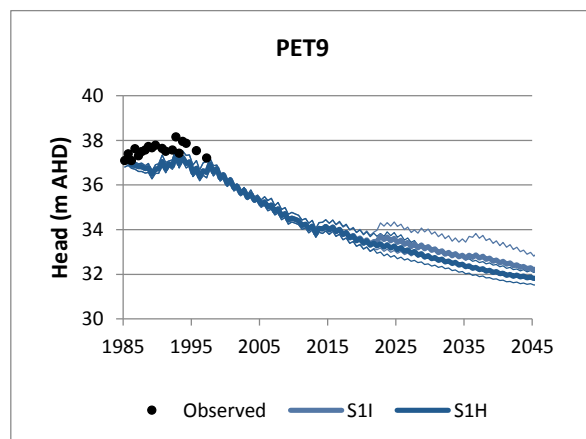
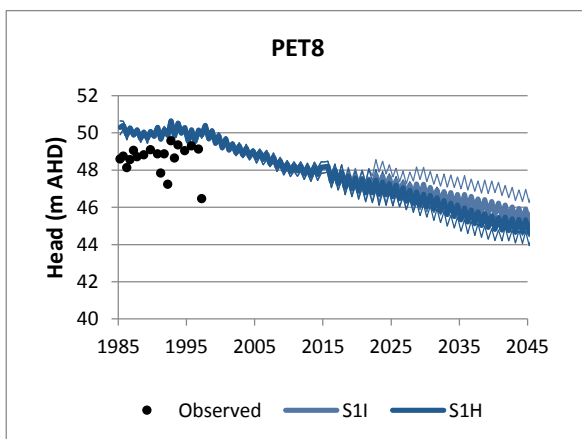
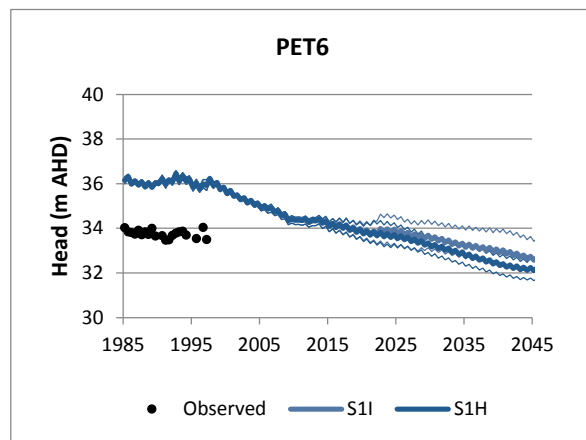
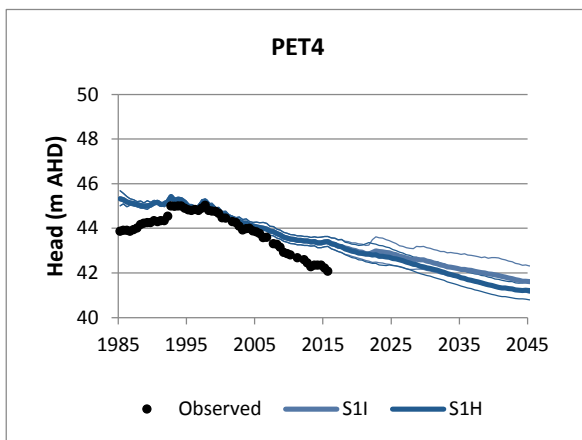
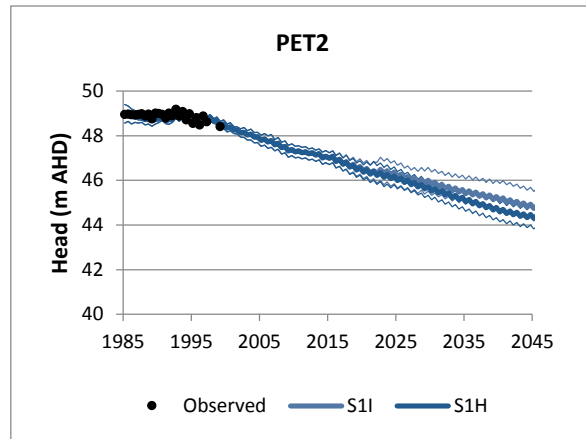
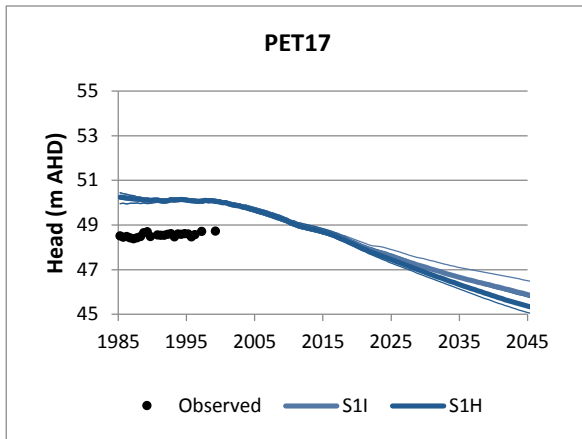
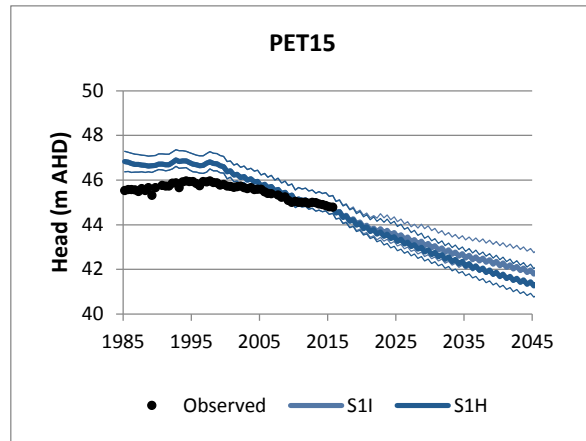
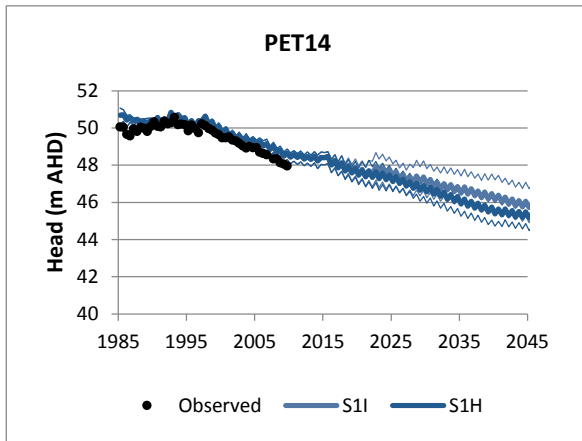


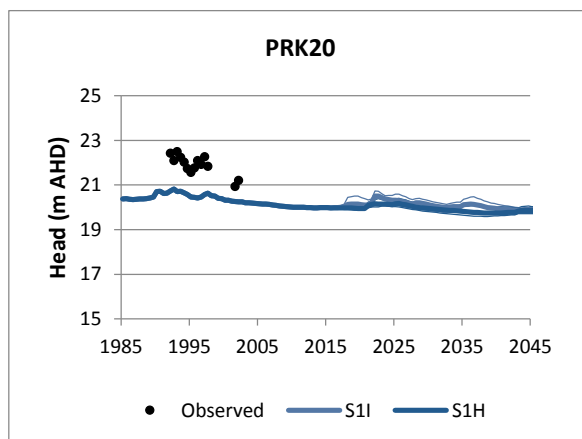
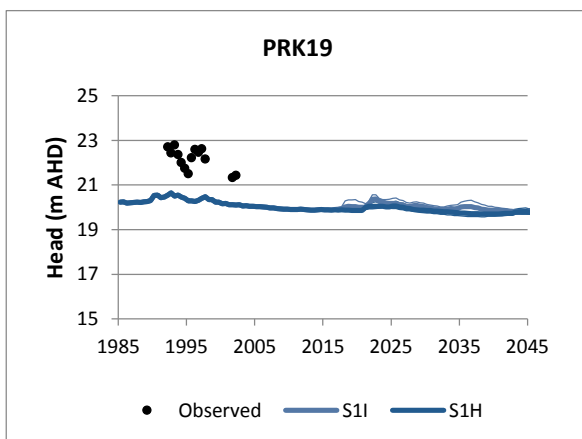
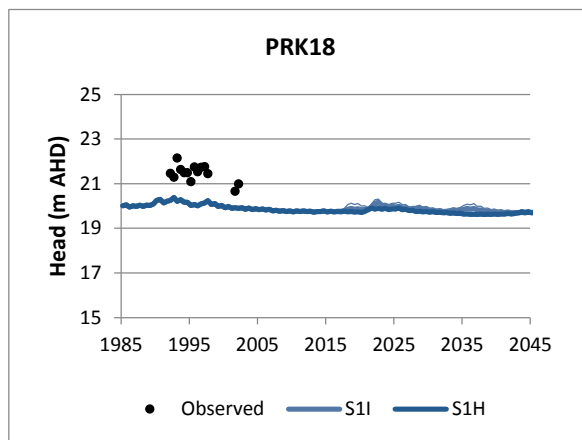
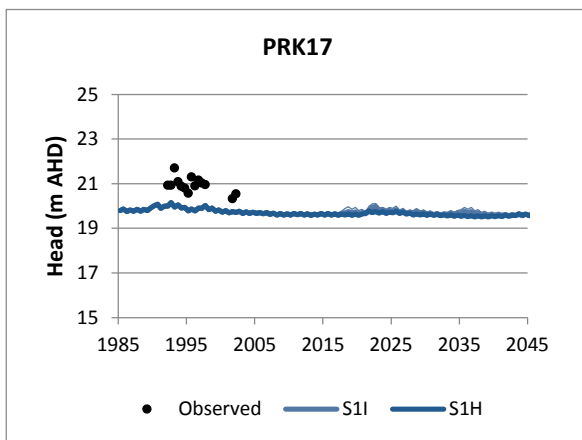
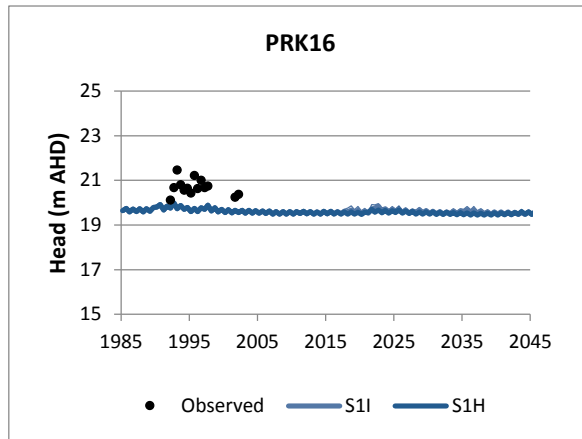
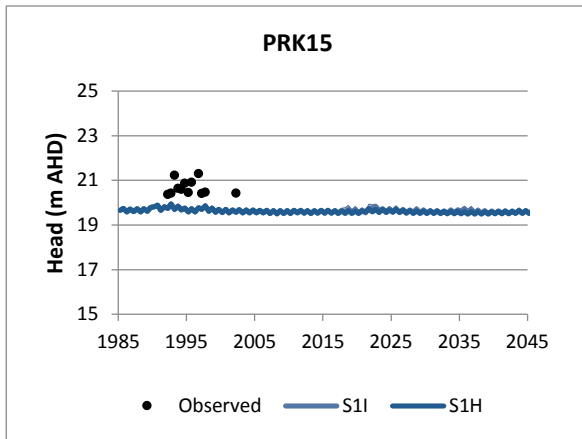
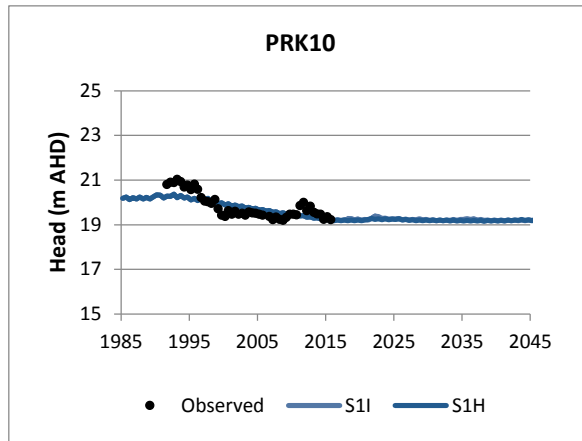
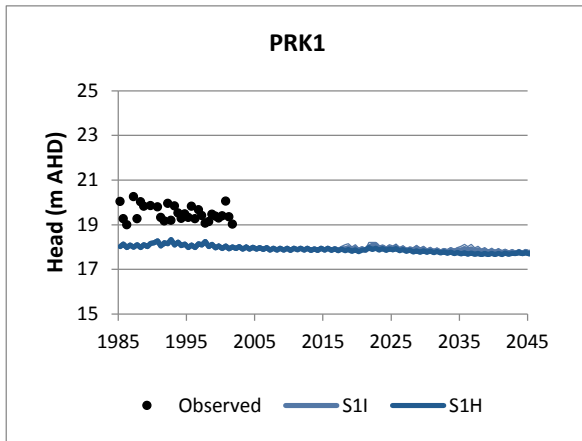


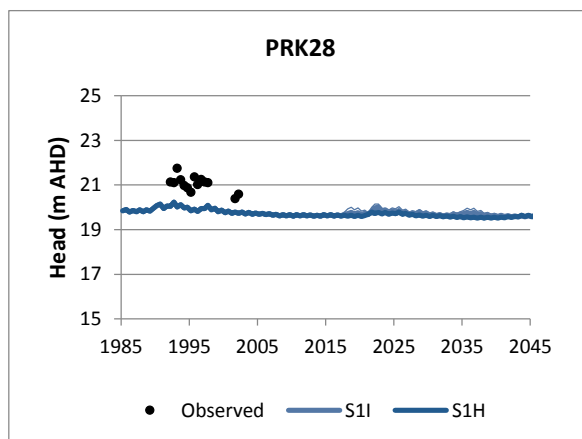
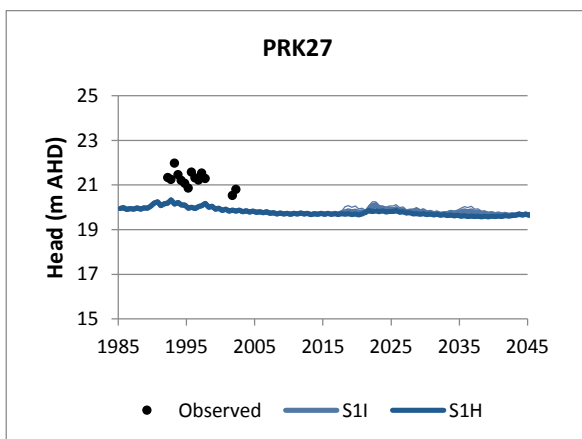
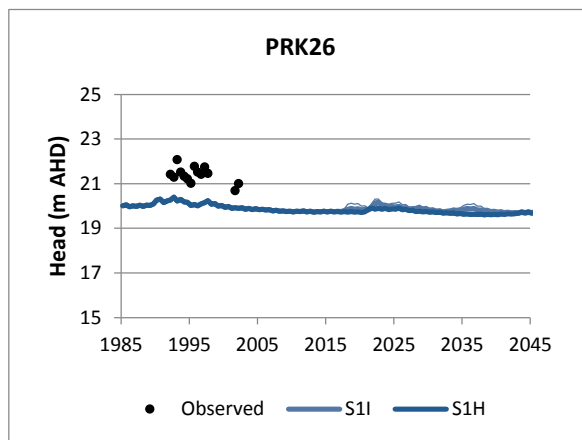
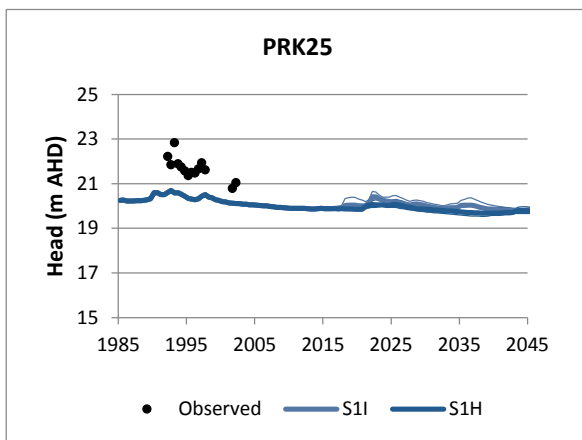
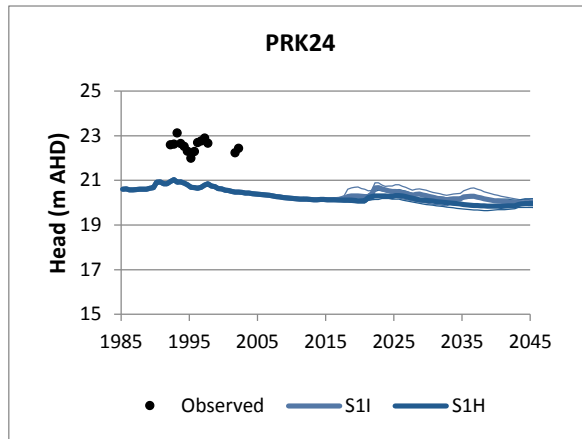
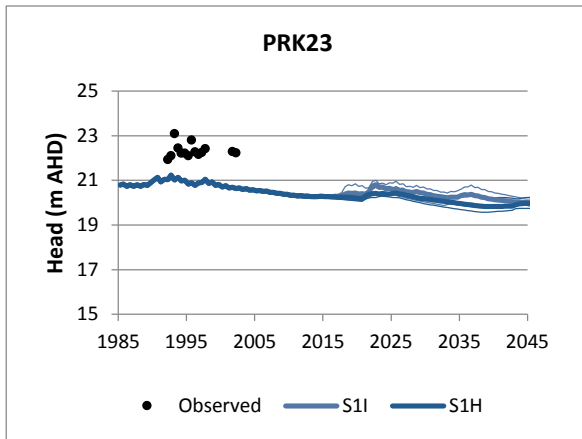
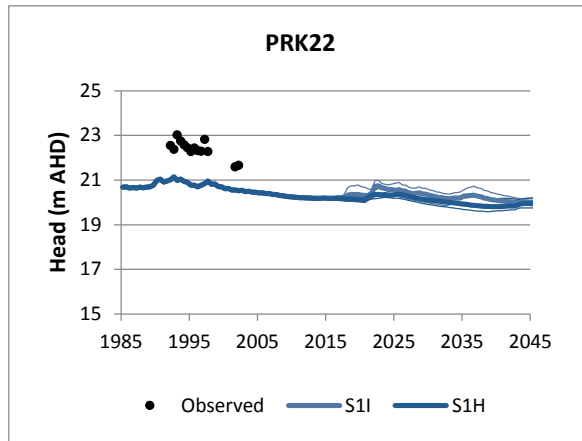
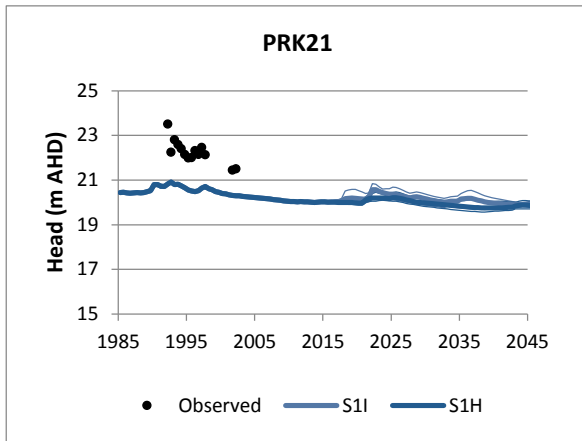


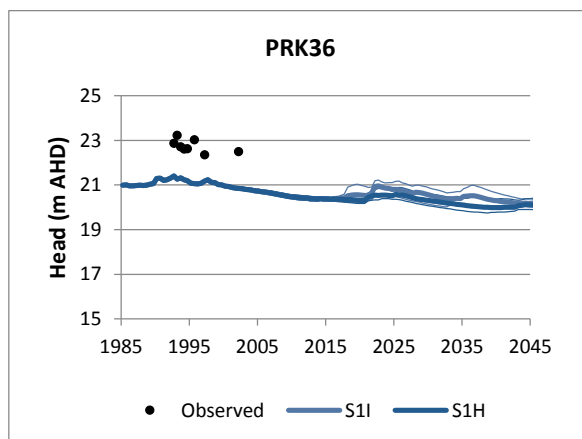
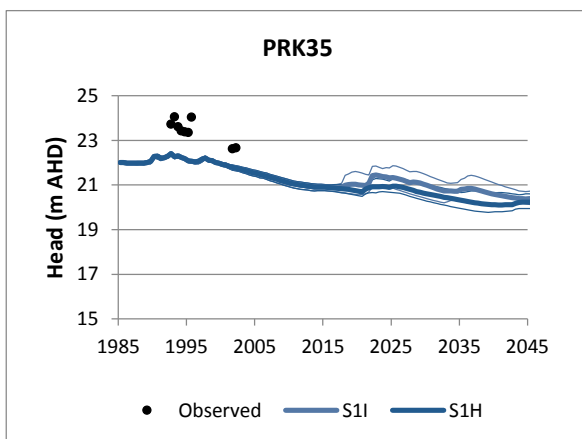
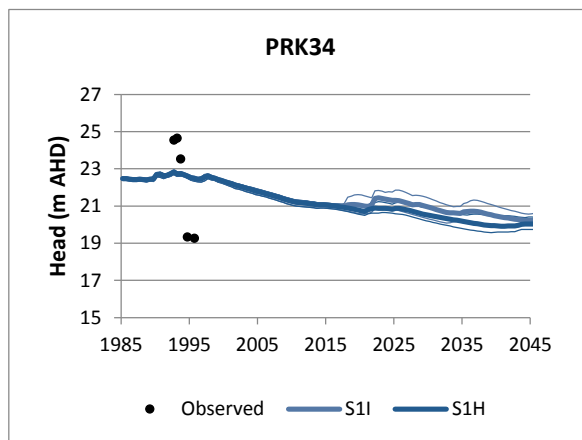
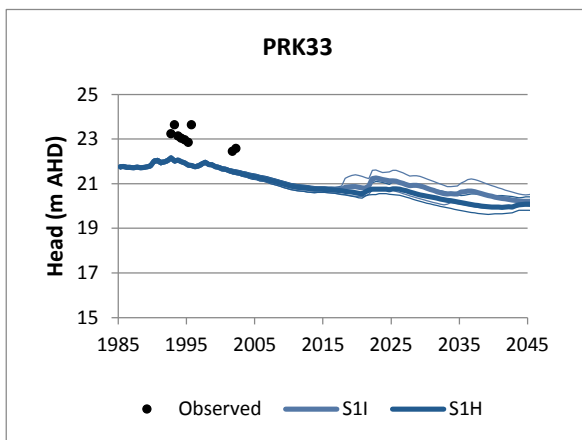
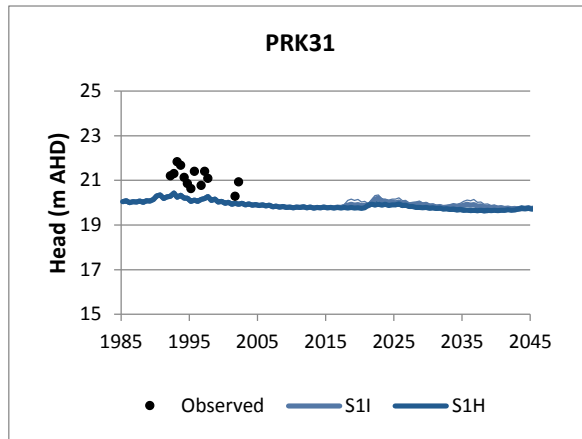
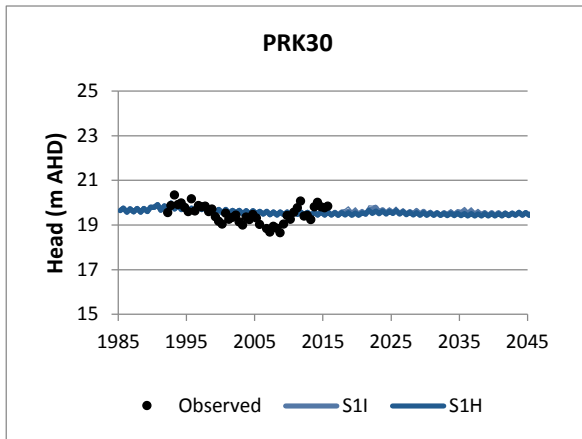
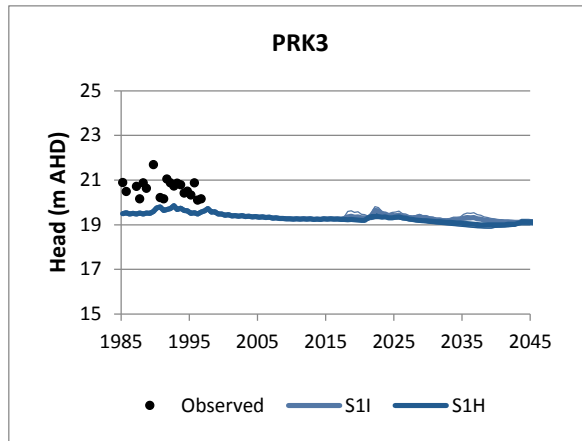
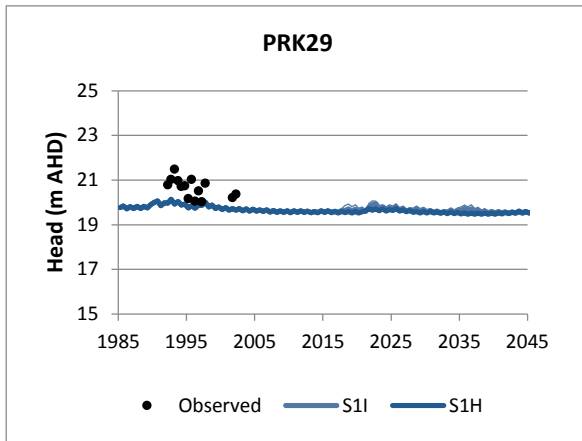


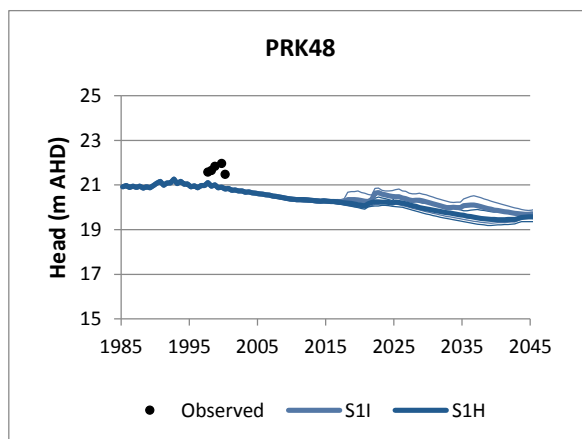
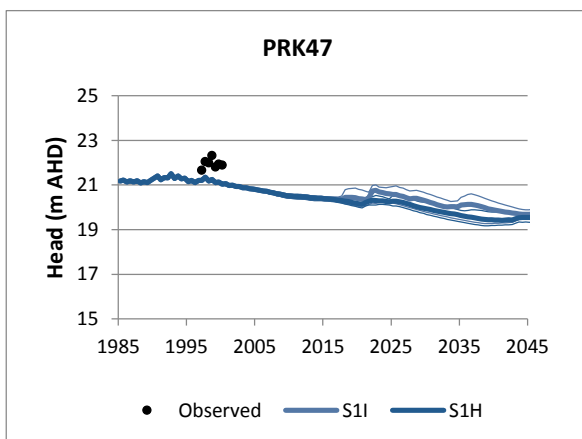
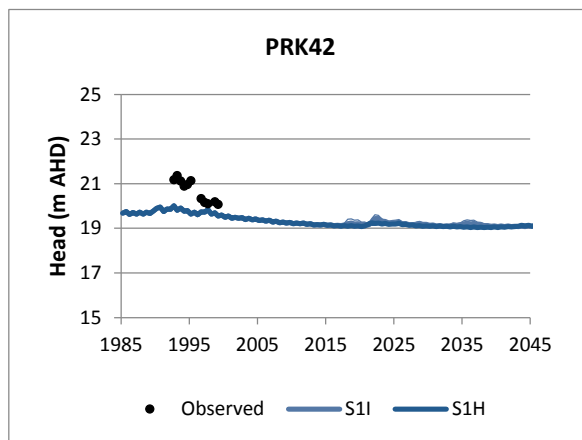
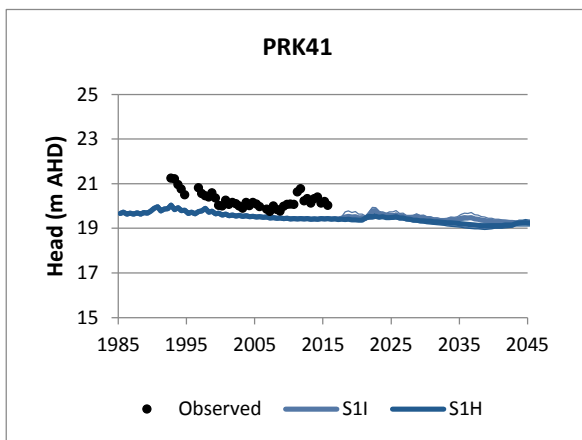
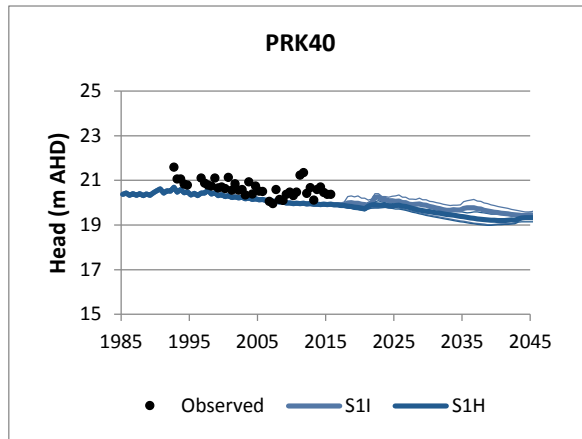
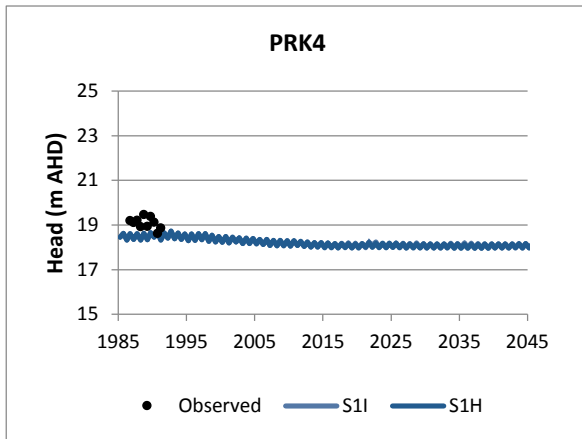
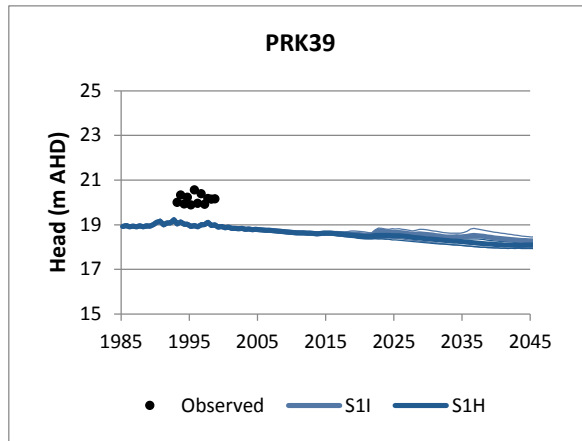
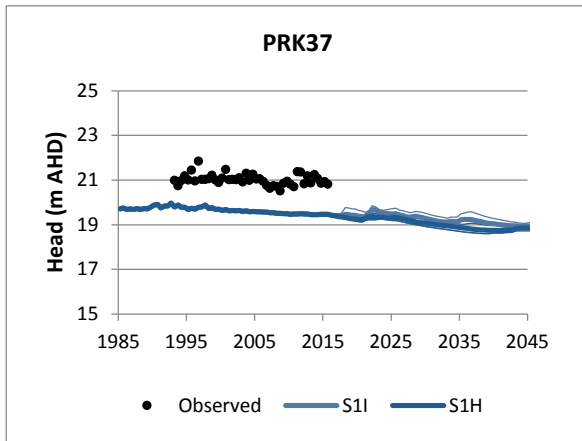


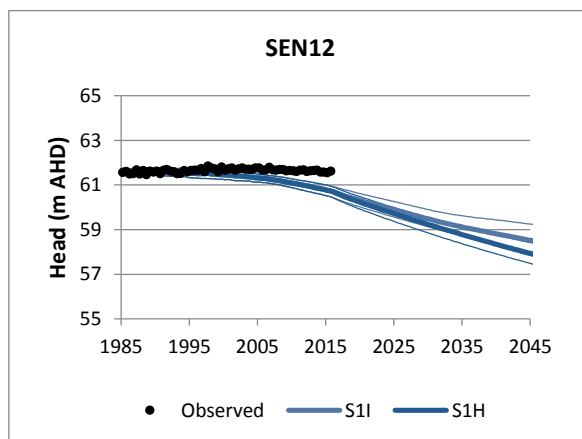
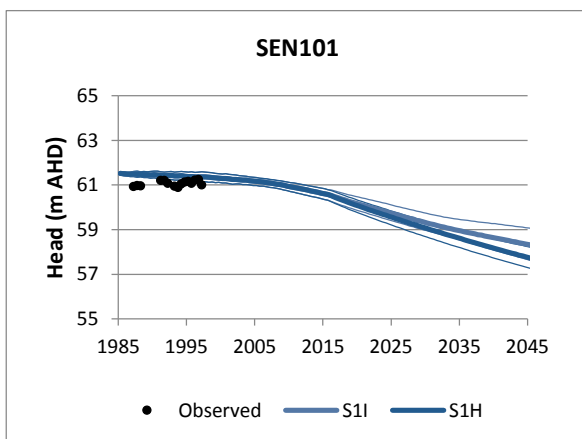
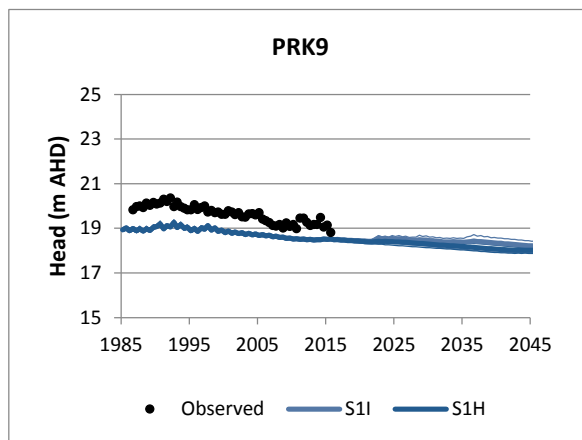
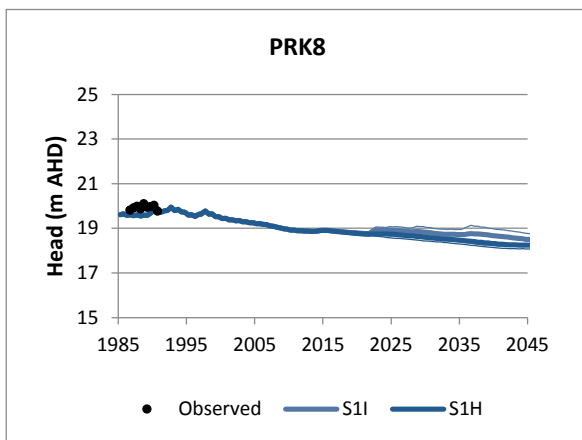
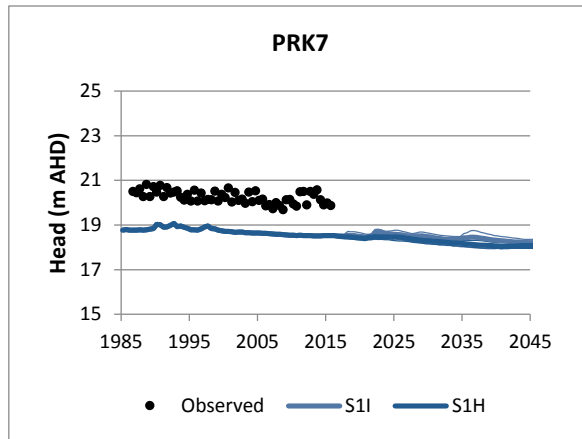
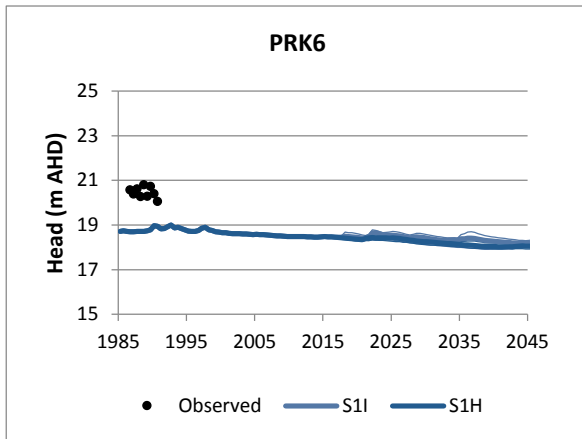
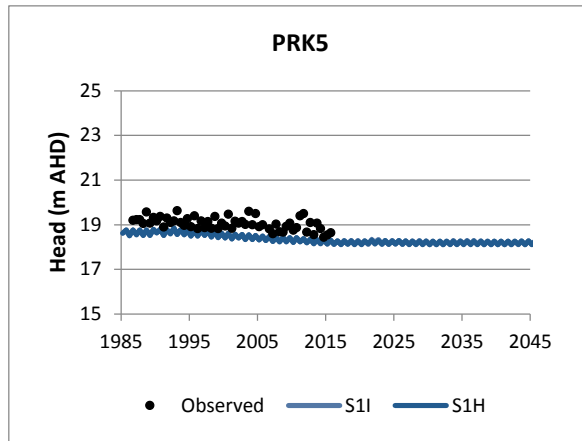
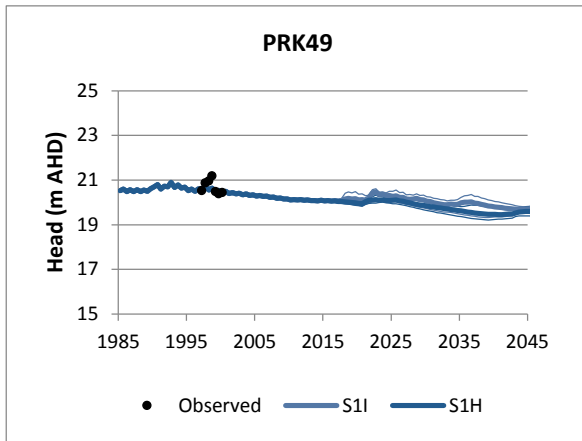


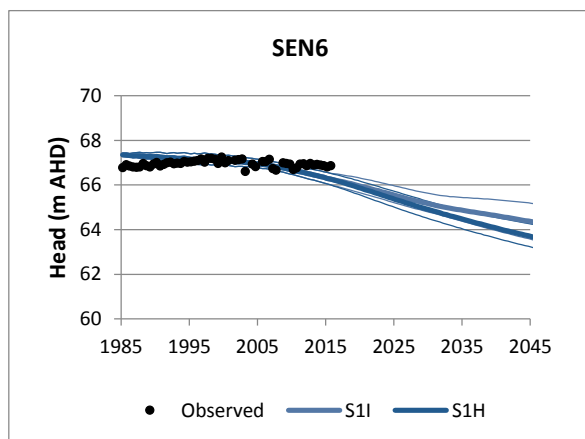
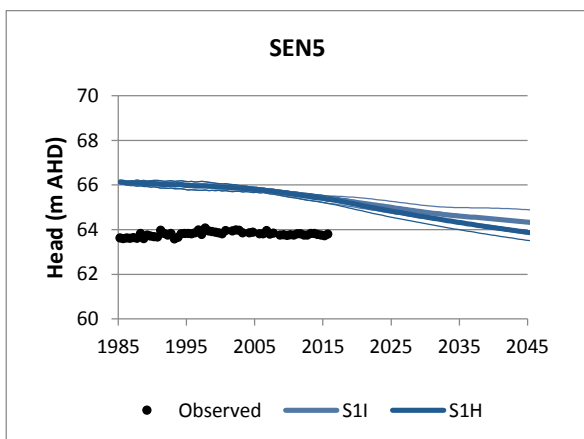
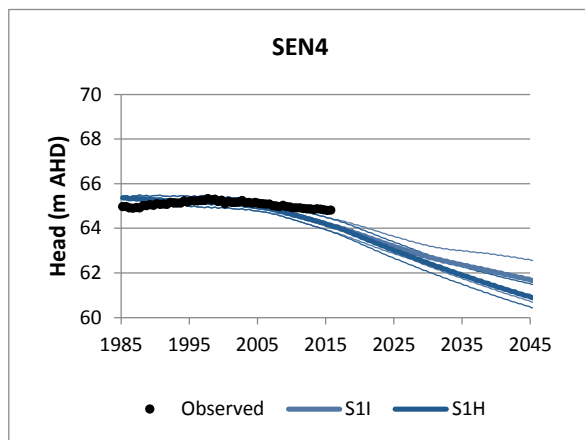
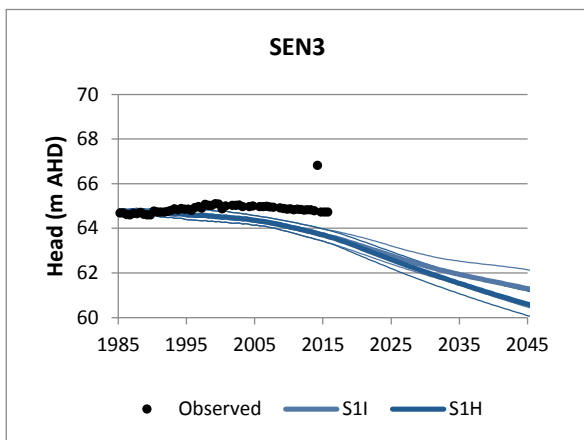
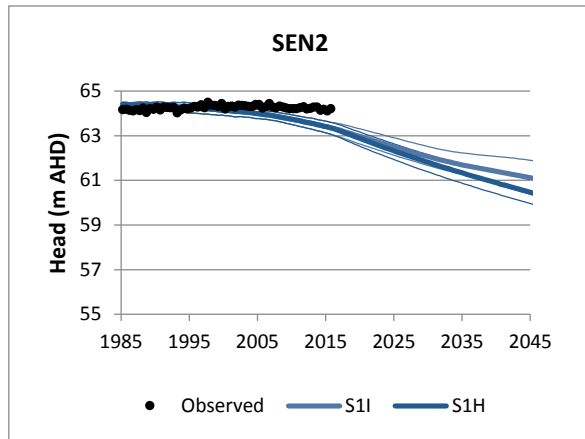
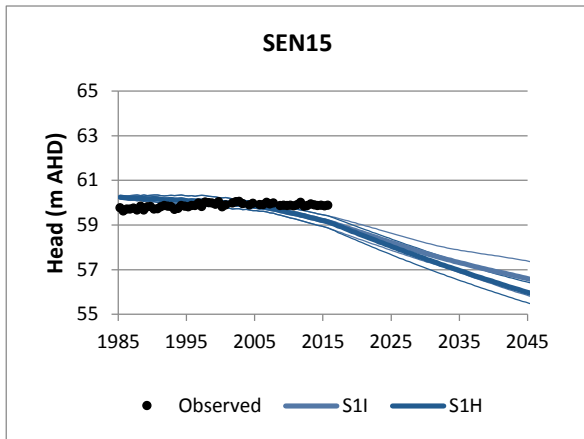
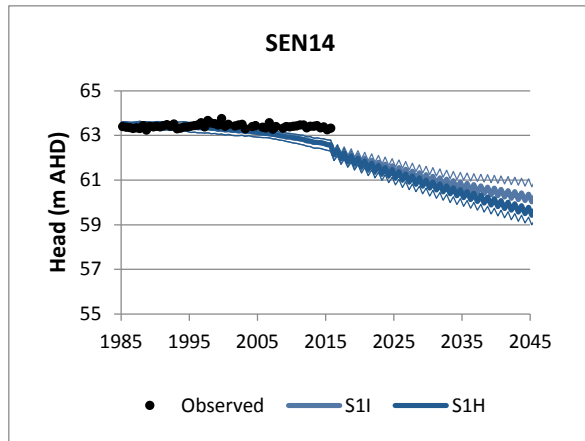
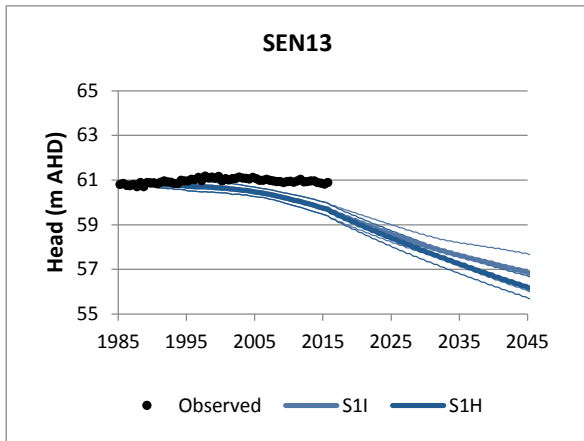


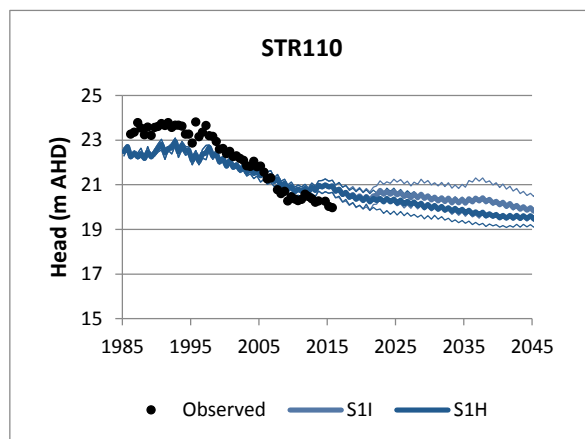
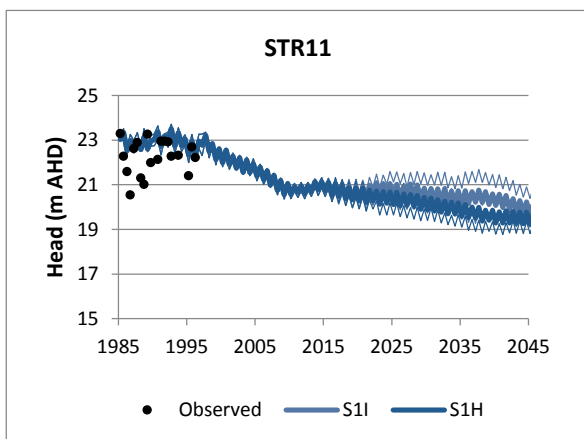
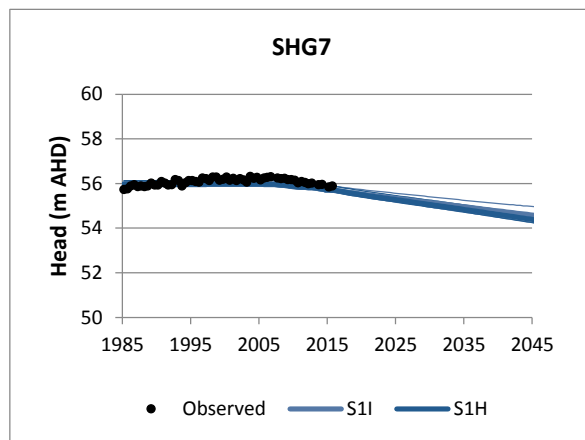
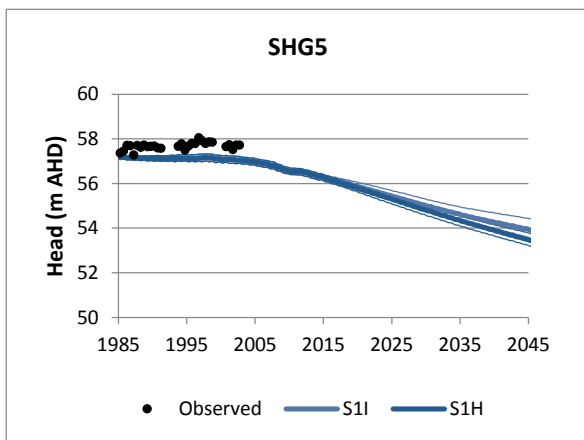
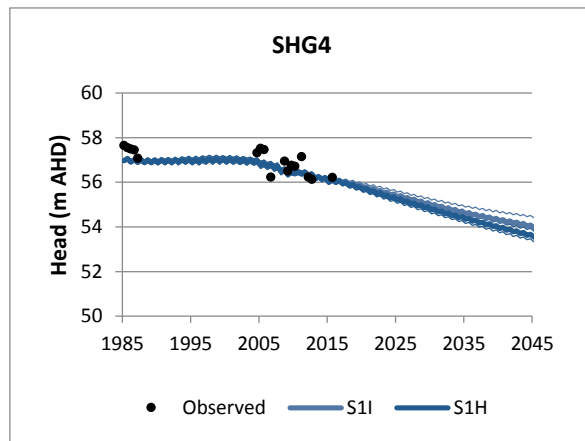
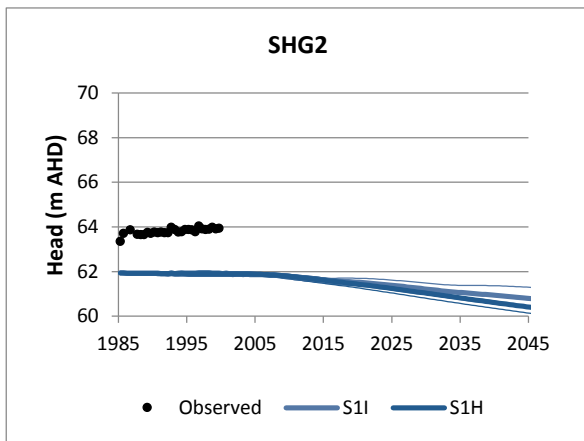
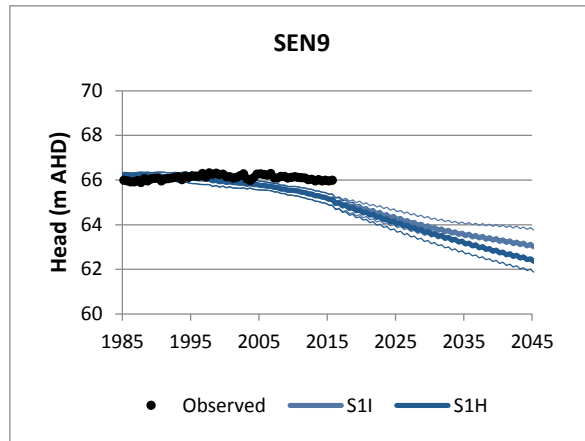
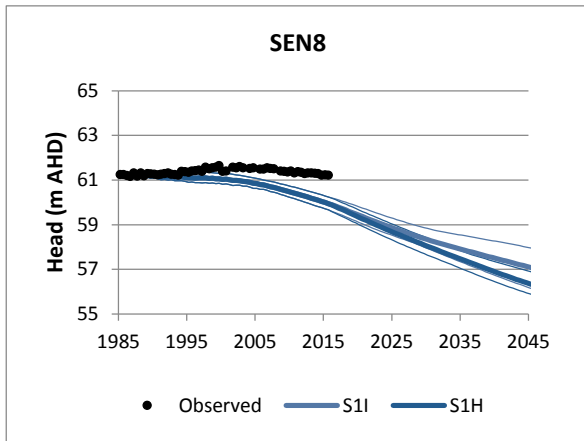


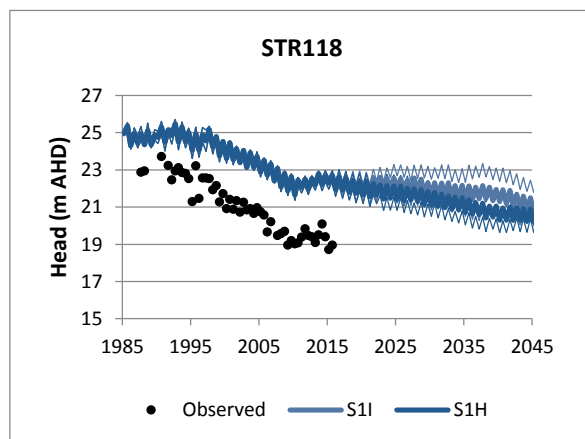
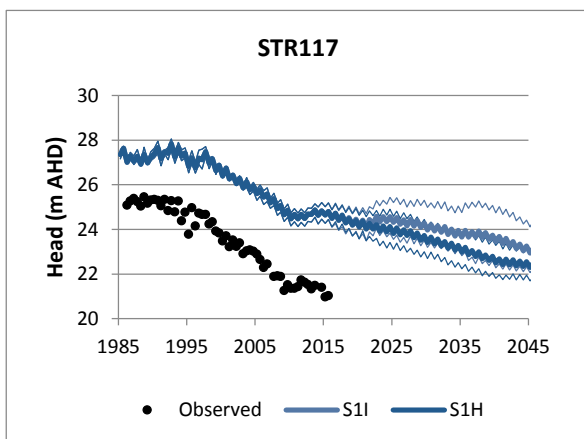
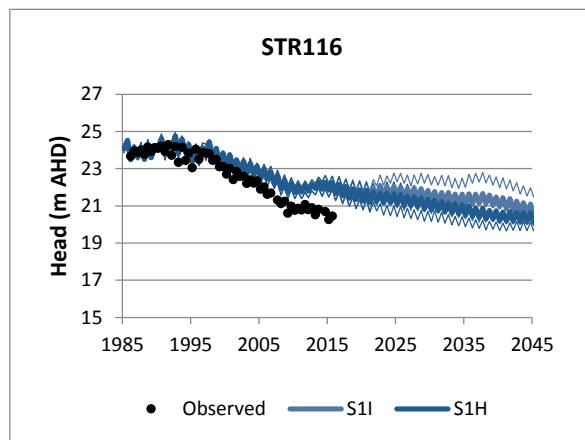
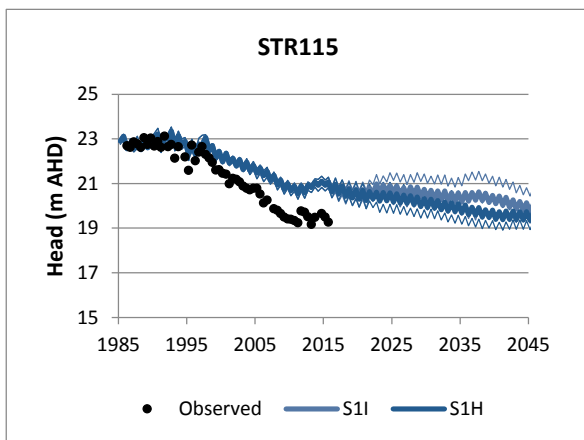
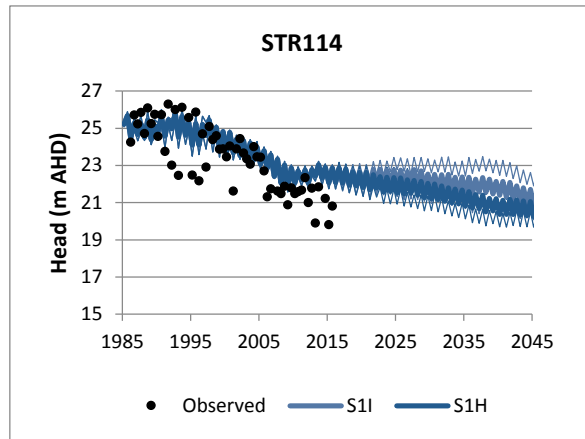
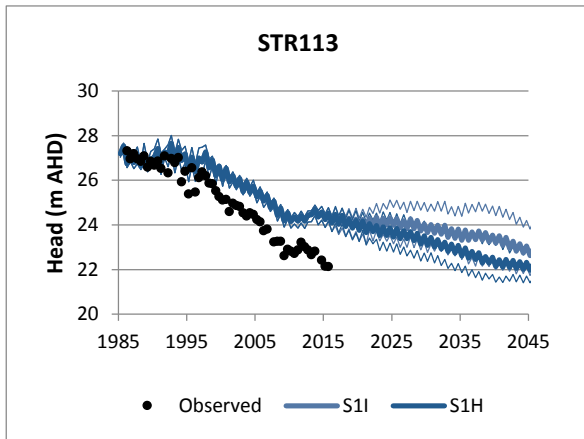
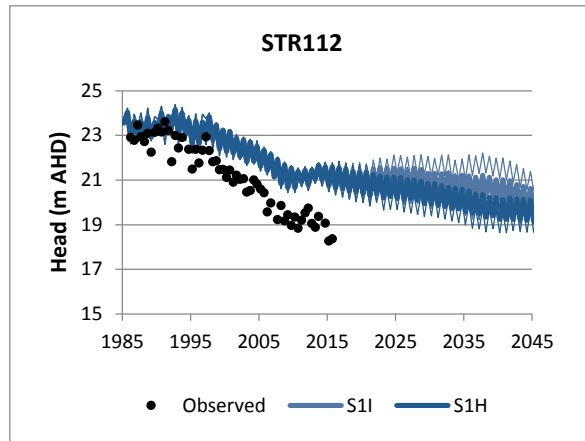
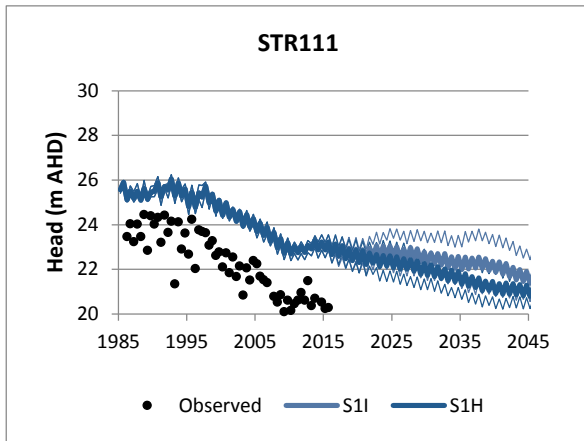


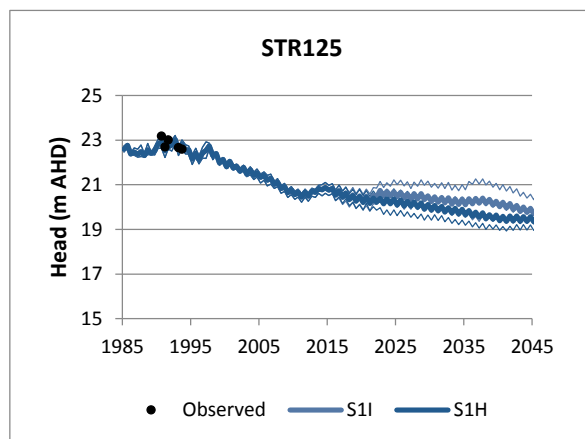
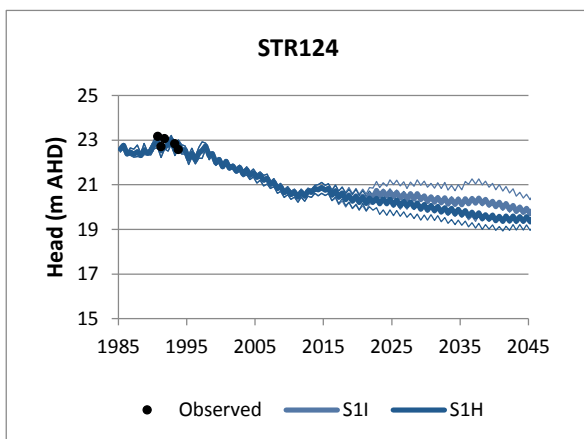
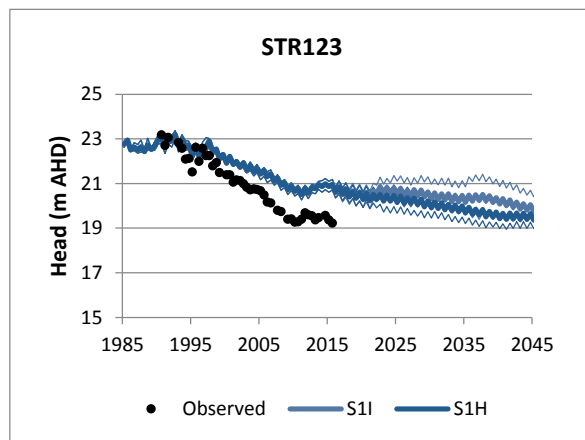
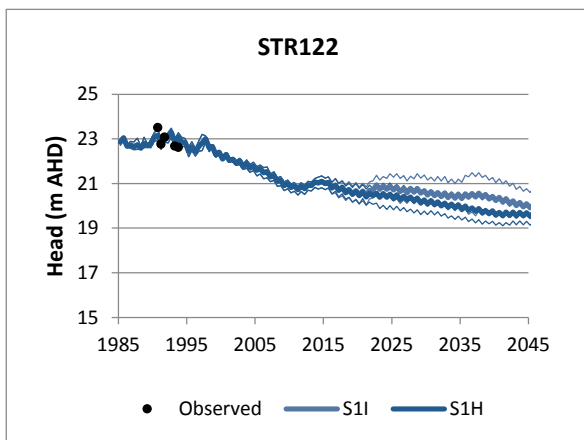
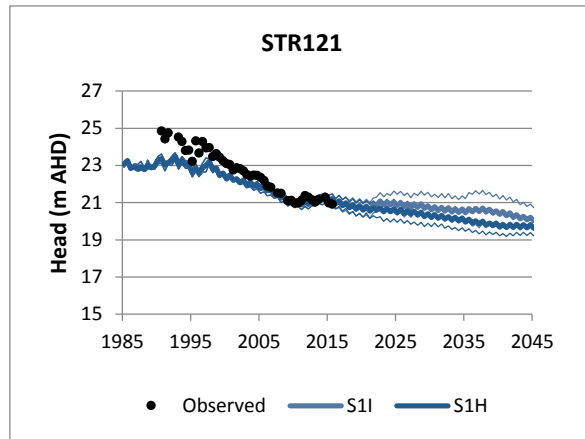
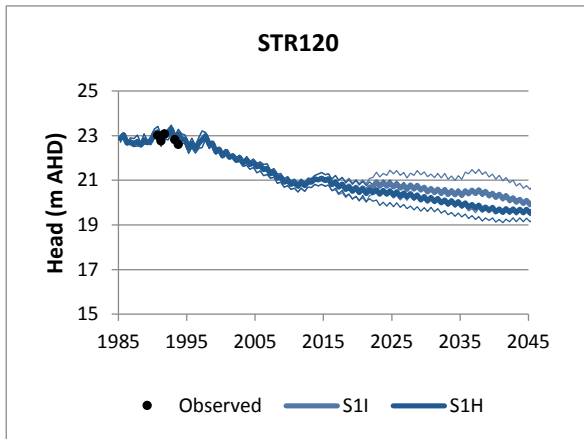
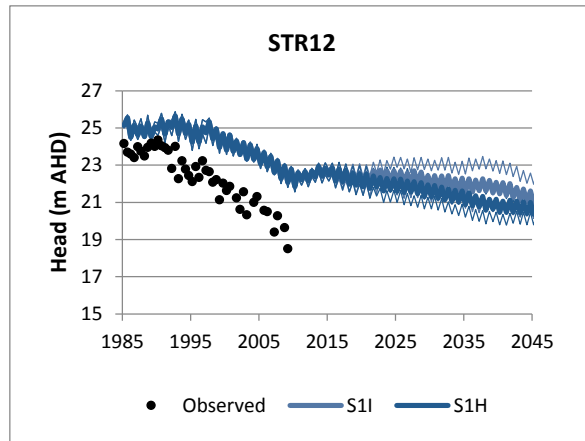
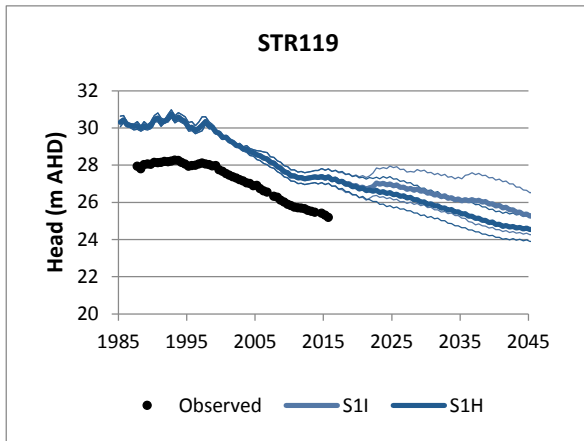


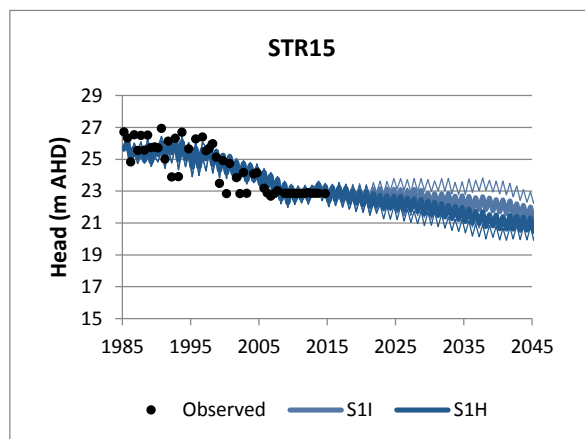
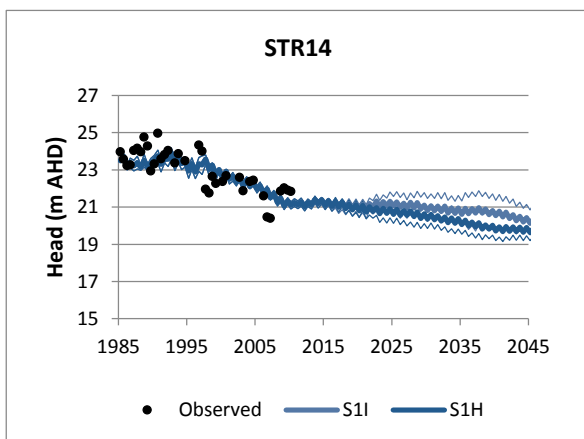
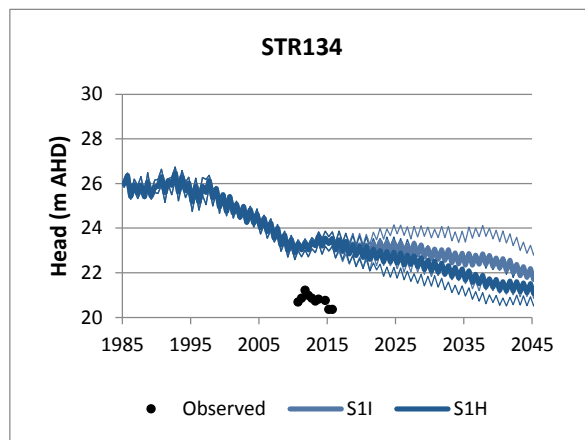
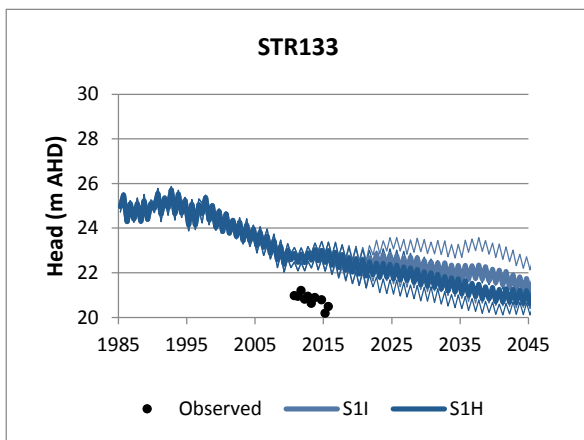
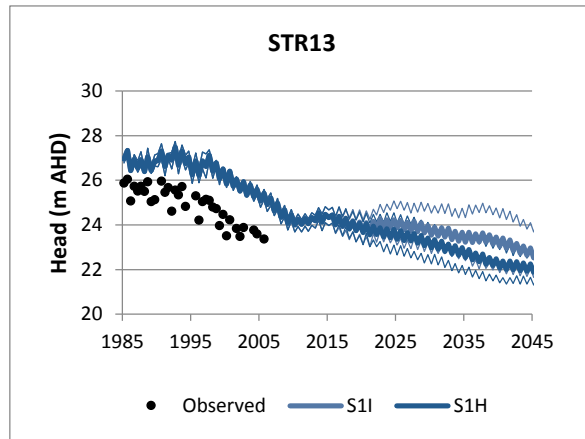
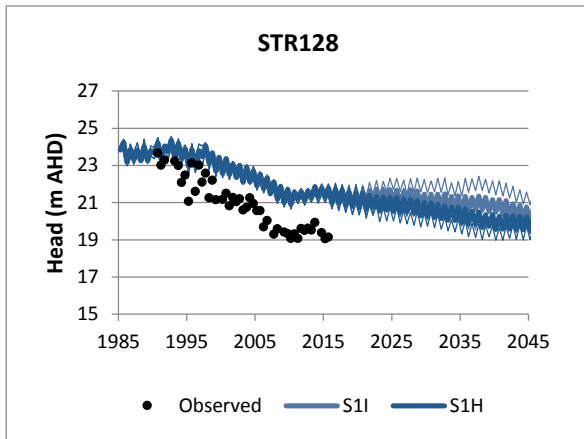
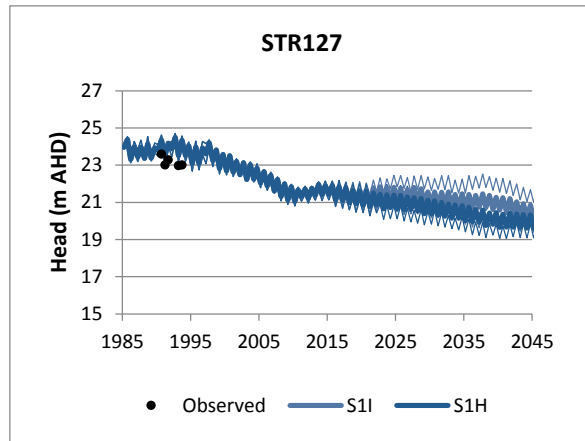
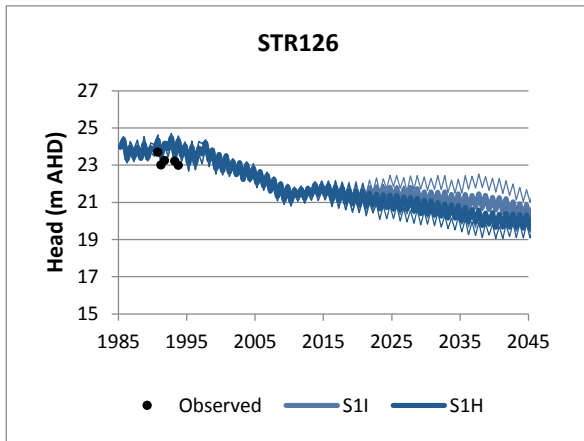


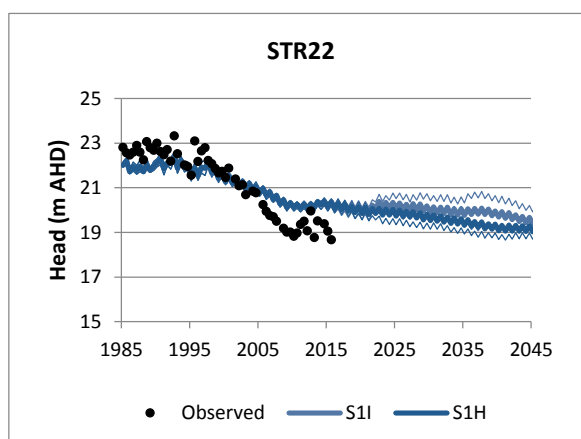
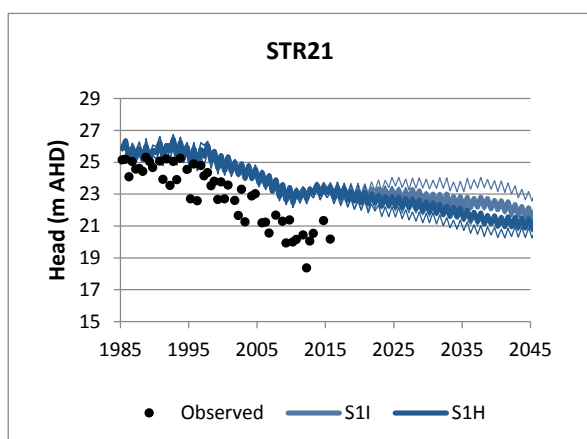
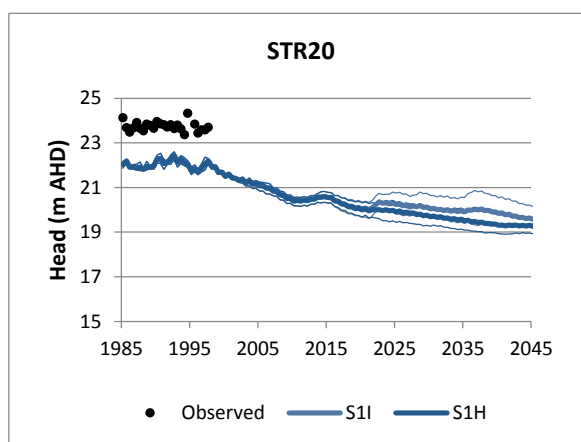
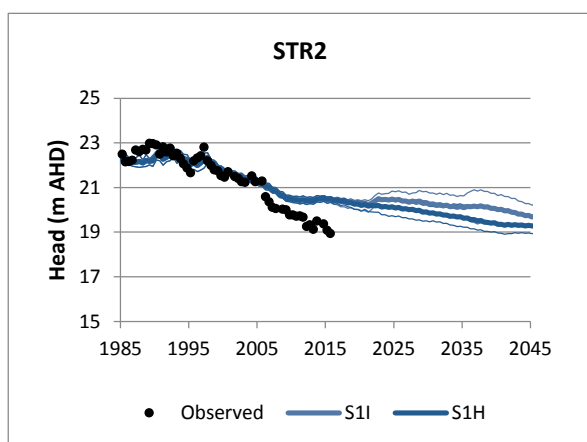
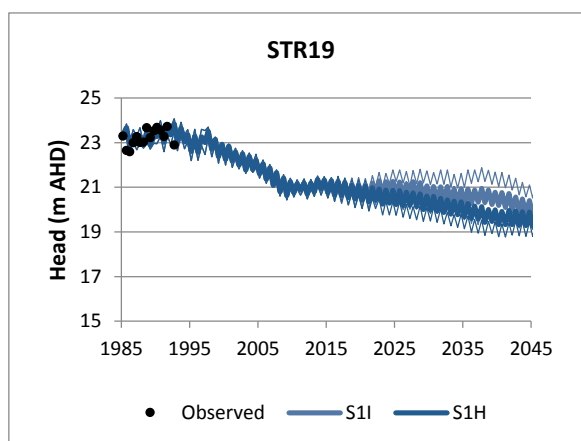
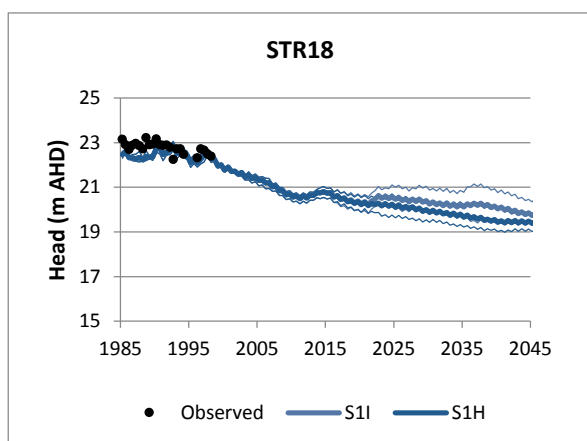
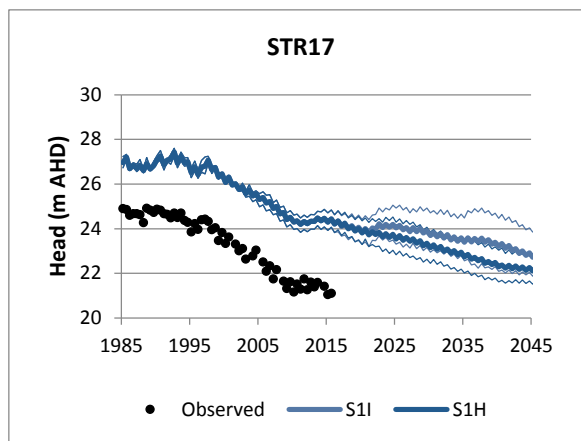
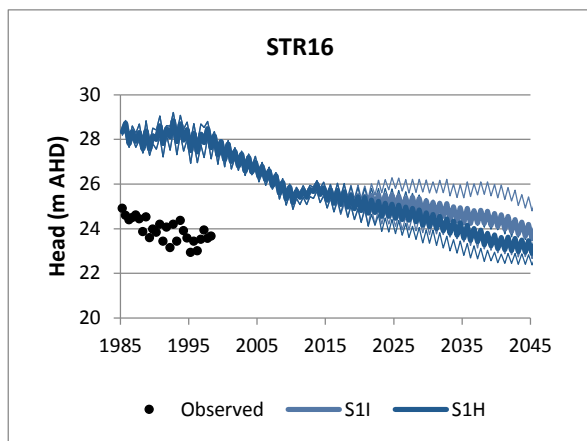


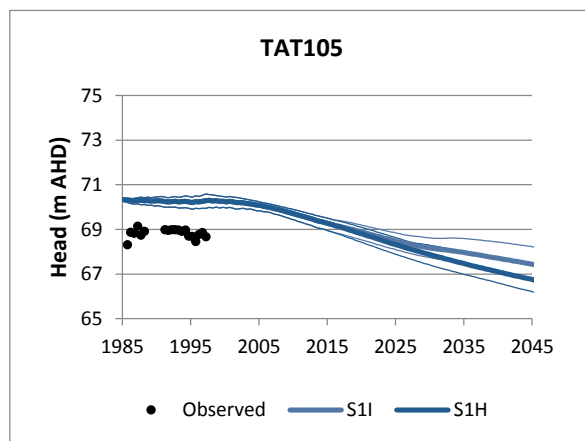
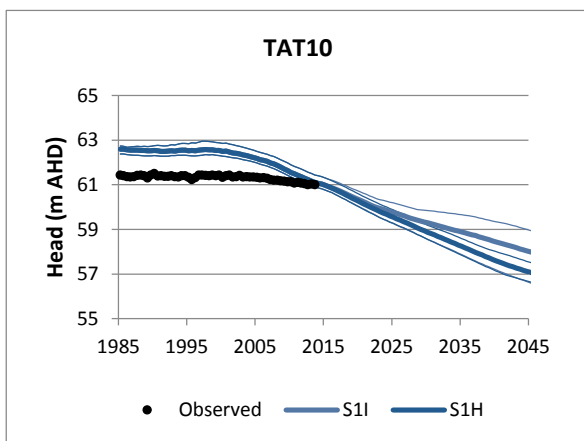
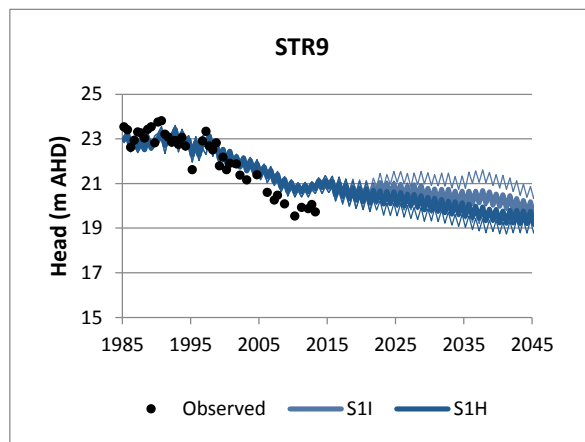
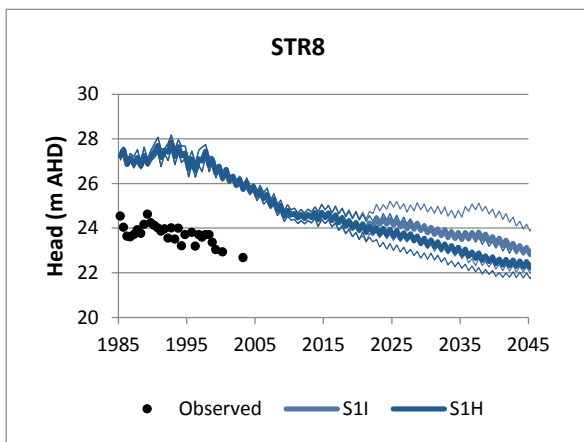
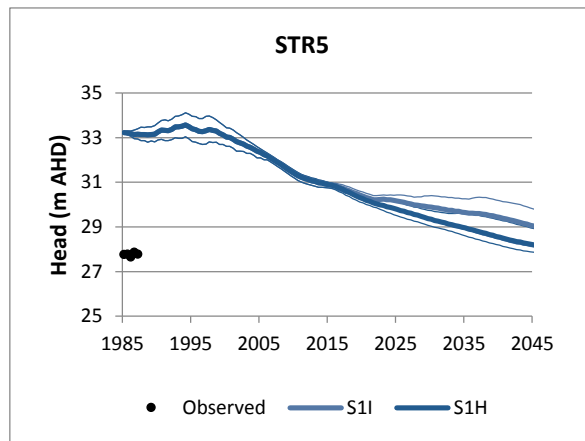
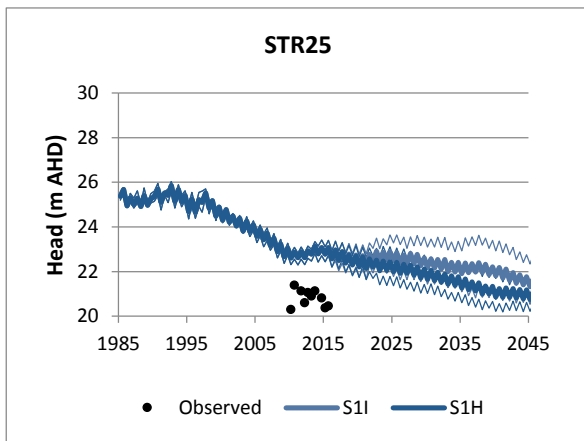
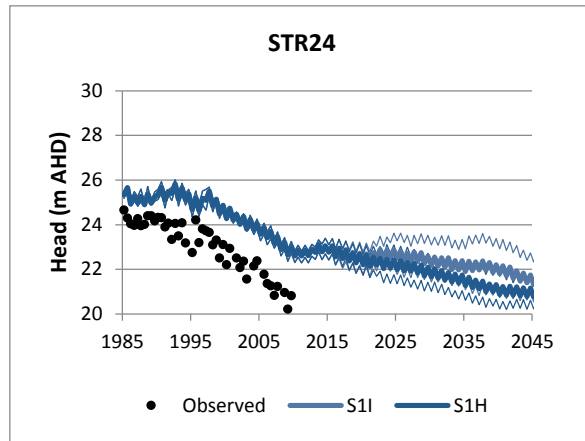
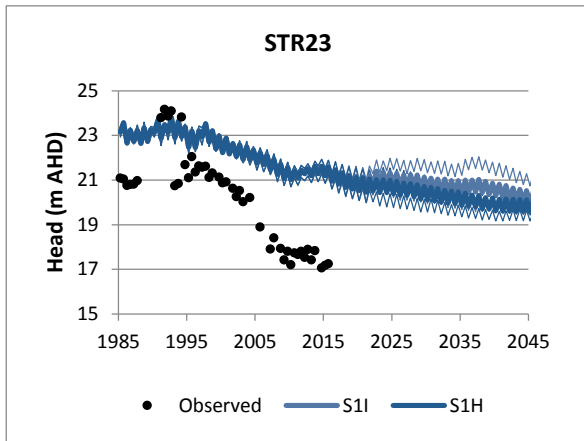


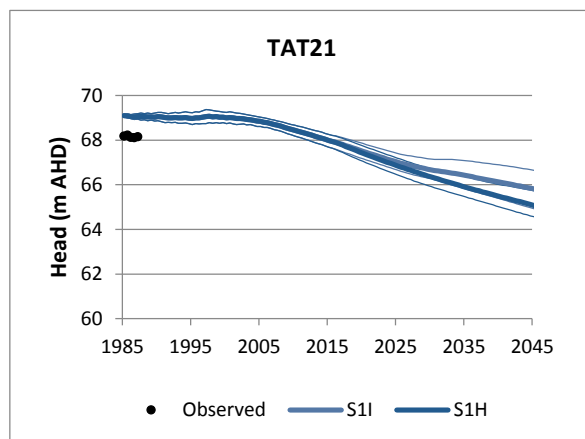
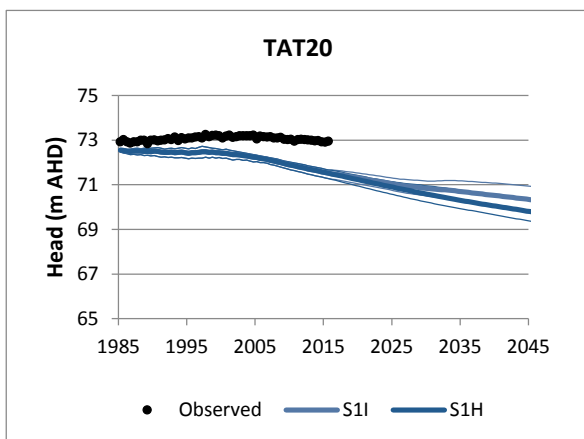
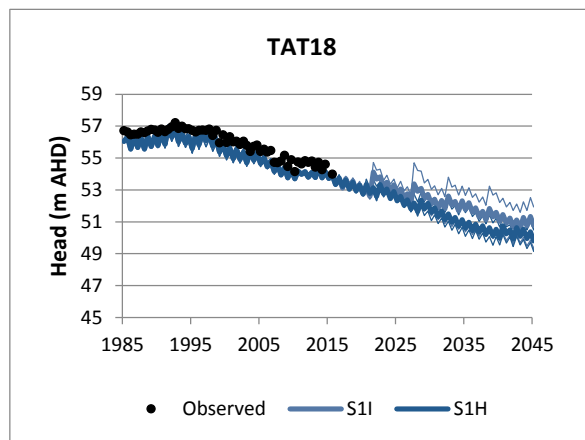
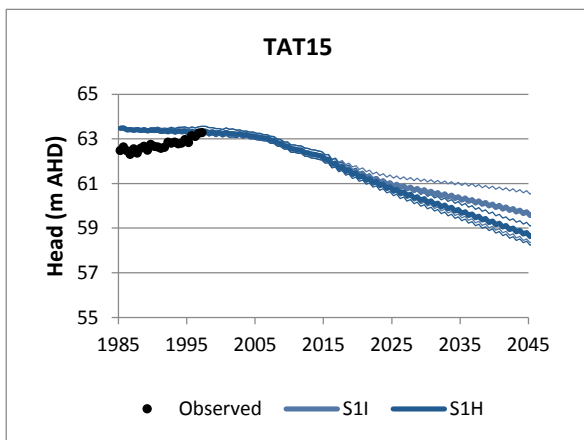
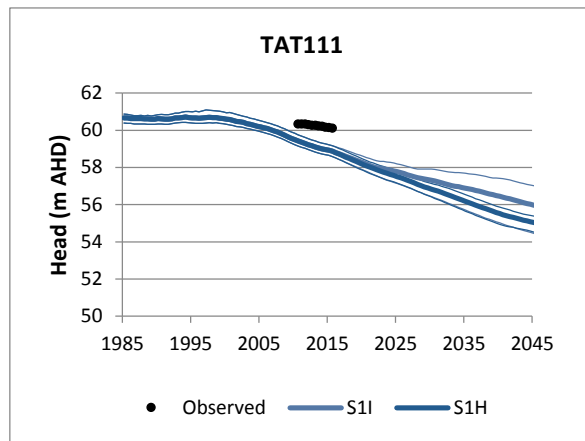
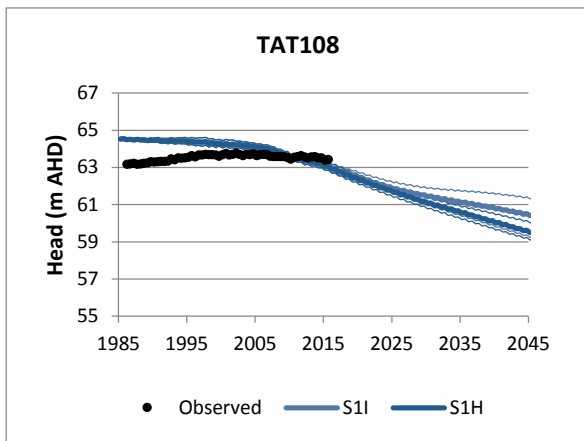
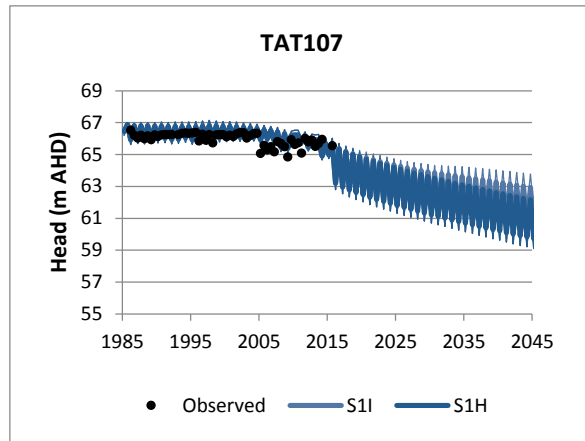
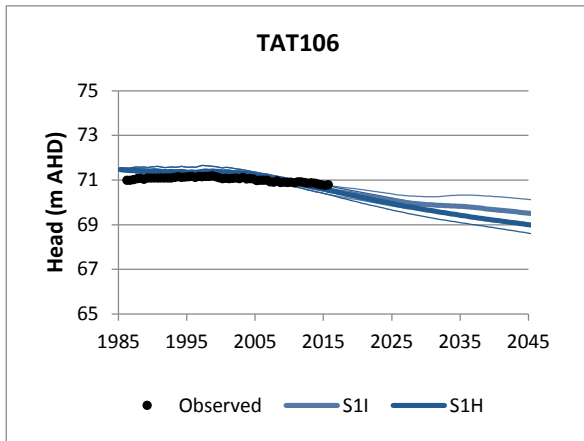


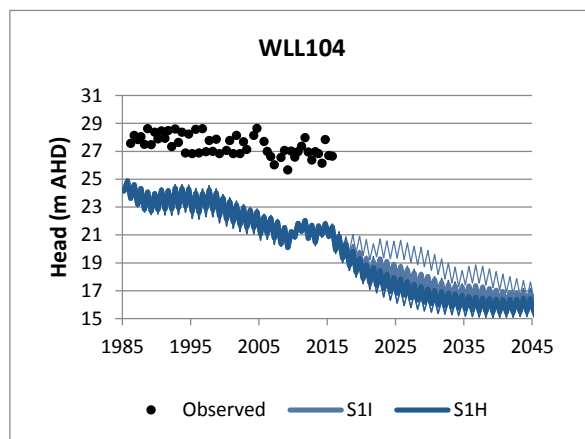
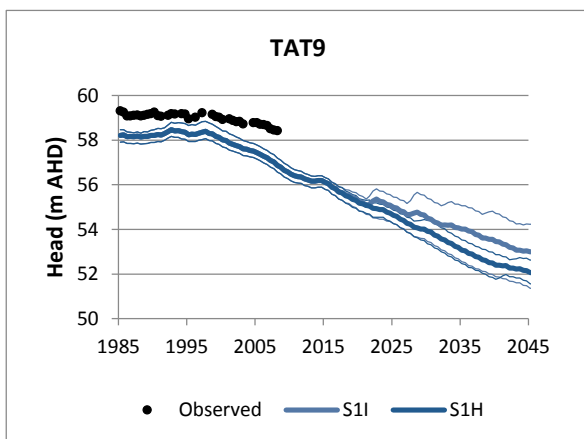
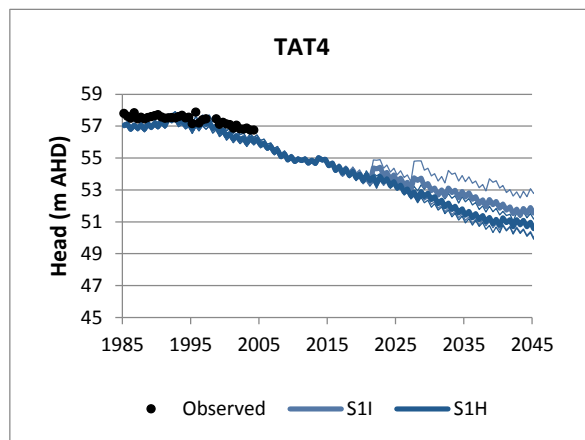
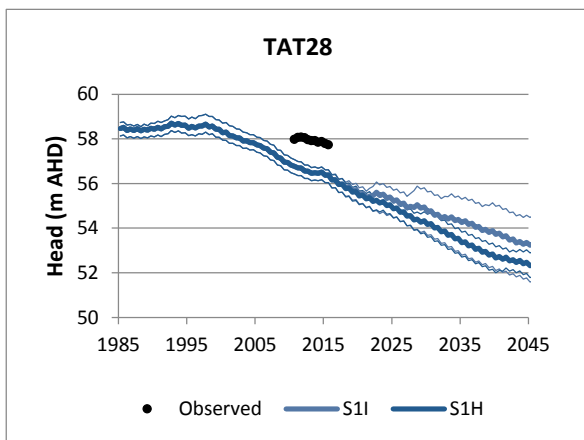
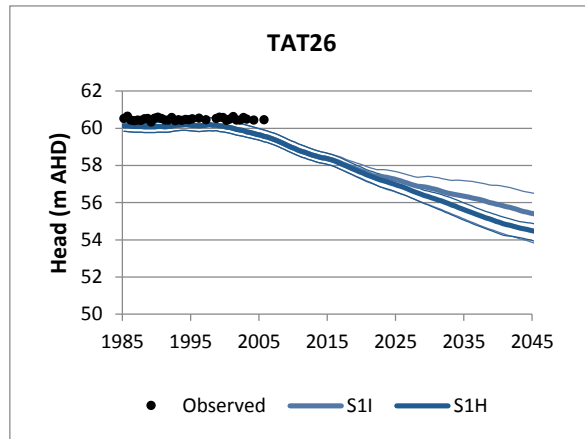
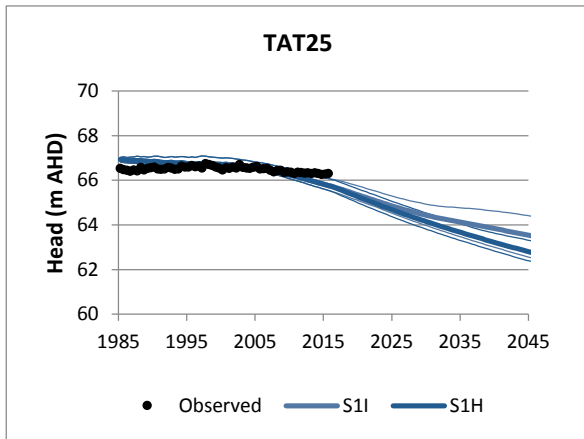
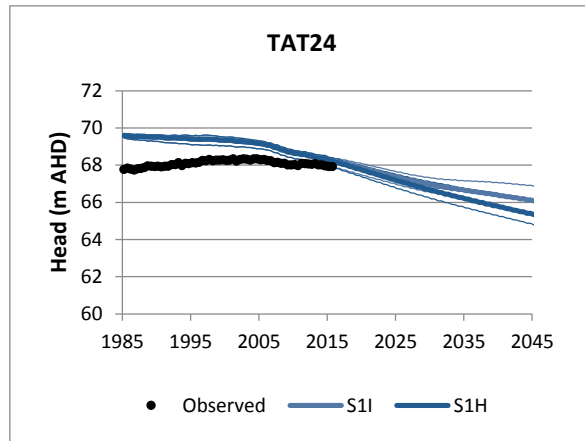
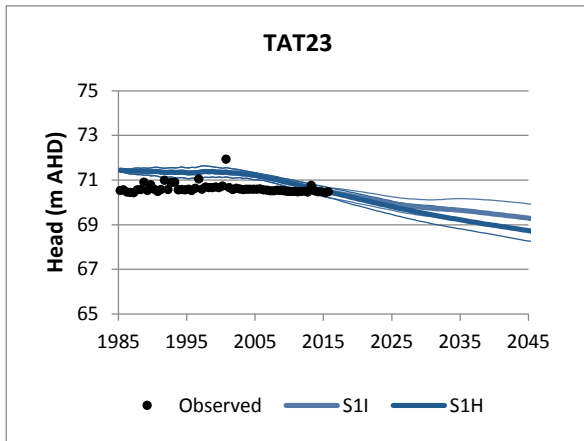


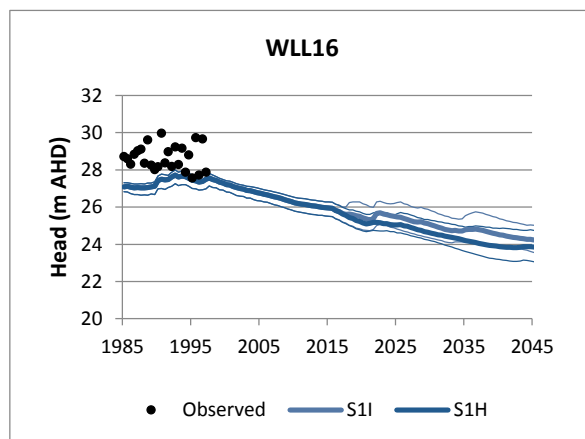
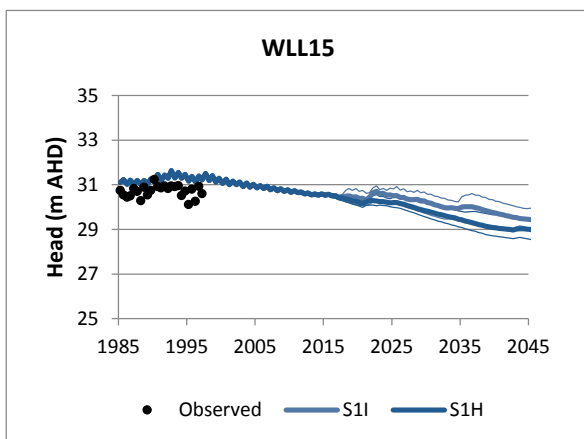
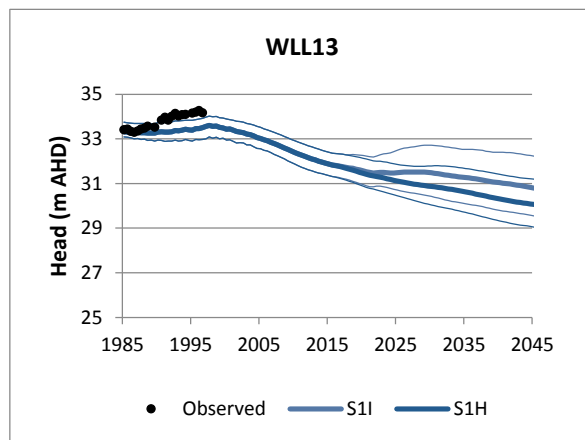
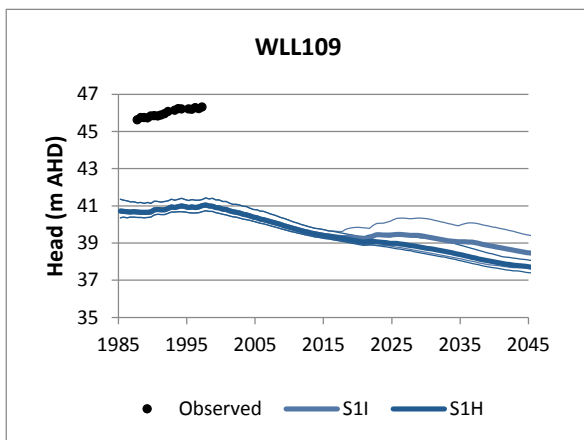
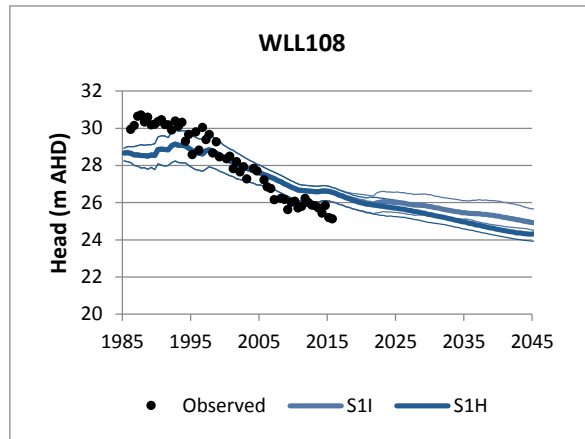
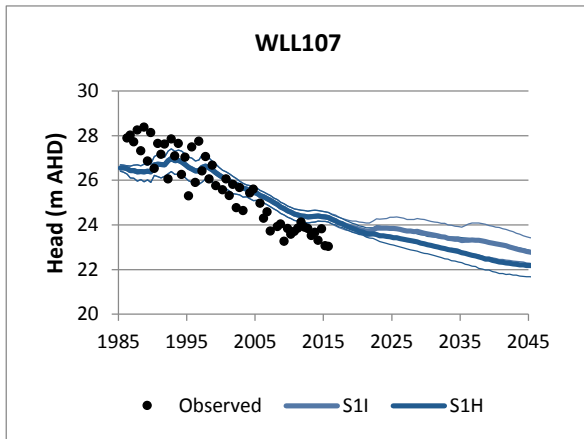
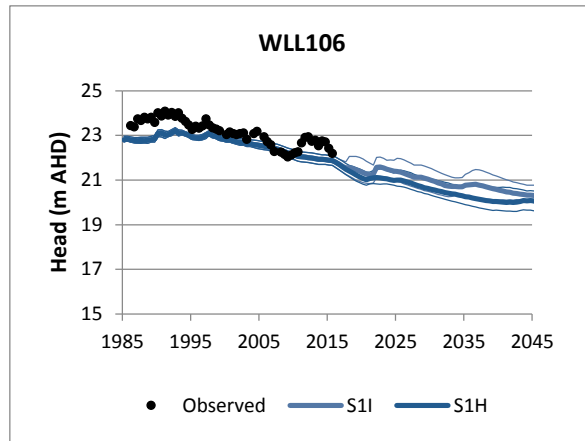
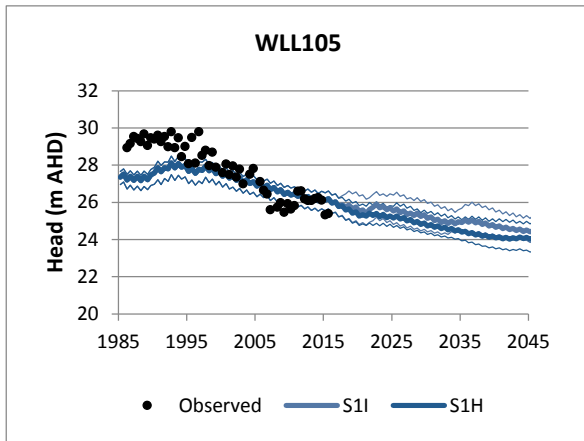


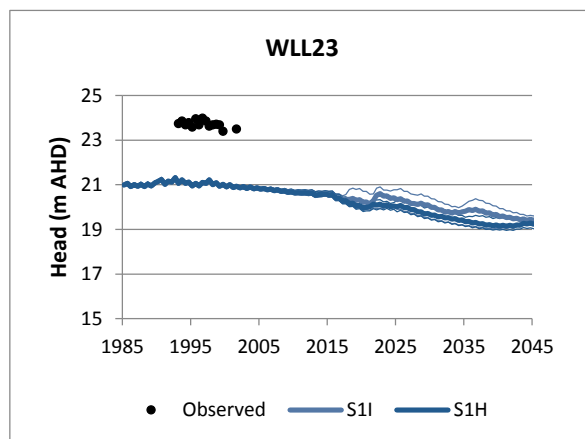
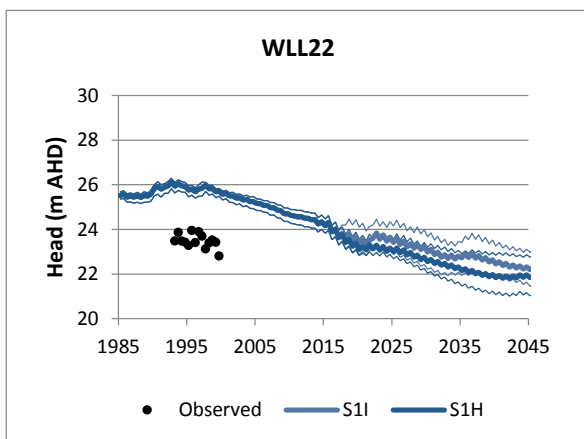
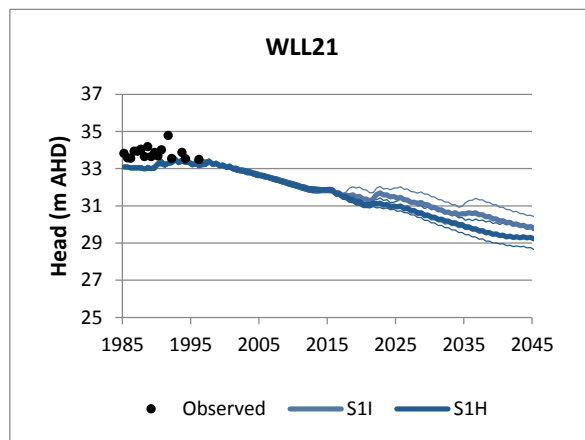
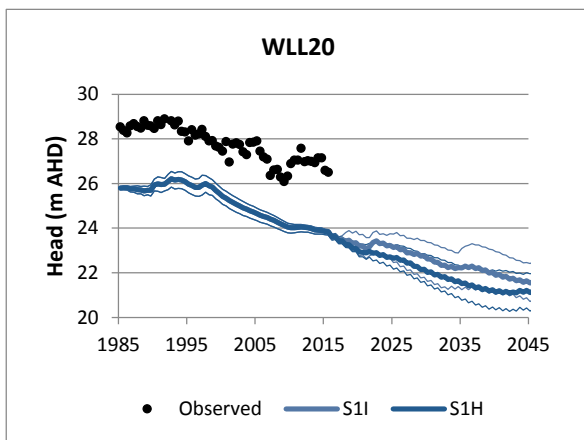
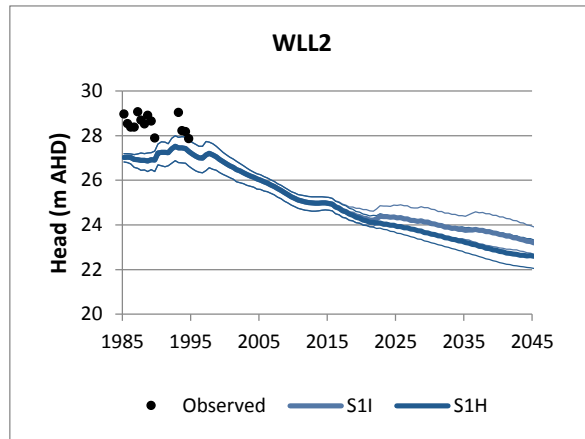
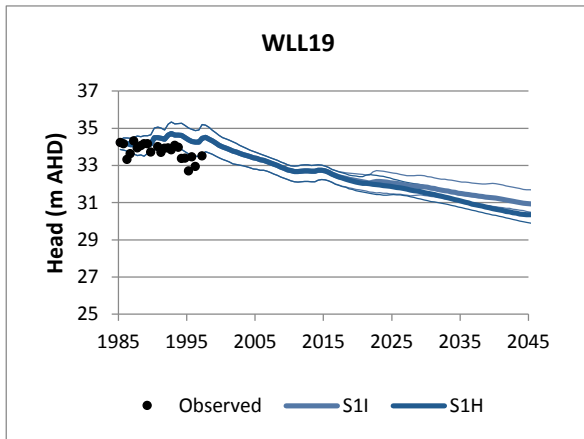
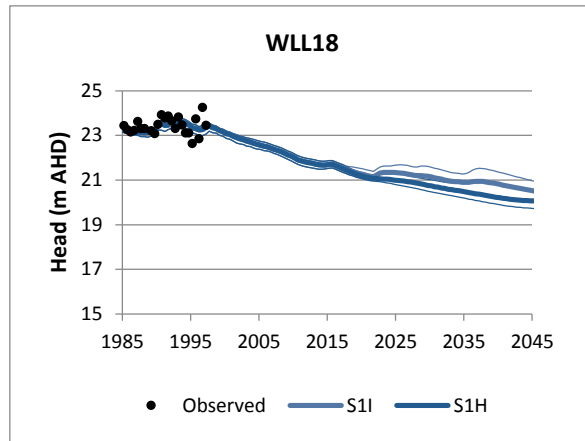
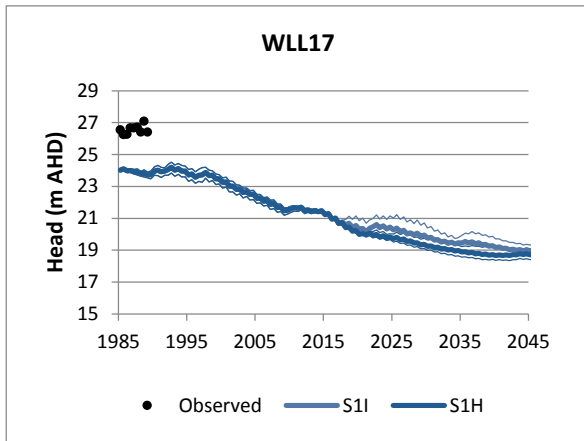


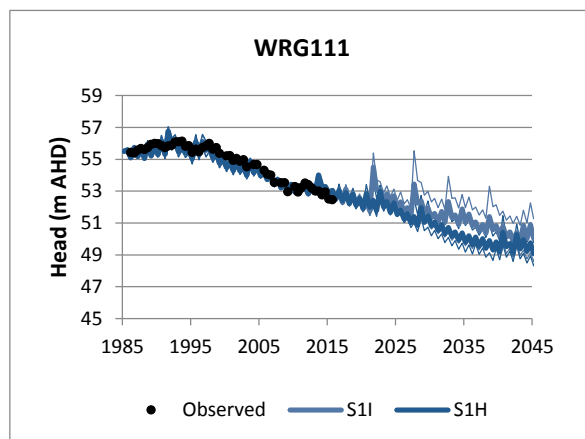
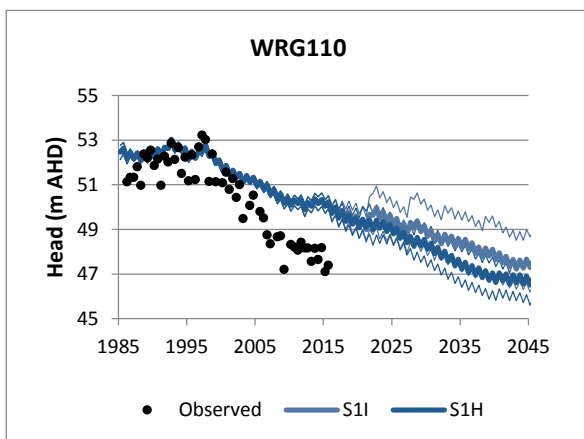
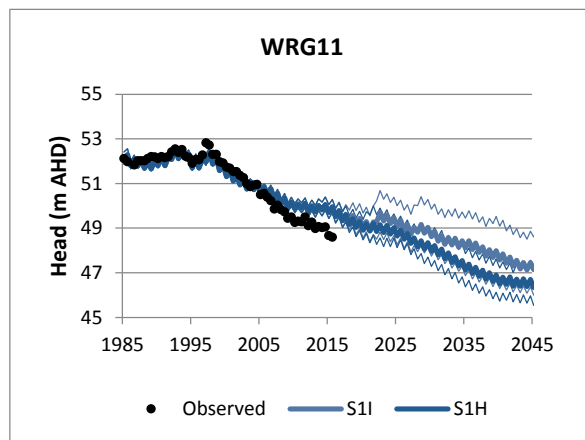
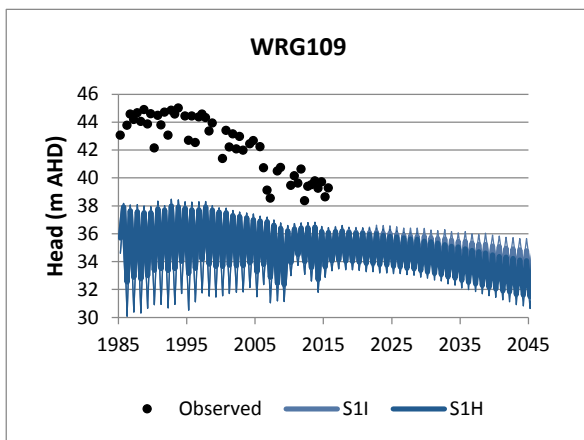
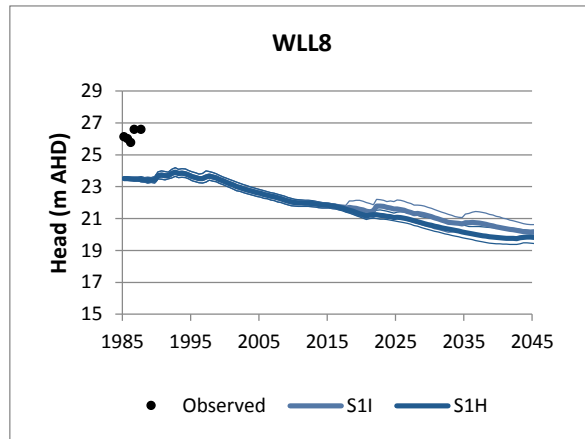
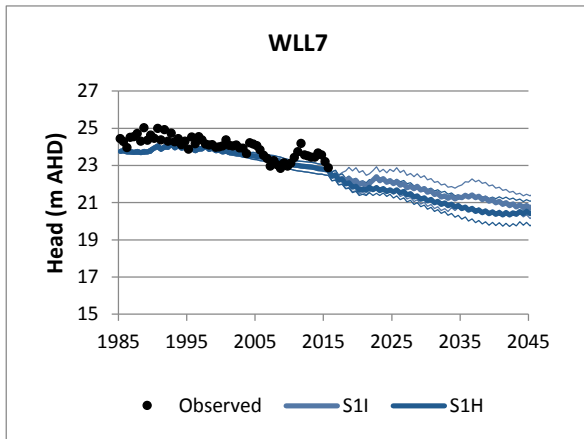
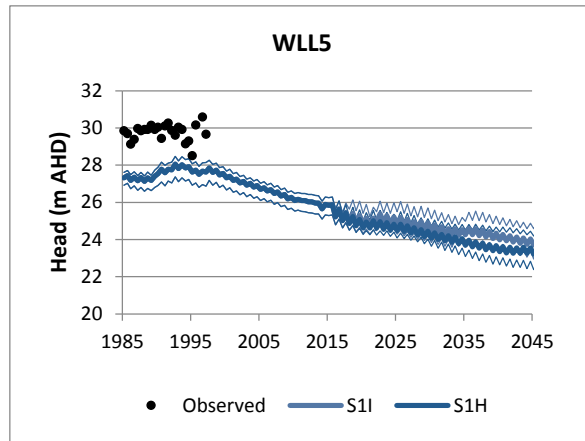
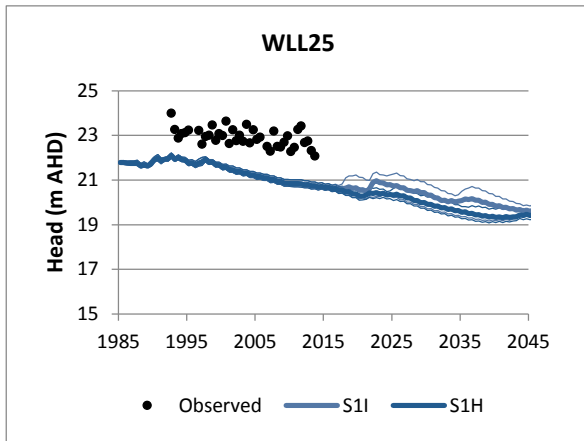


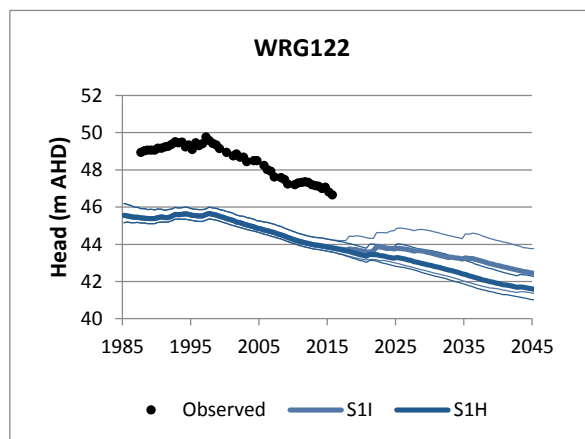
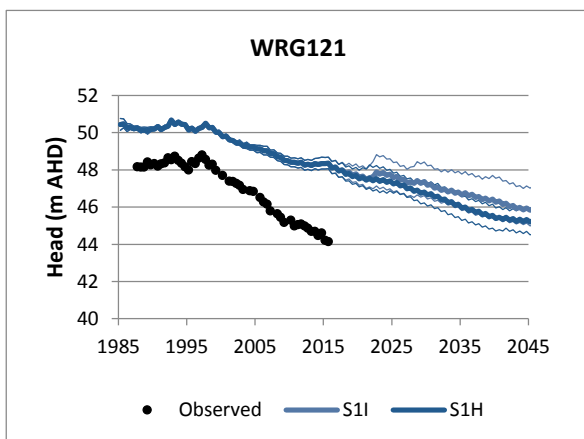
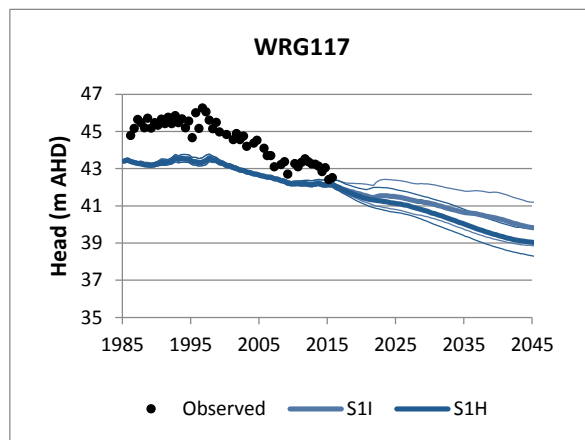
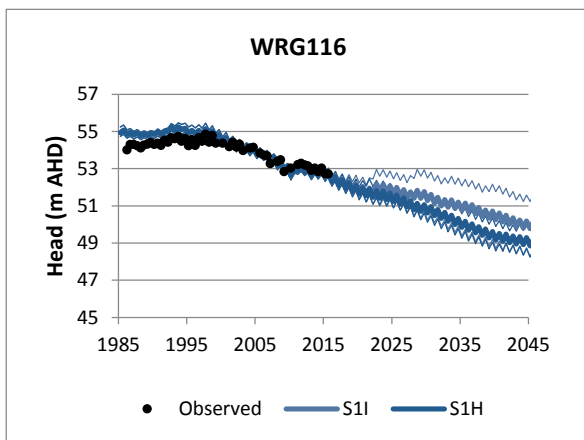
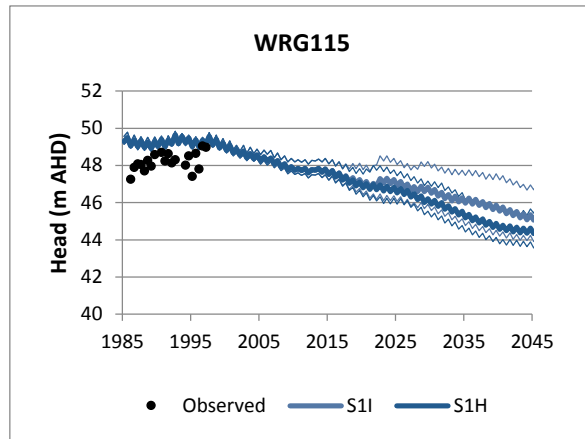
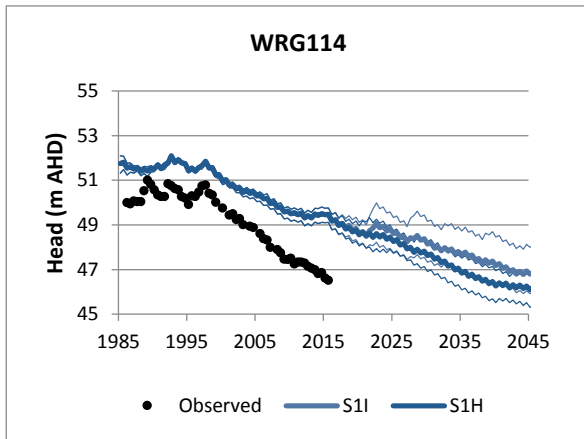
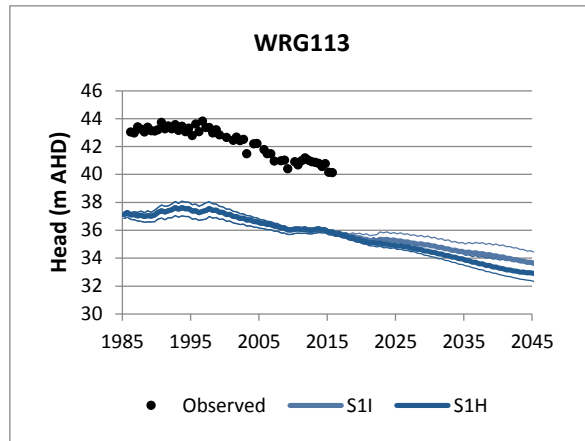
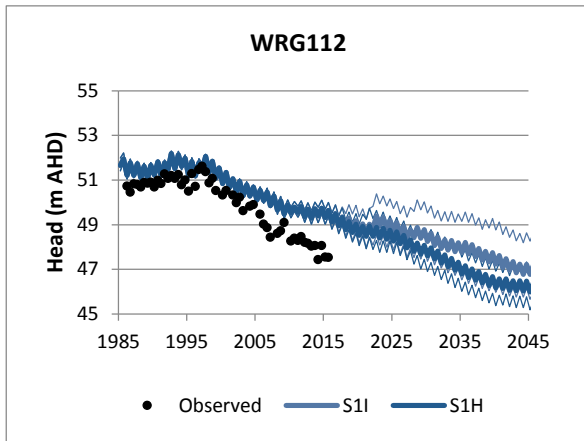


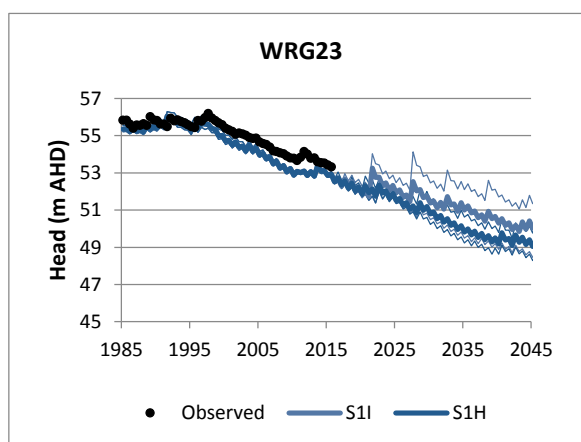
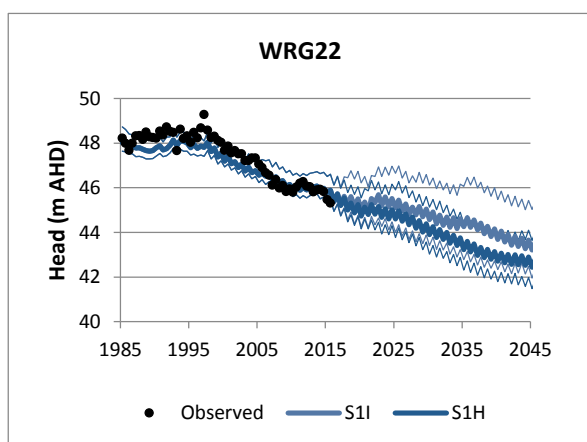
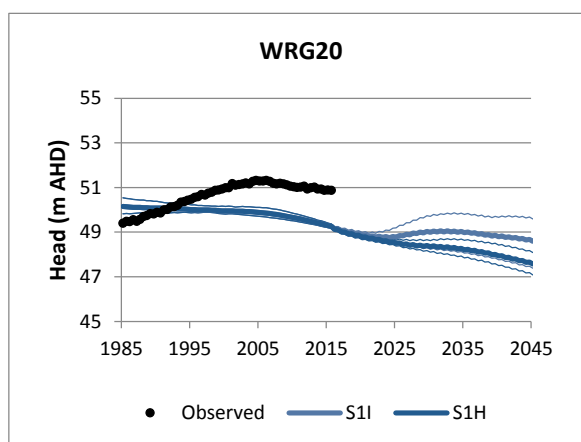
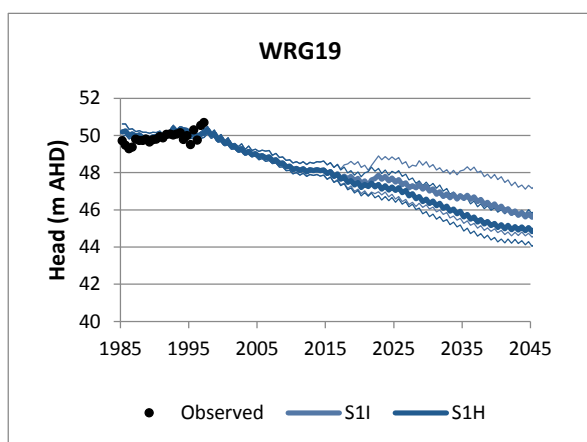
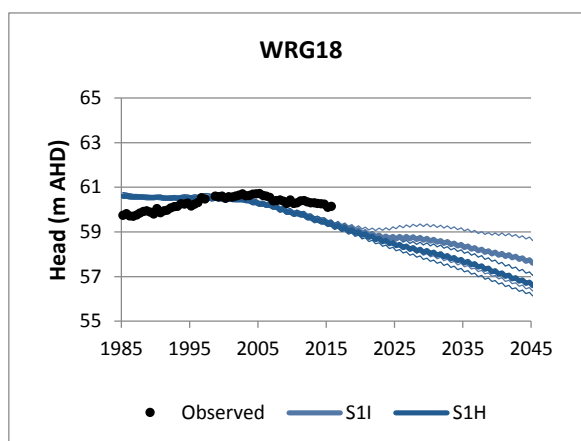
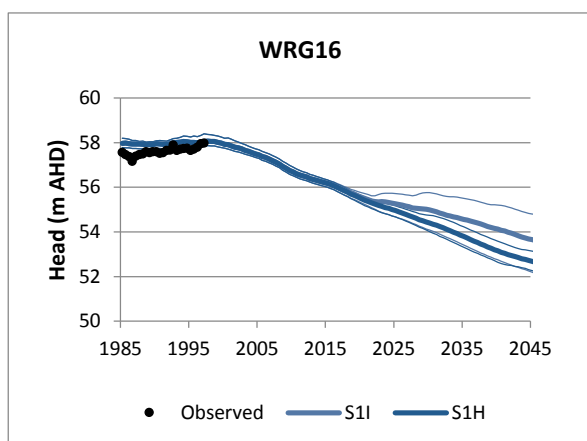
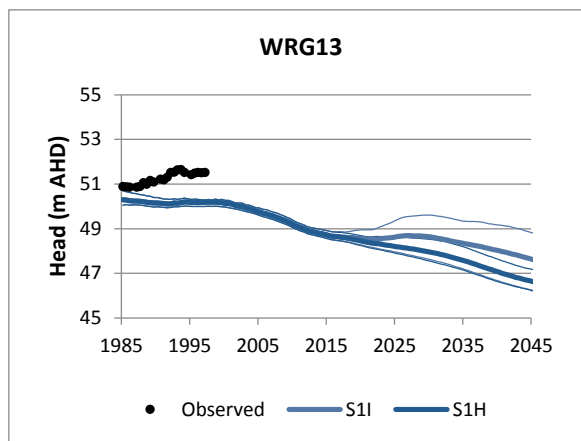
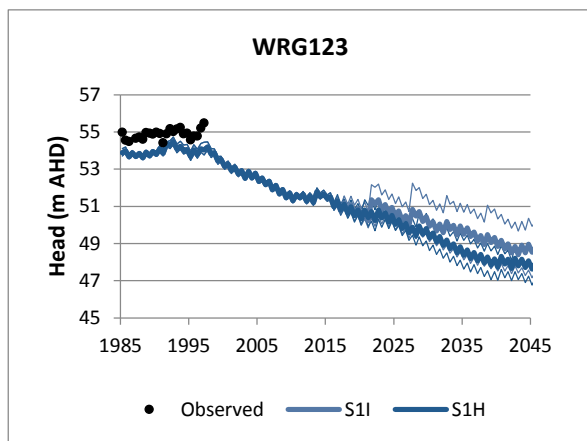


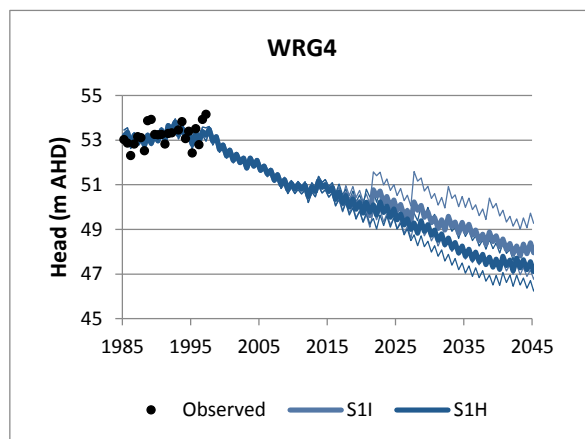
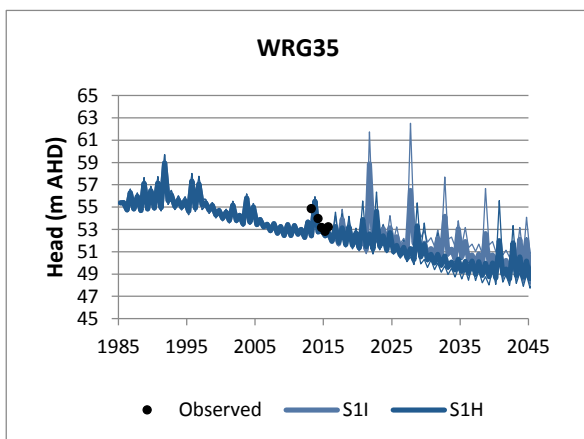
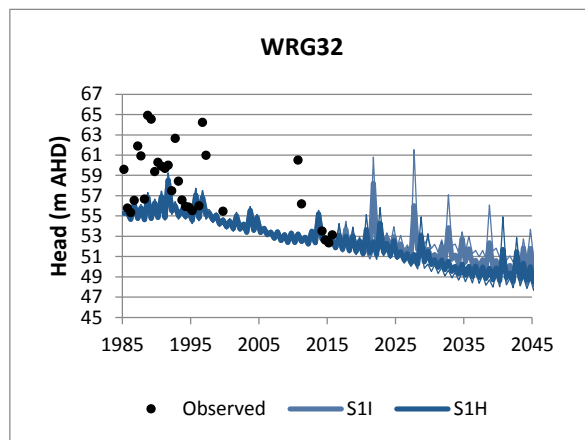
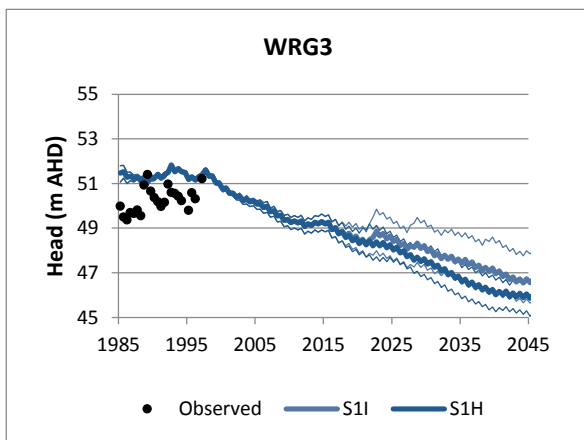
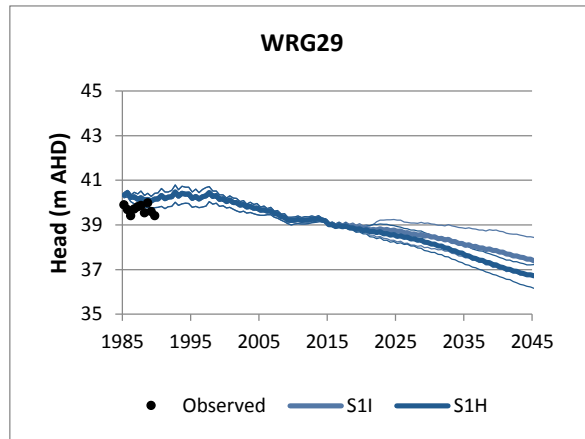
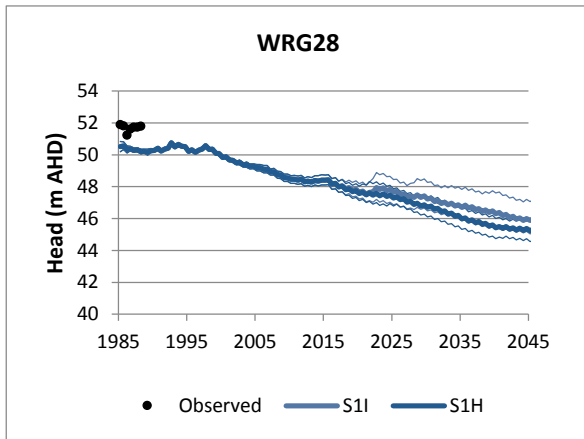
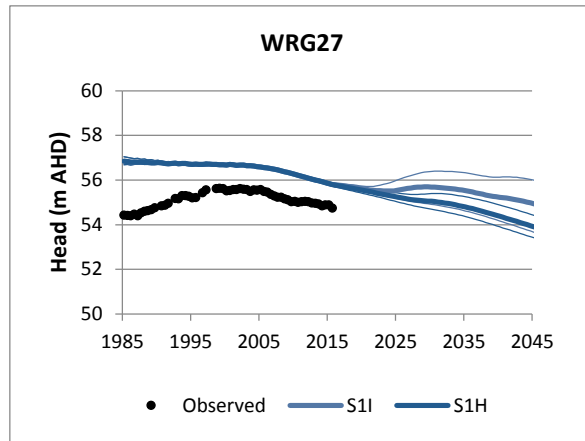
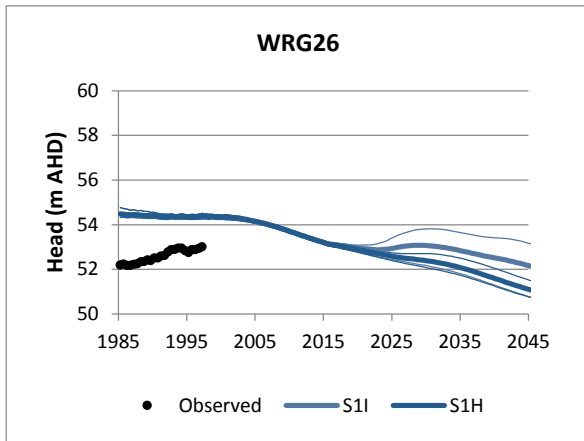


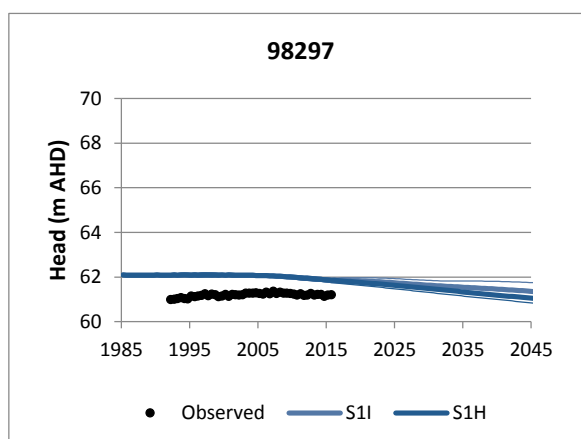
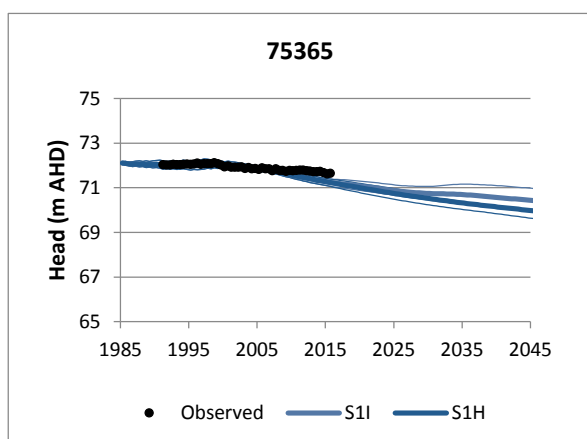
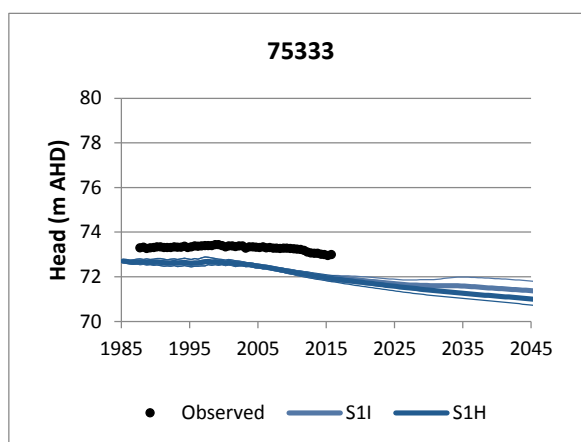
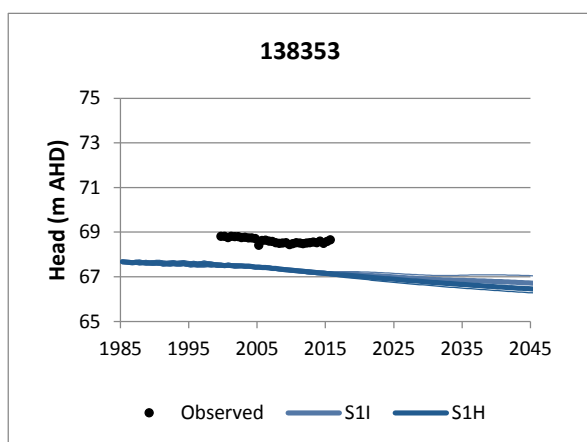
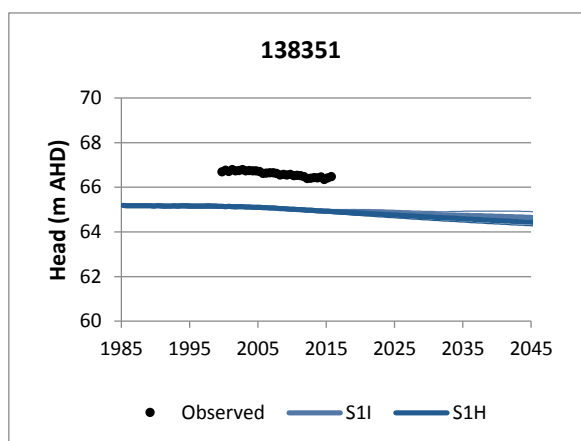
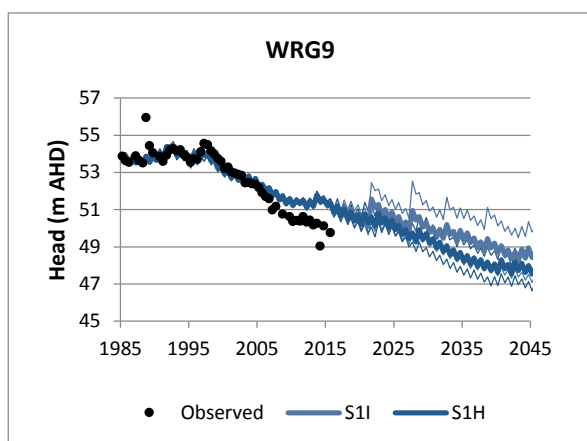
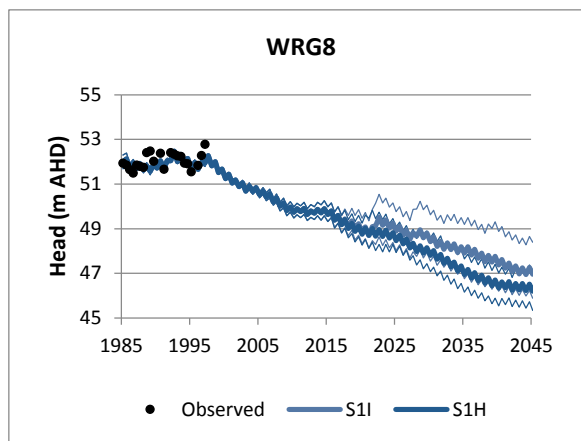
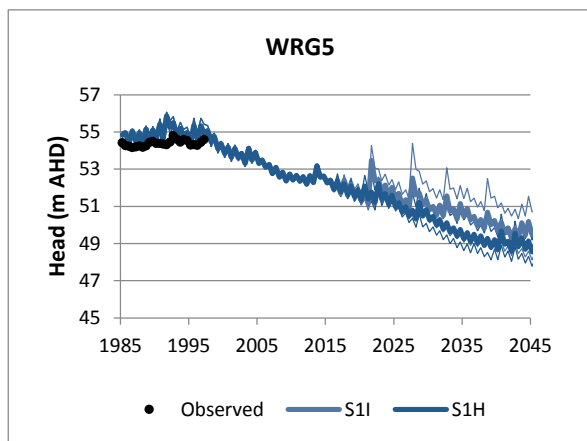






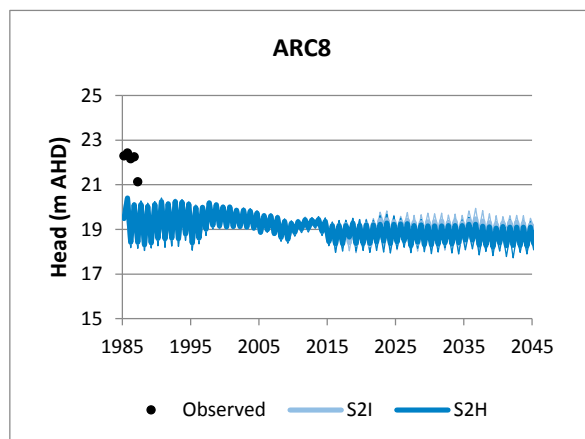
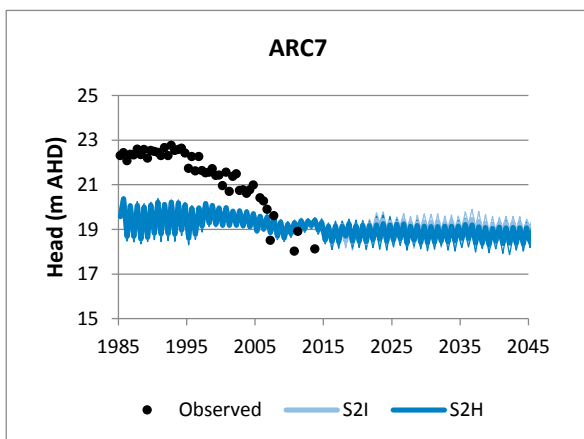
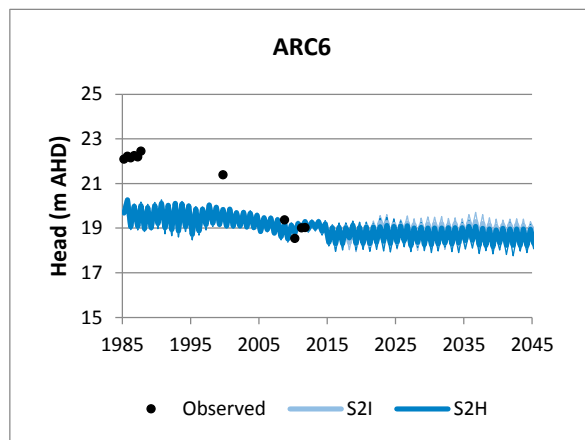
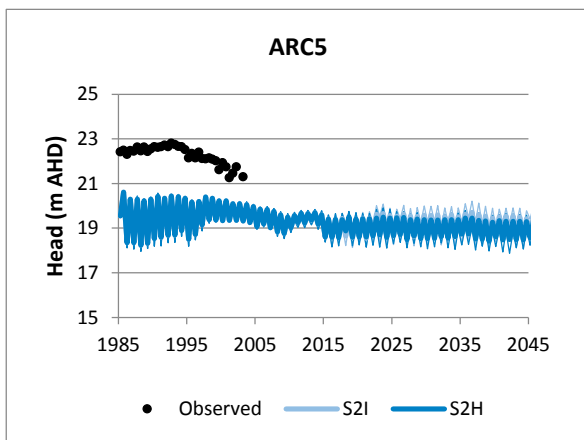
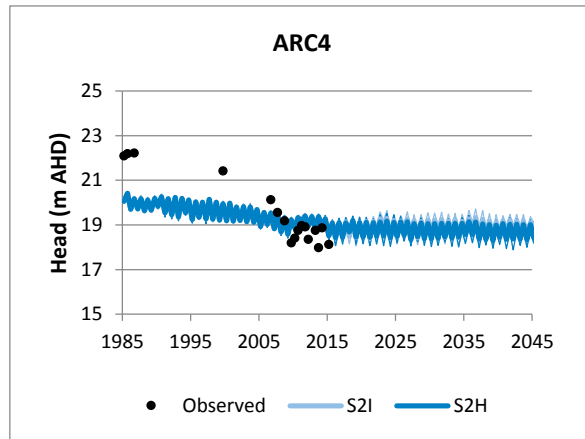
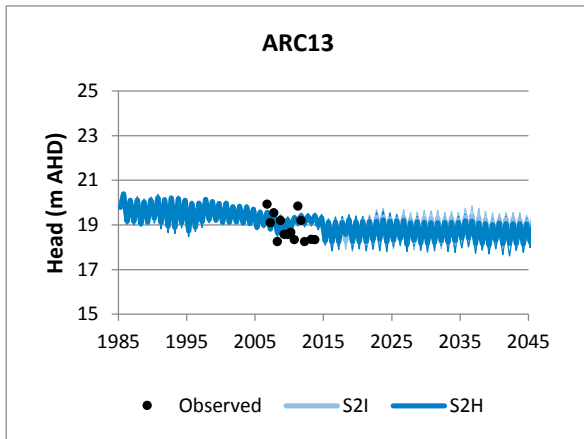
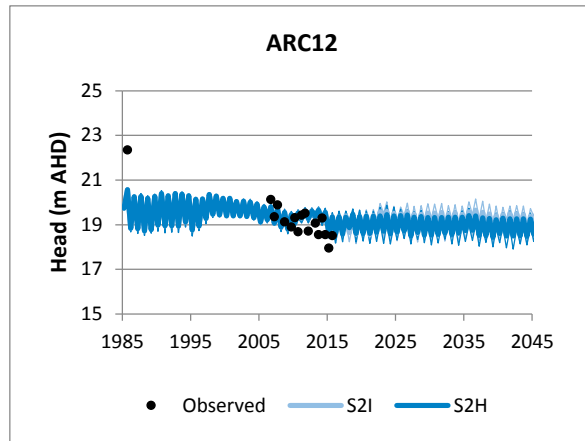
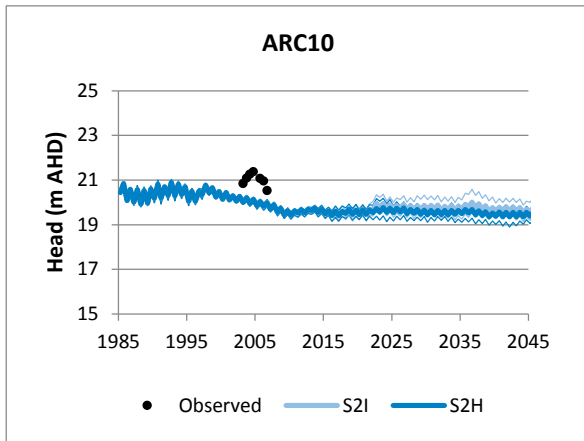


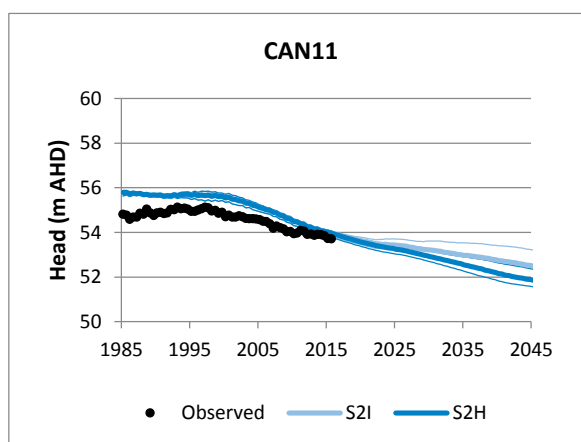
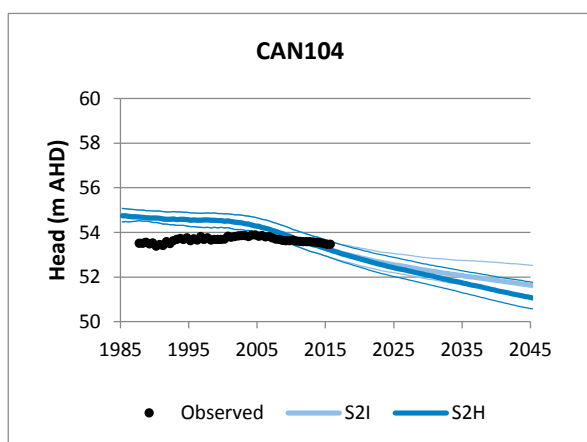
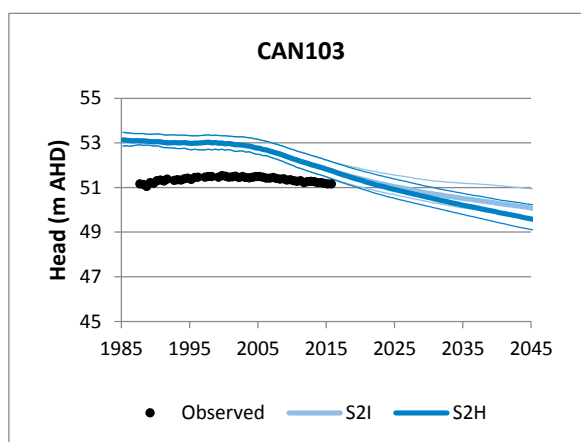
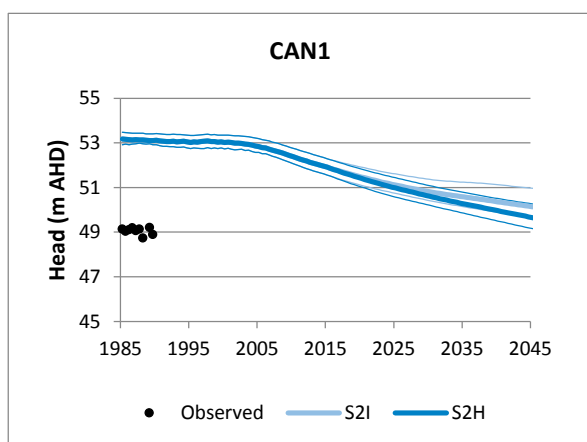
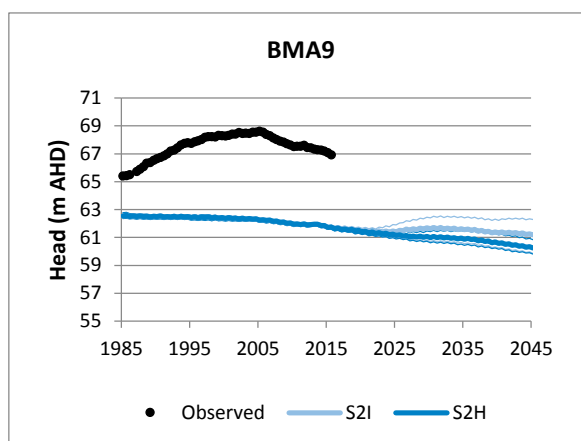
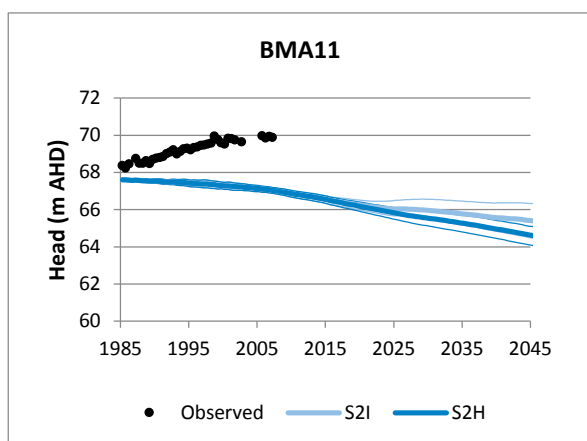
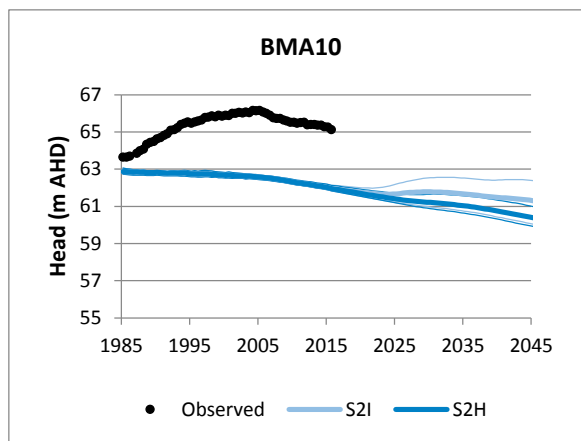
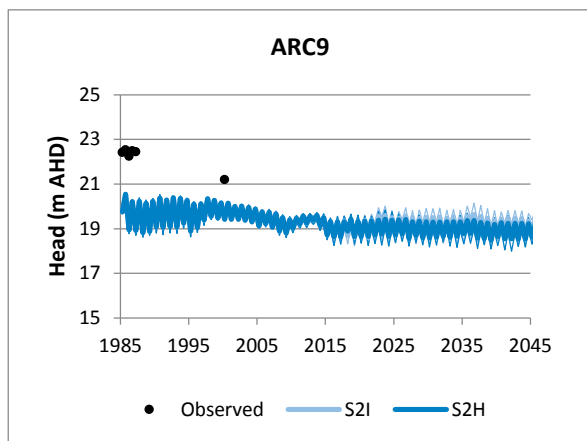


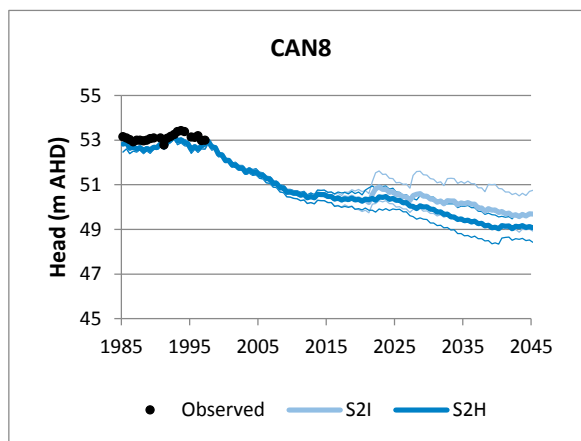
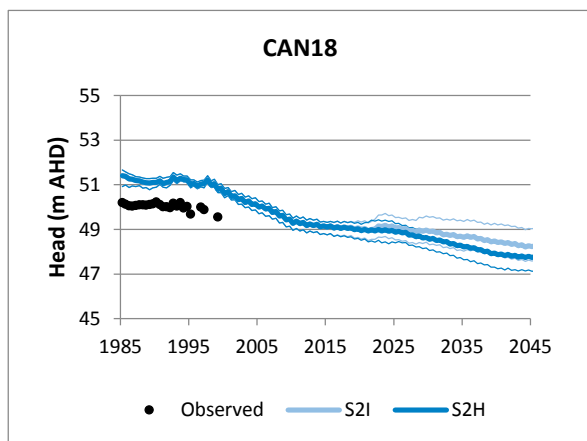
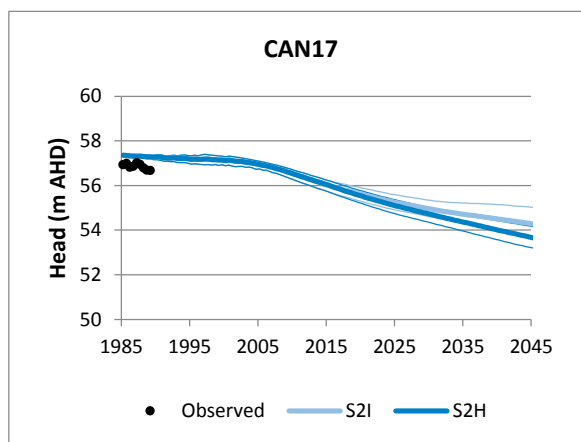
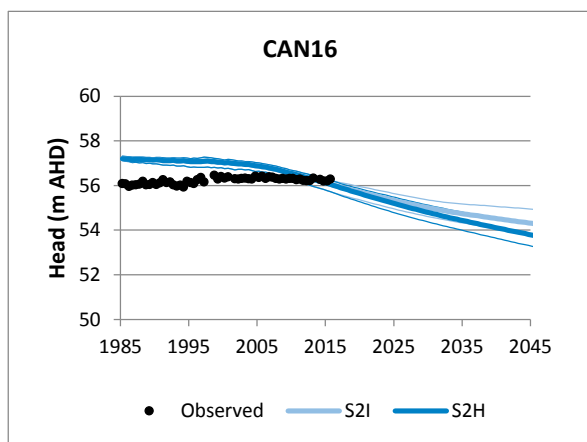
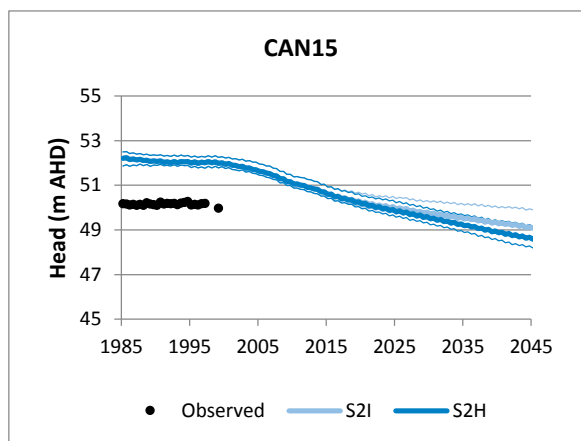
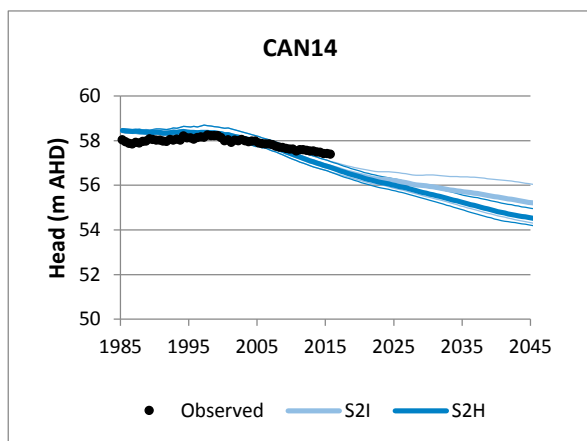
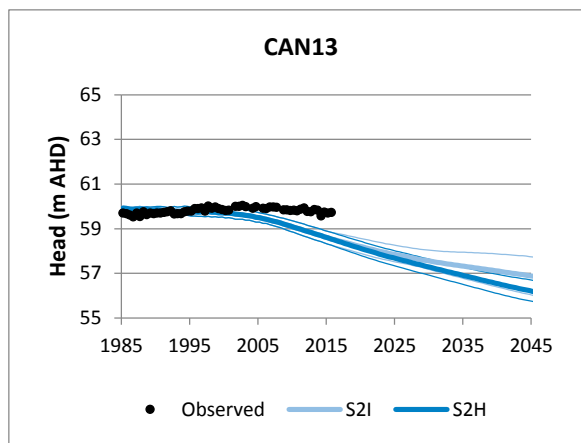
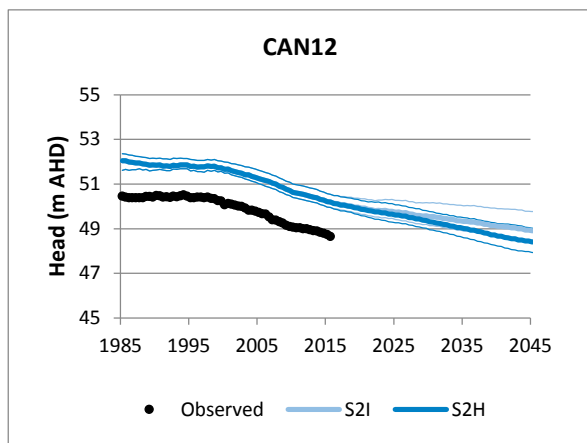


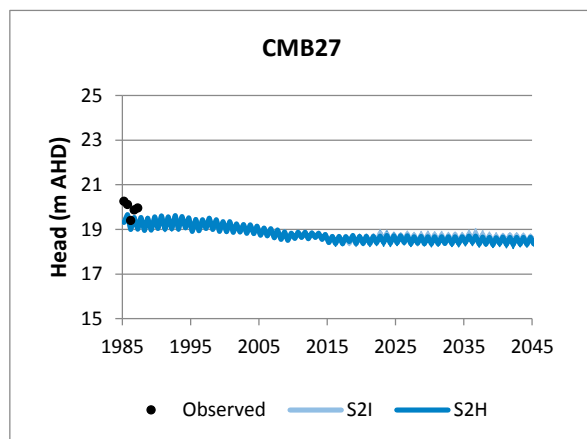
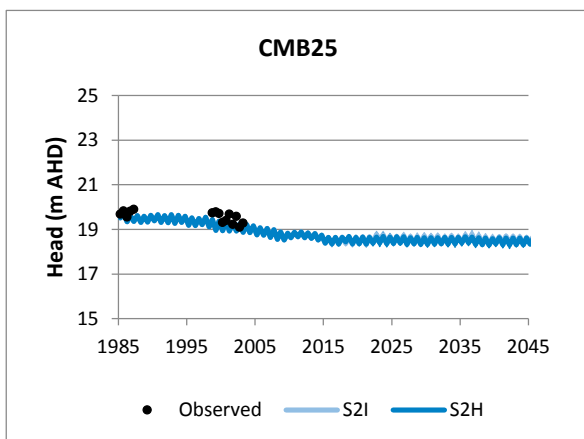
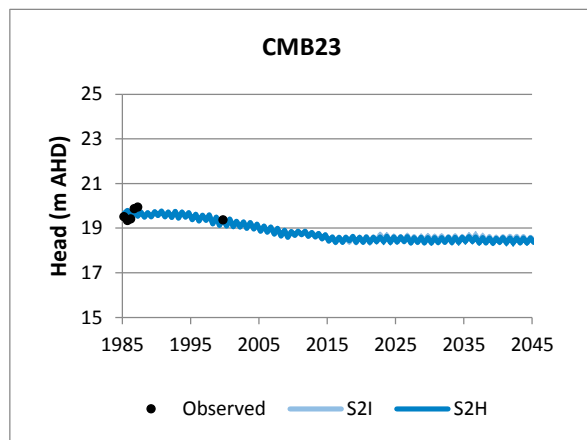
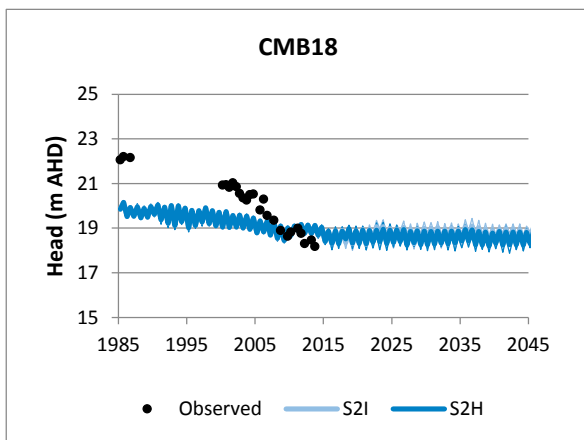
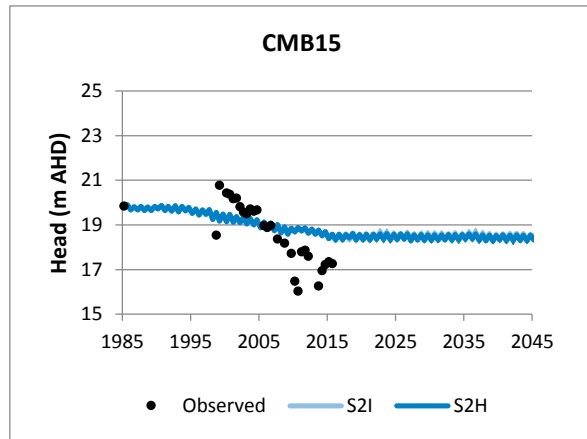
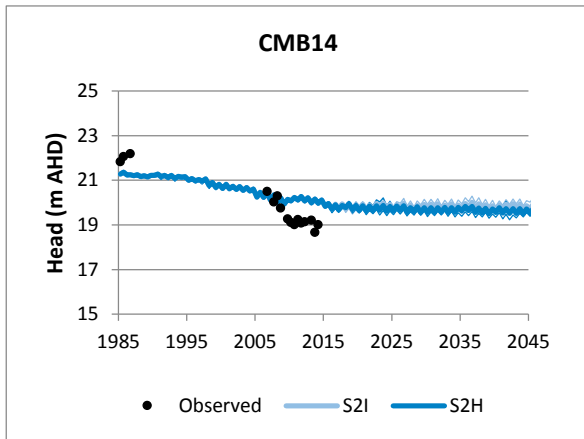
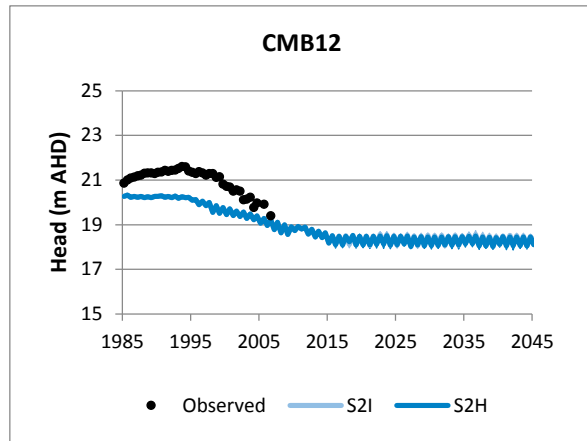
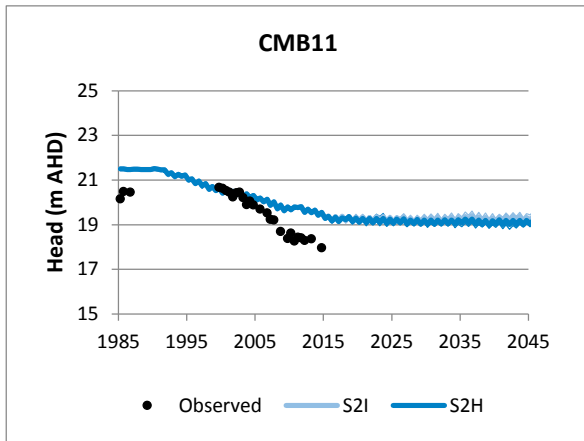
E. Hydrograph projections for periodic extraction with both intermediate and high carbon emission climates (S2I and S2H)

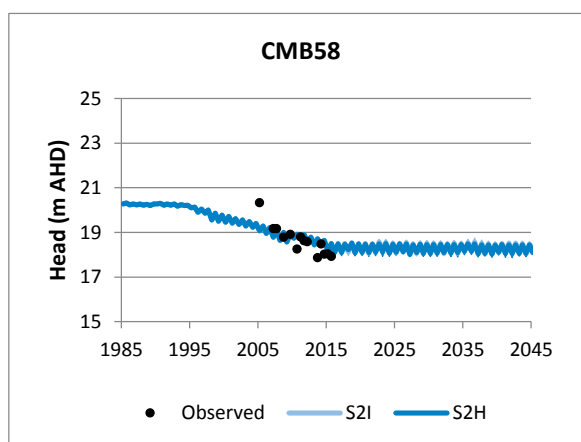
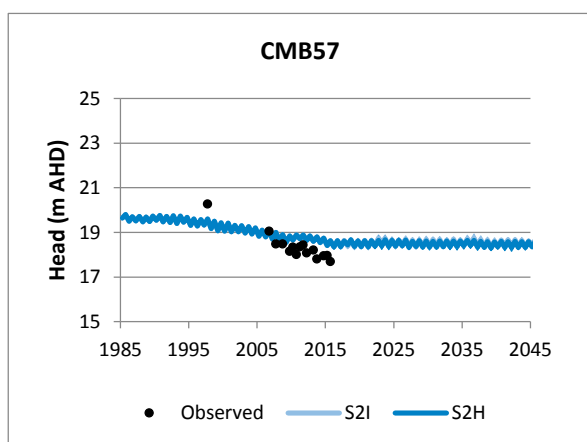
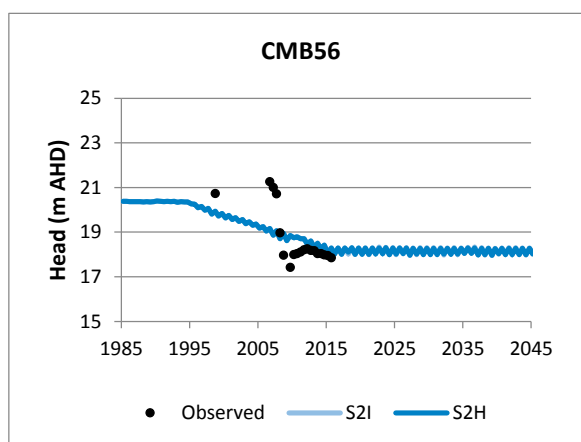
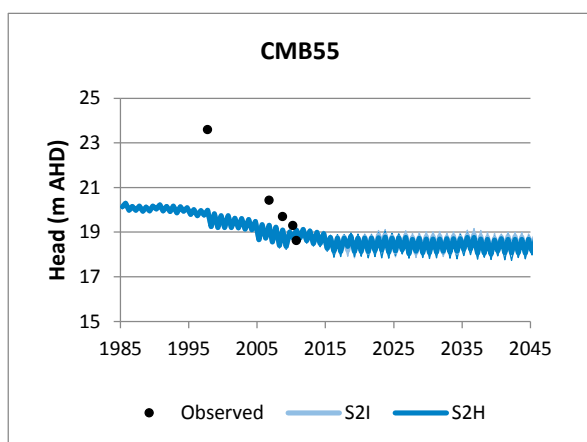
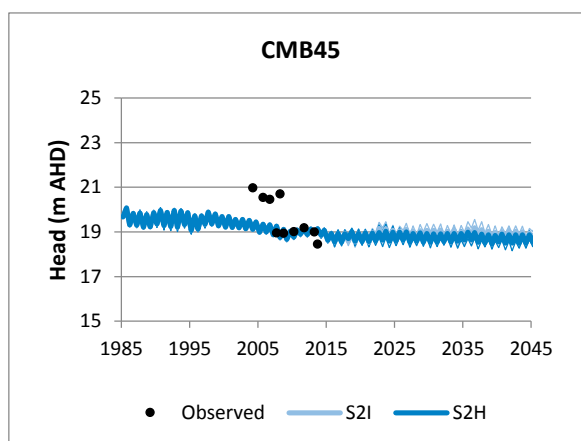
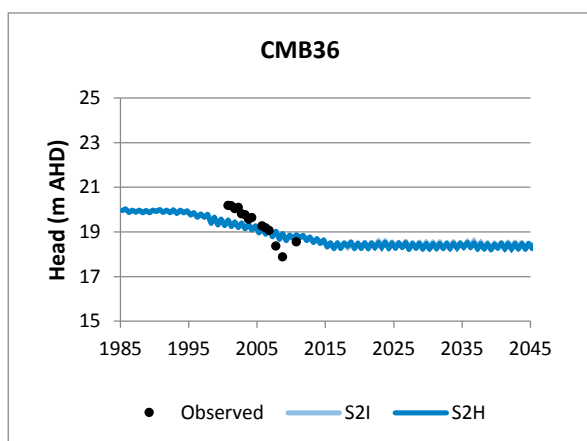
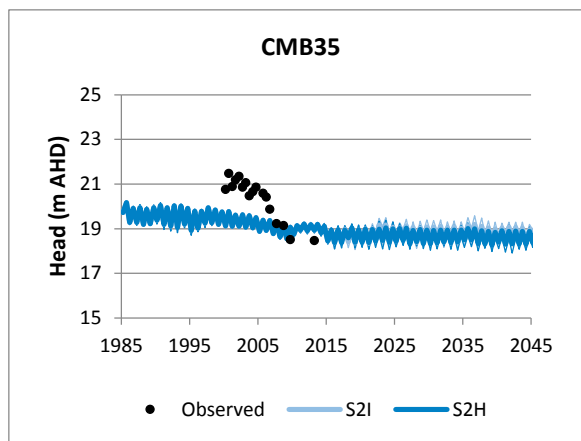
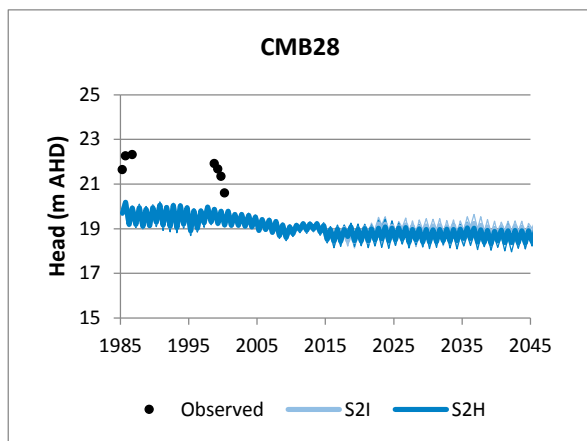
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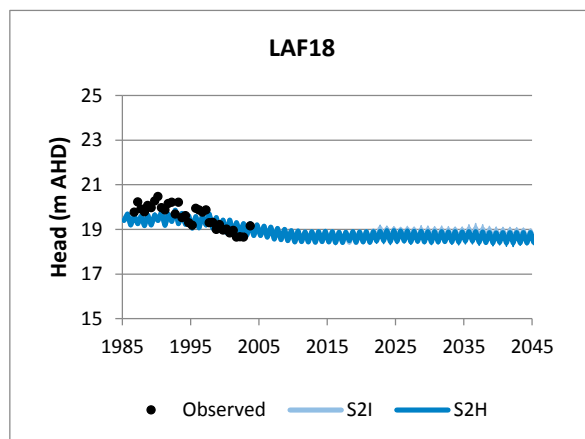
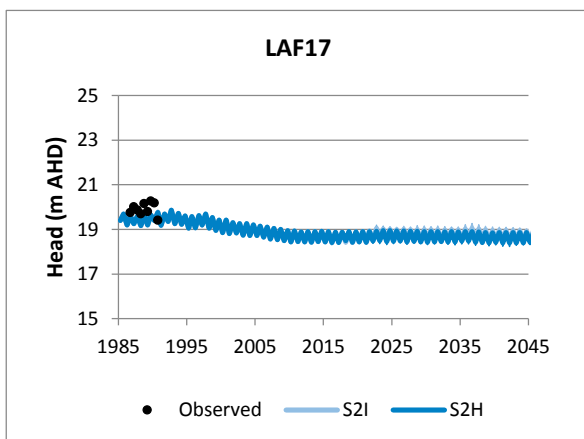
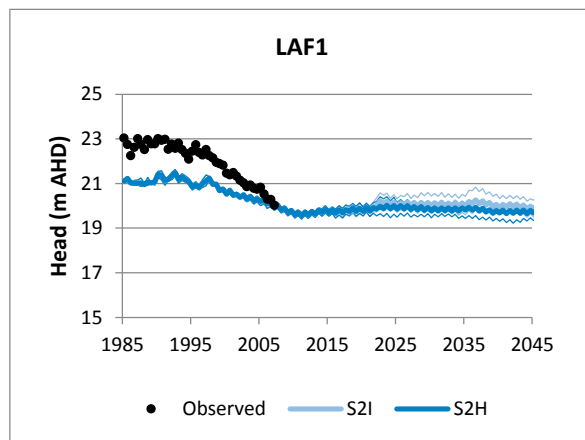
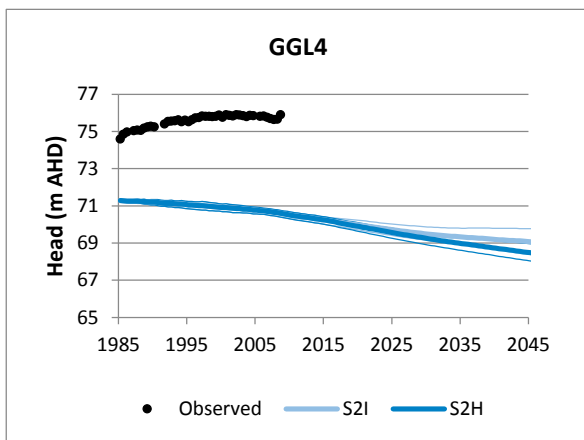
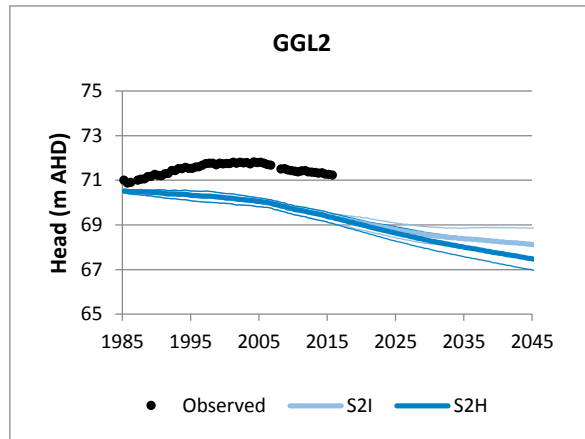
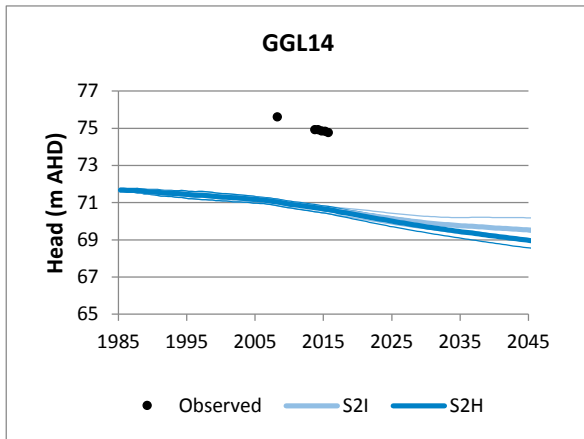
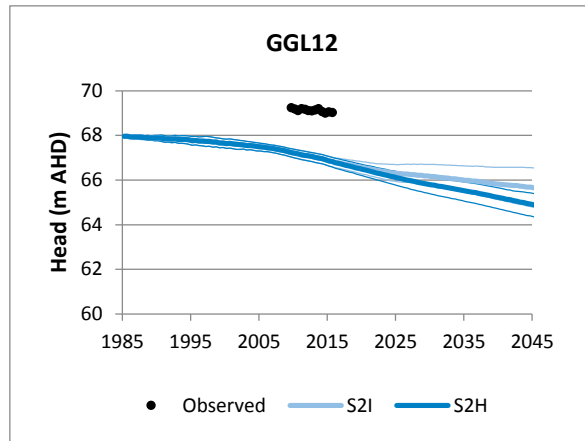
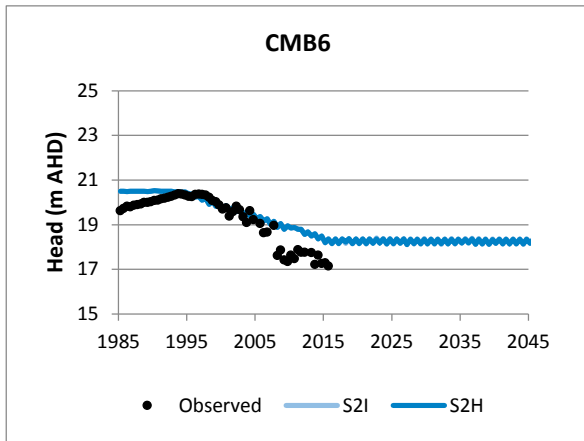


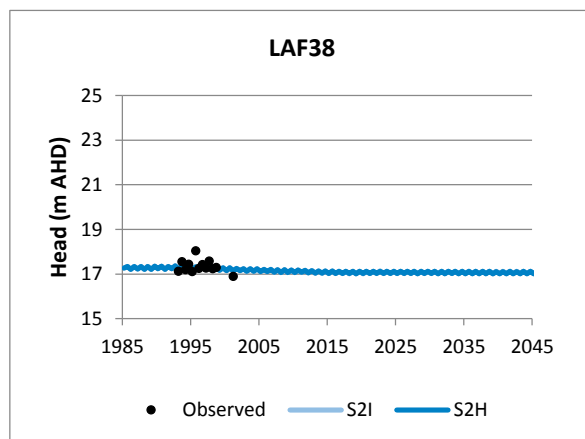
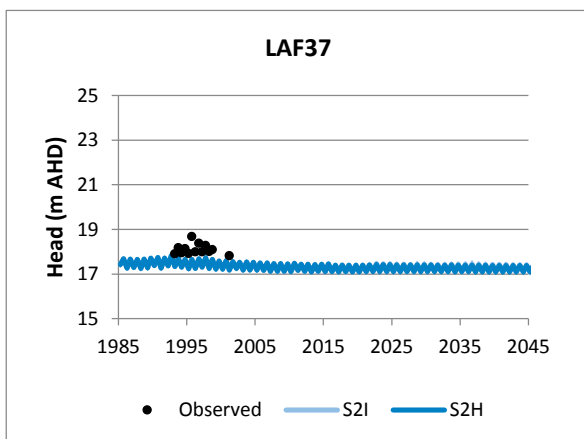
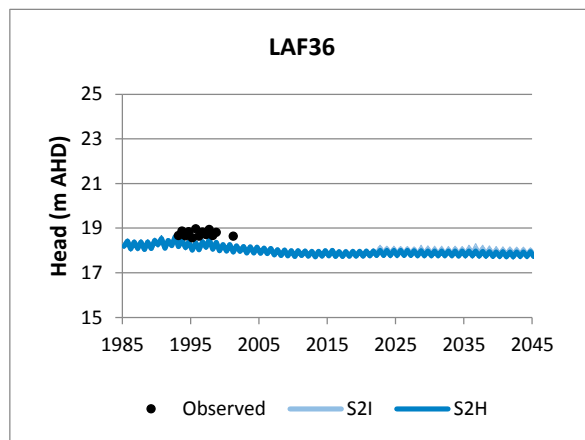
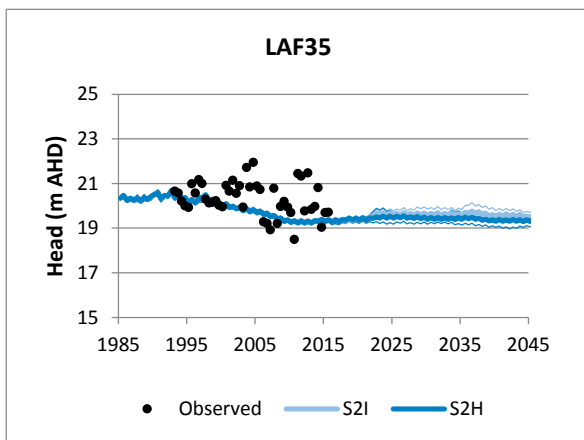
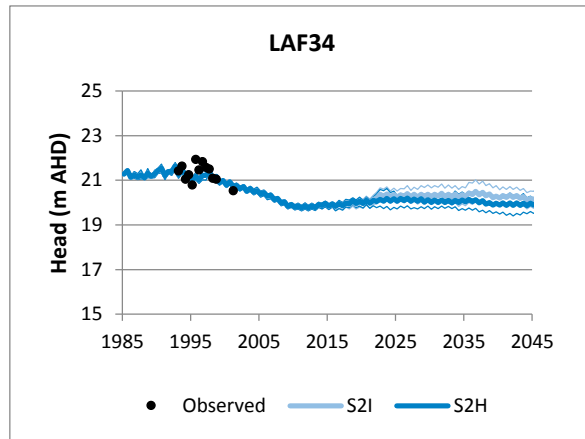
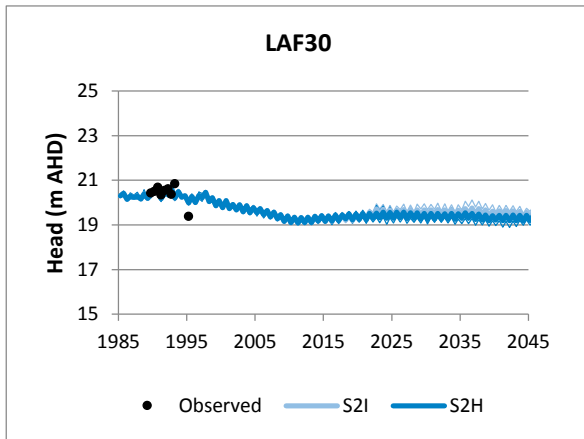
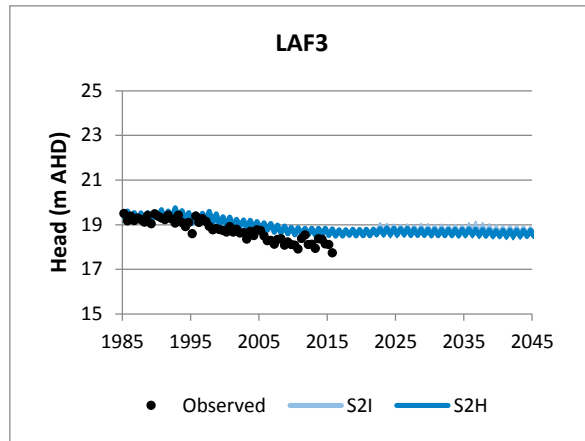
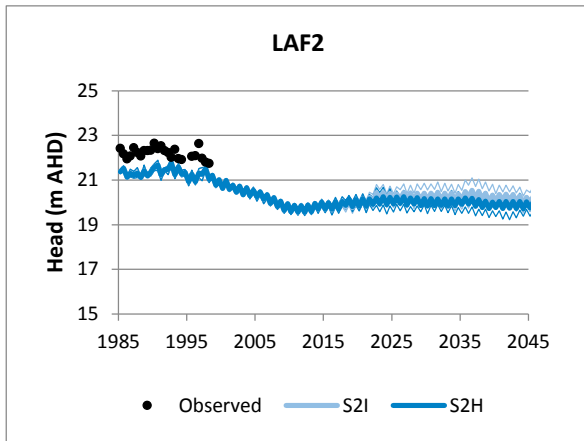


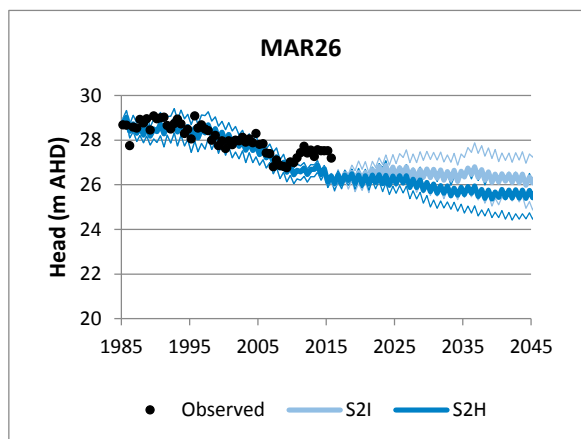
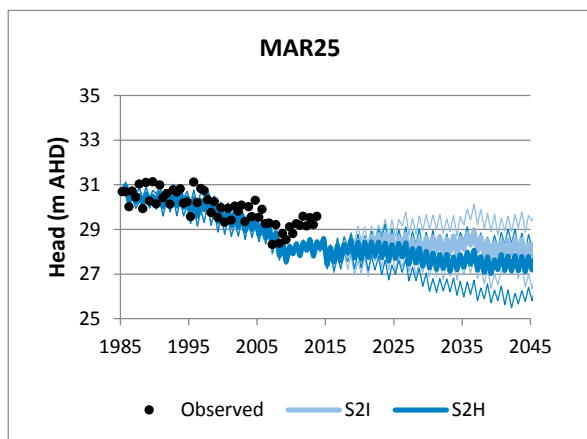
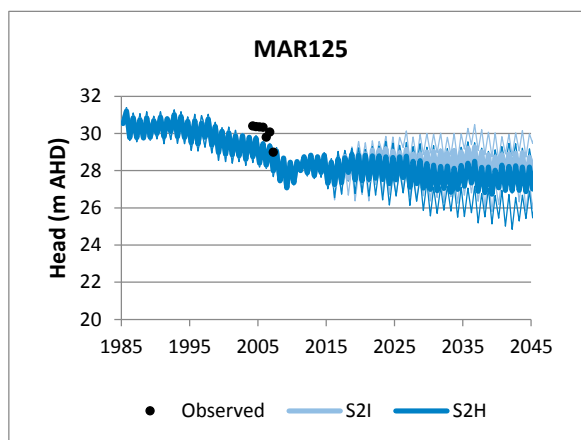
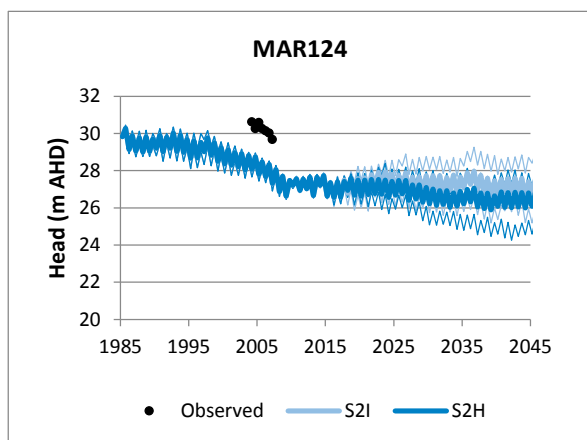
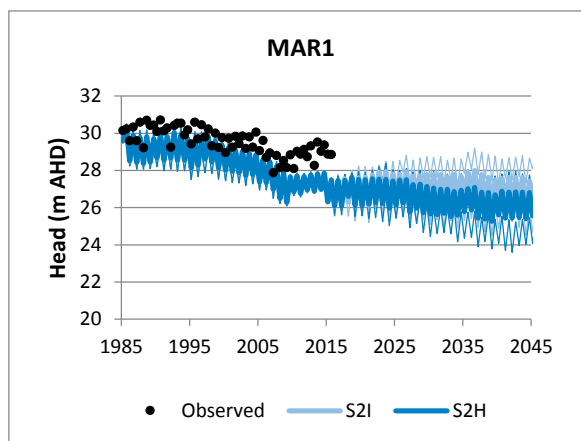
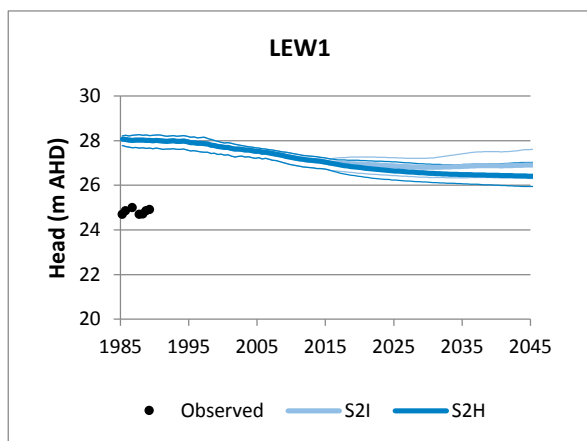
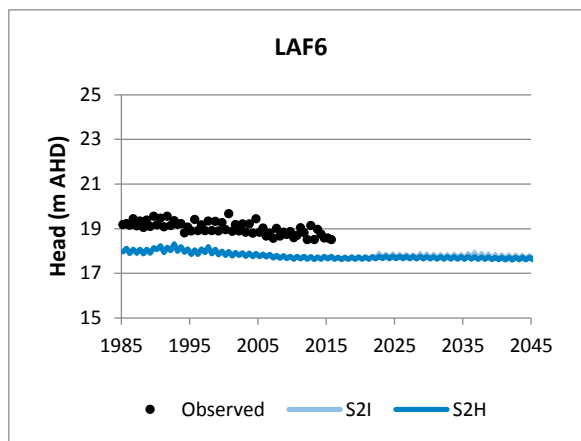
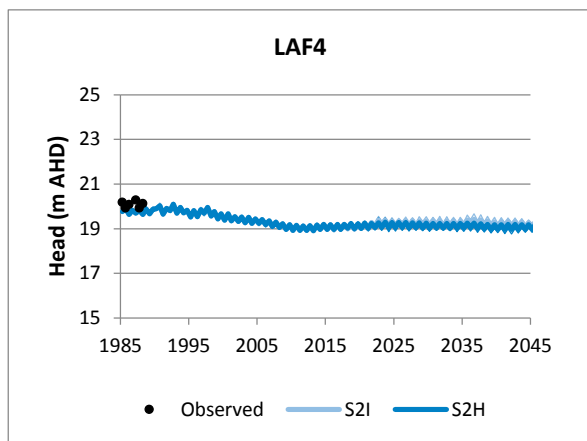


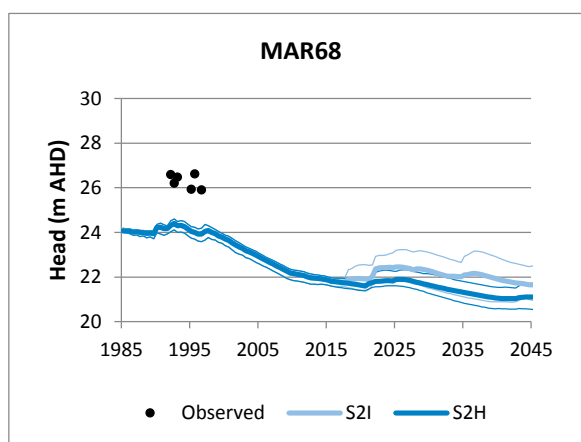
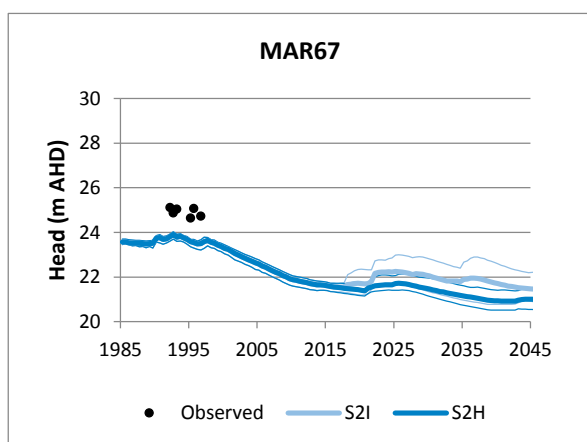
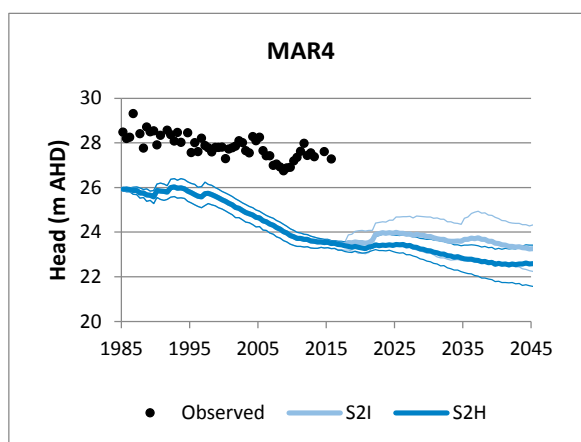
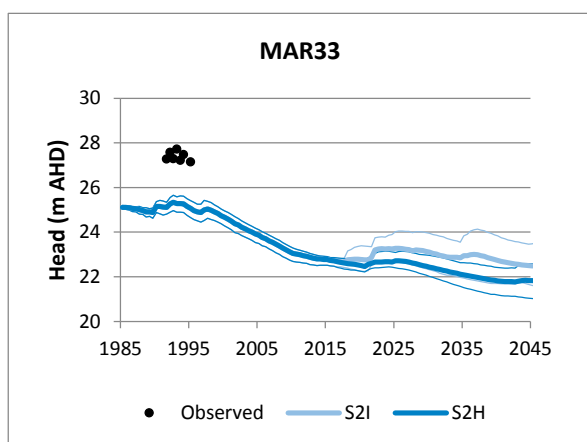
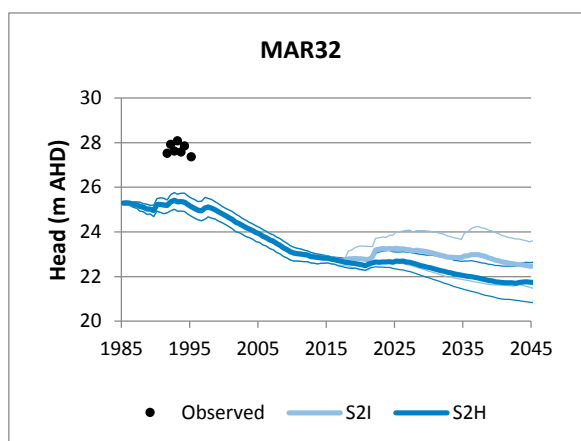
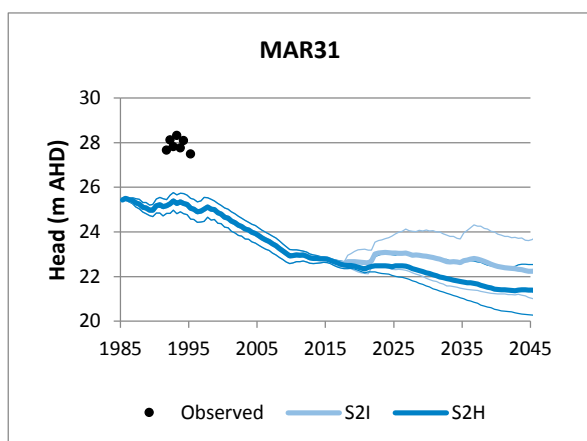
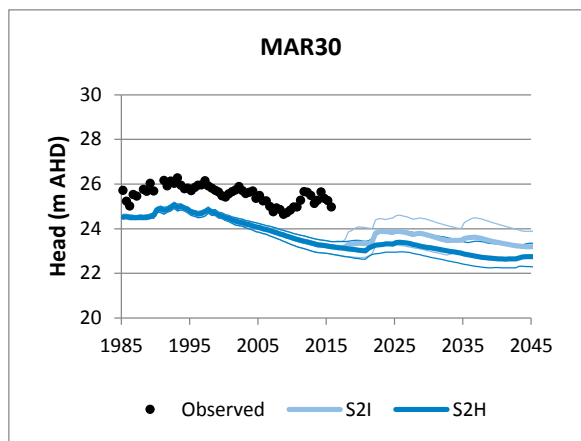
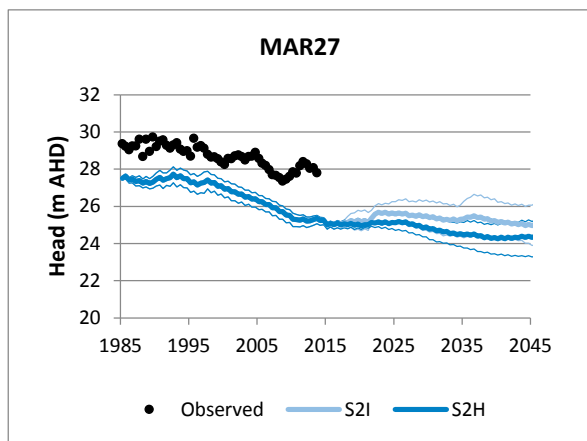


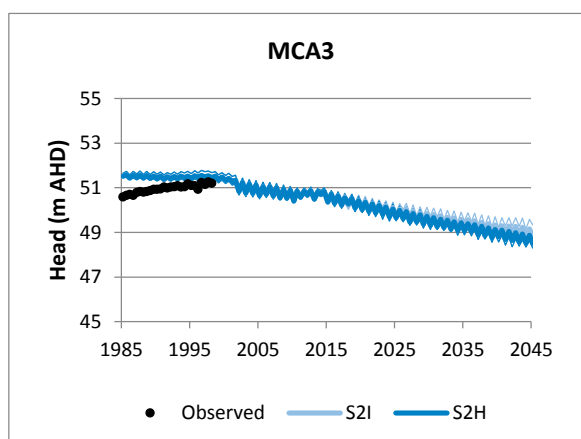
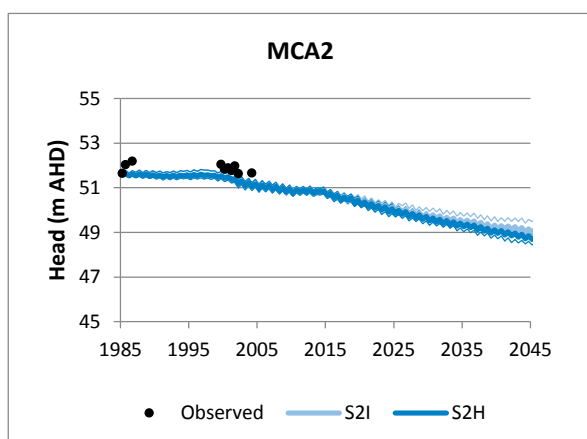
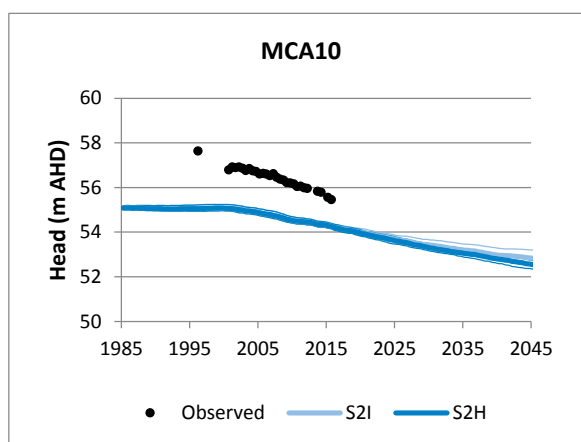
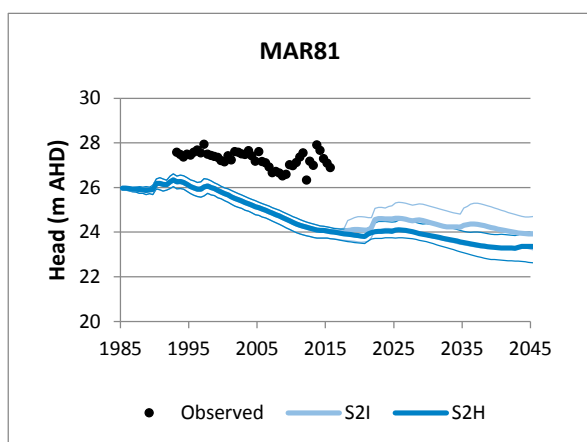
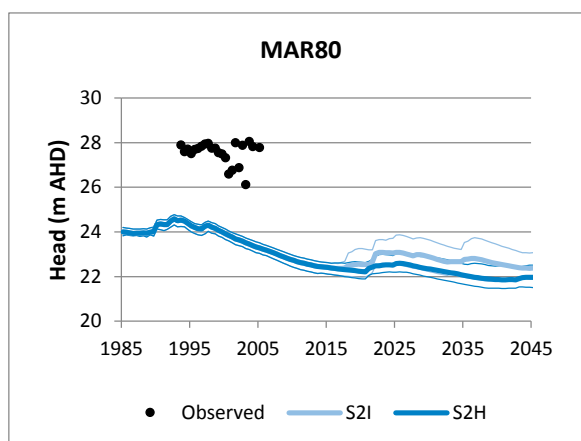
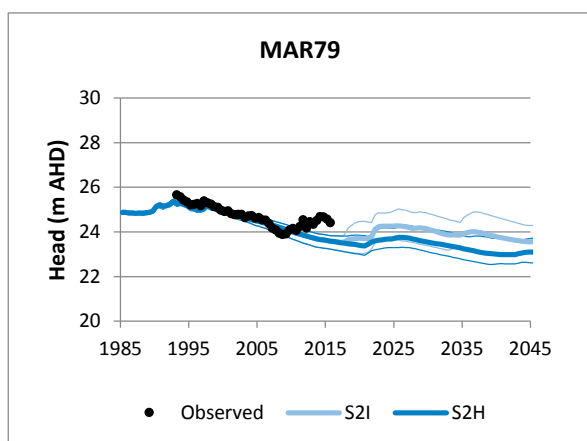
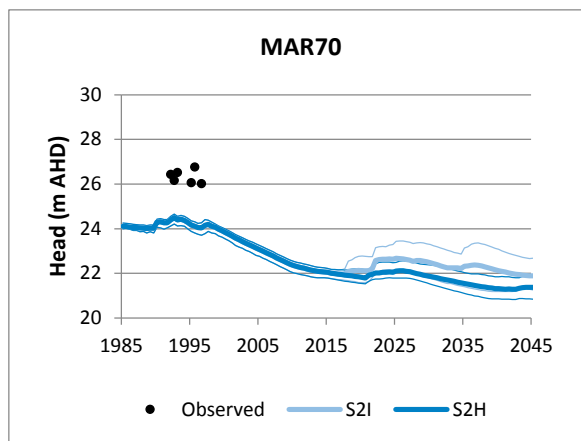
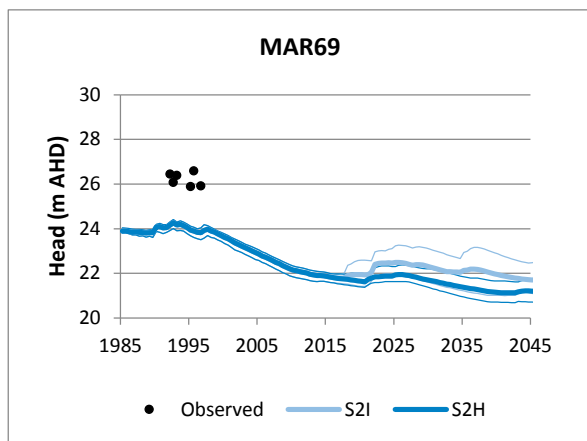


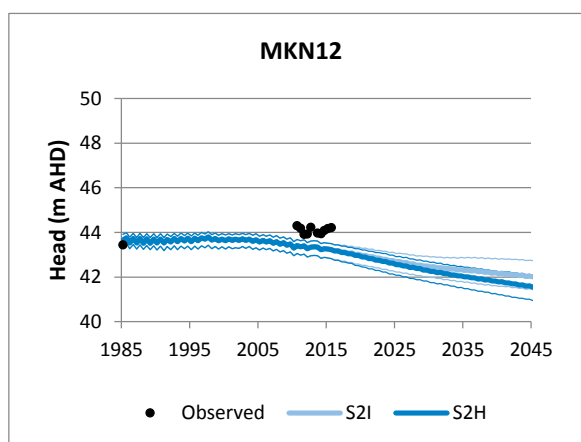
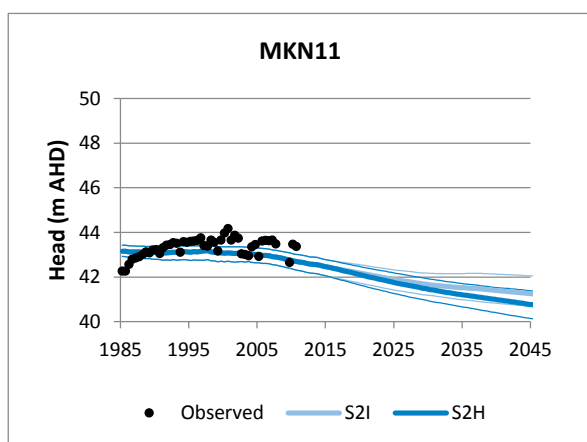
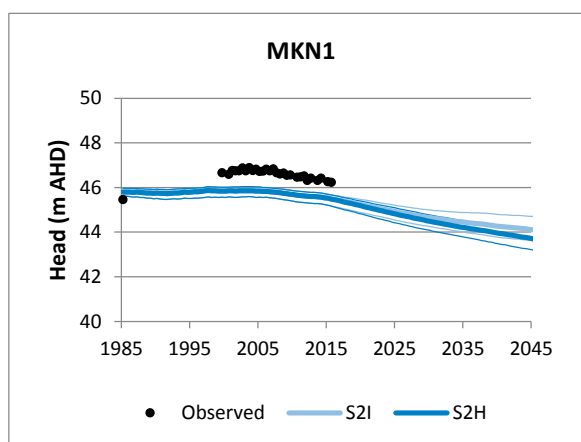
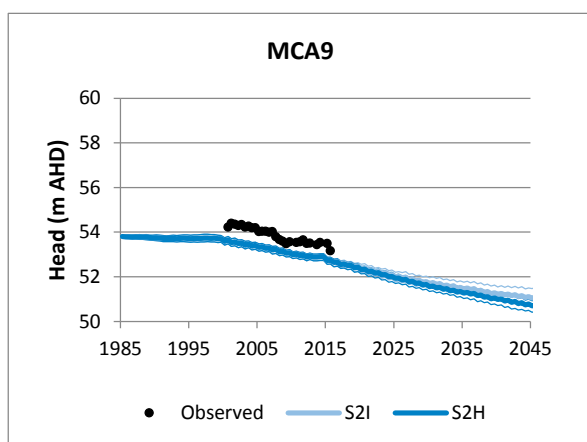
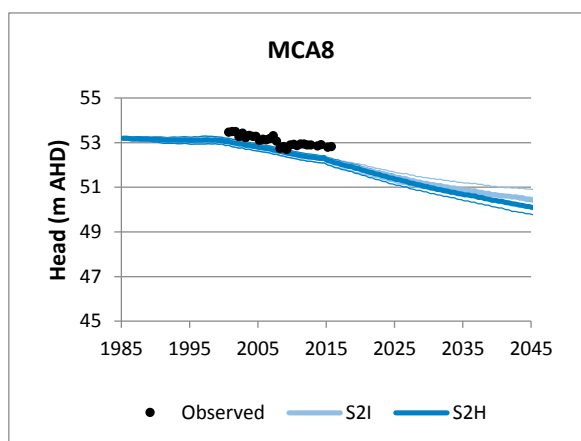
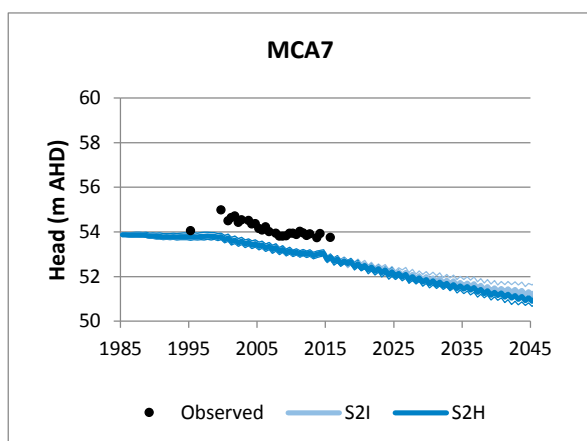
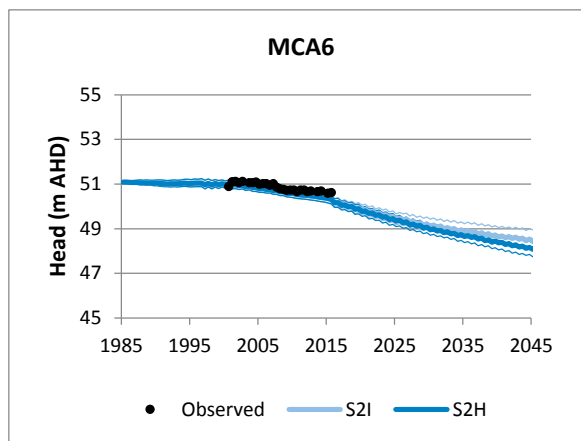
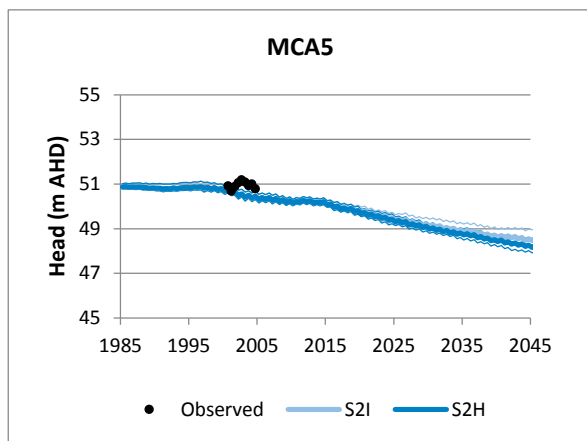


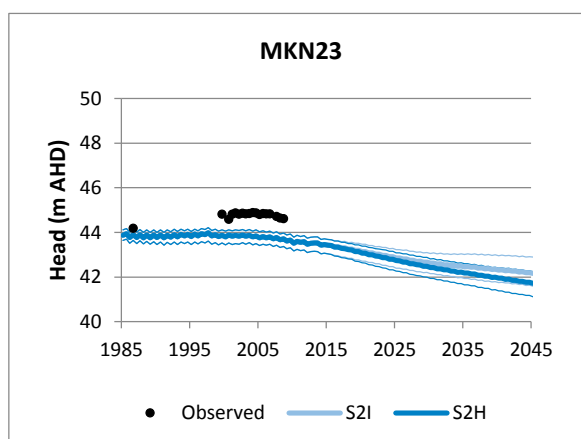
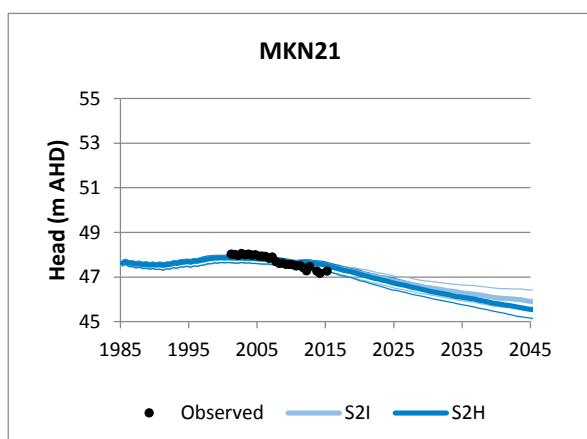
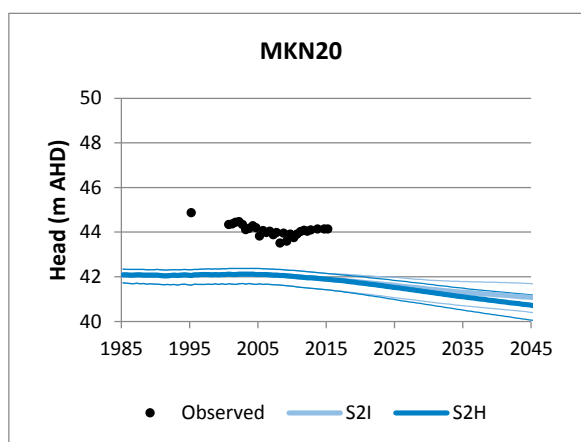
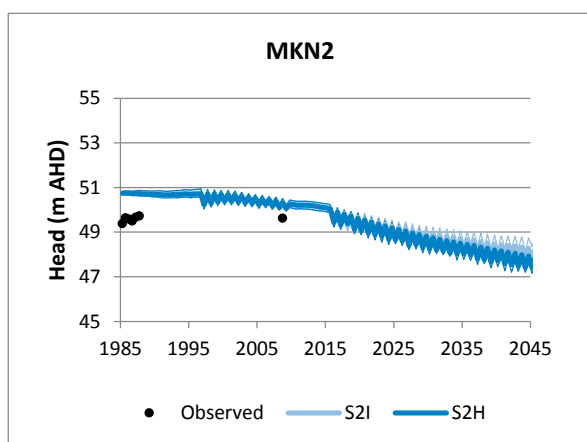
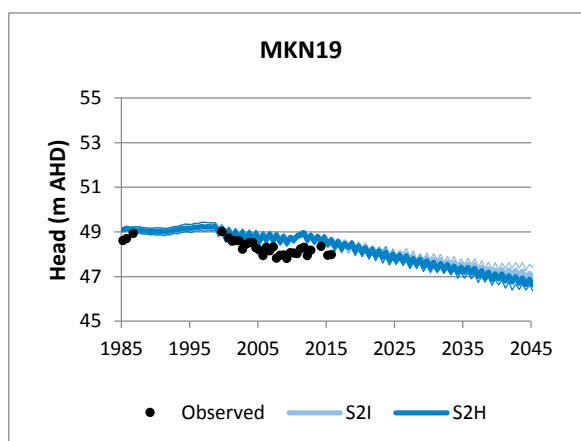
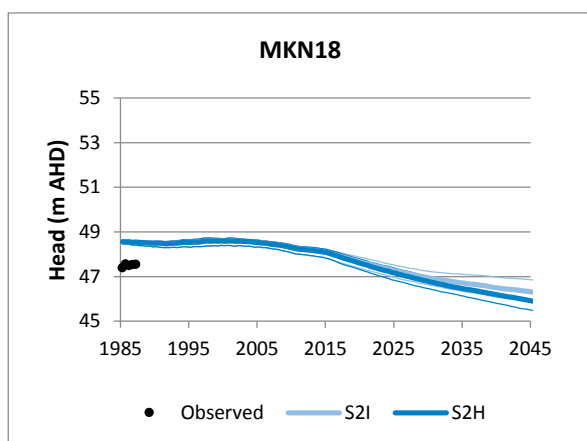
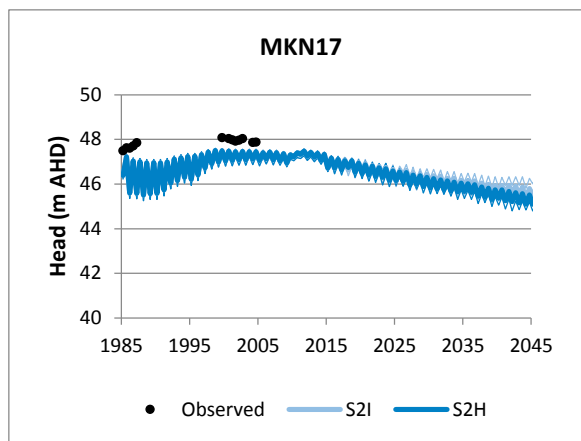
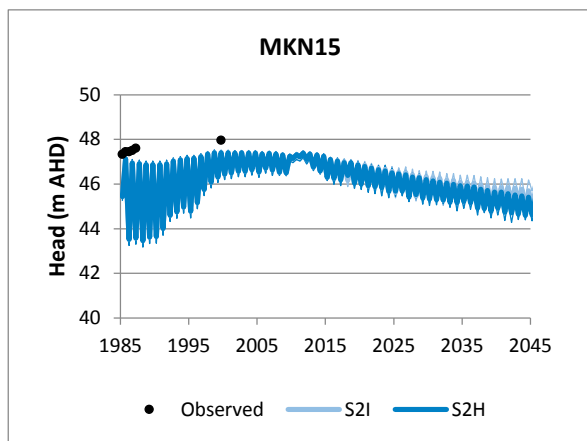


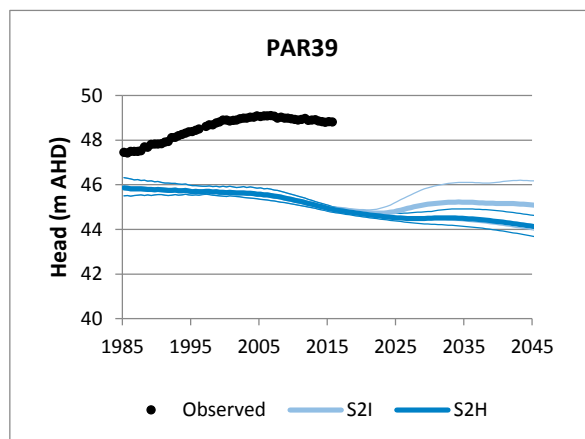
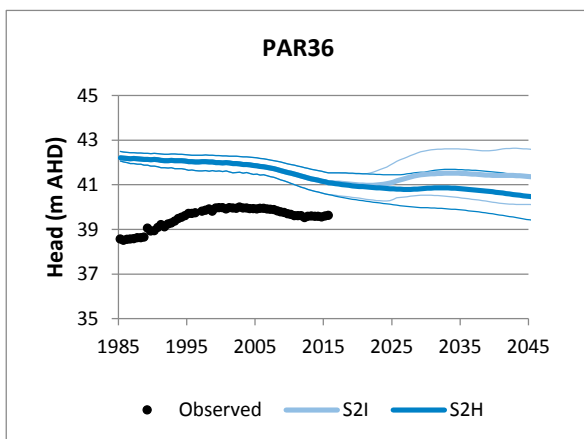
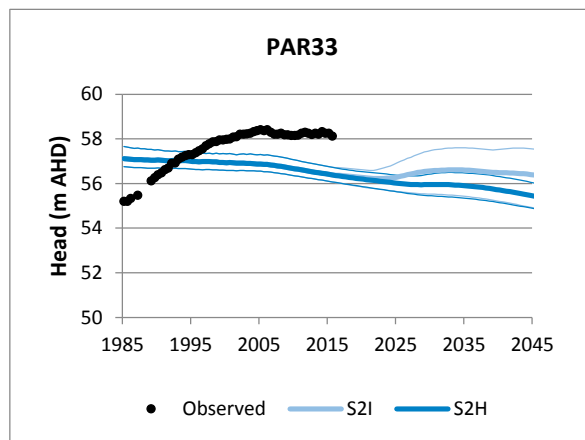
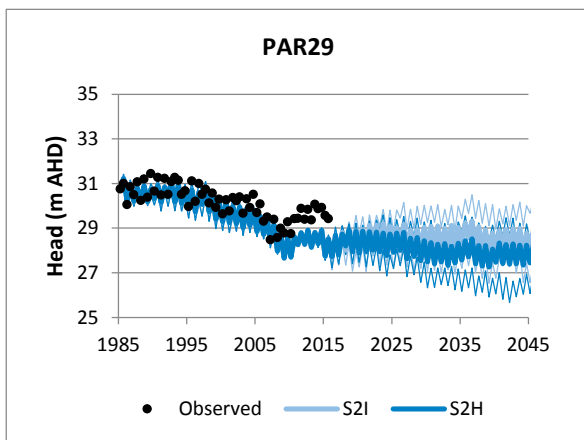
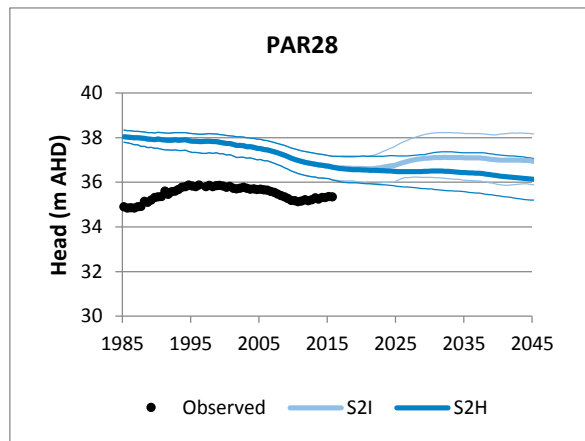
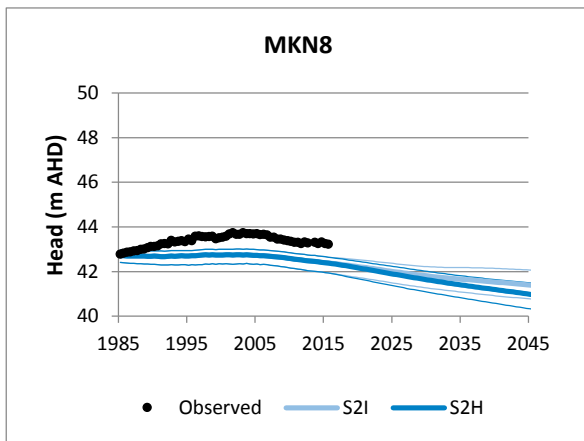
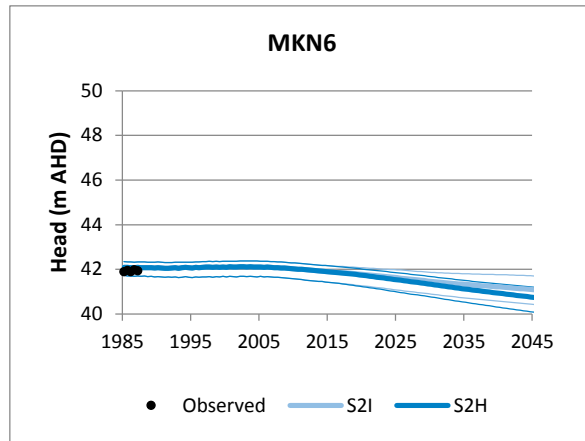
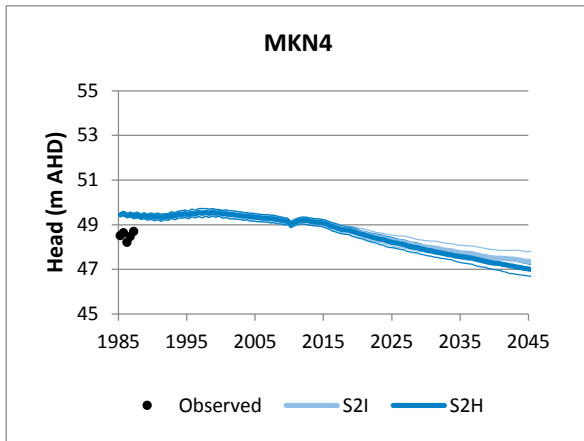


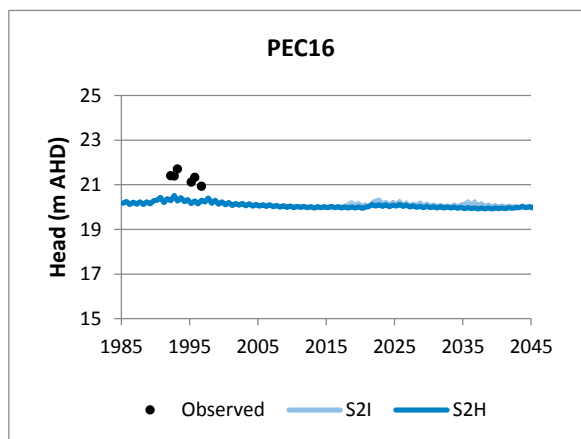
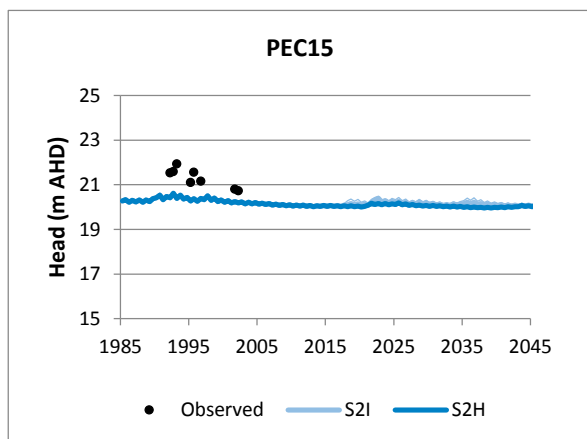
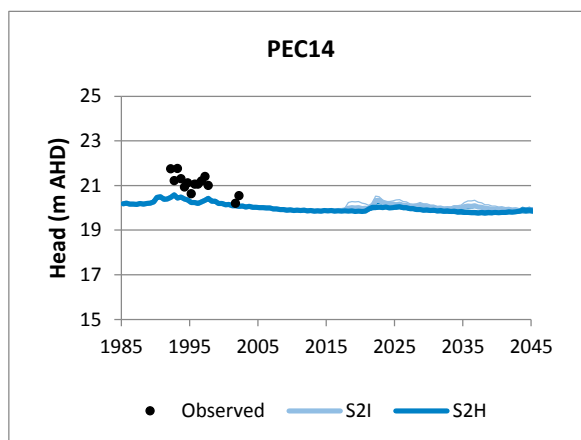
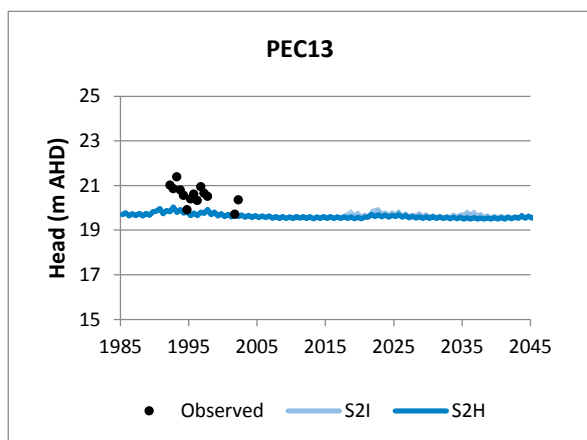
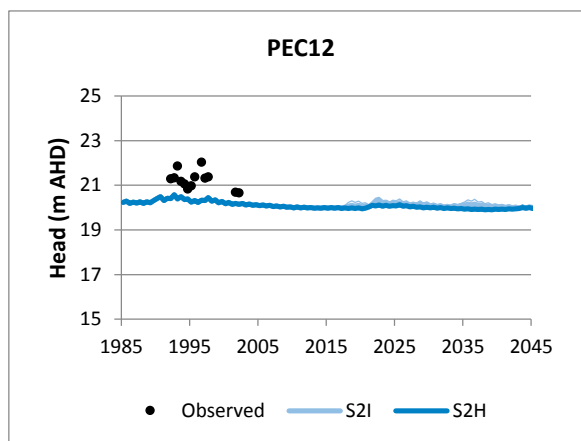
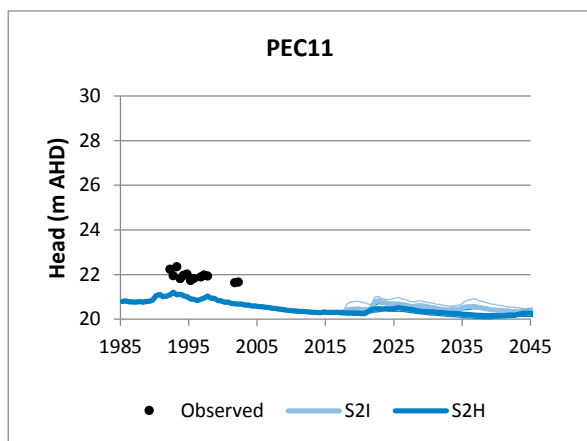
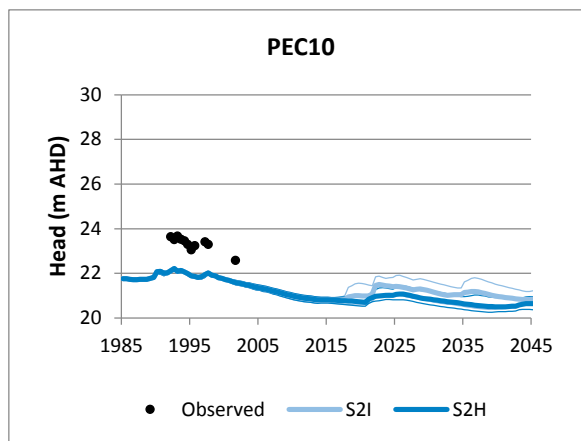
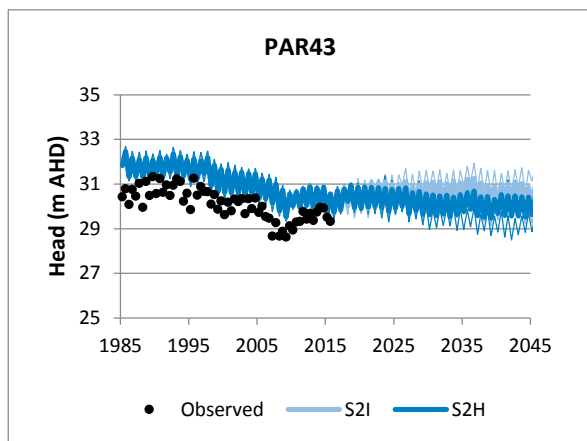


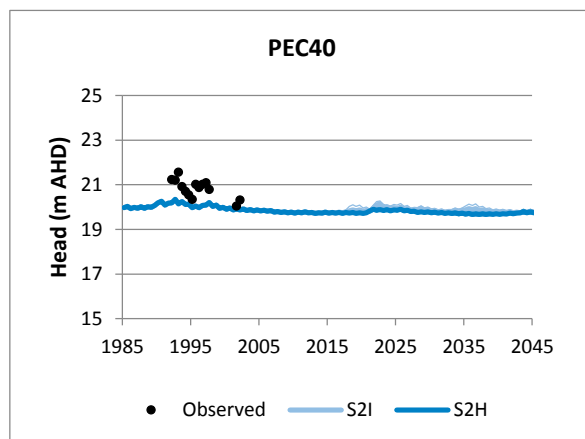
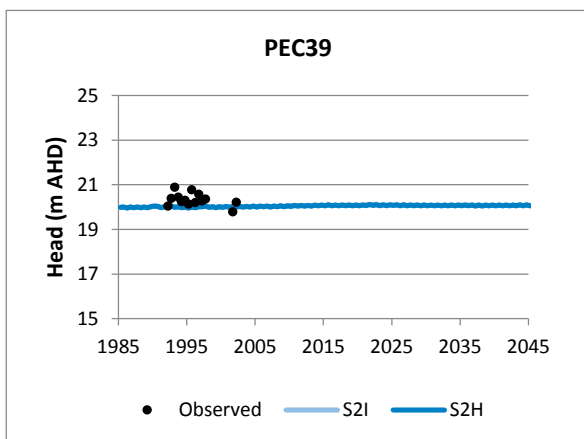
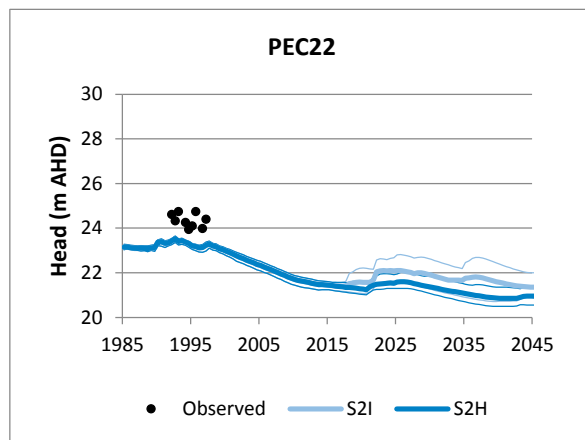
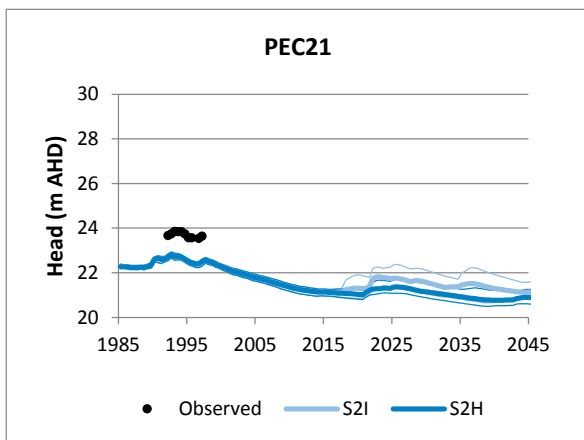
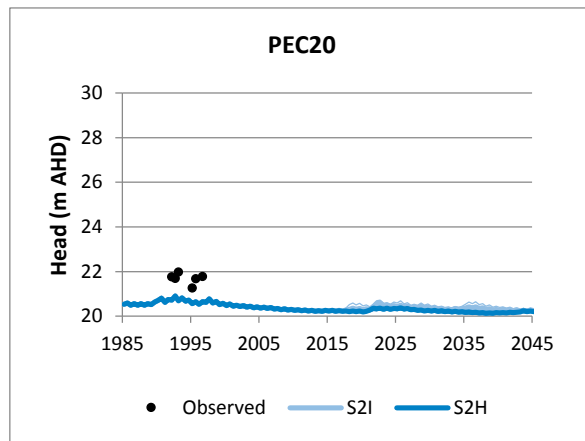
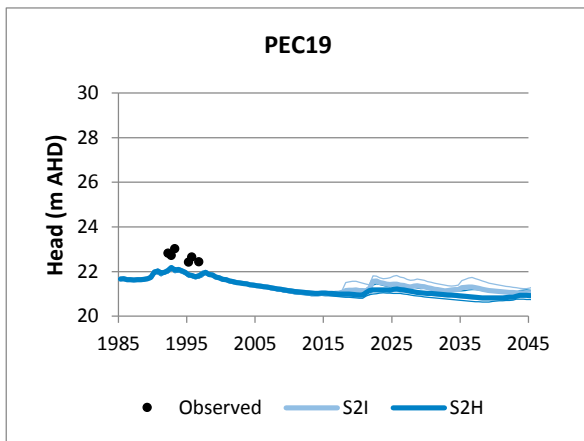
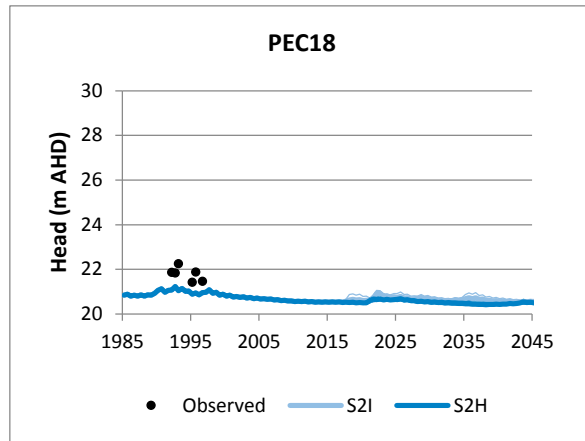
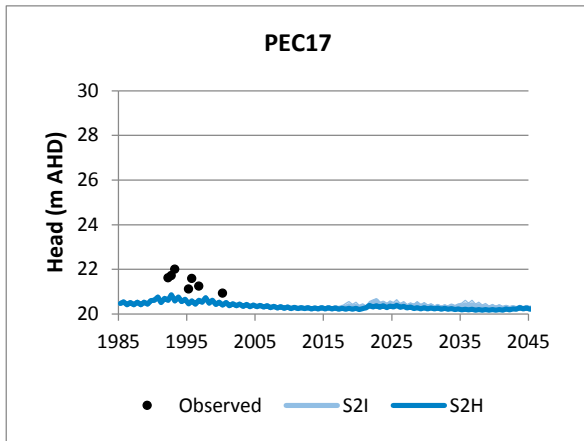


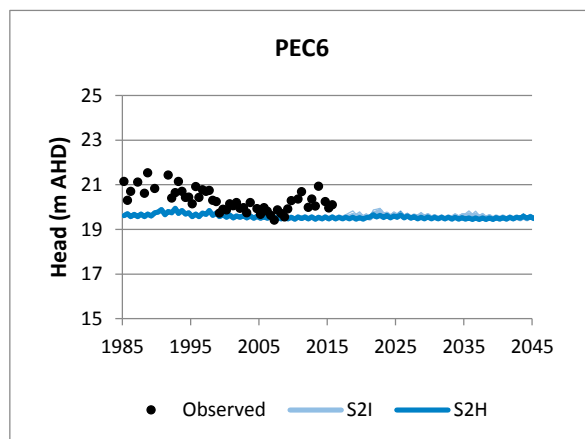
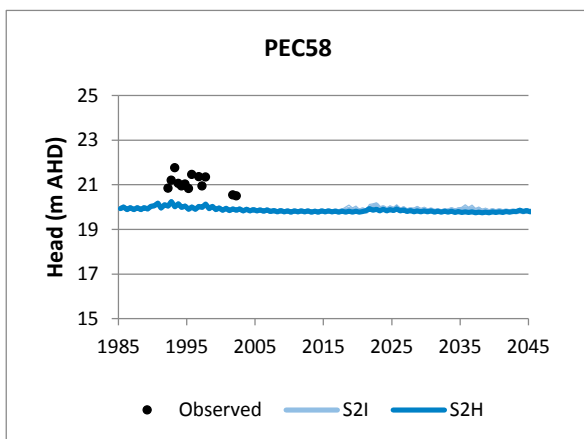
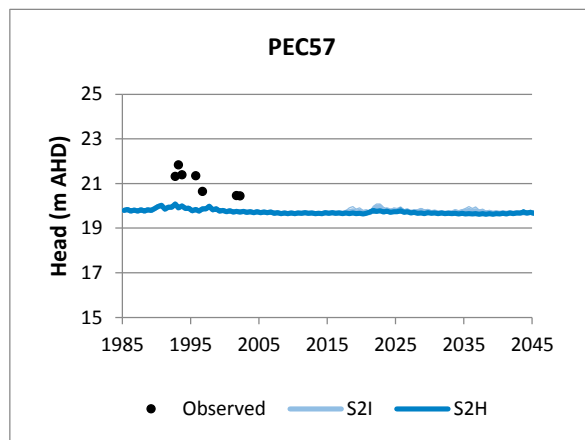
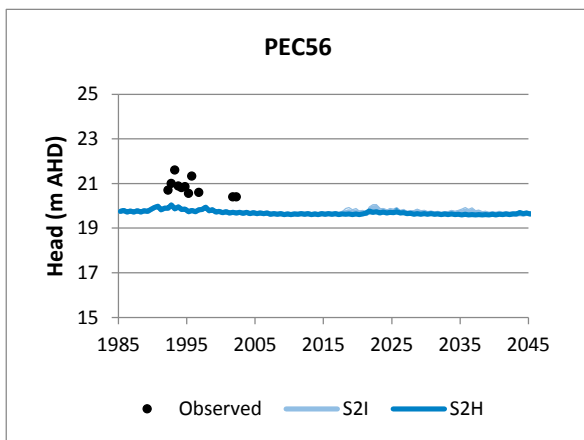
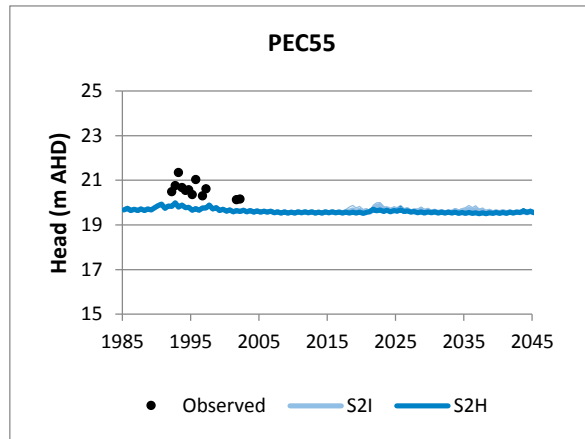
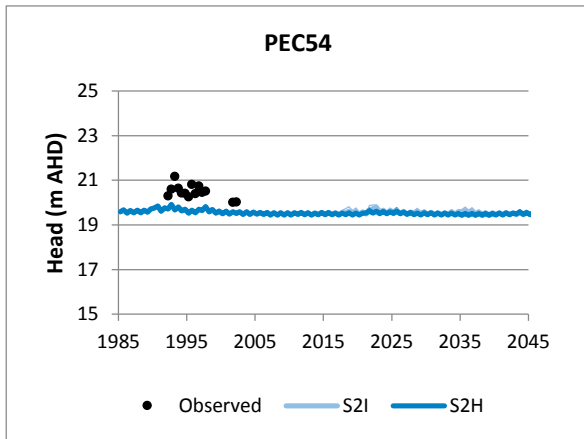
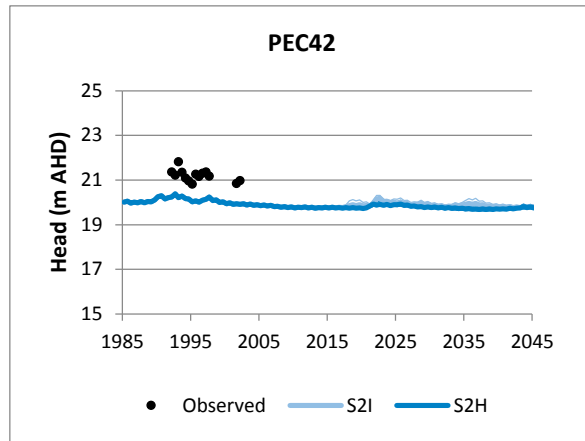
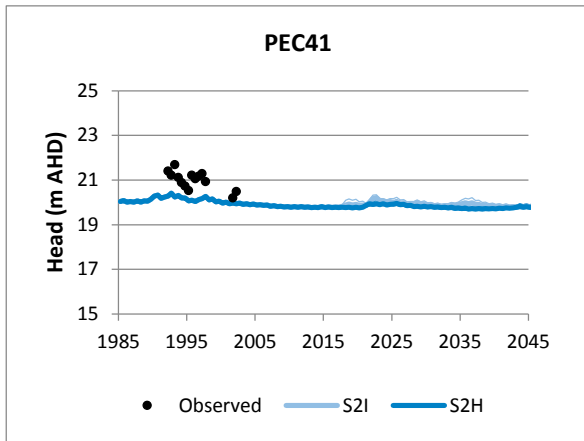


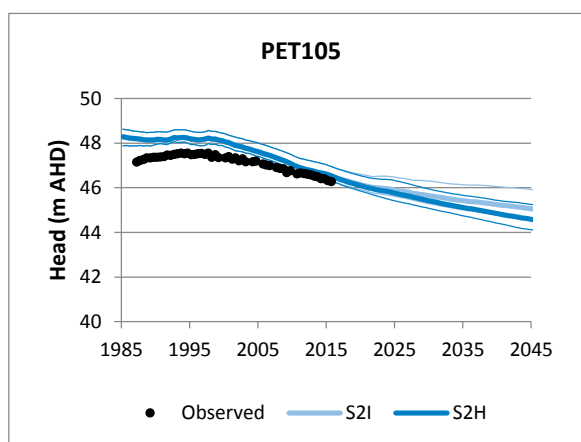
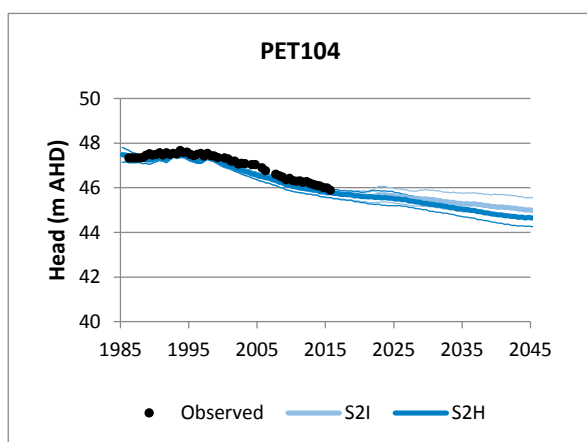
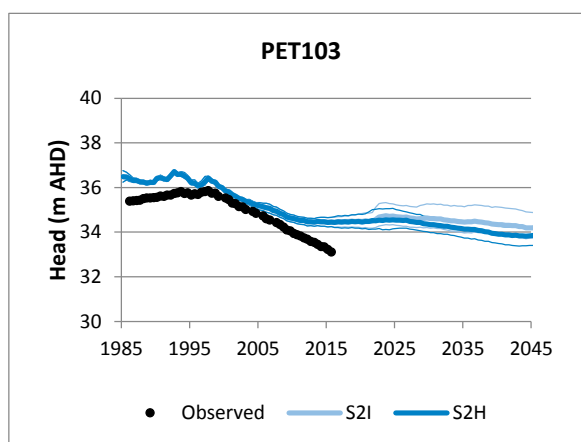
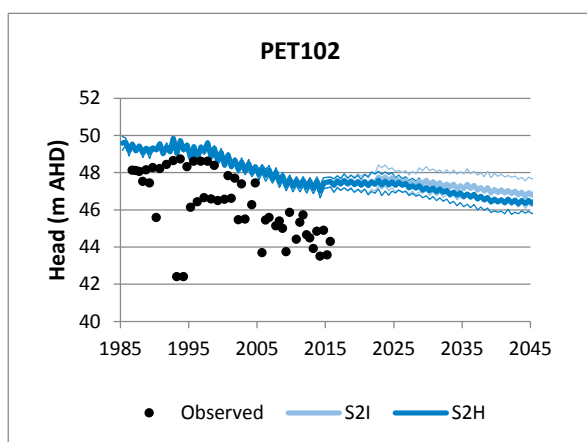
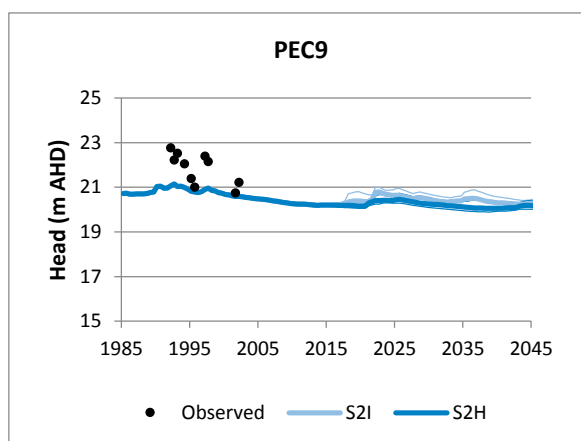
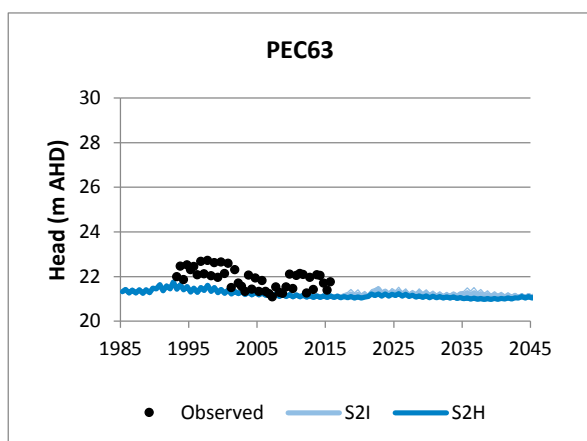
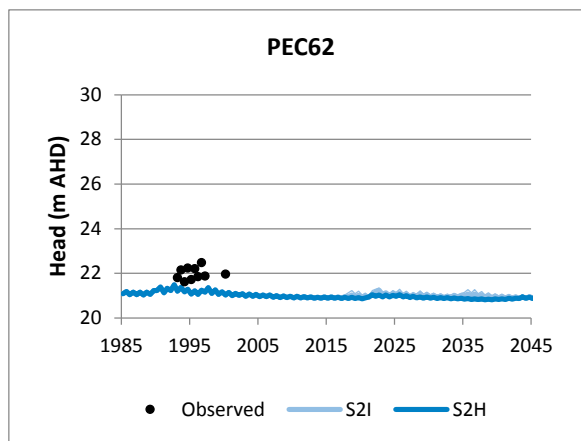
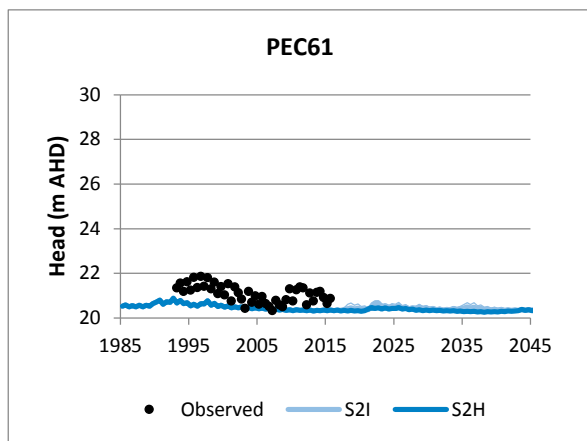


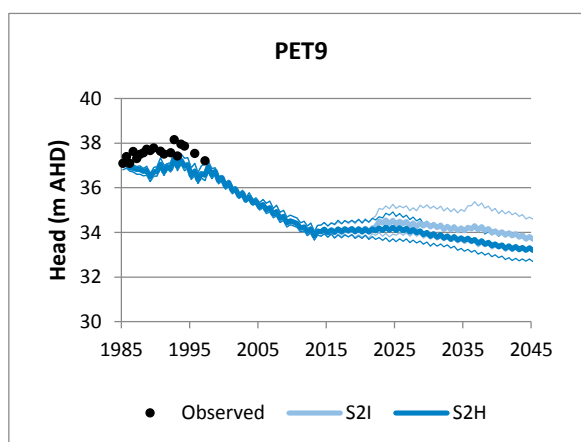
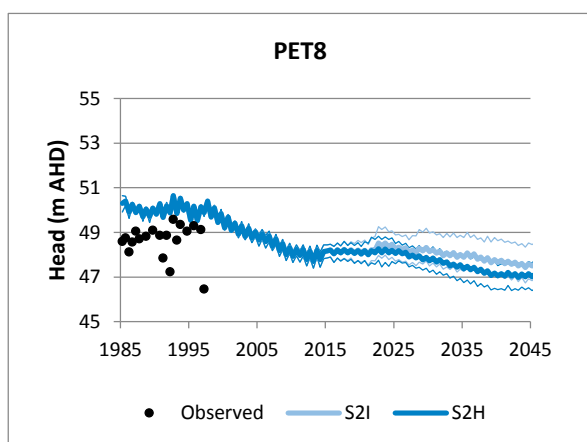
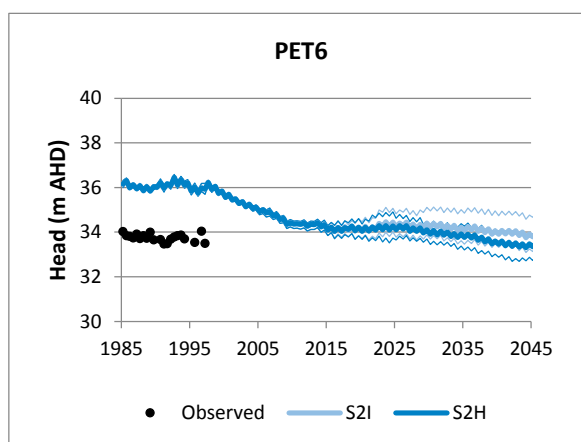
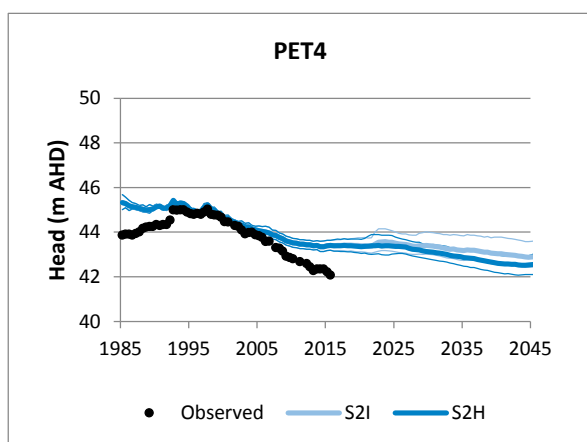
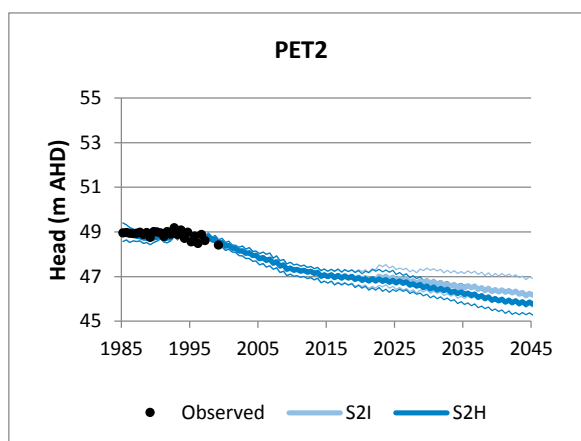
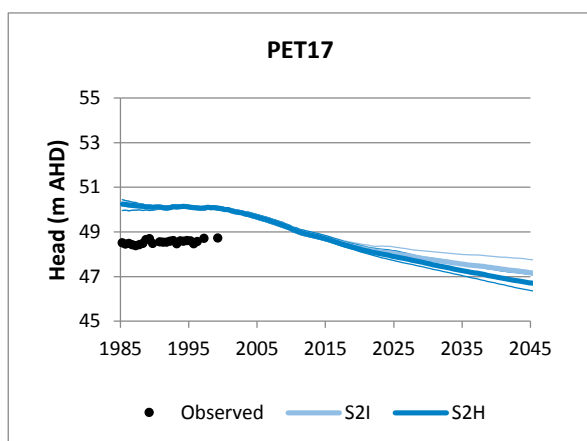
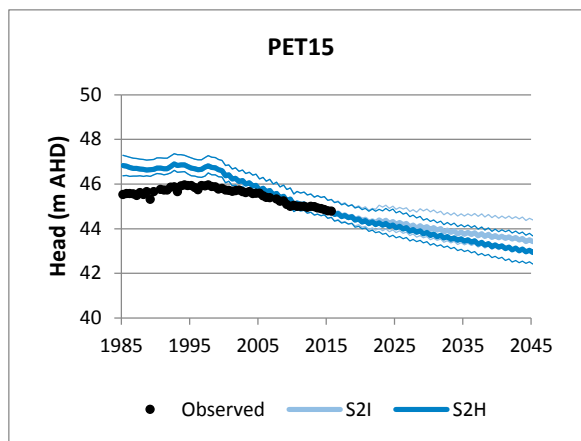
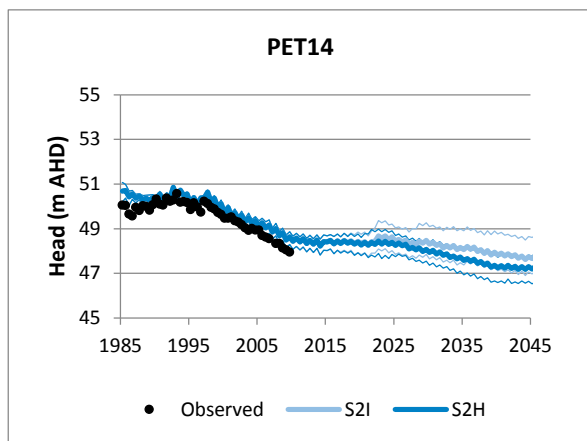


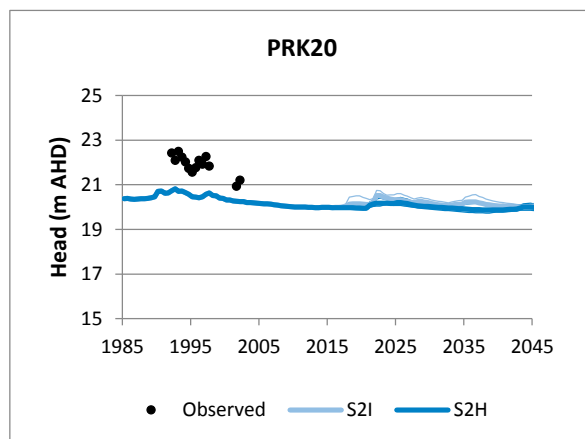
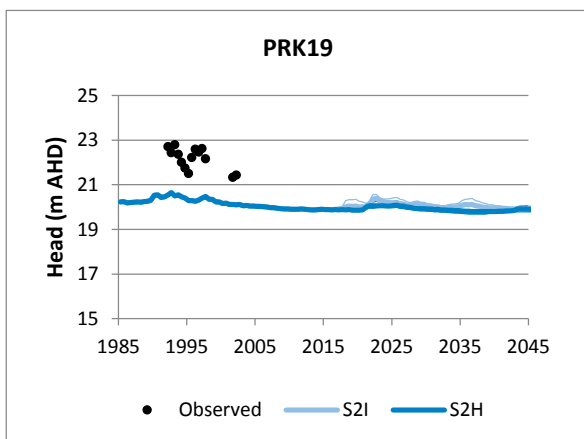
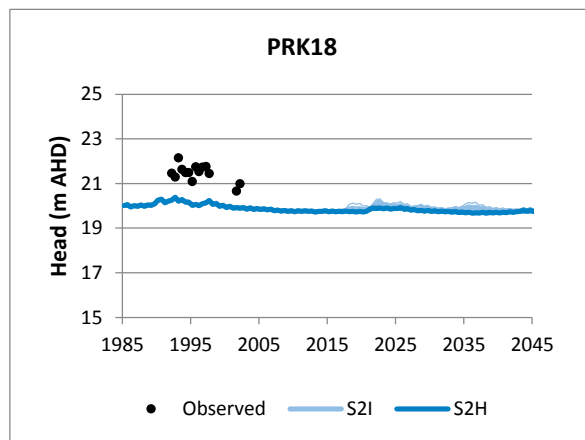
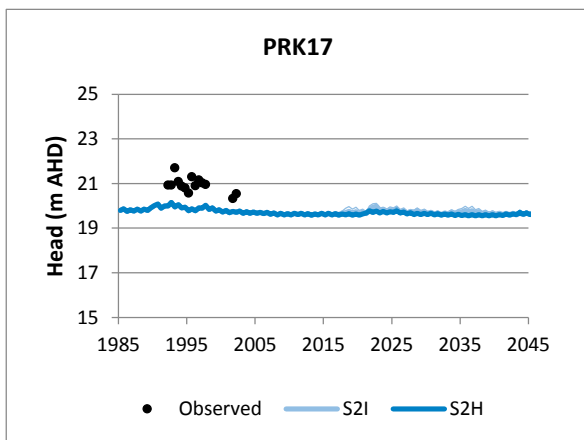
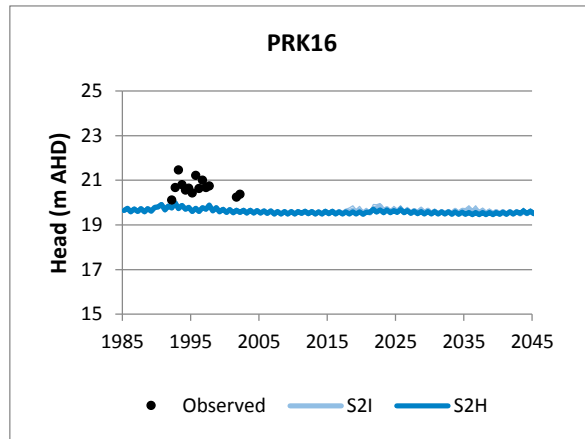
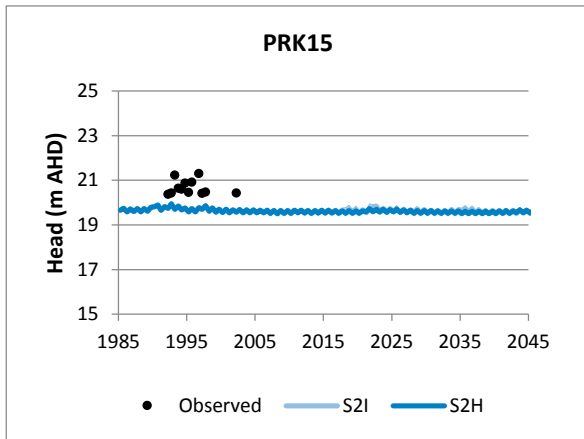
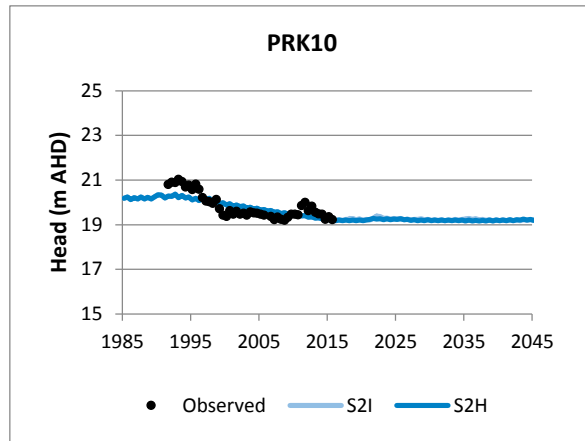
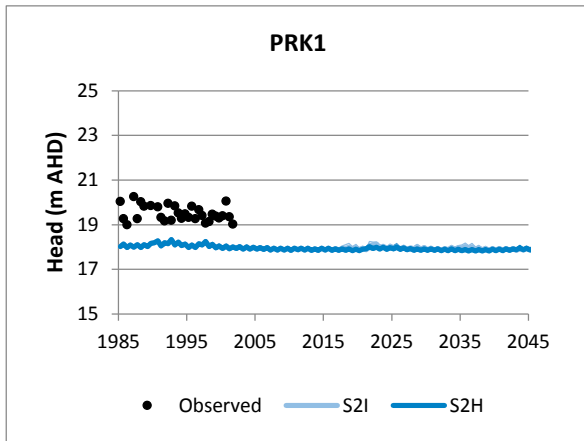


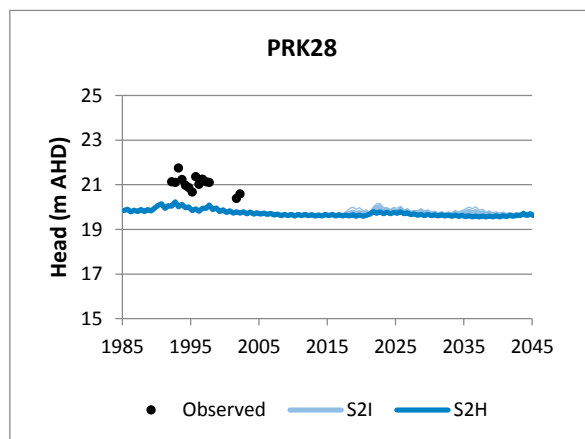
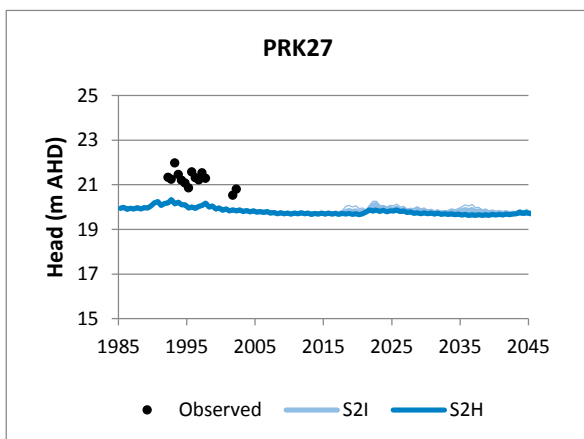
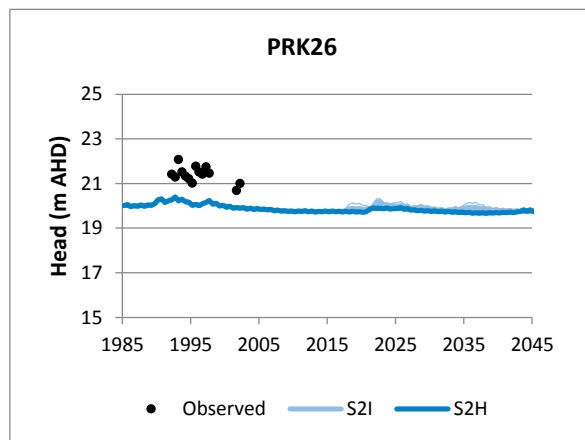
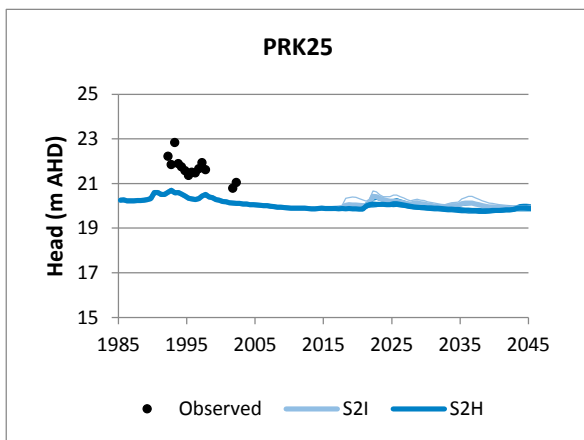
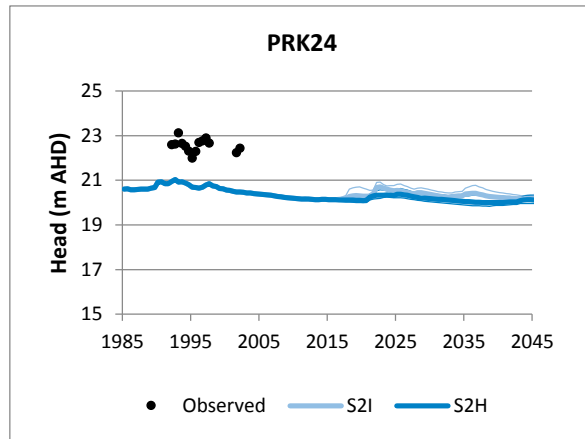
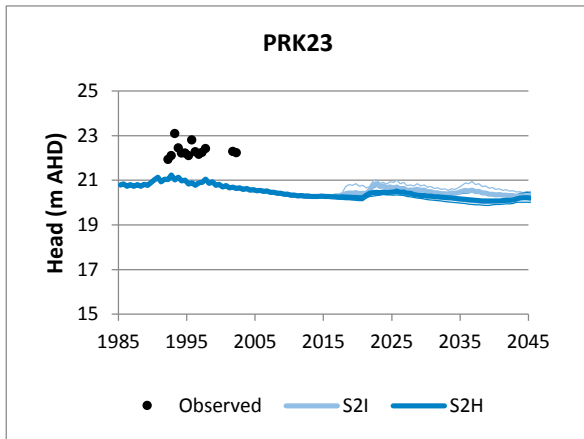
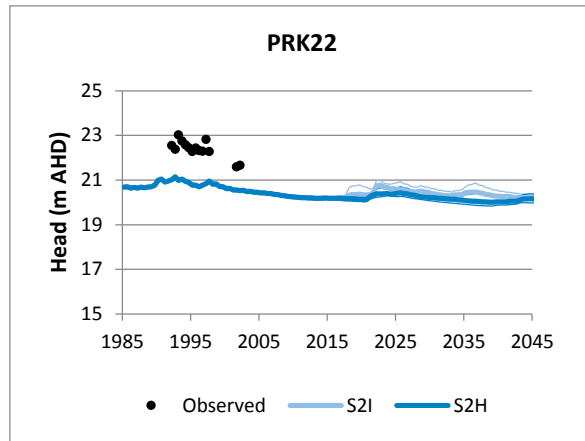
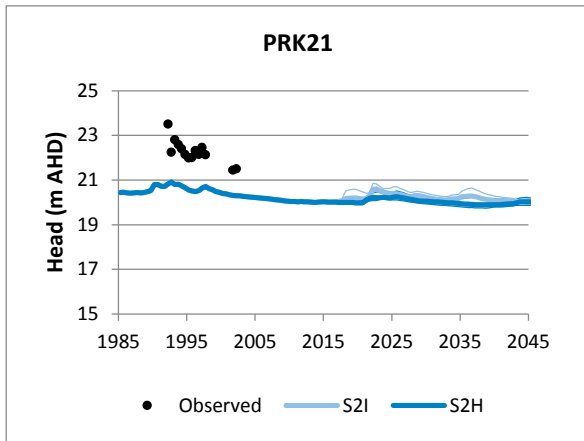


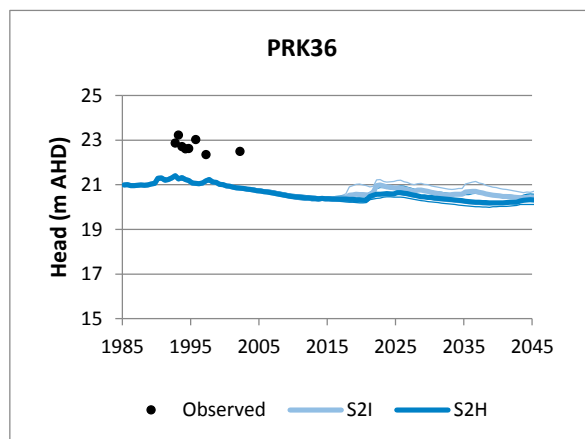
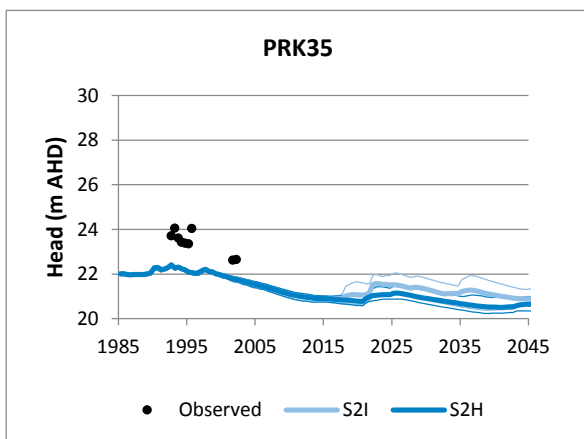
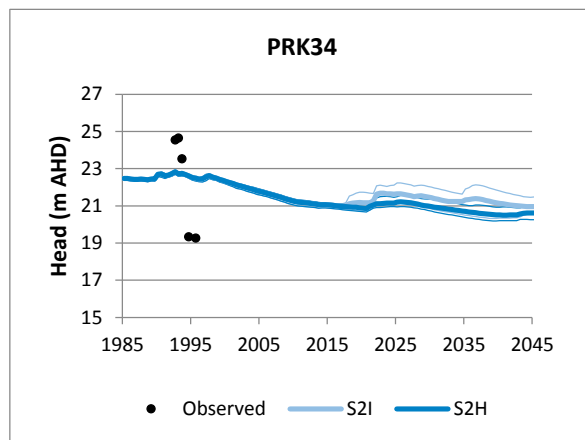
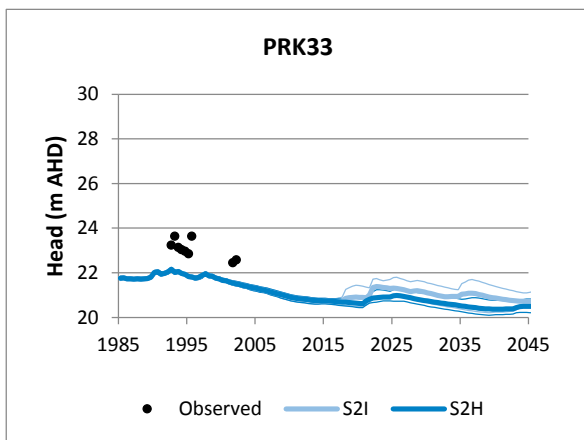
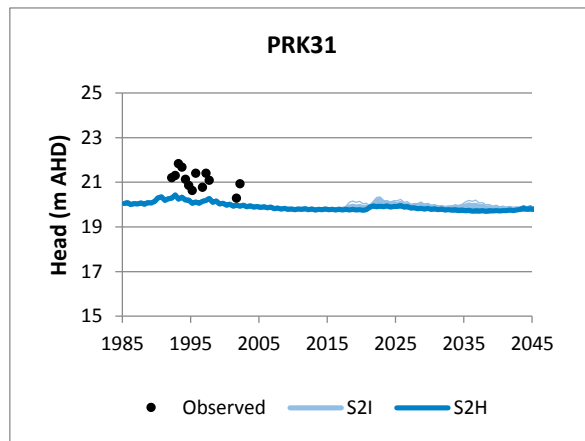
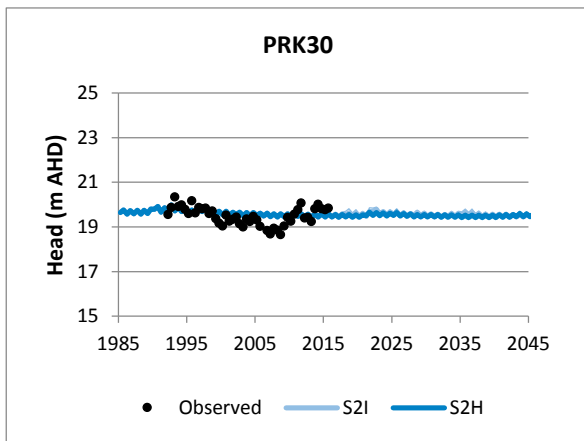
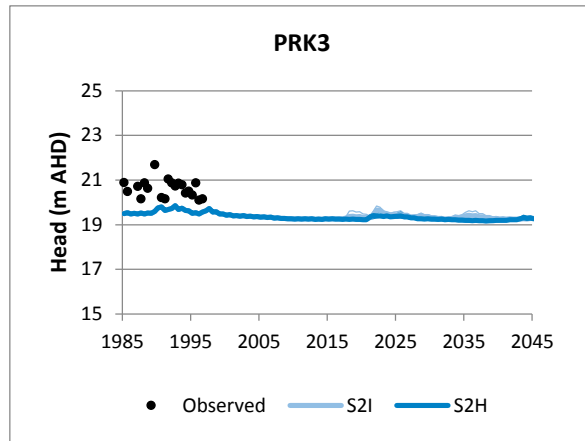
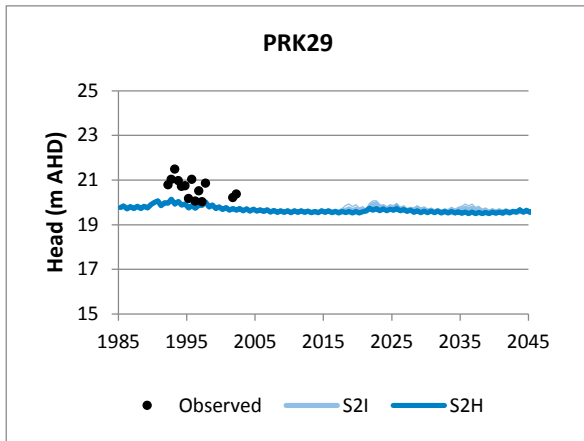


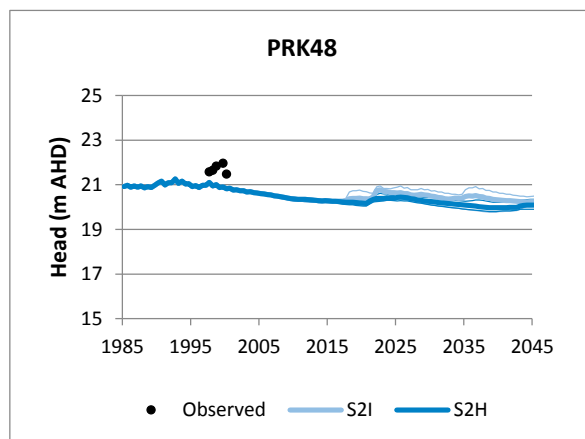
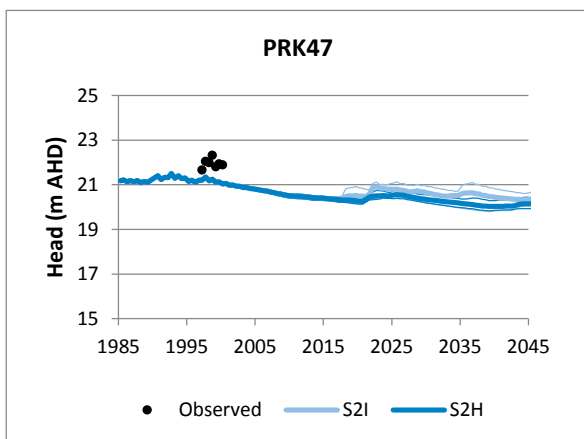
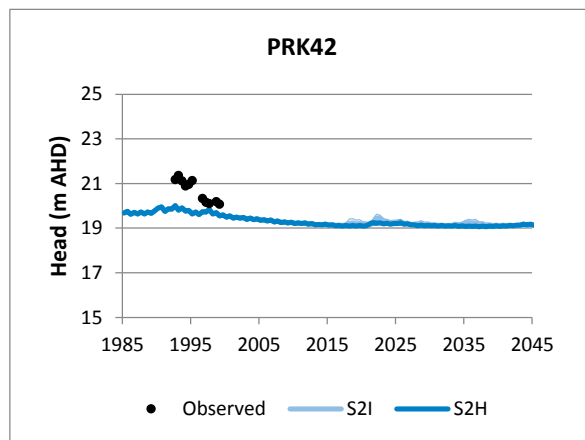
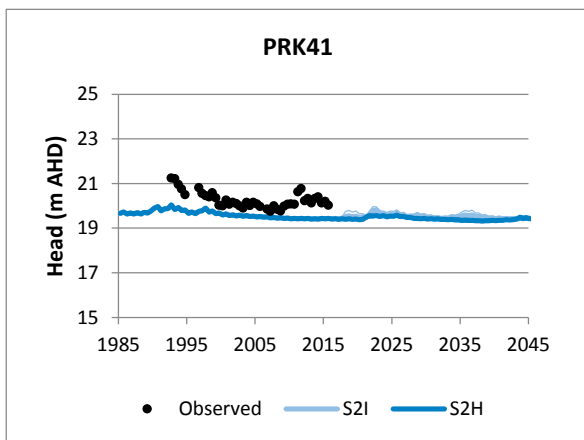
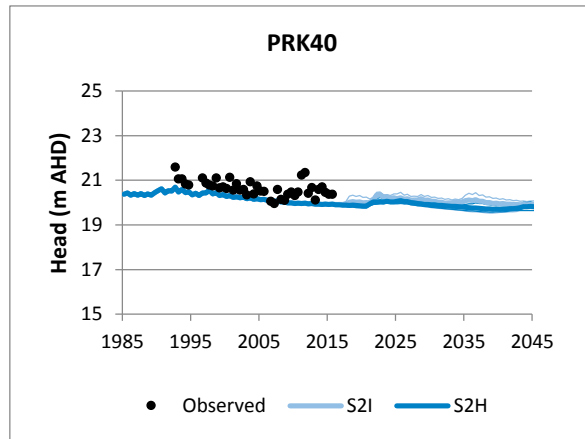
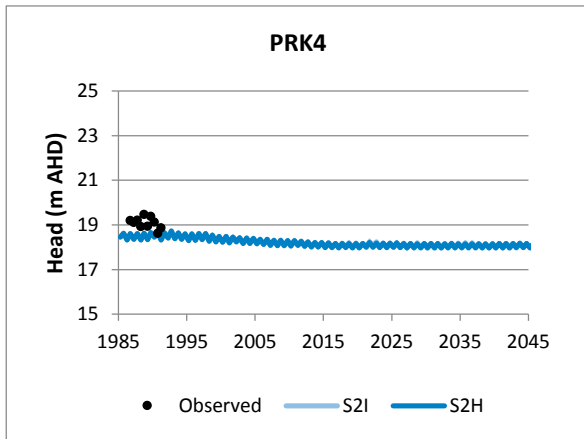
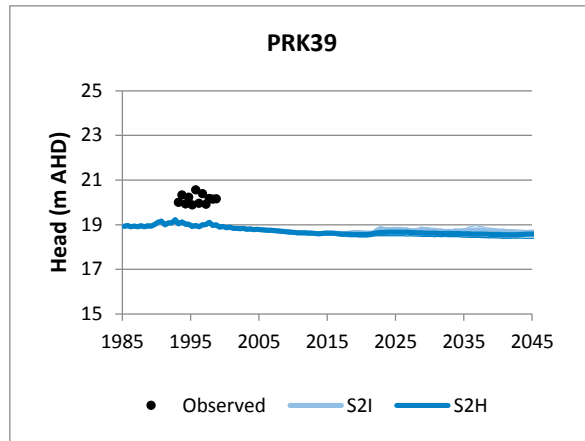
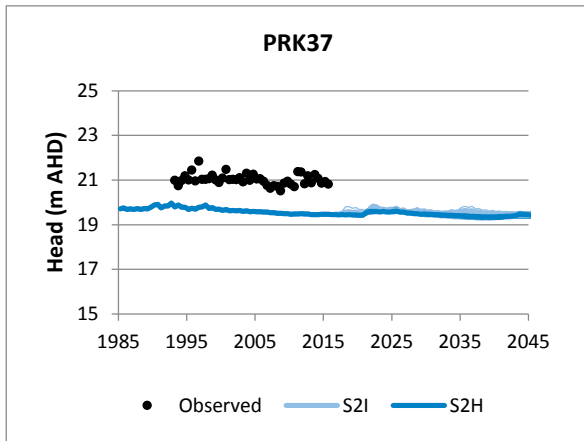


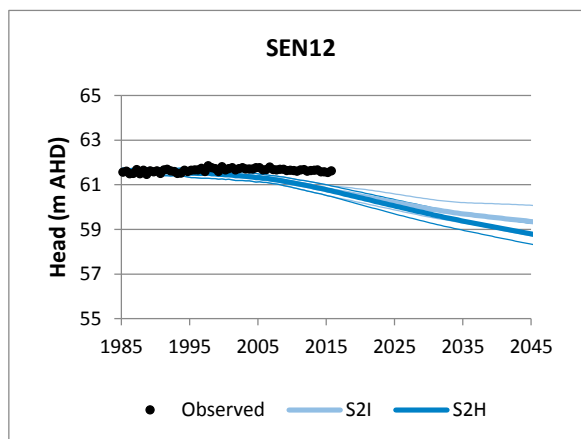
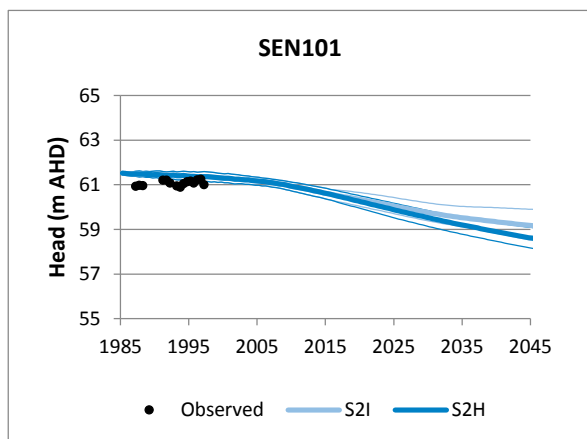
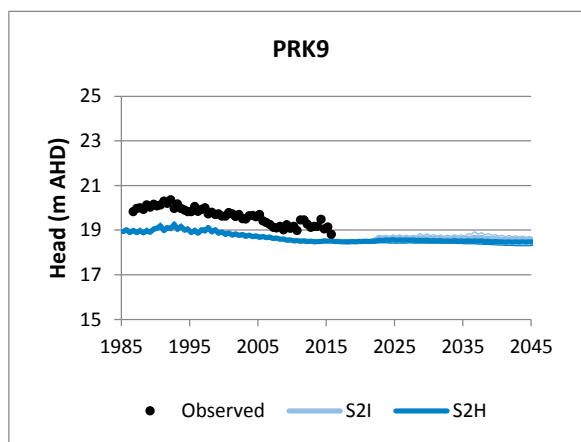
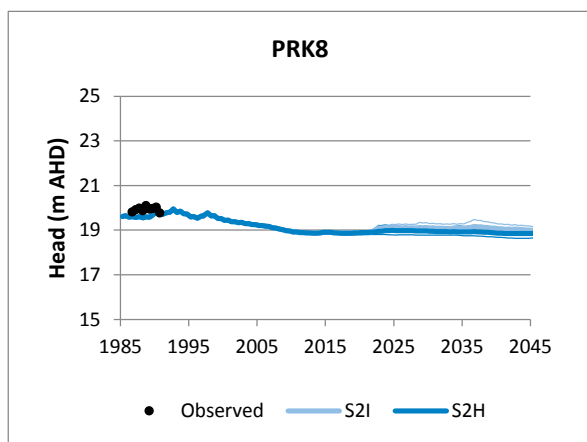
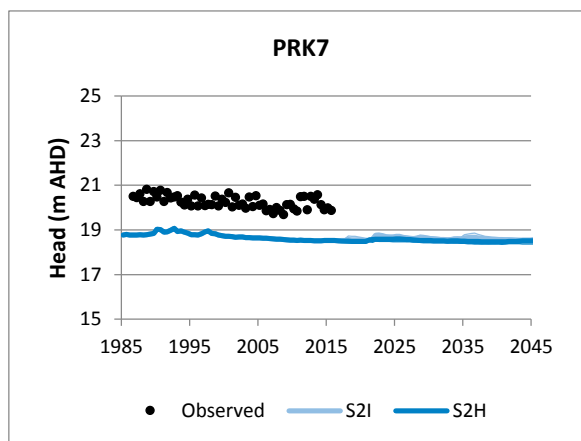
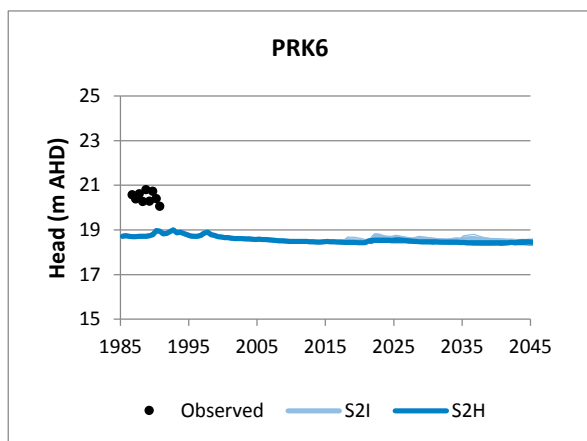
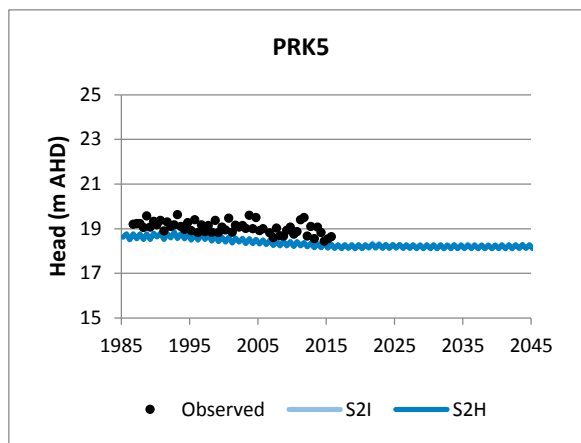
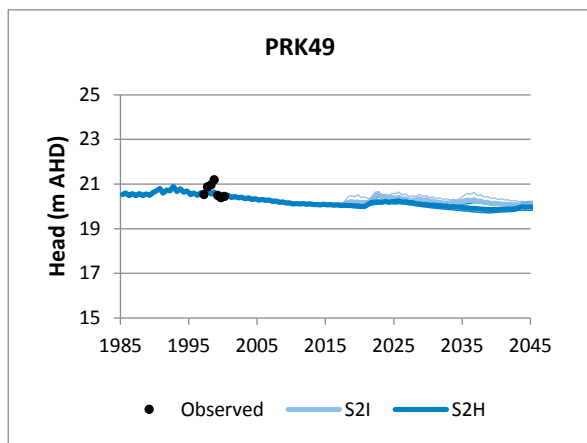


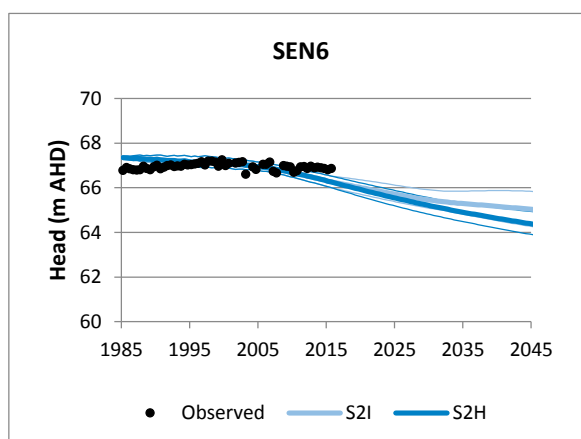
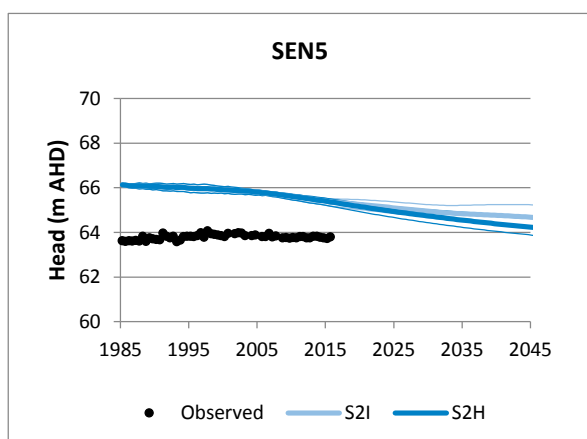
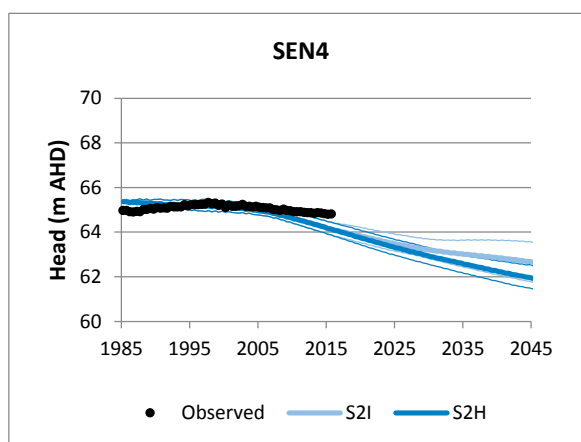
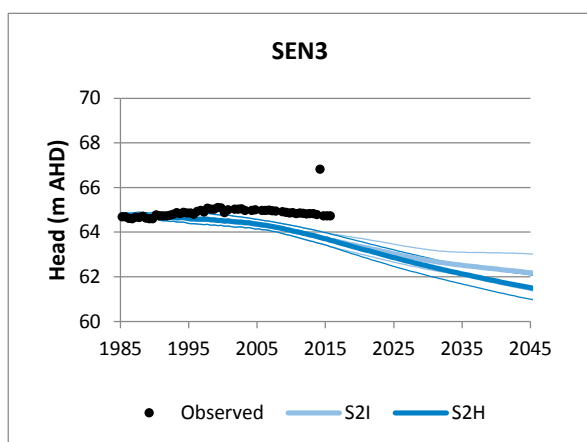
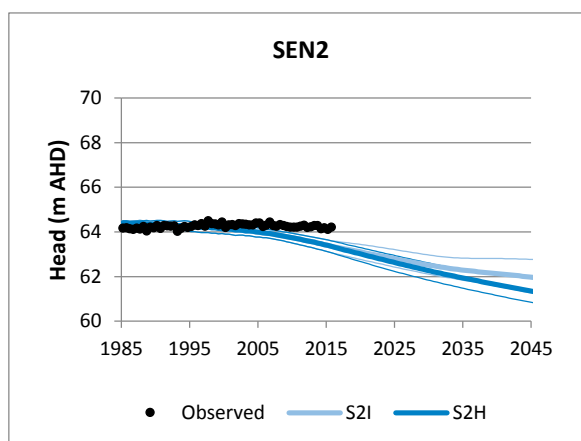
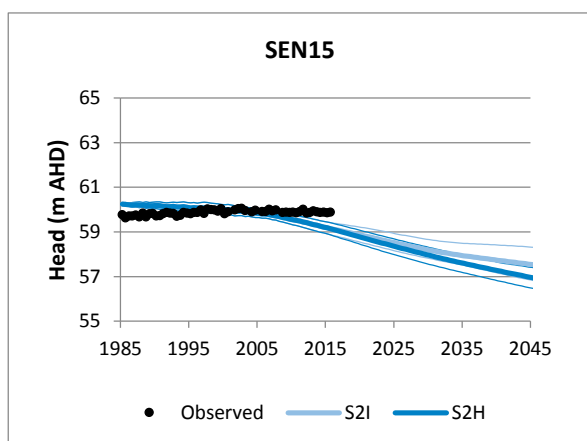
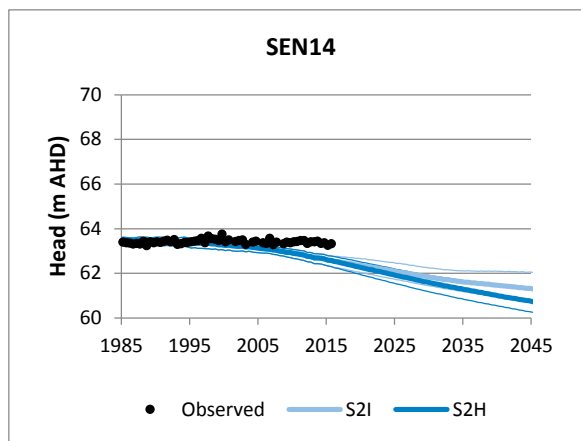
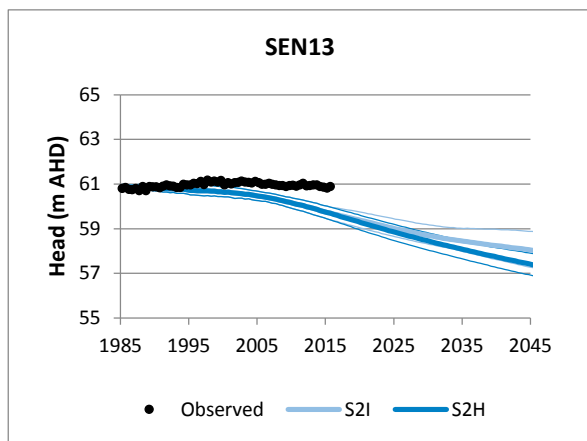


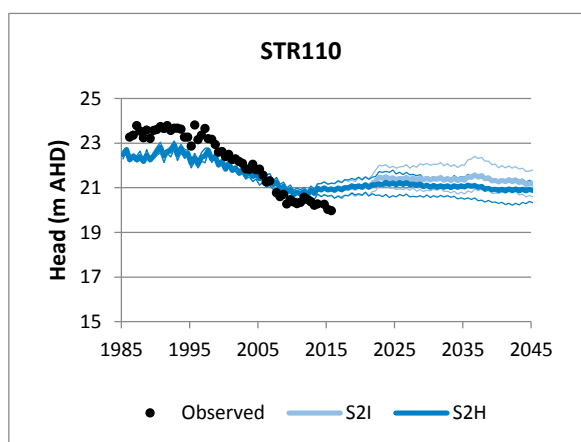
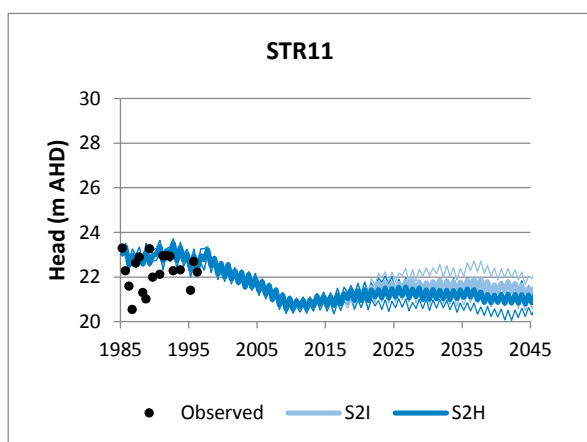
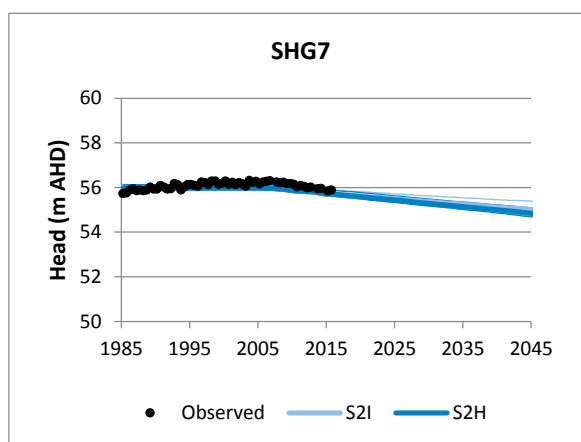
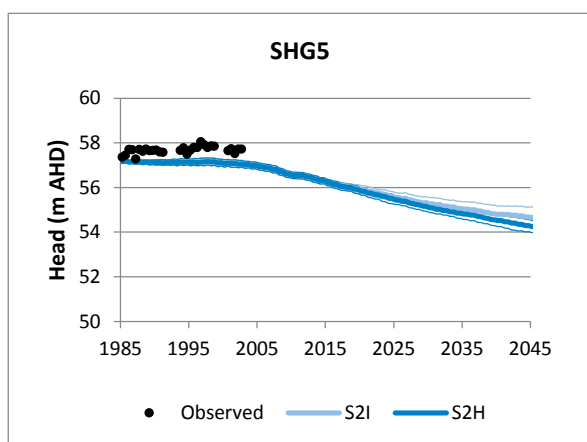
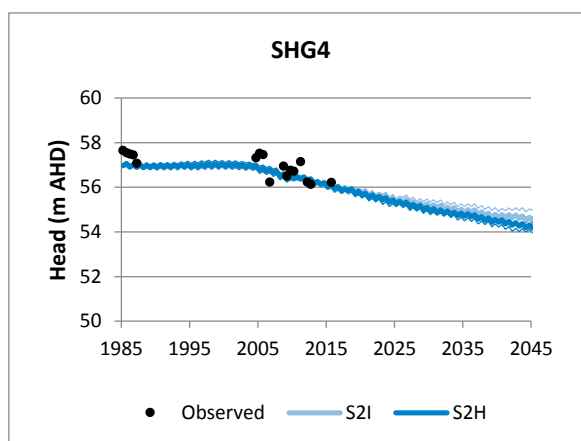
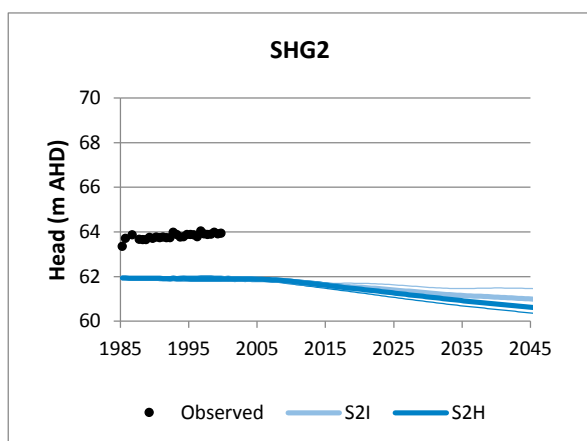
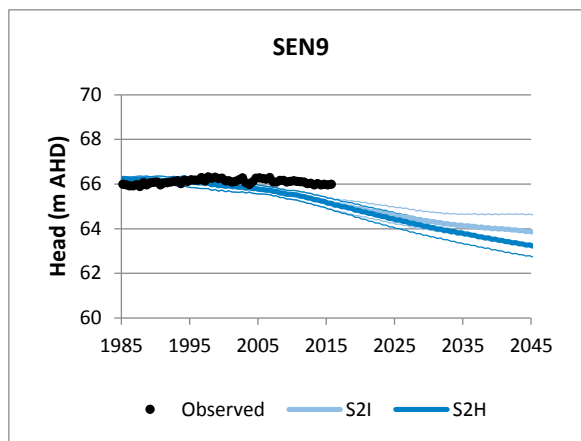
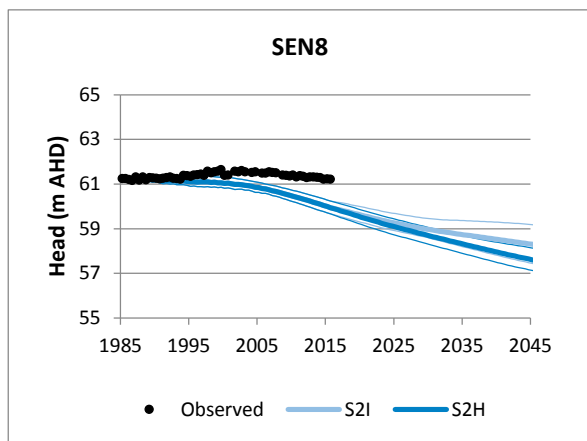


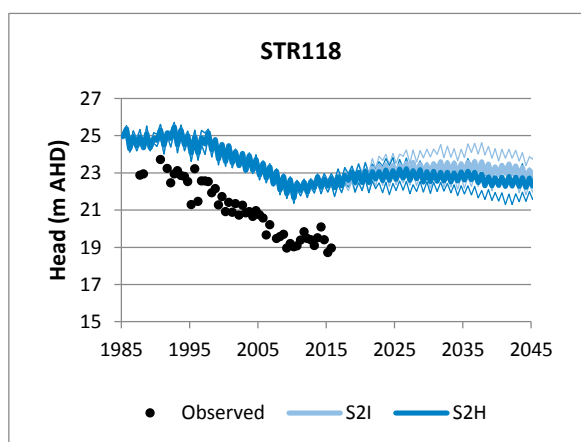
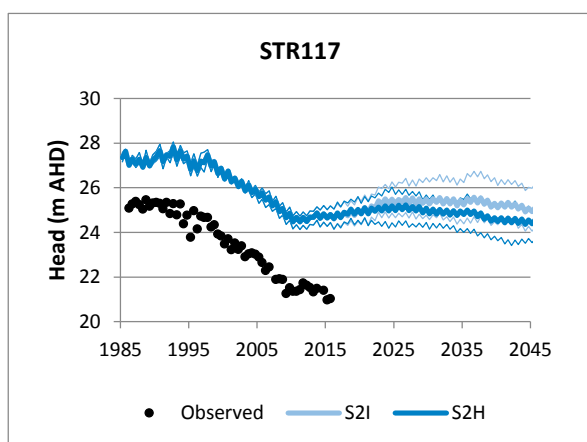
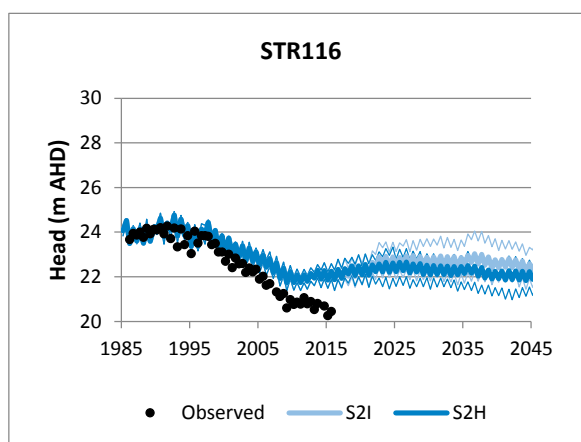
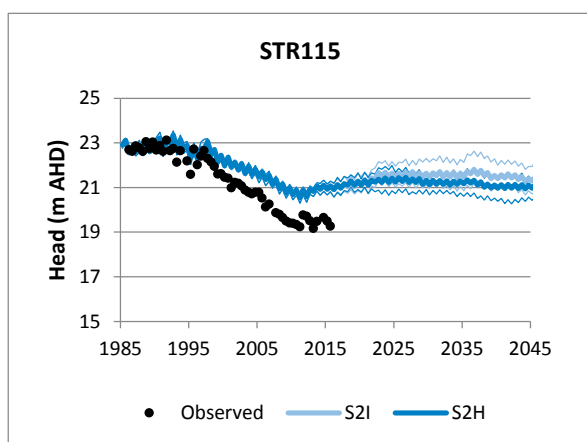
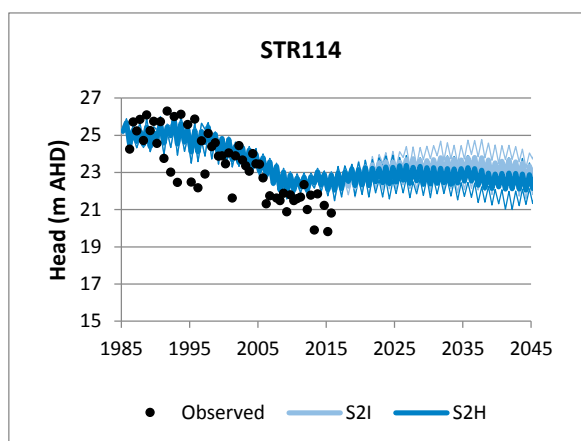
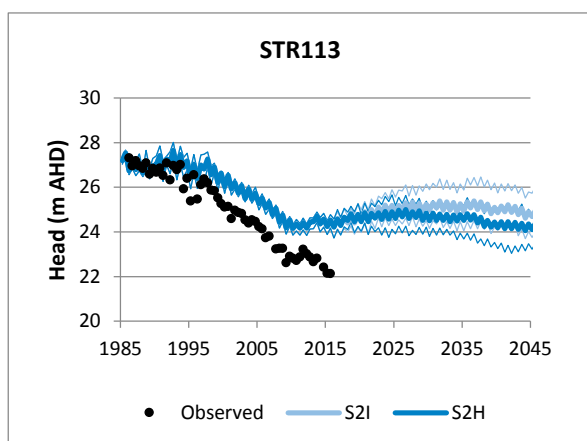
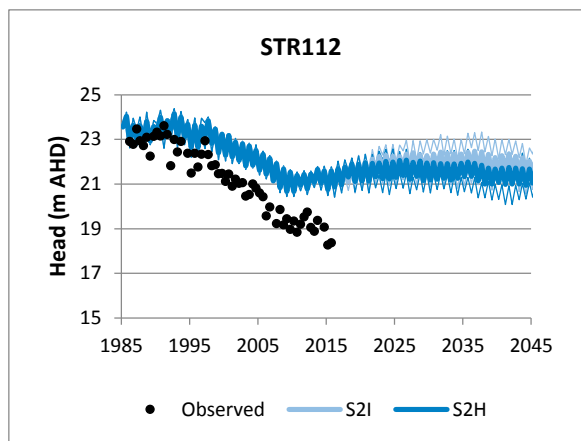
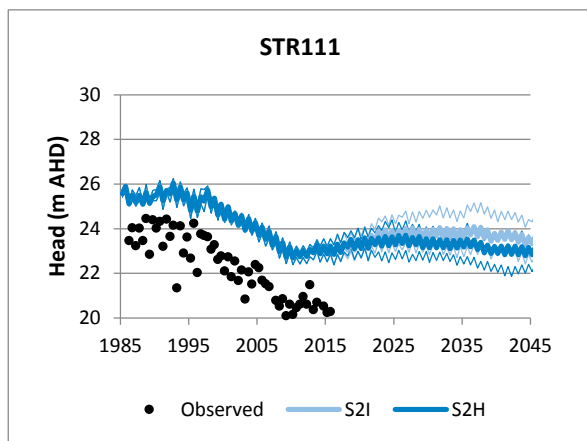


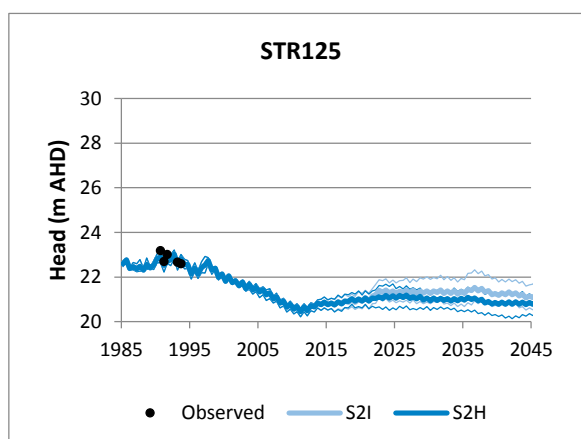
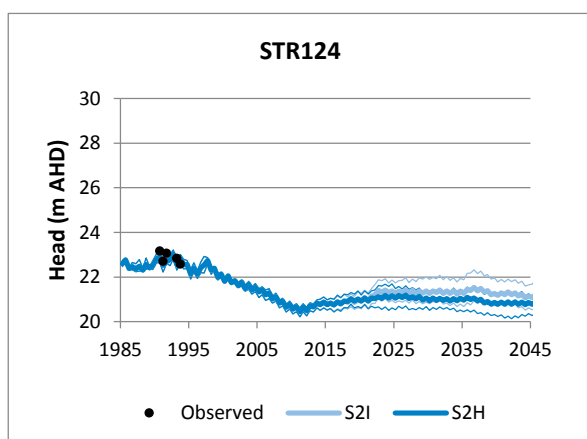
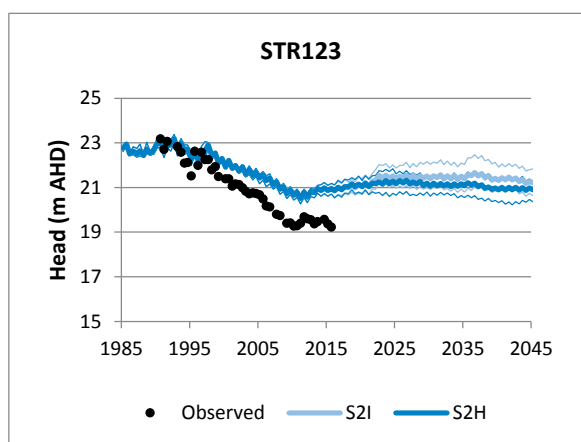
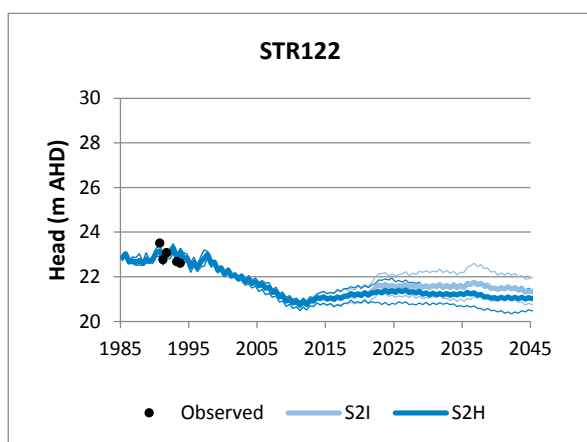
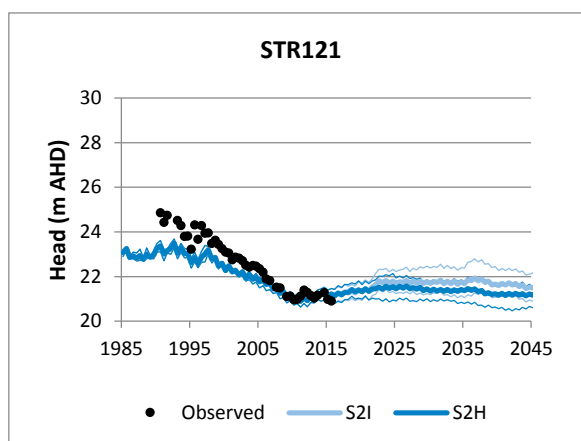
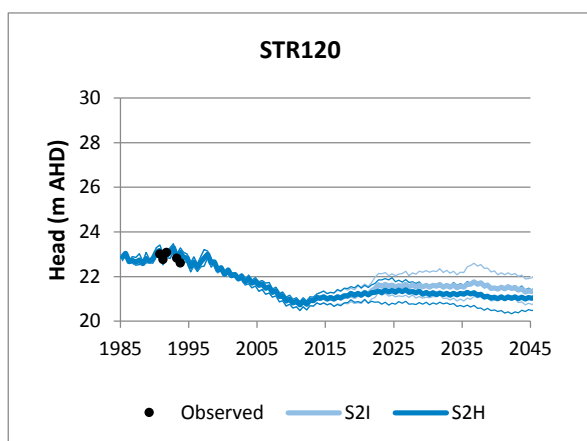
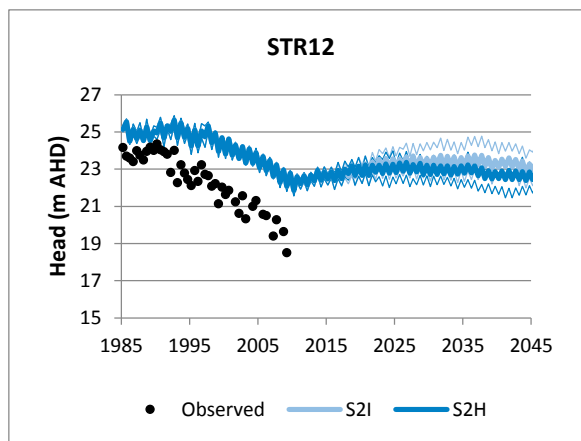
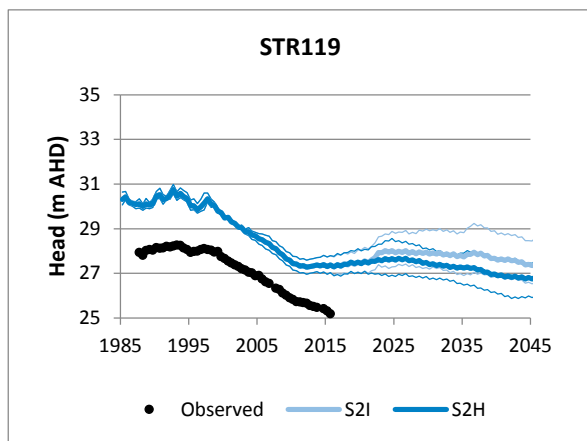


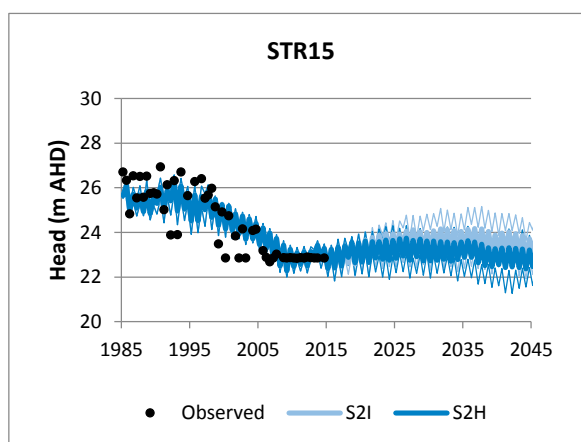
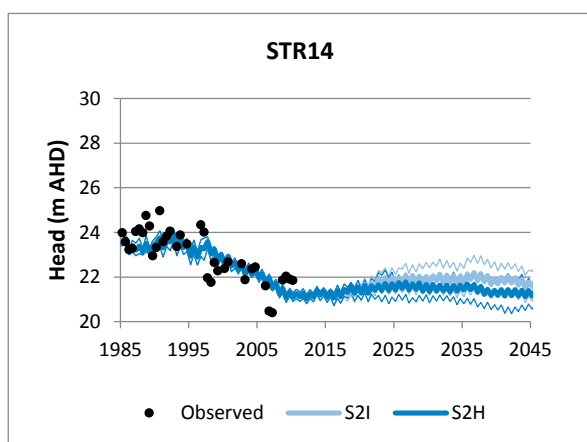
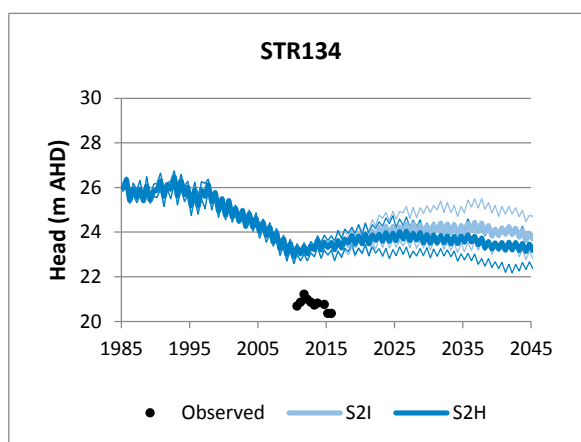
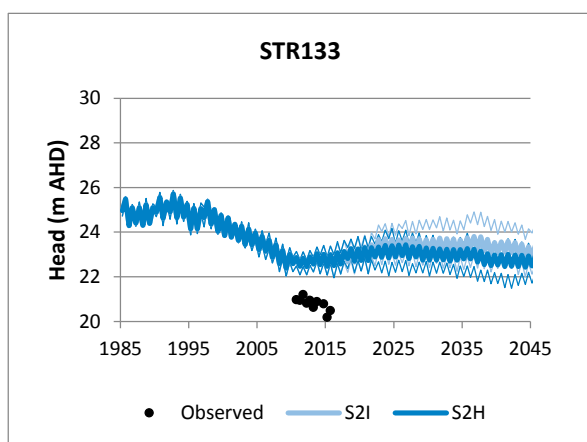
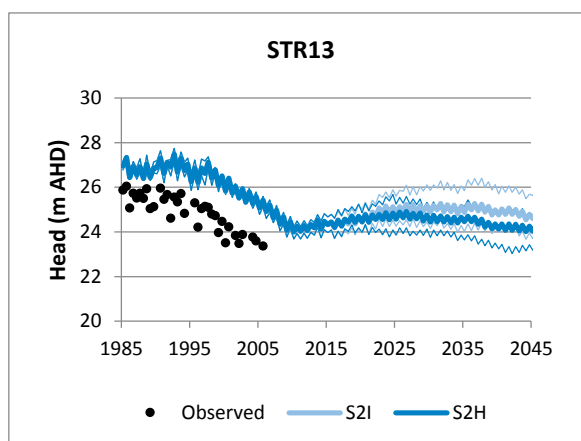
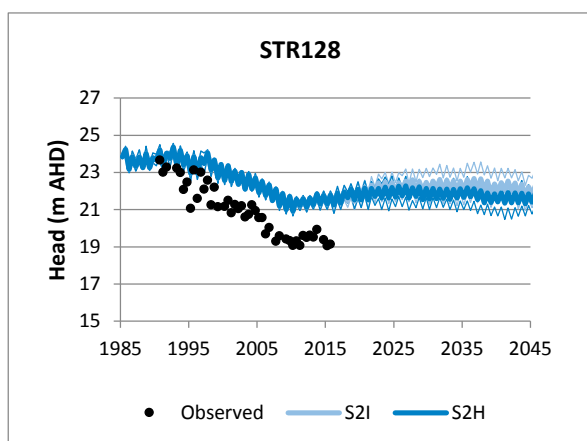
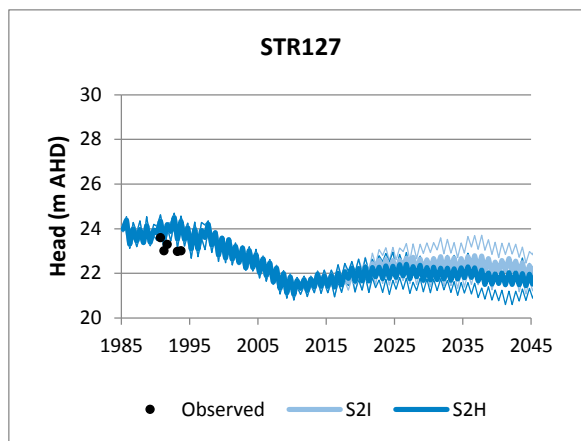
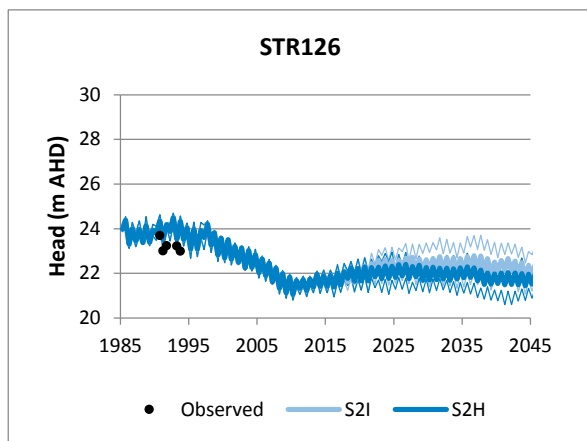


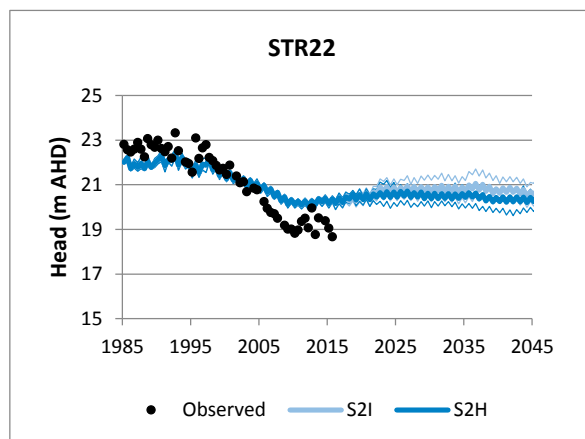
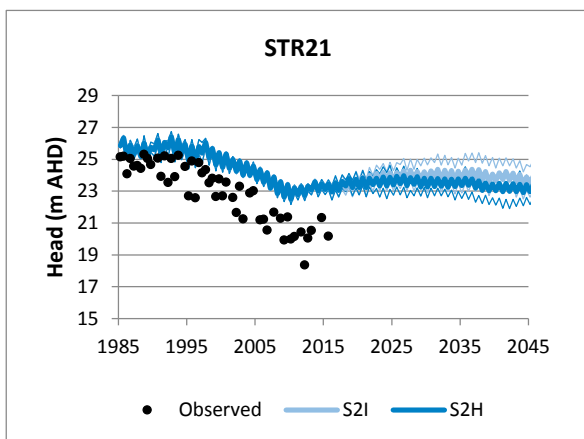
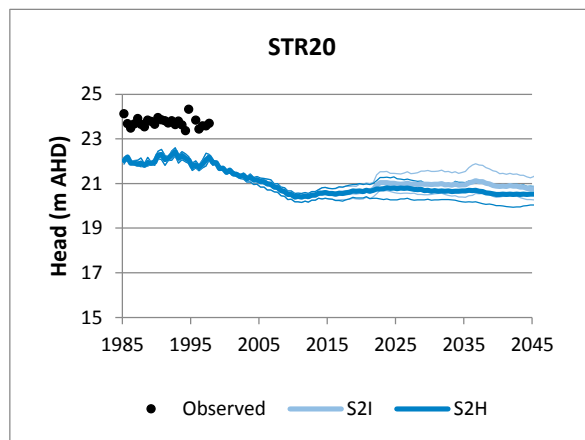
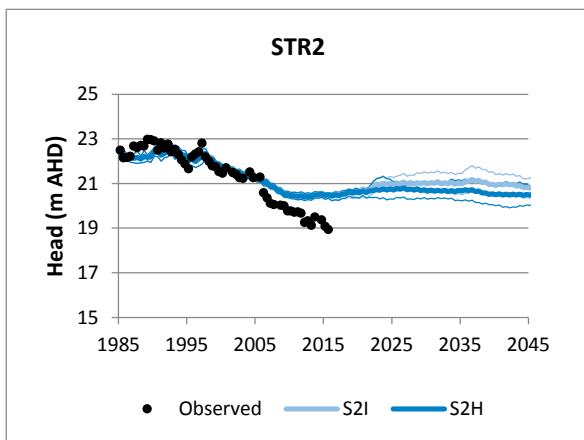
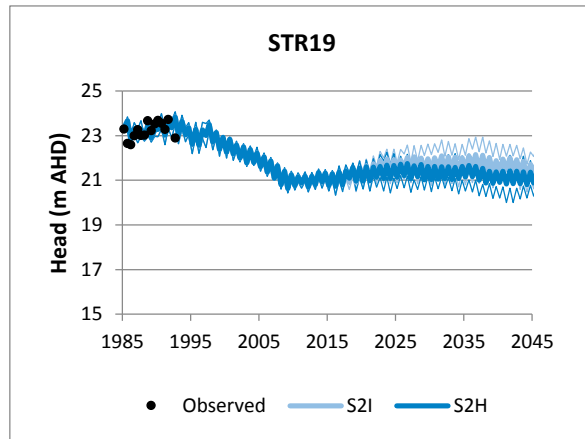
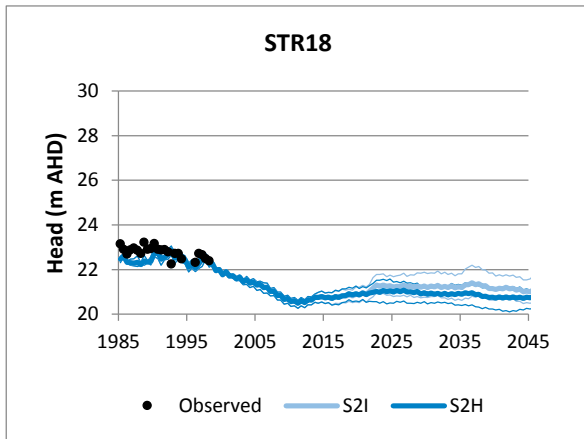
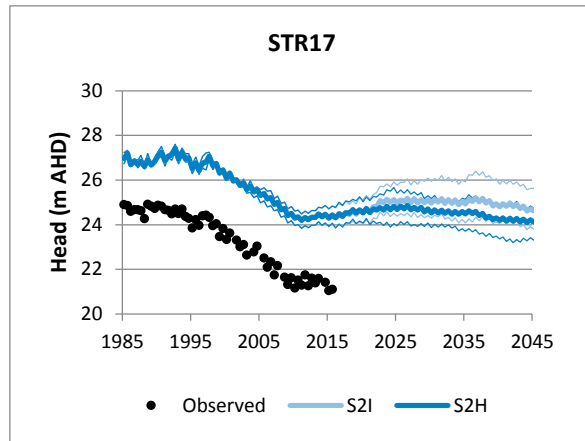
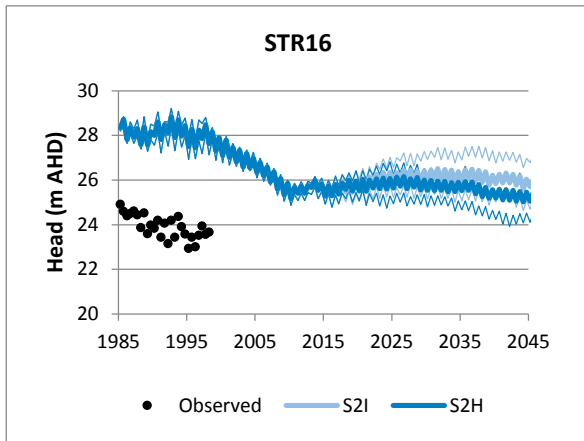


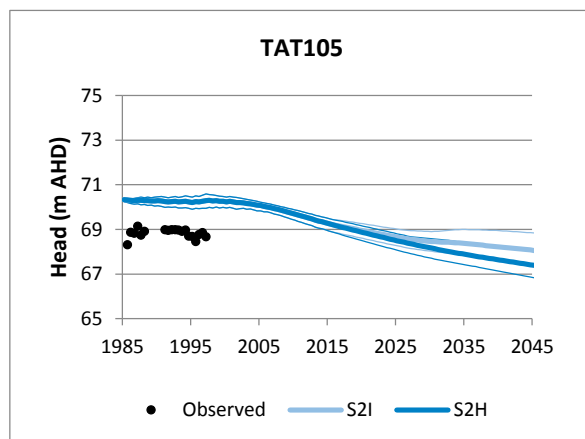
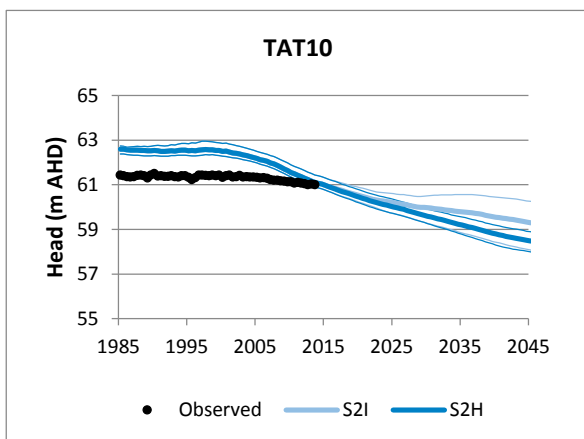
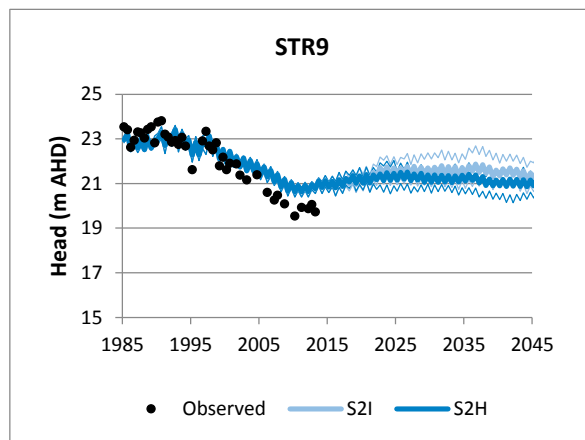
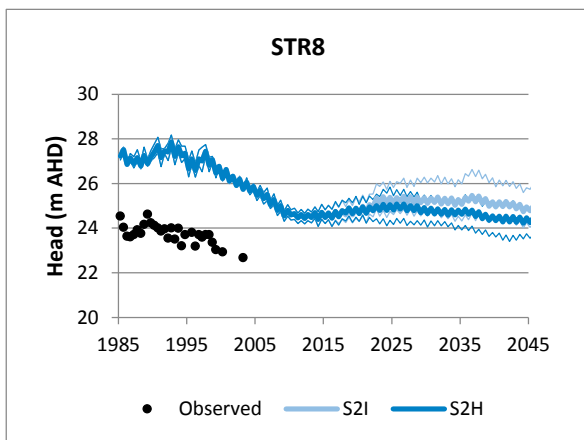
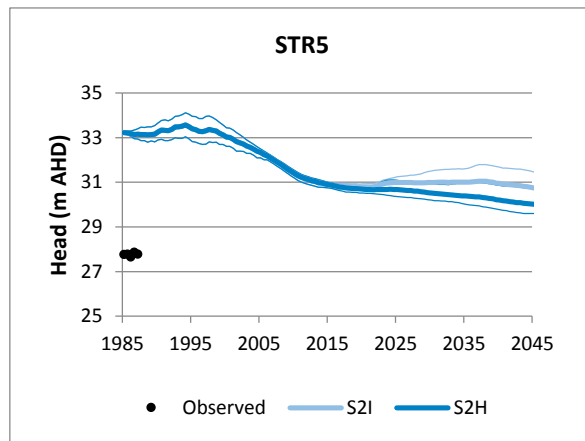
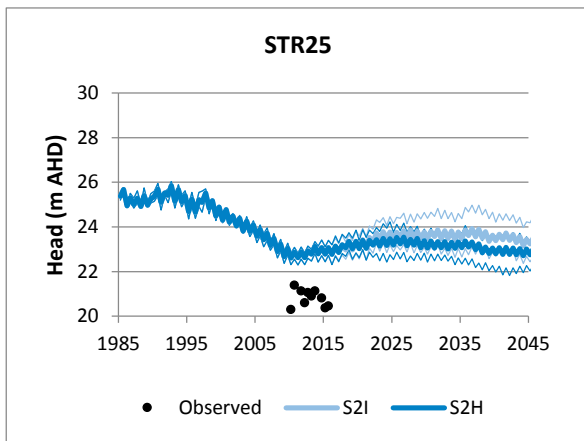
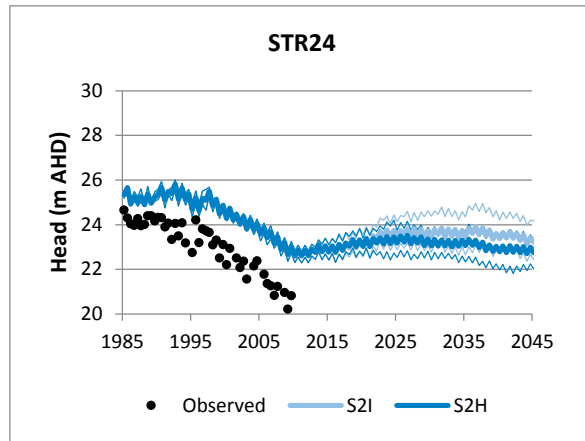
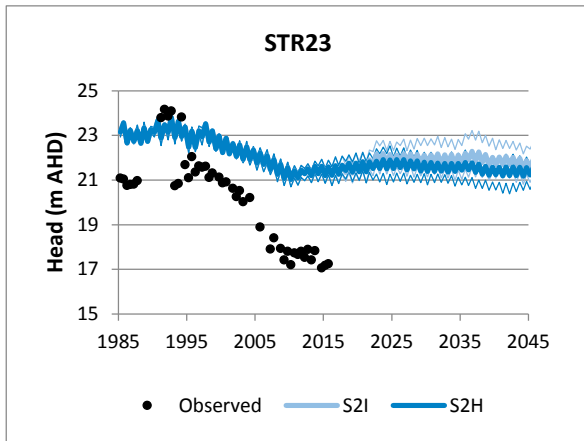


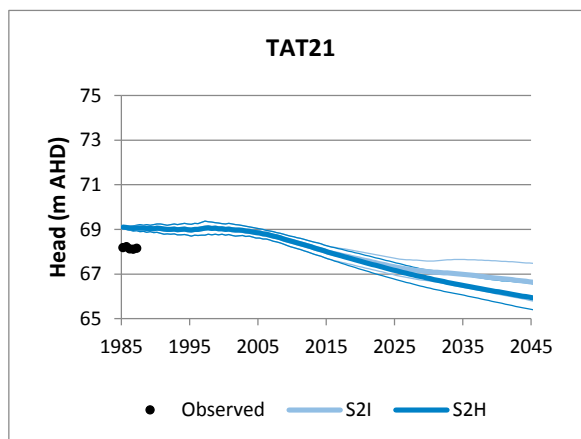
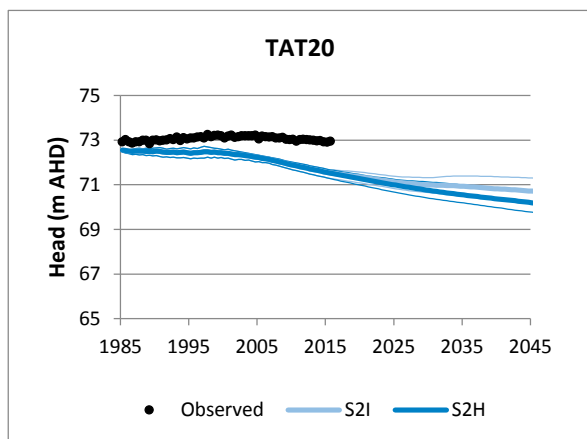
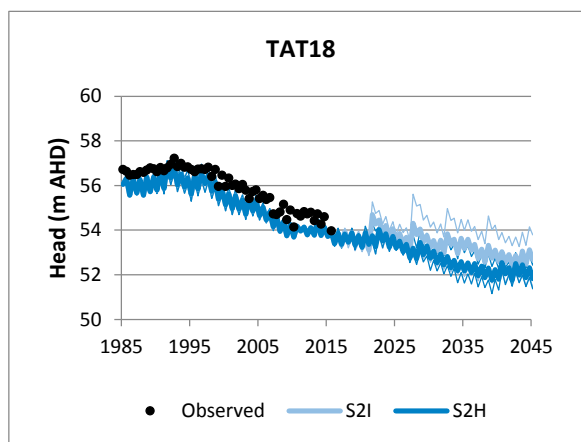
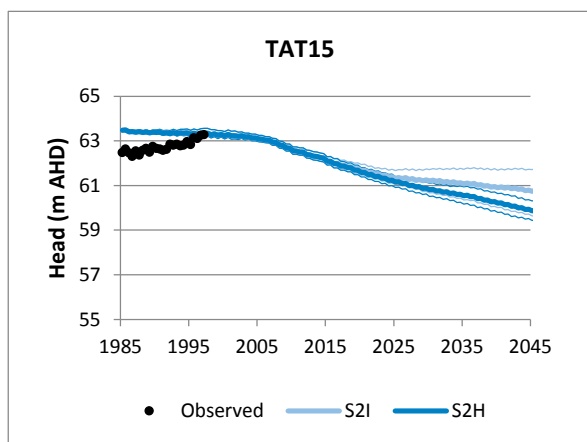
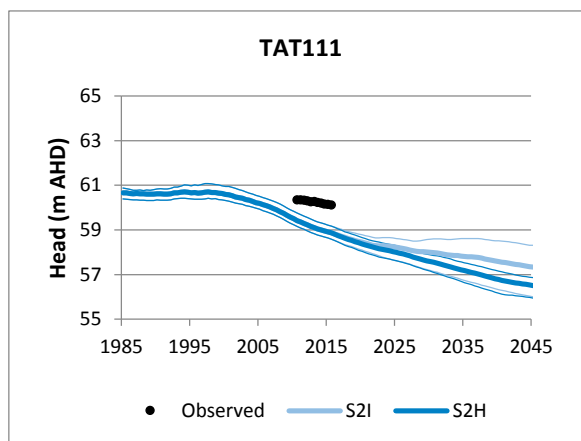
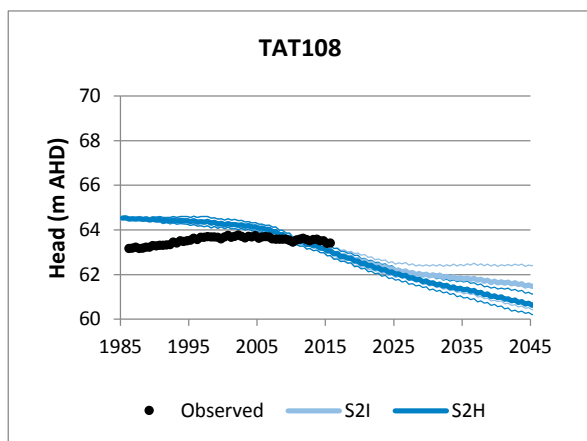
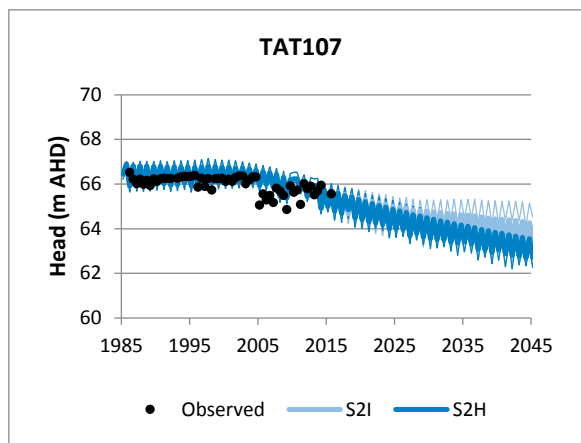
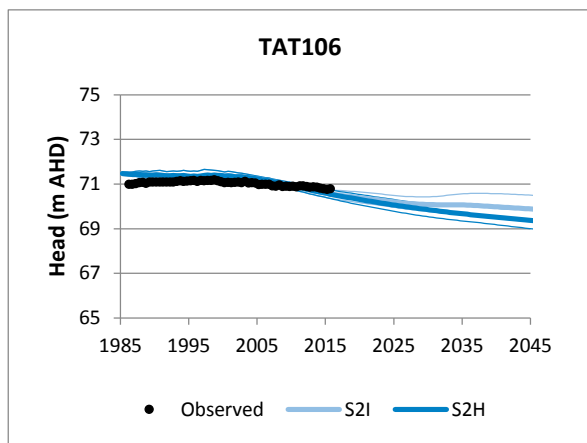


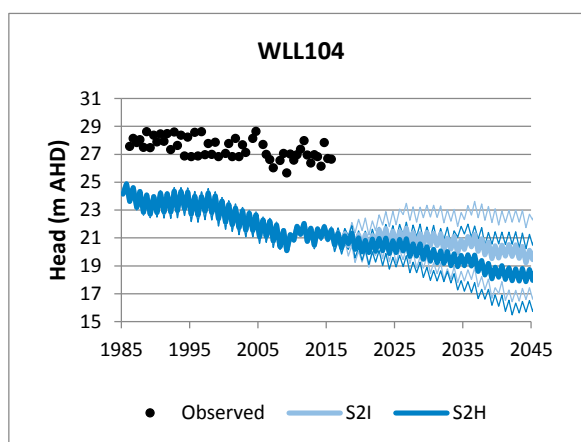
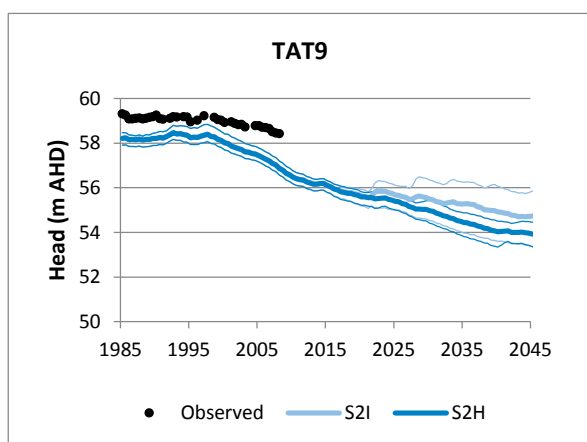
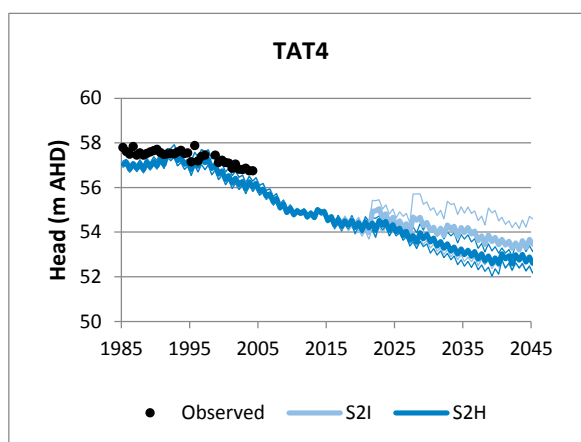
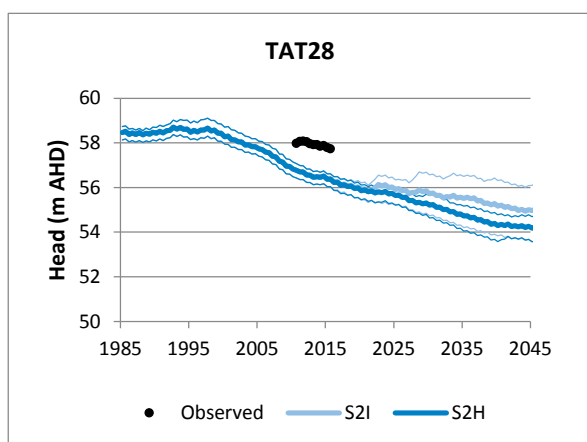
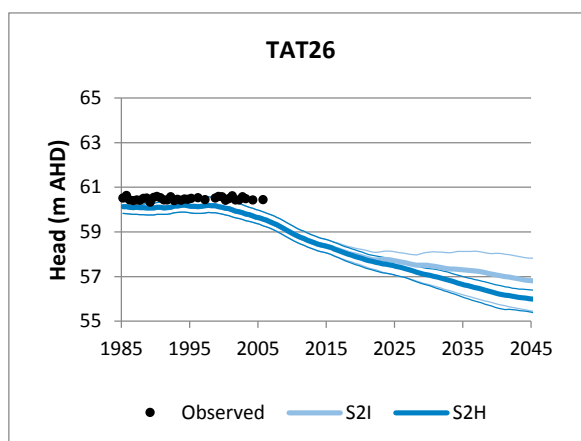
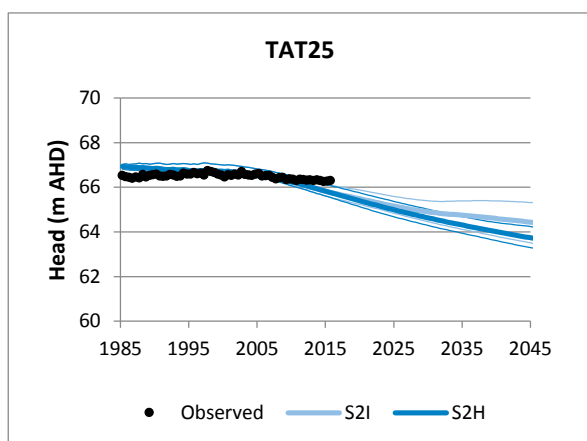
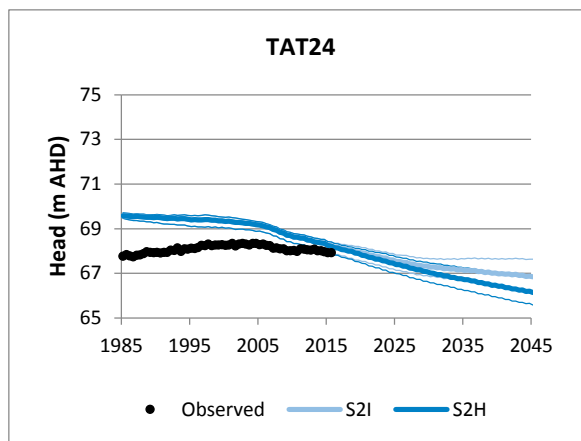
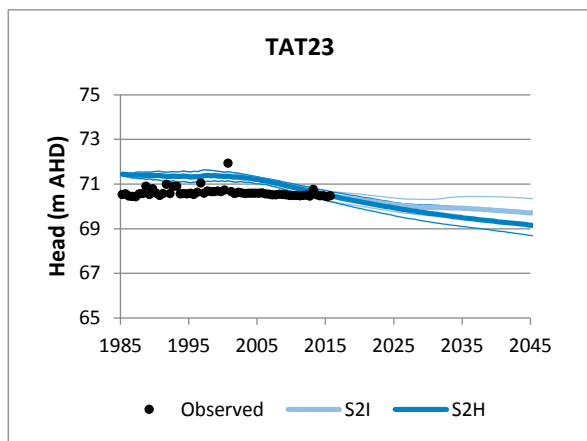


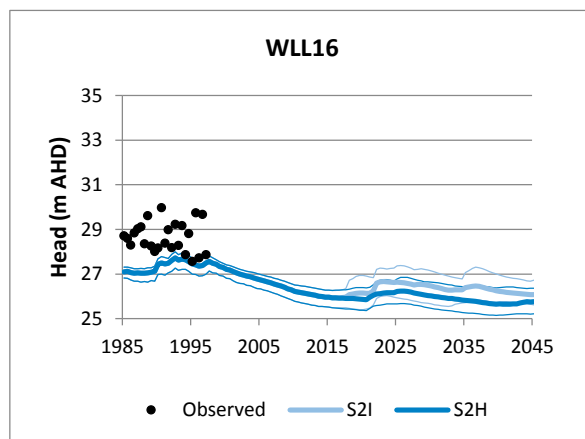
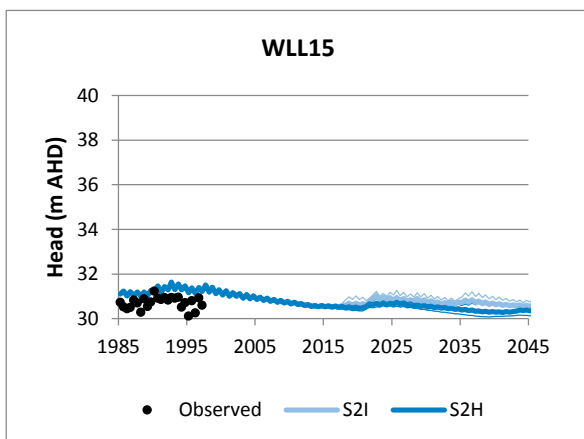
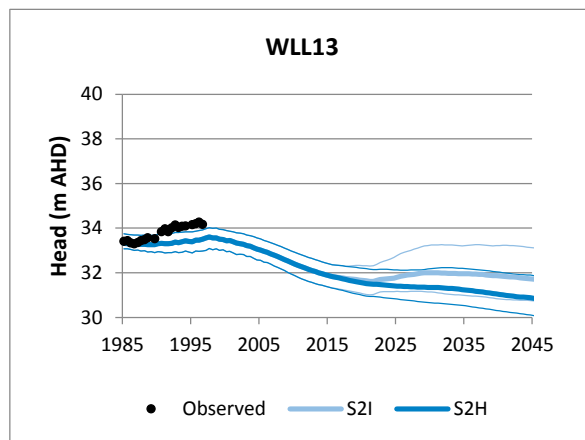
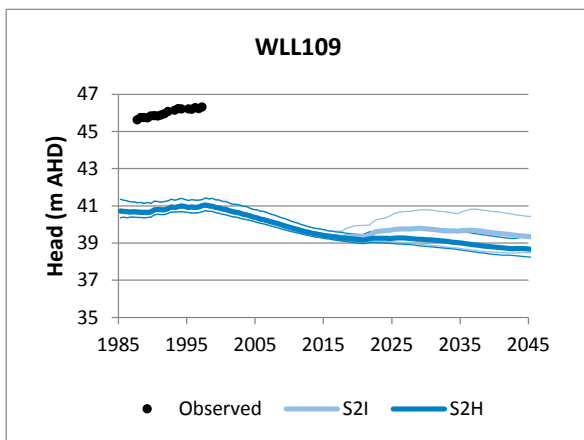
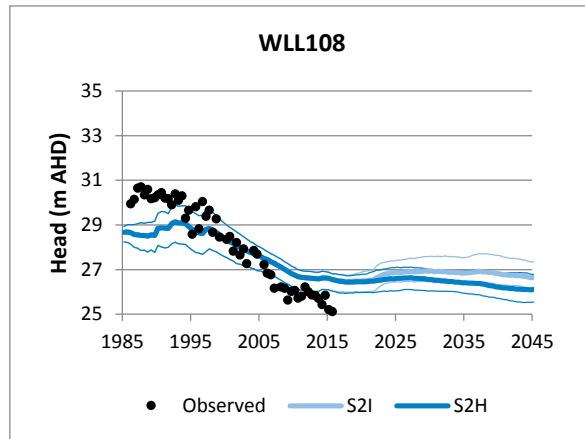
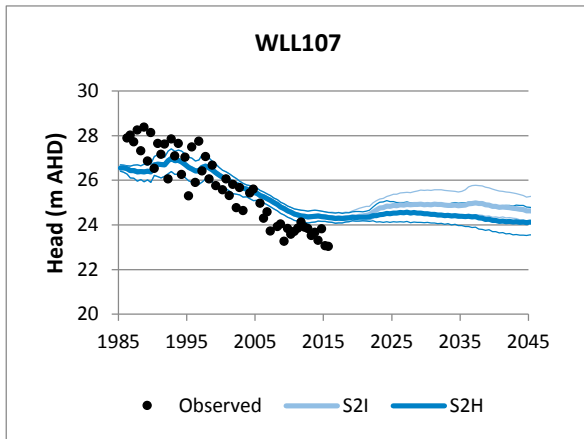
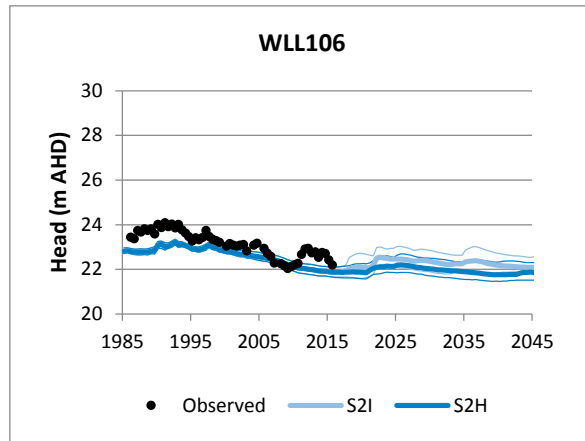
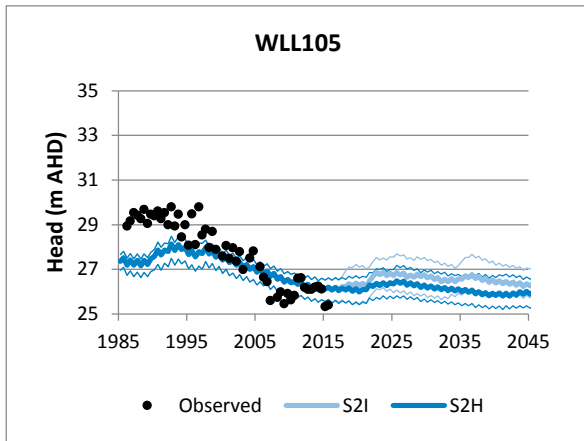


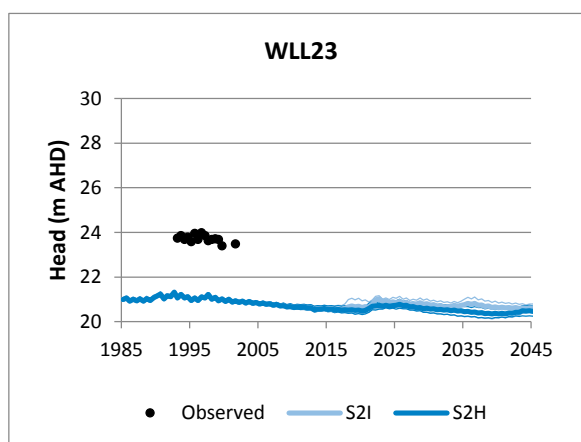
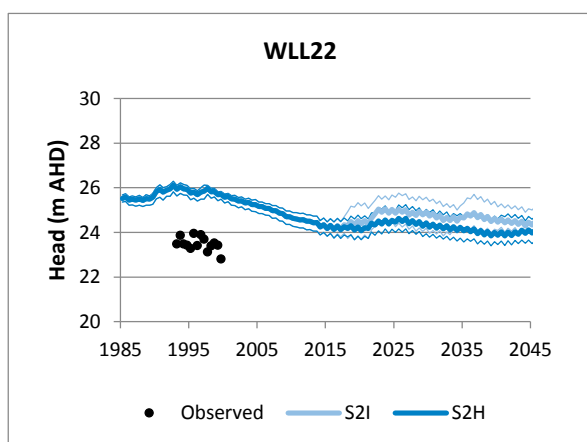
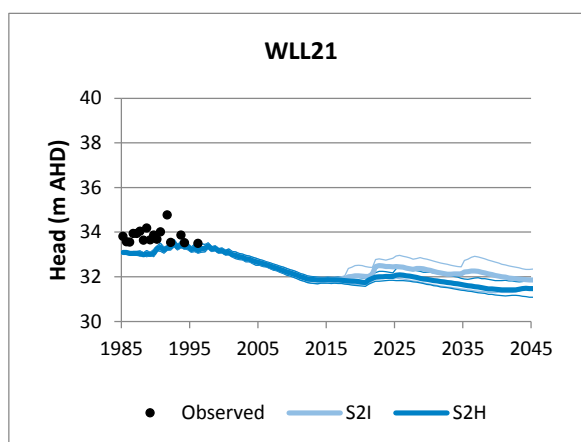
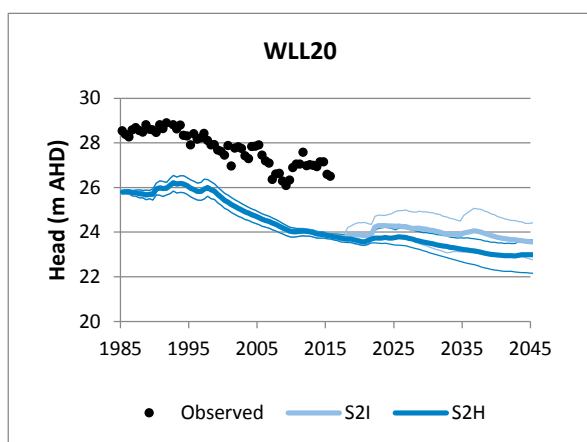
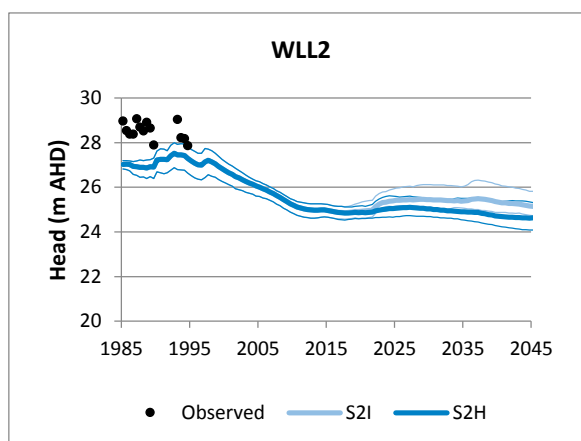
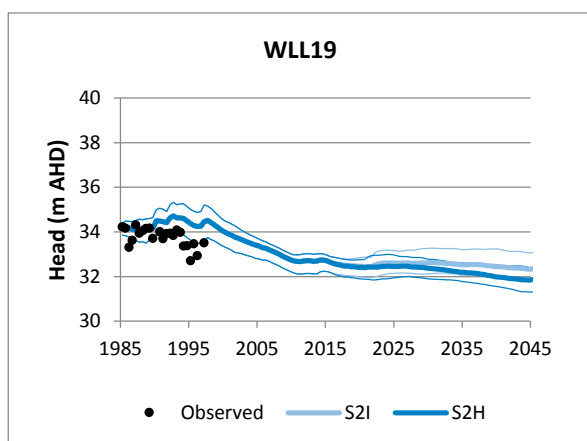
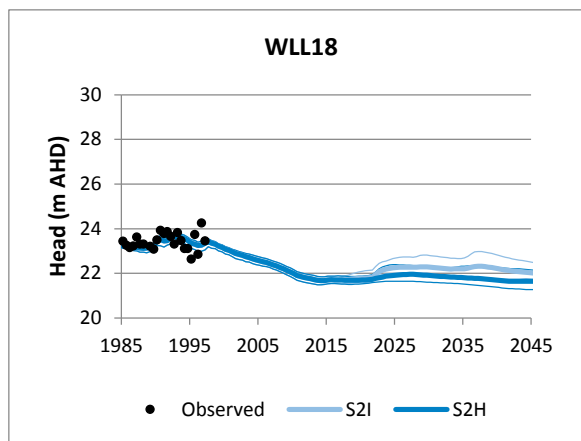
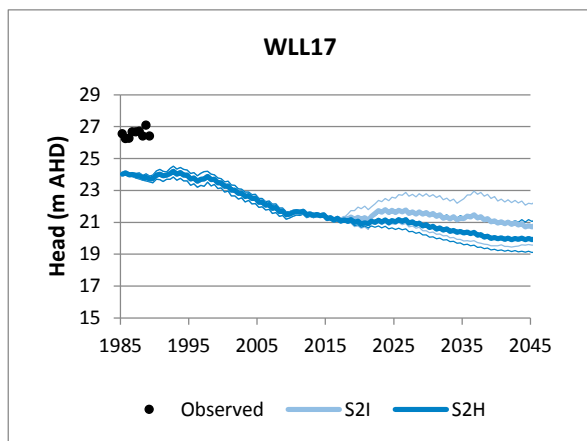


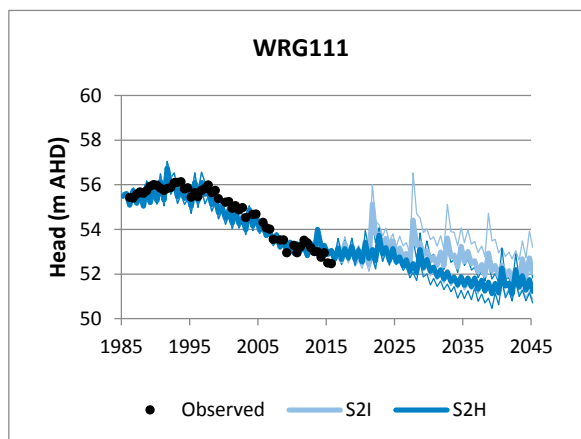
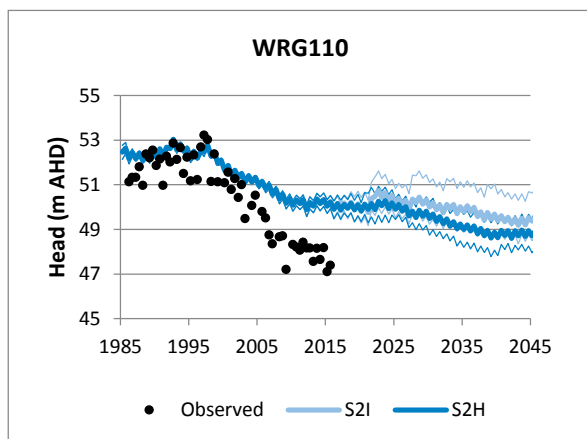
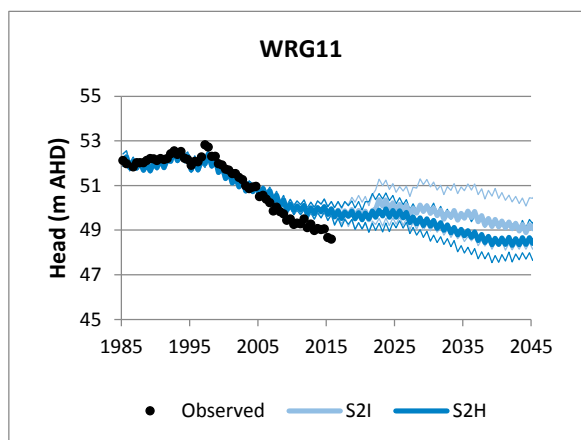
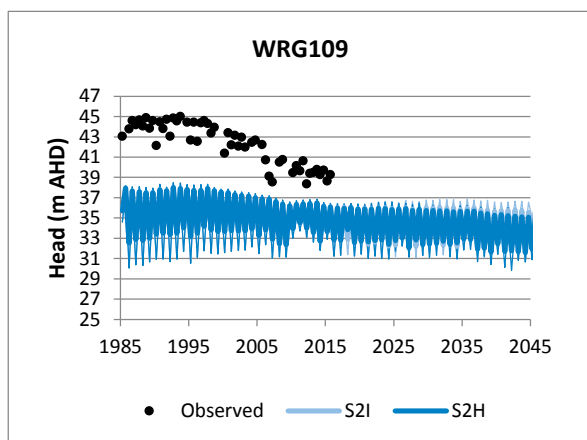
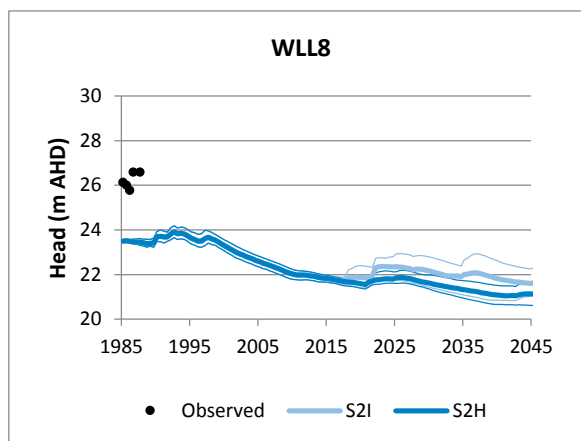
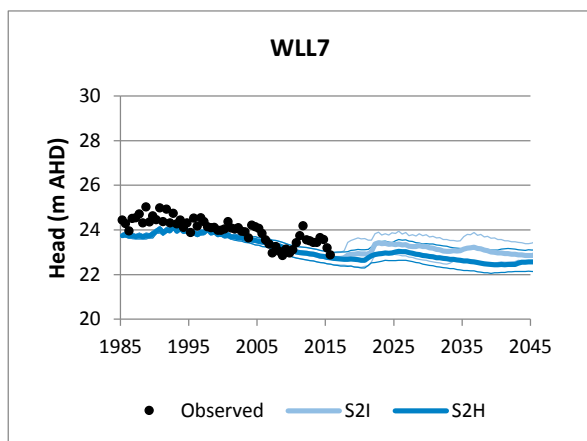
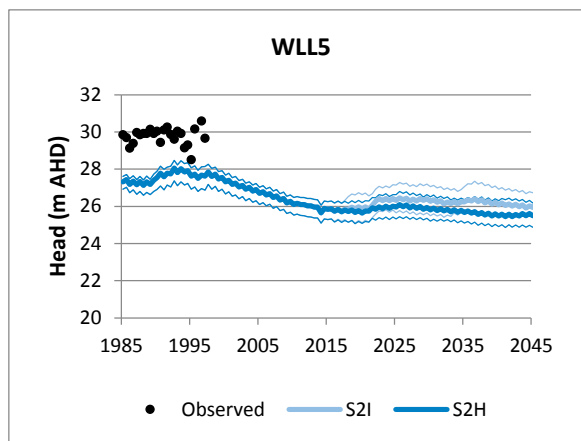
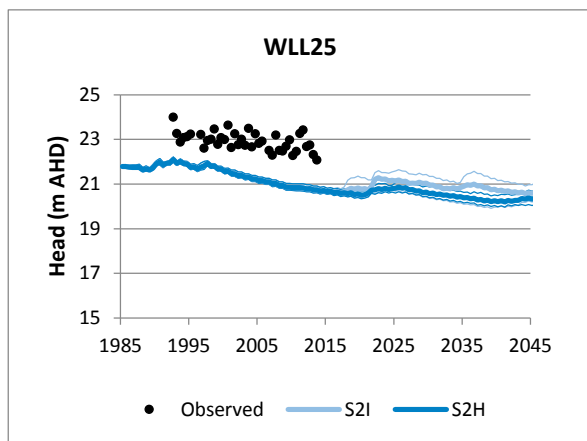


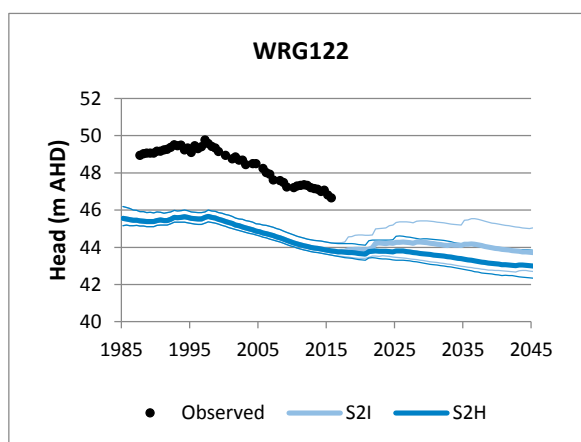
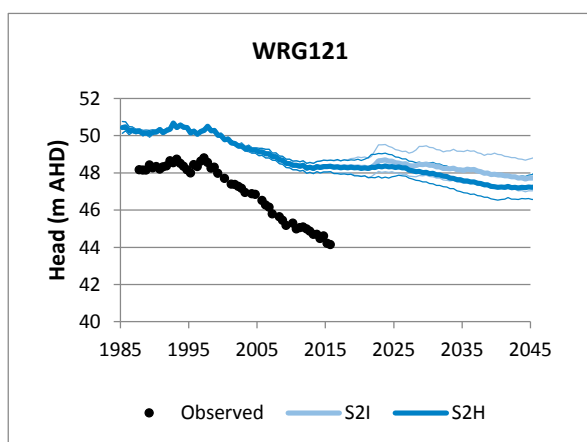
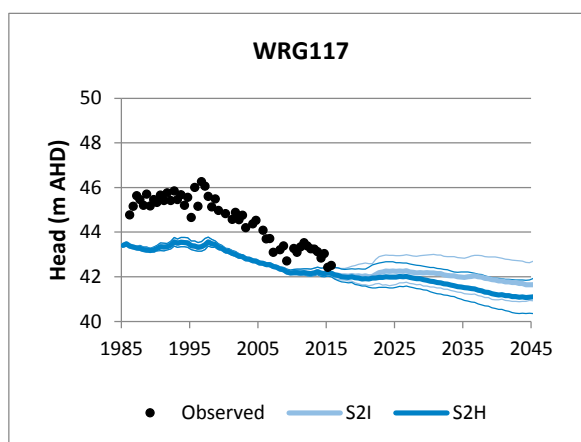
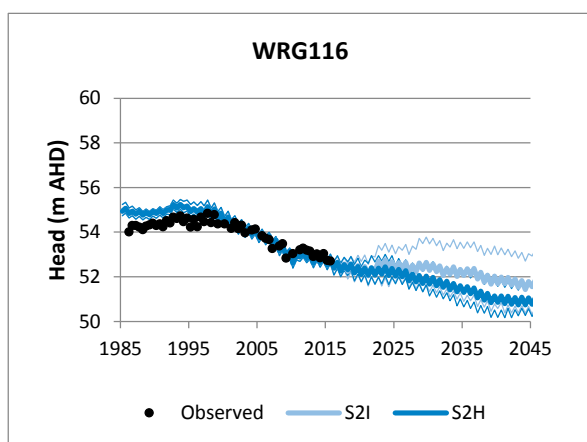
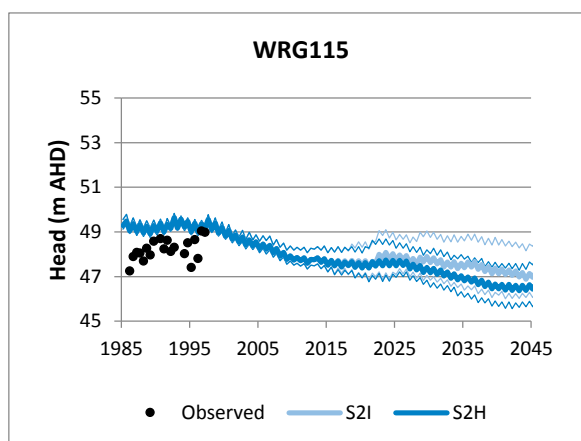
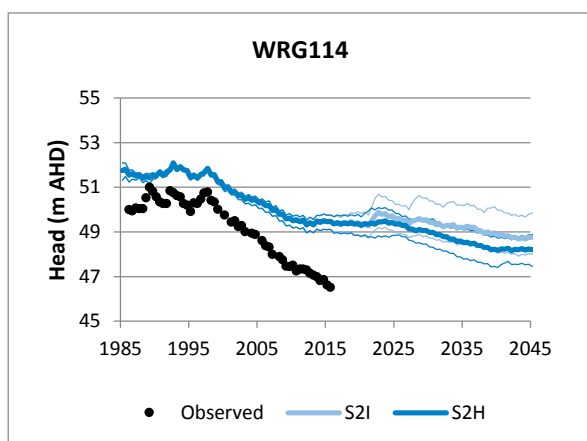
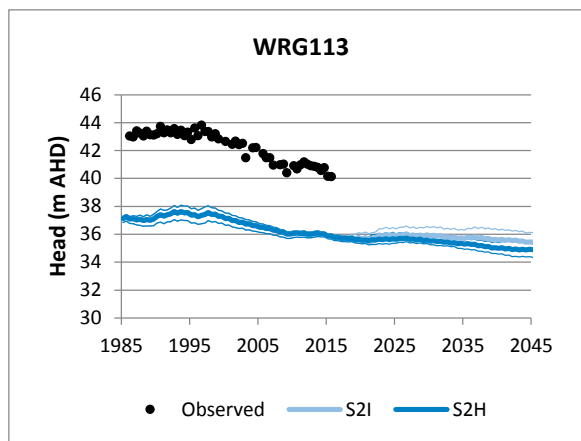
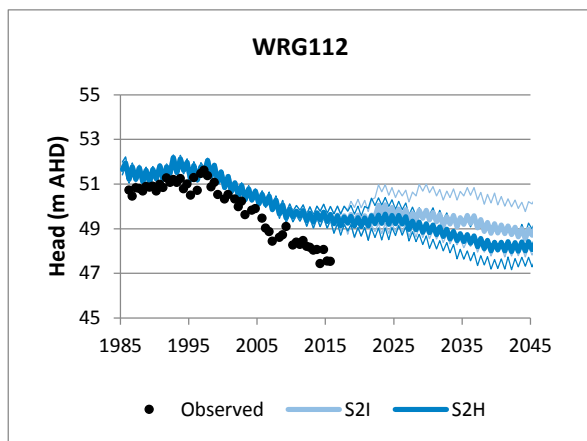


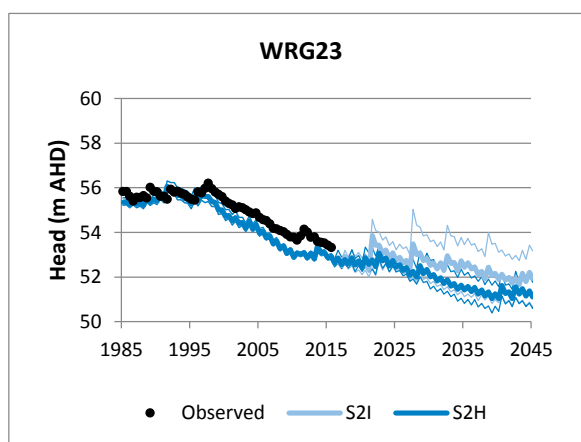
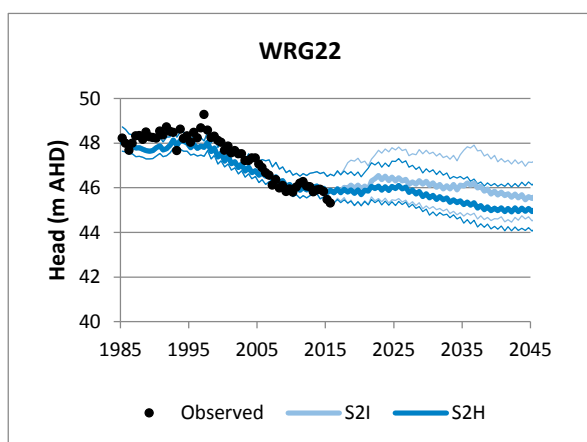
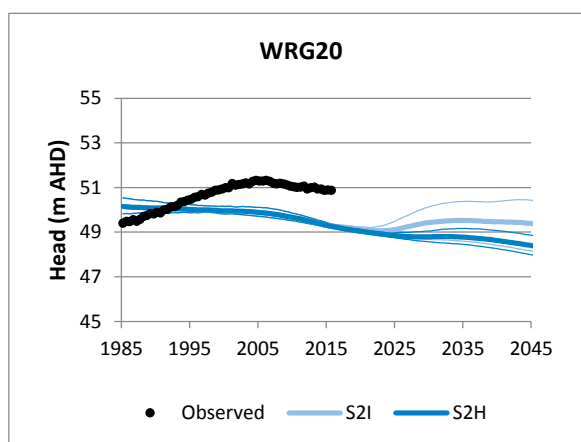
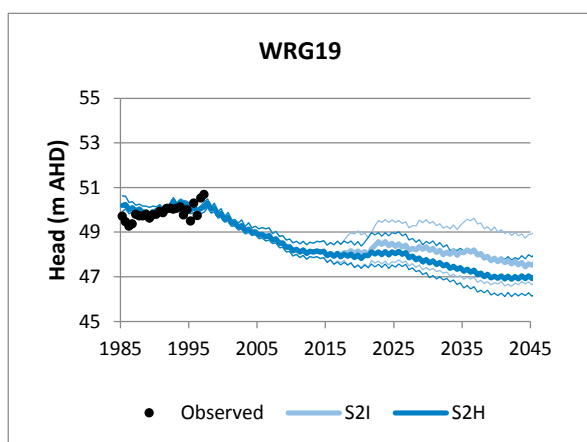
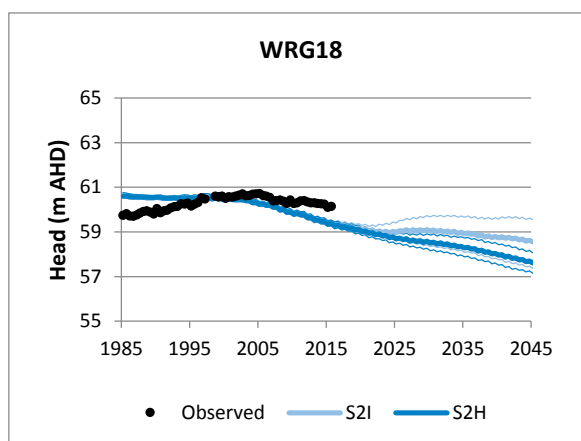
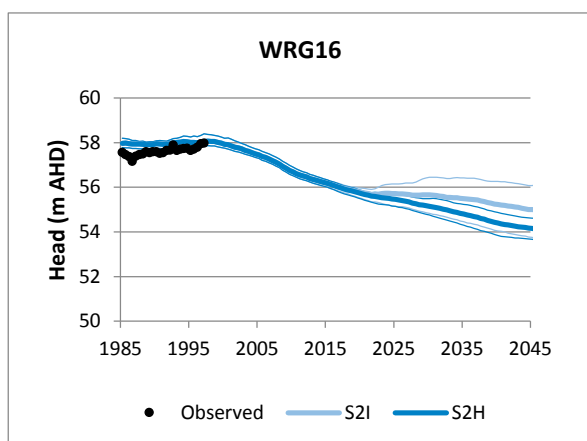
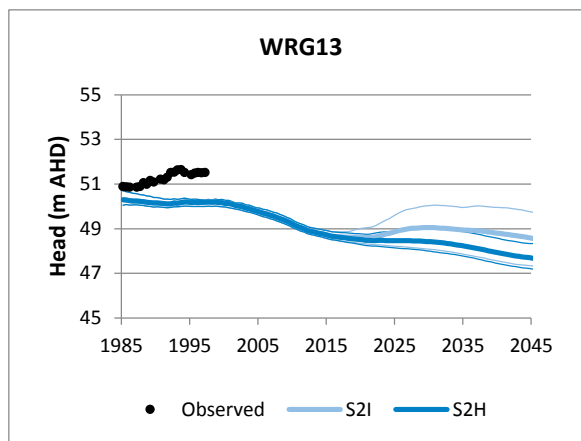
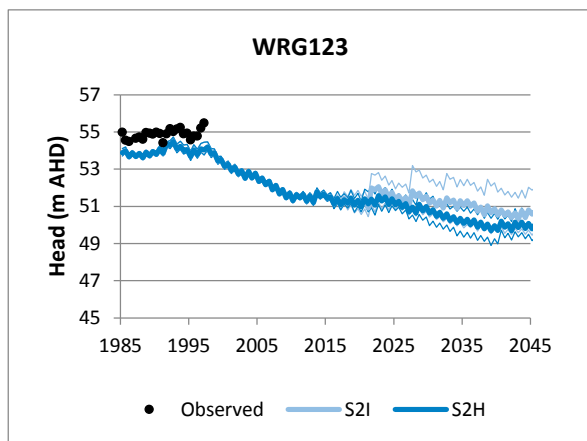


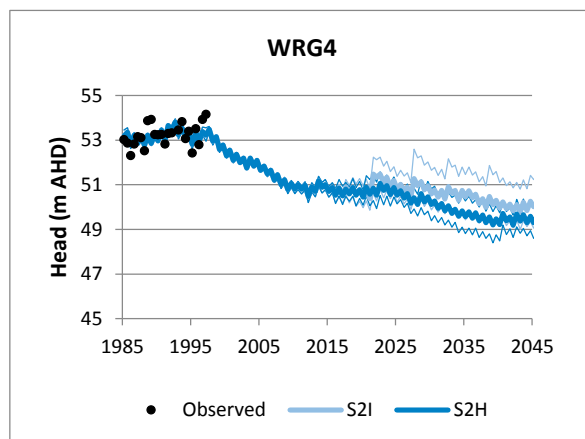
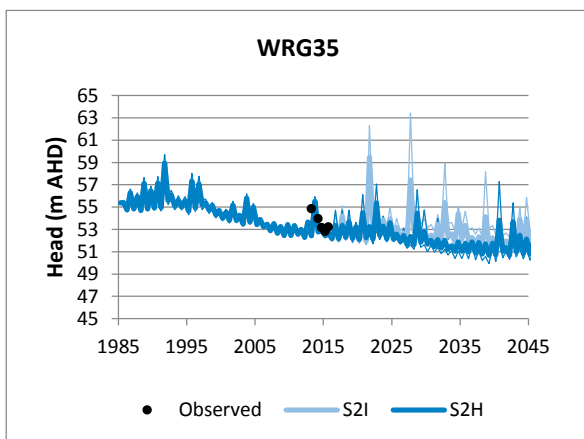
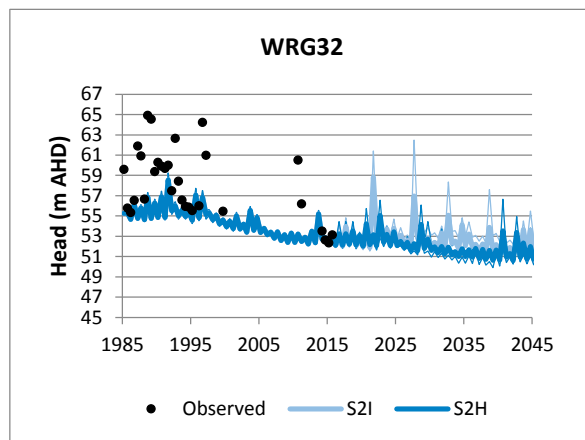
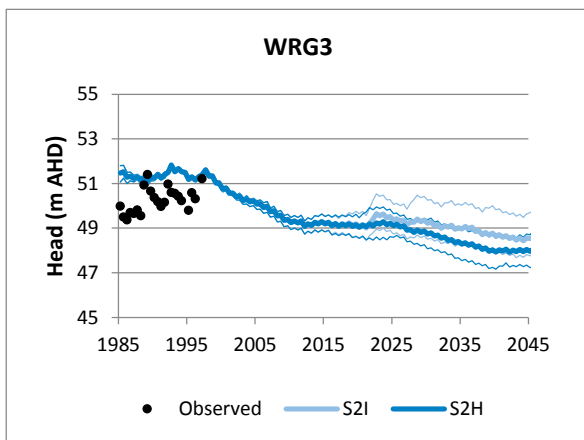
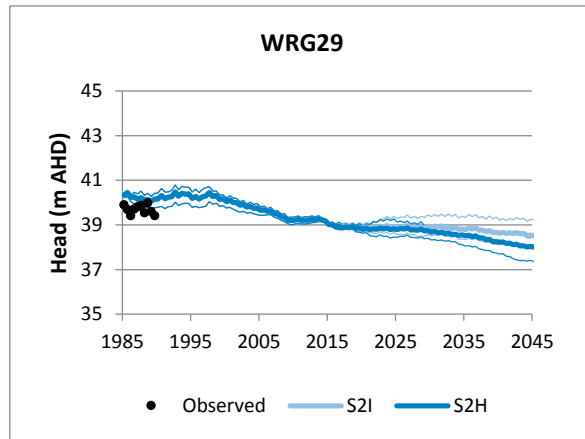
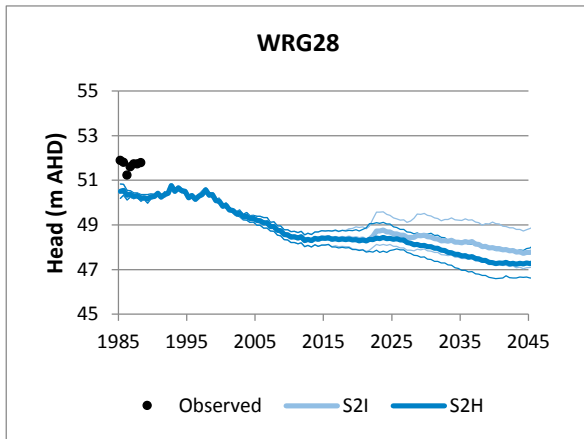
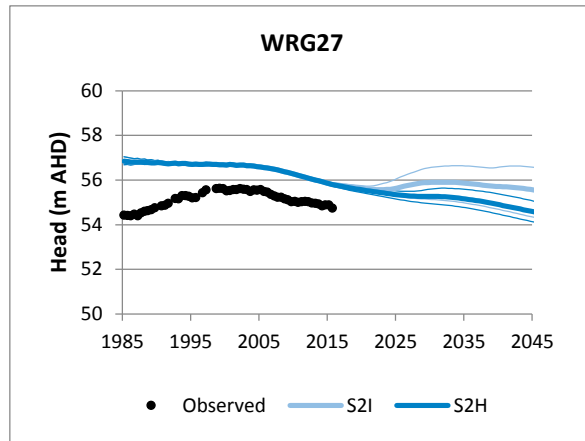
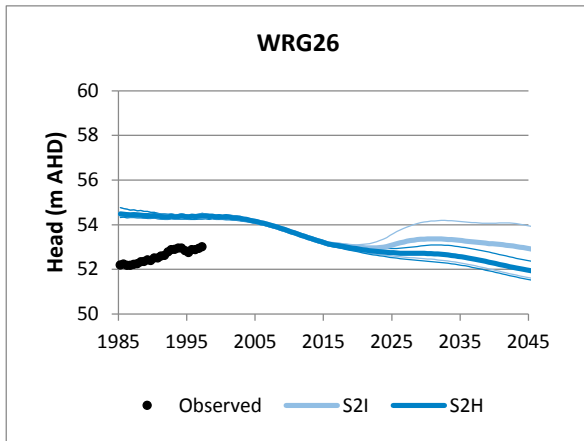


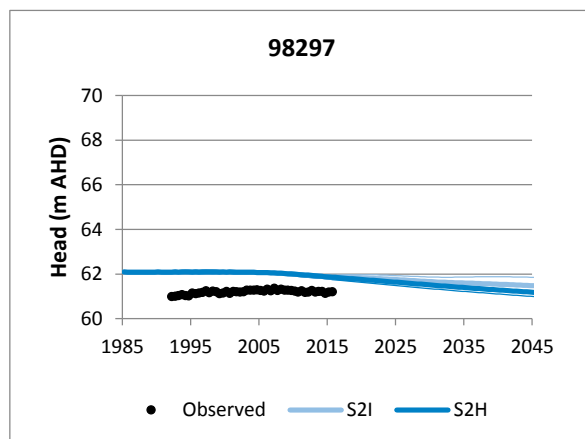
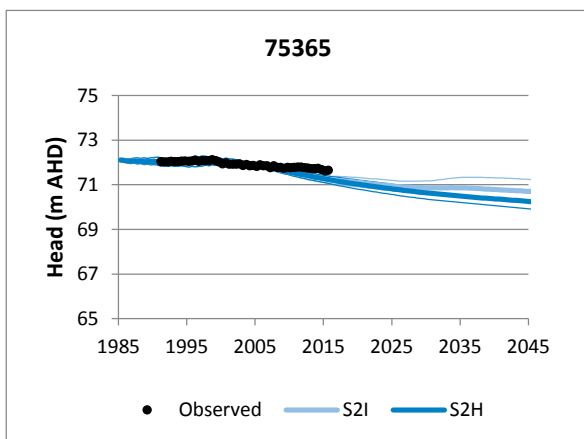
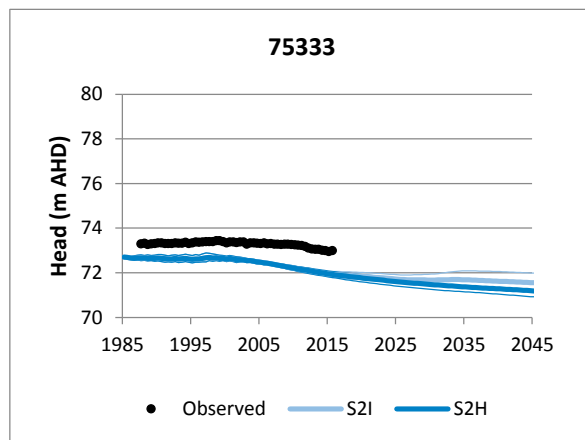
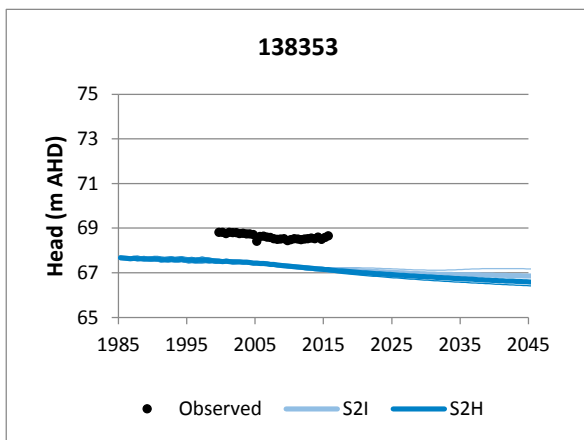
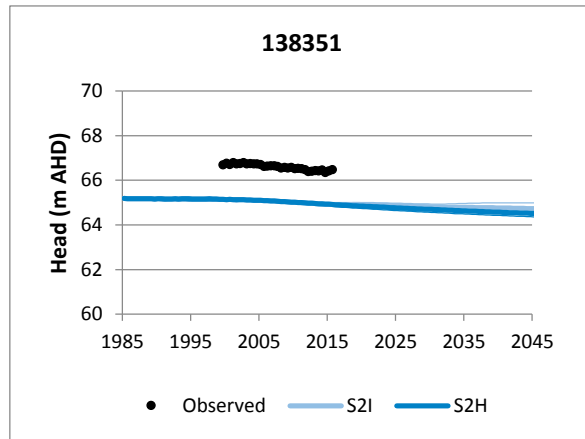
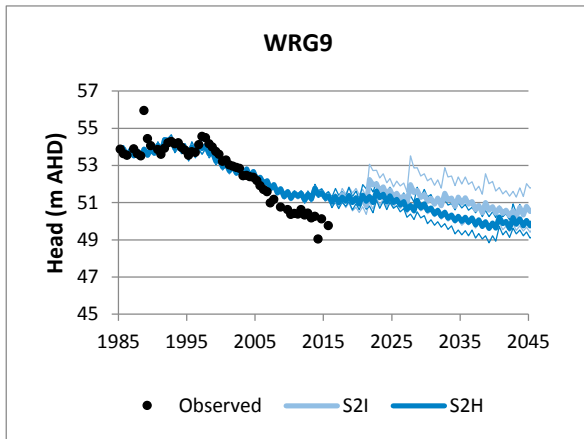
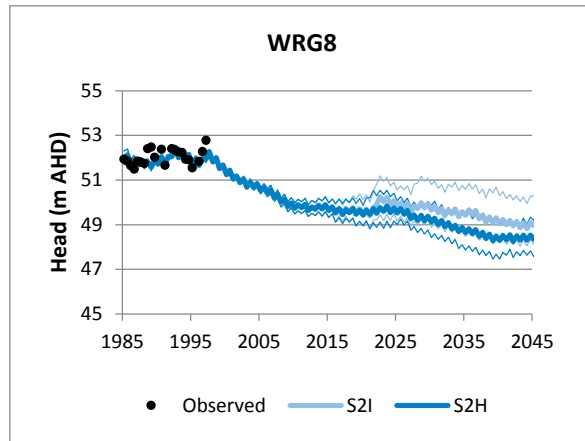
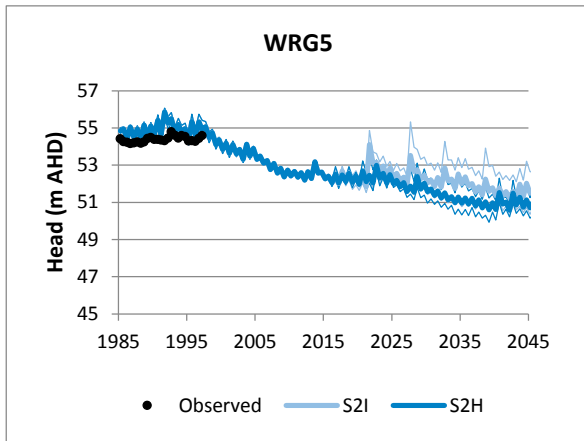






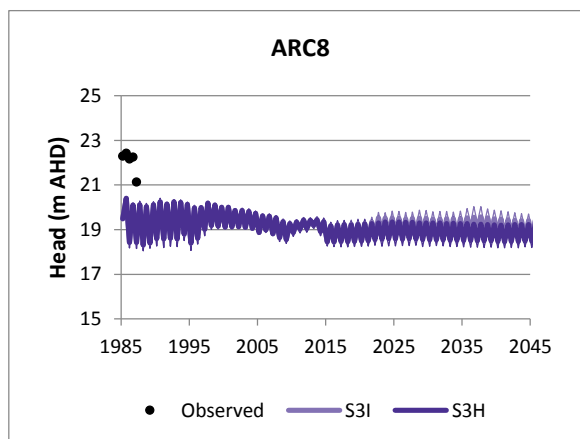
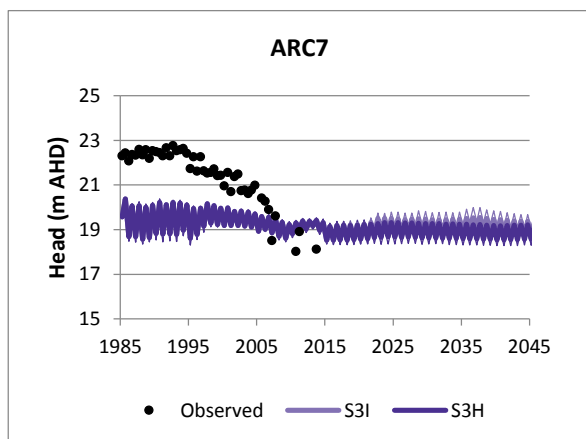
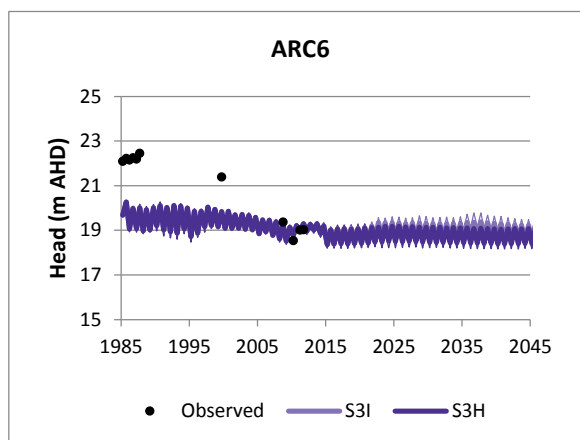
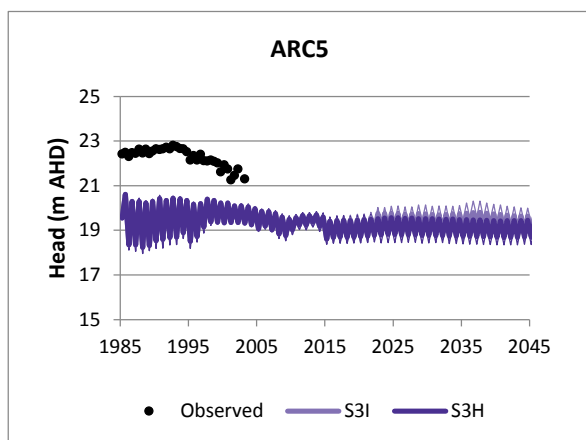
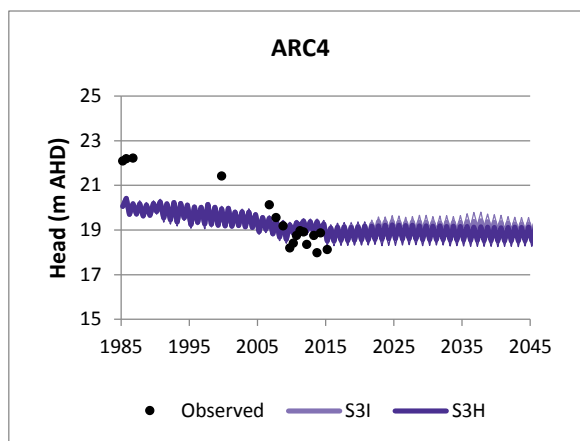
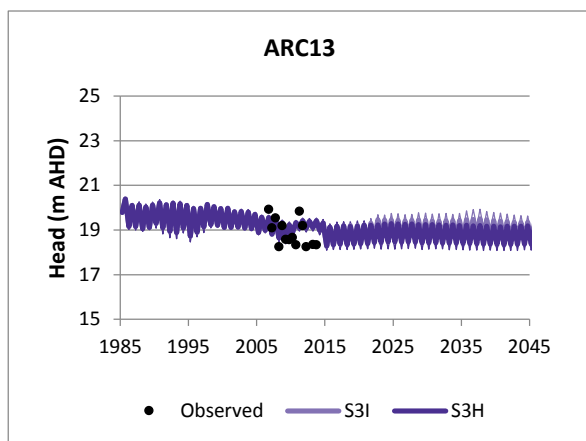
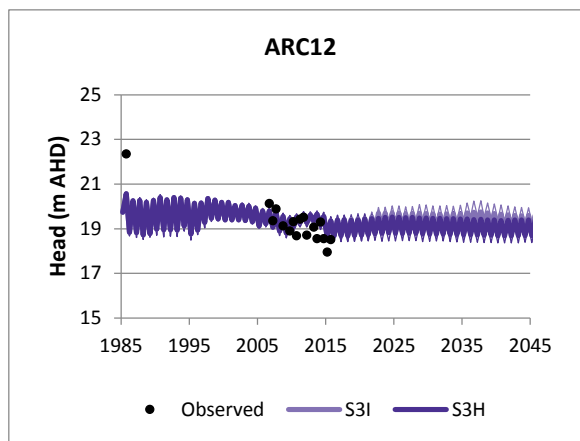
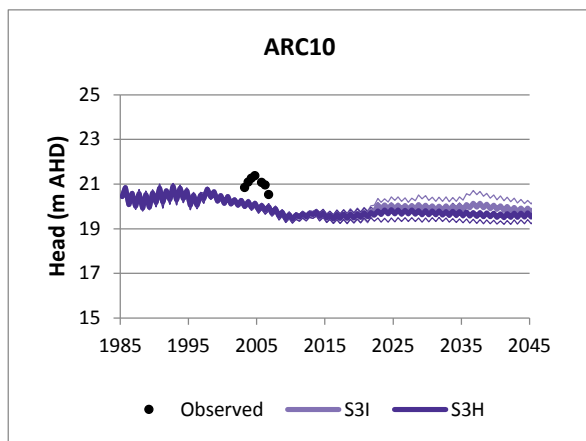


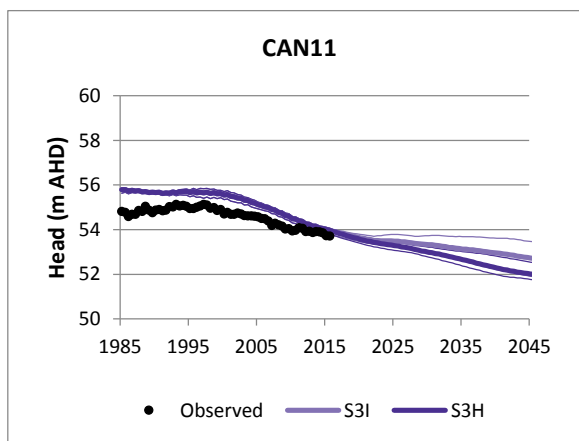
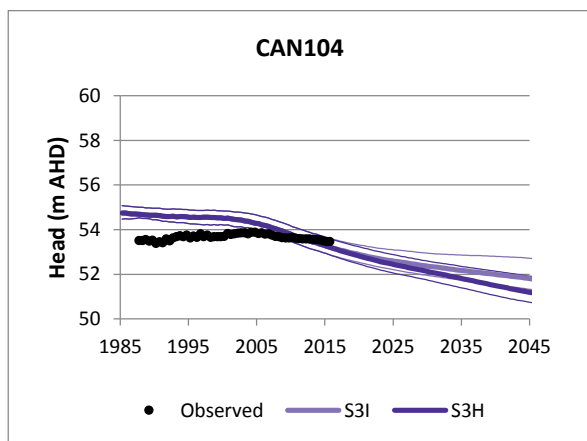
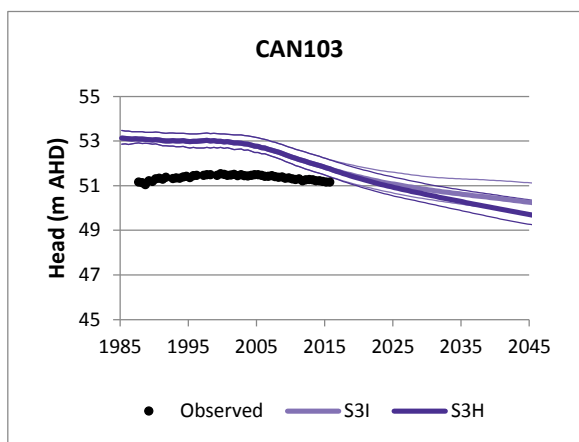
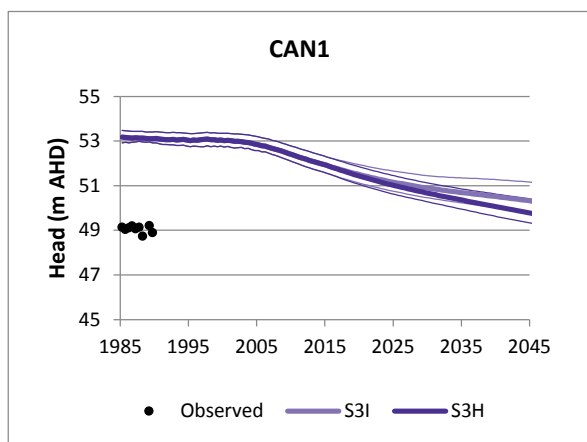
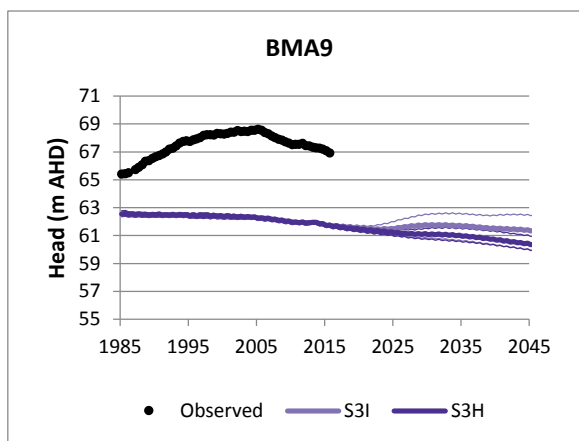
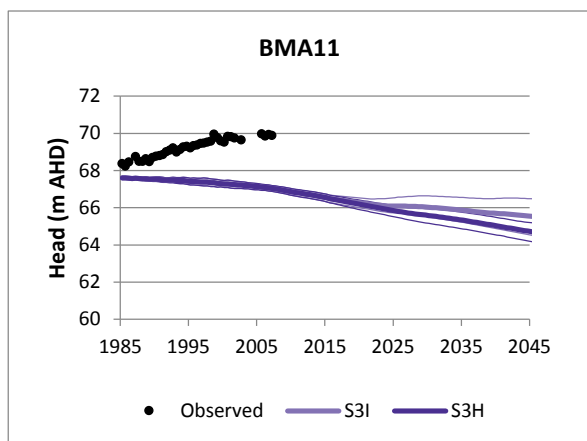
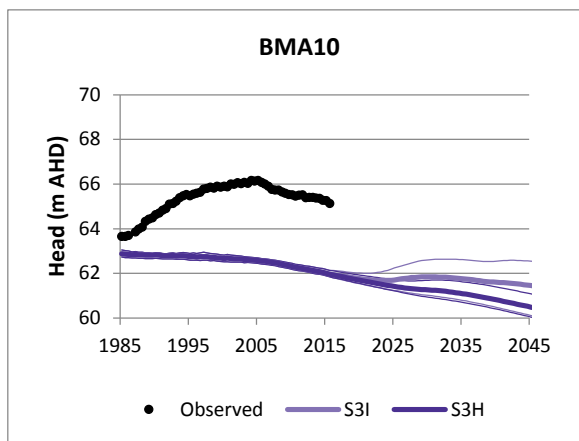
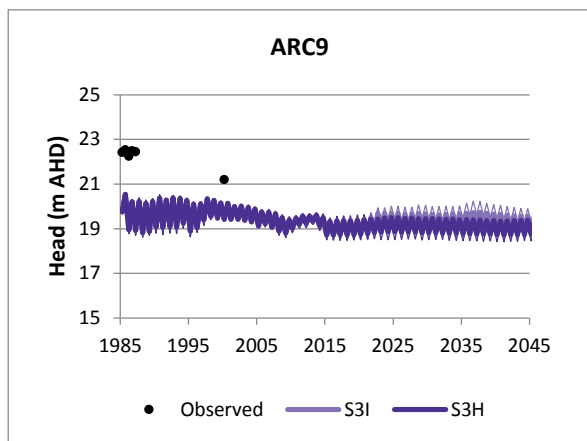


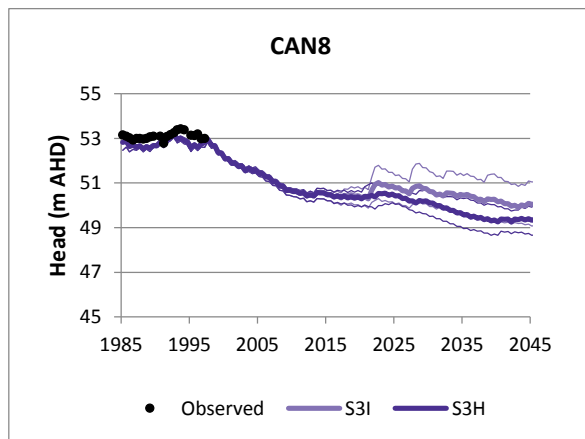
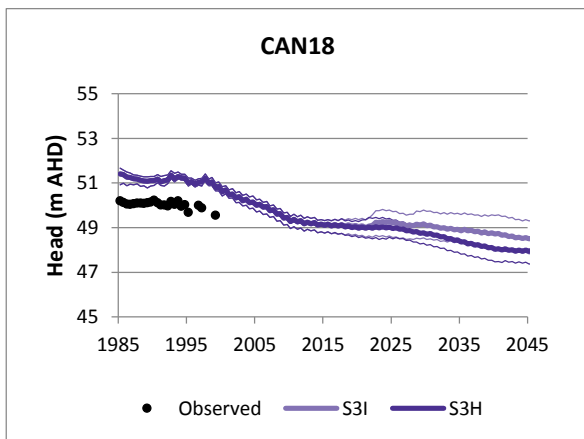
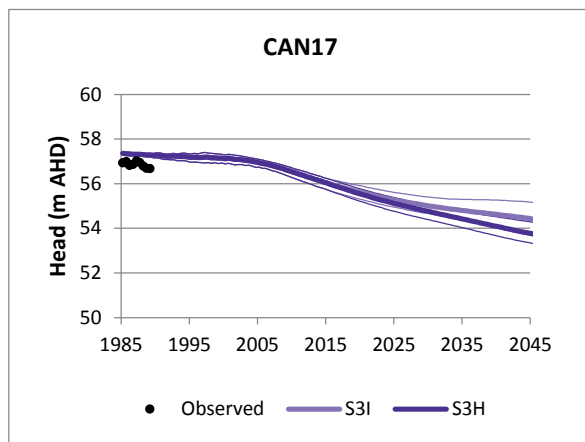
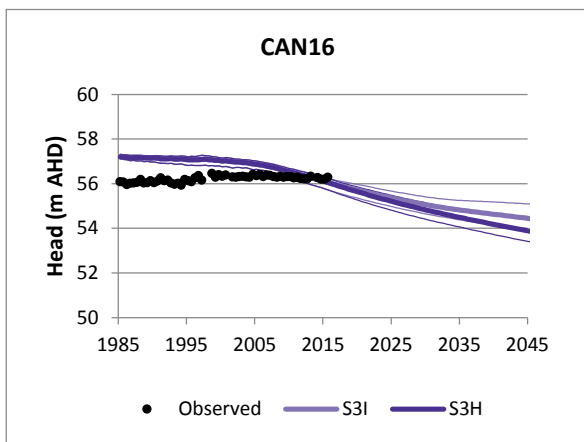
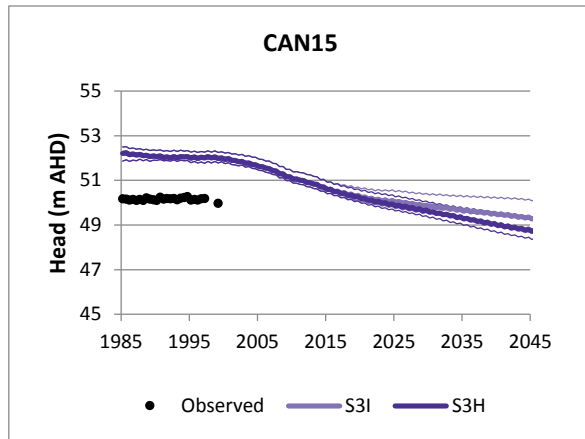
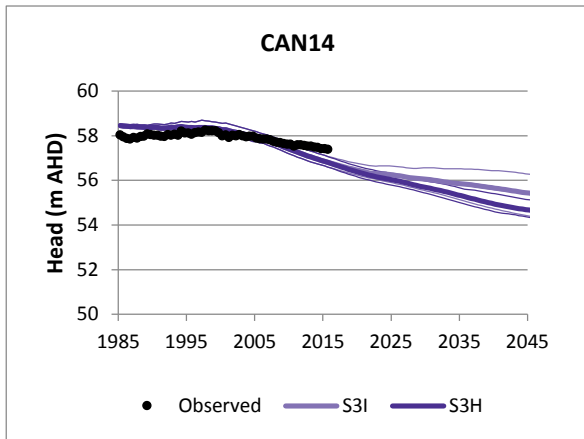
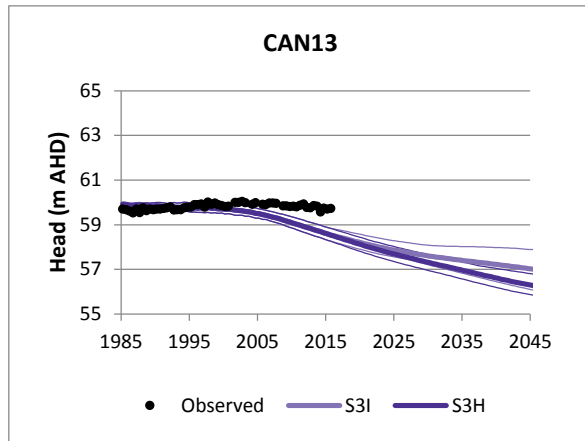
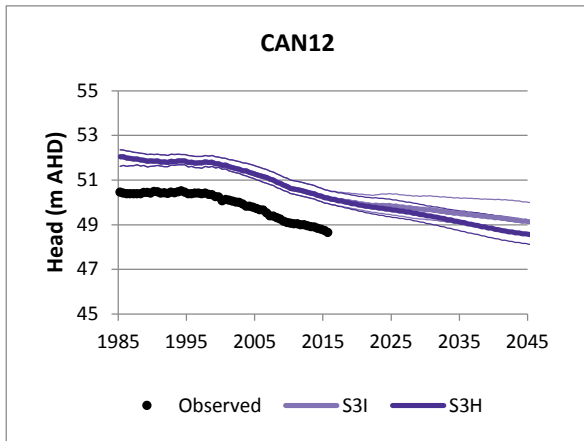


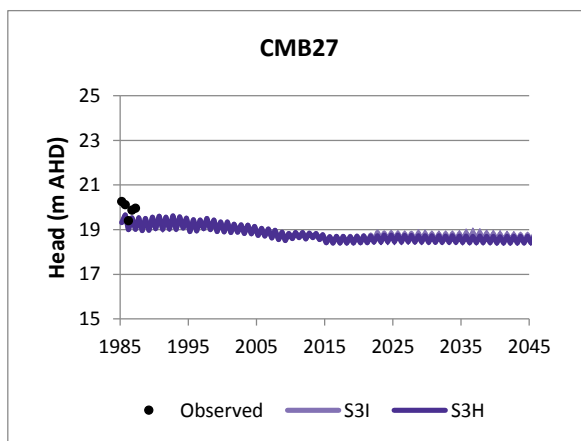
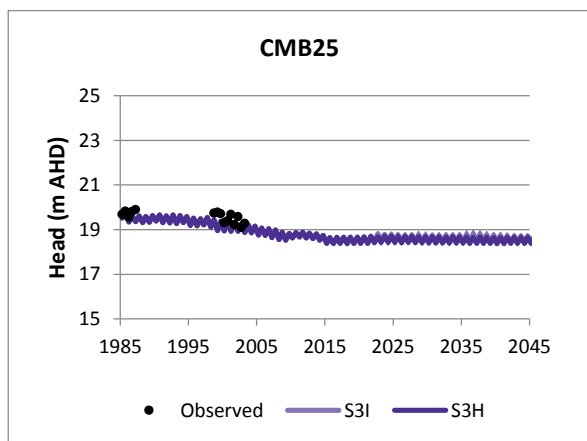
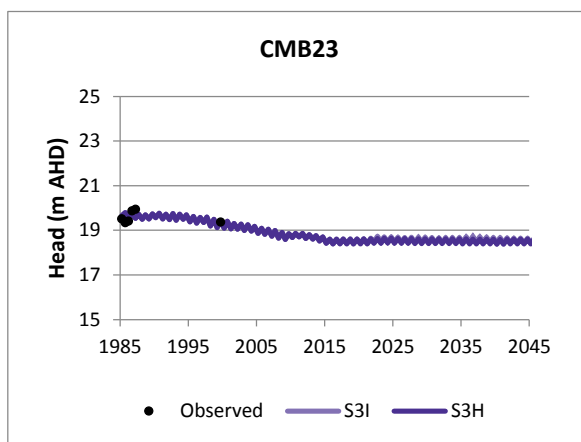
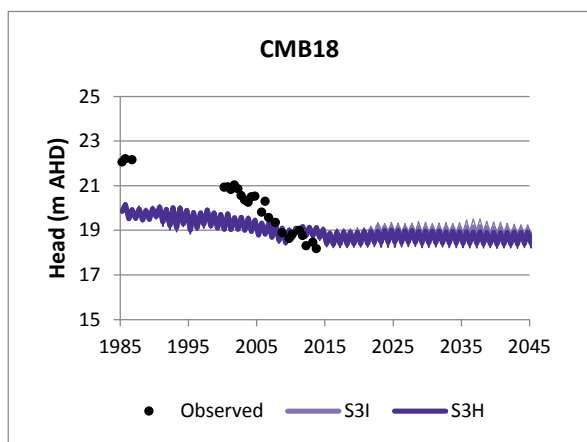
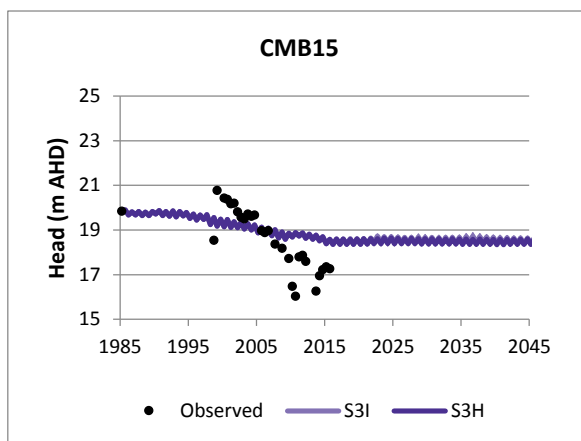
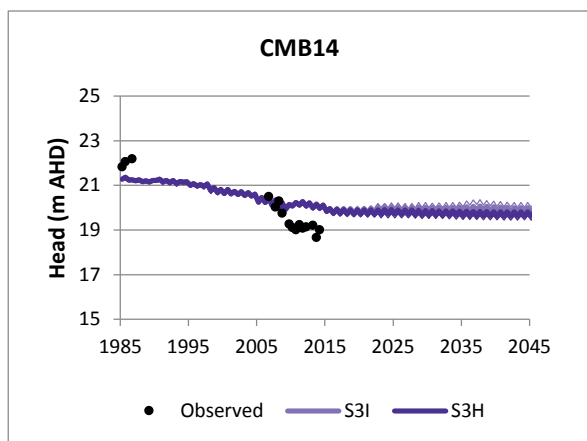
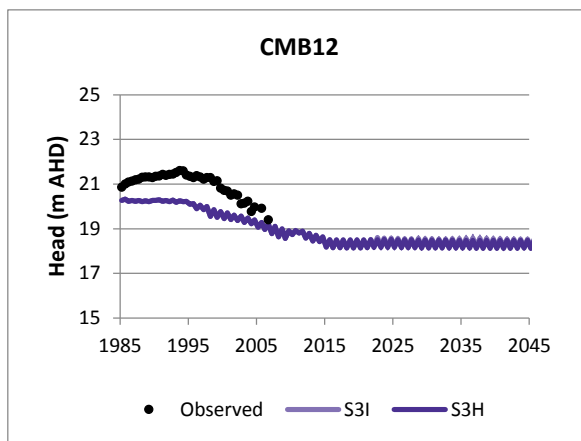
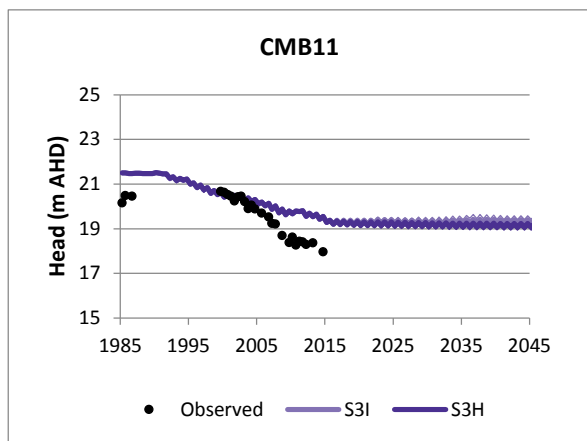
F. Hydrograph projections for current extraction with both intermediate and high carbon emission climates (S3I and S3H)

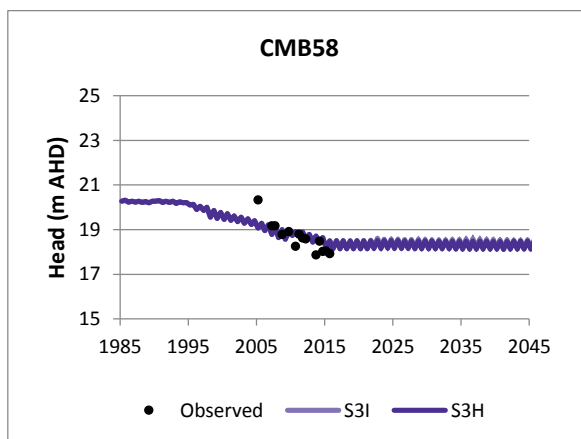
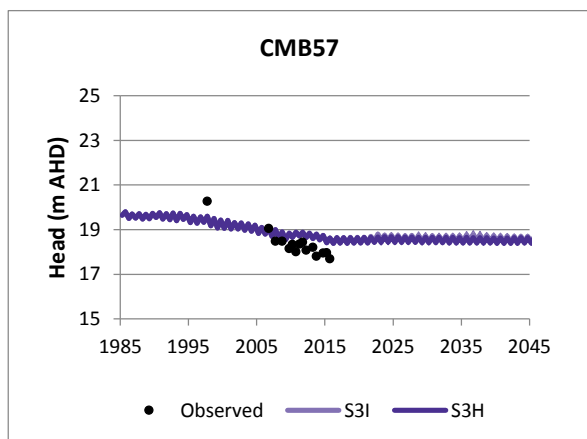
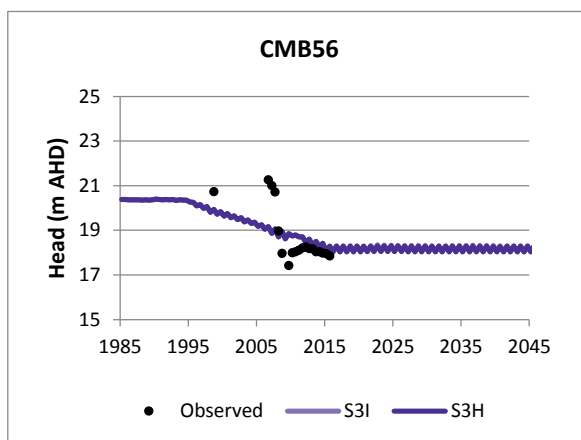
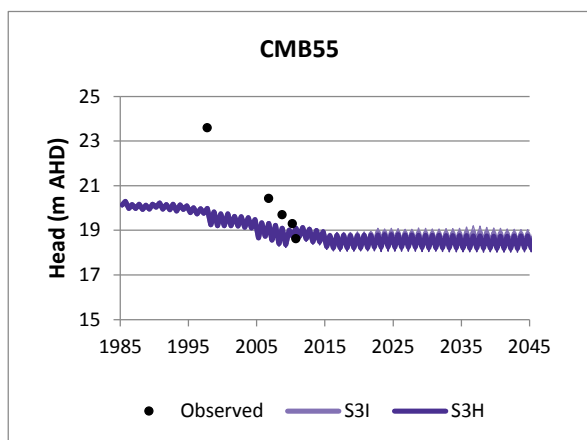
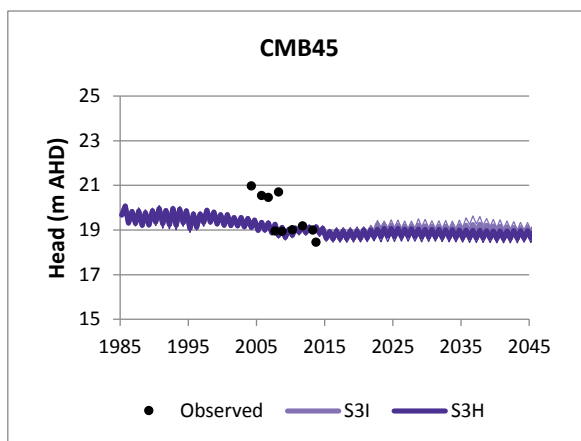
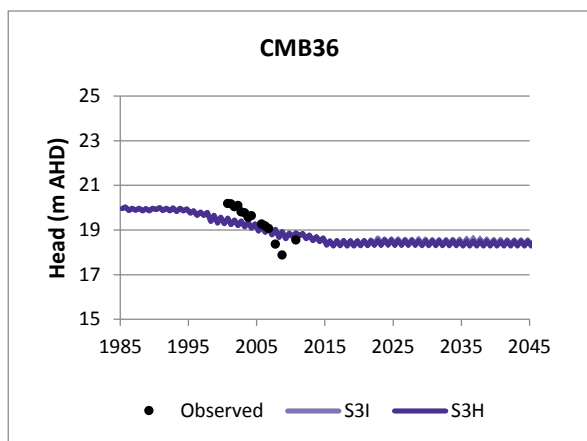
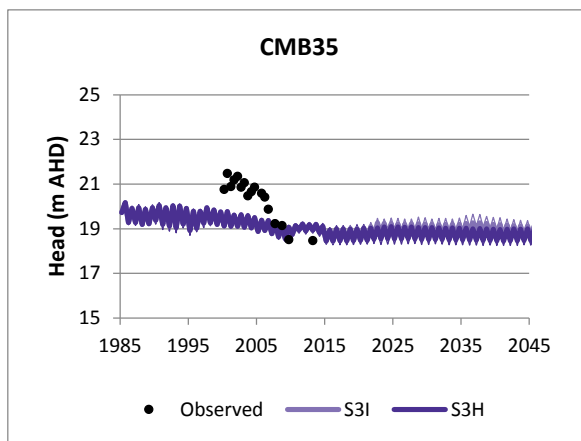
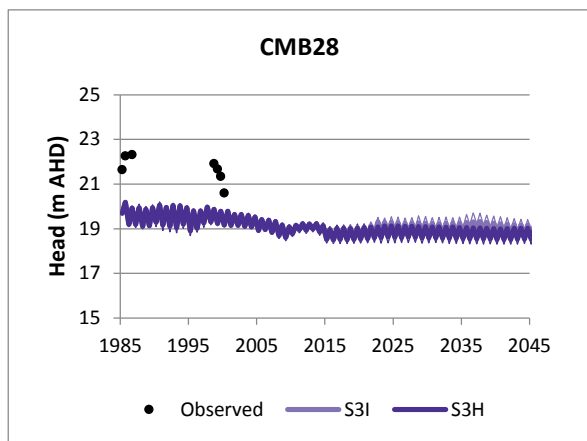
The following section shows the average (thick line), maximum and minimum (thin lines) projected groundwater levels for the current extraction scenario with both intermediate and high carbon emission climate projections.

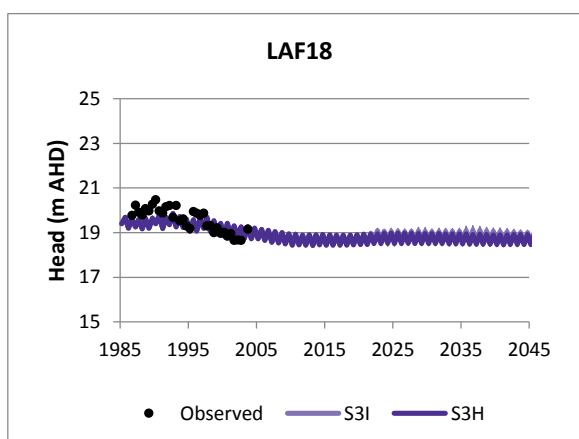
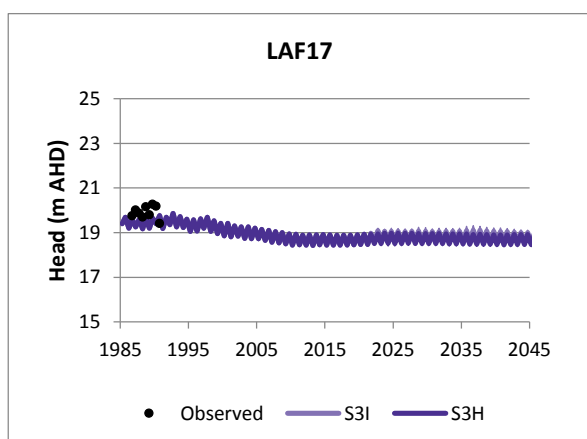
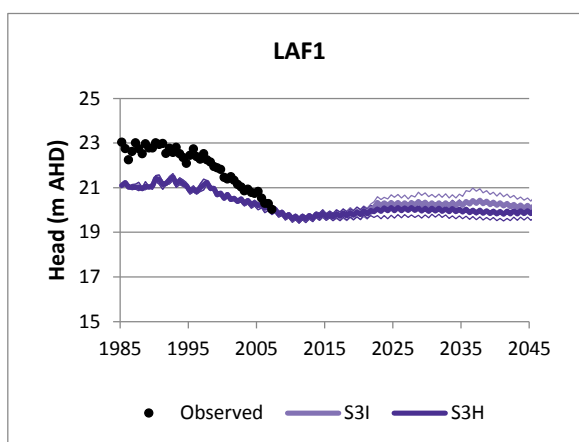
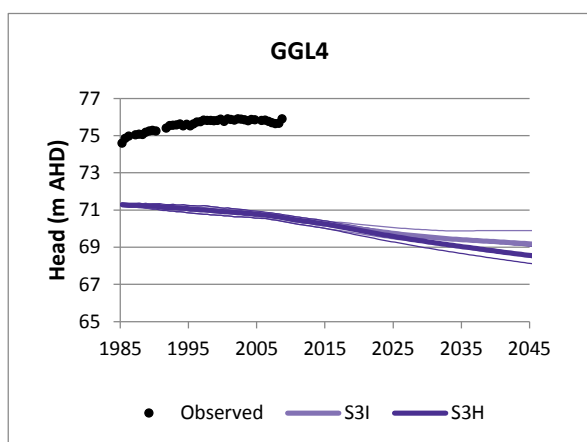
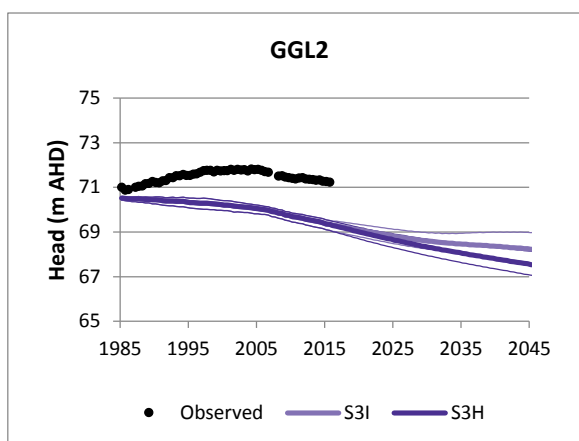
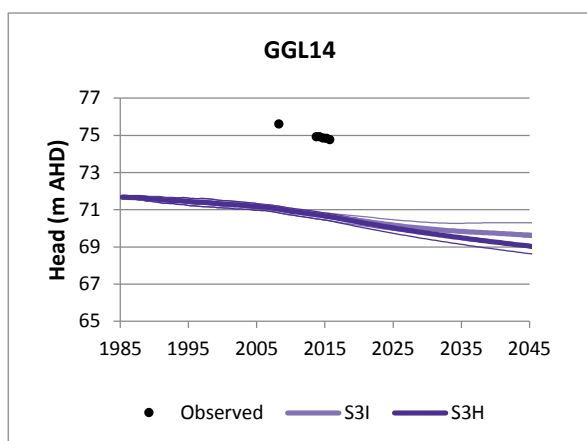
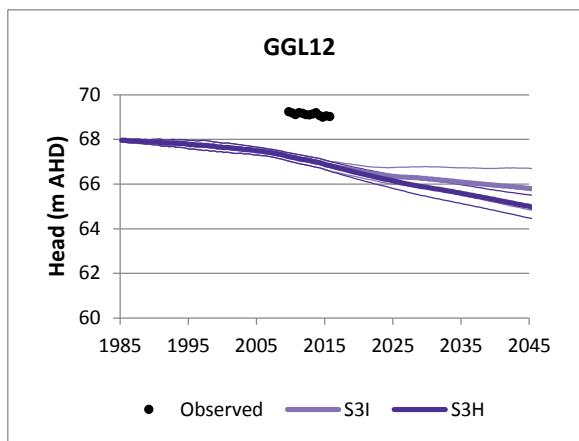
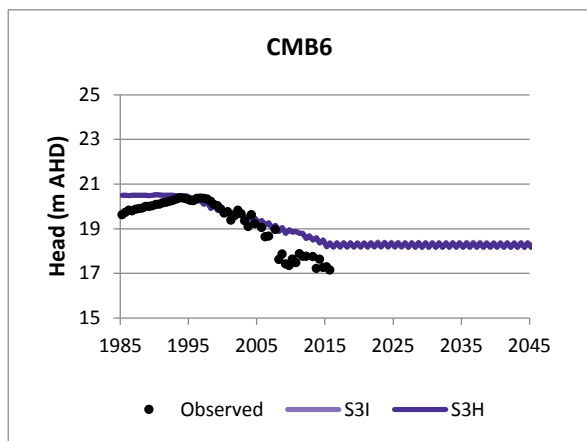


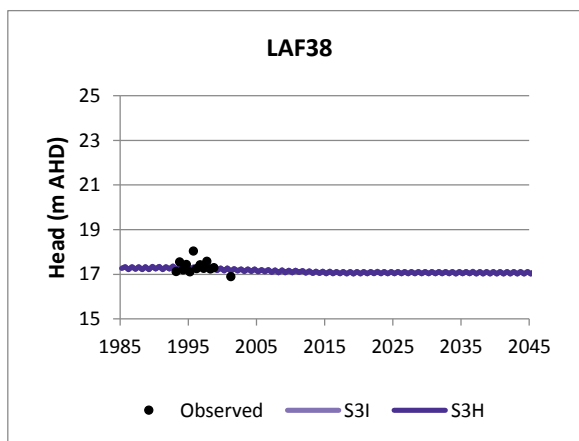
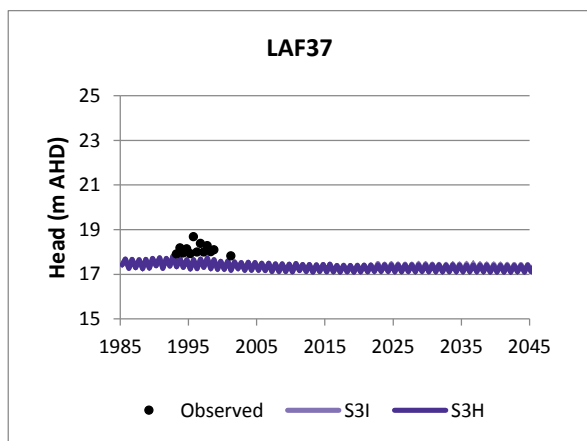
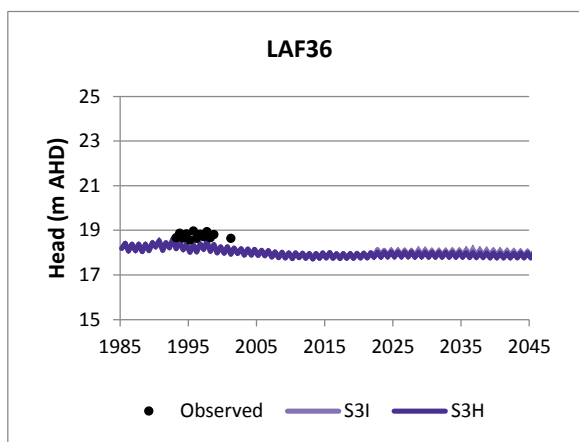
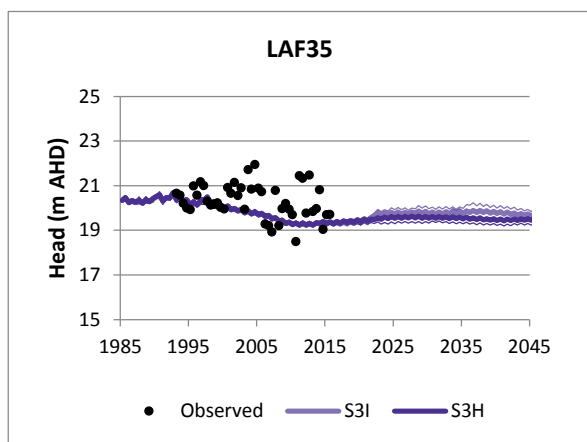
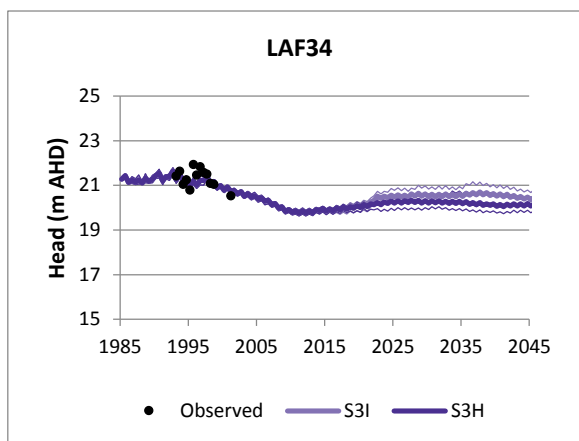
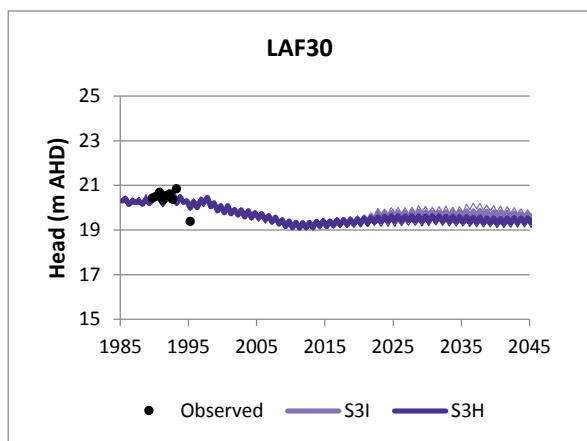
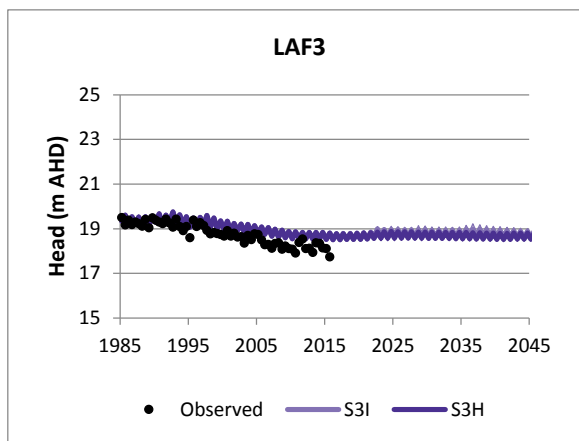
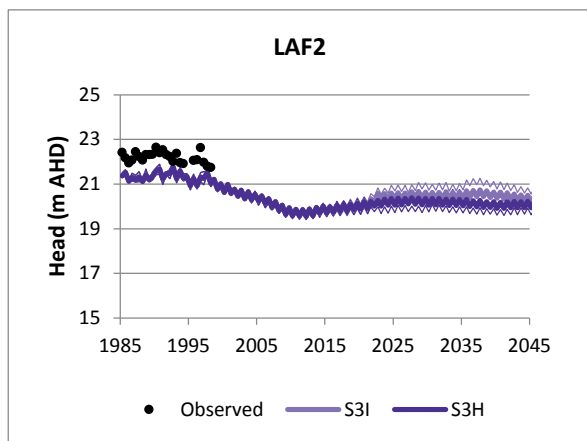


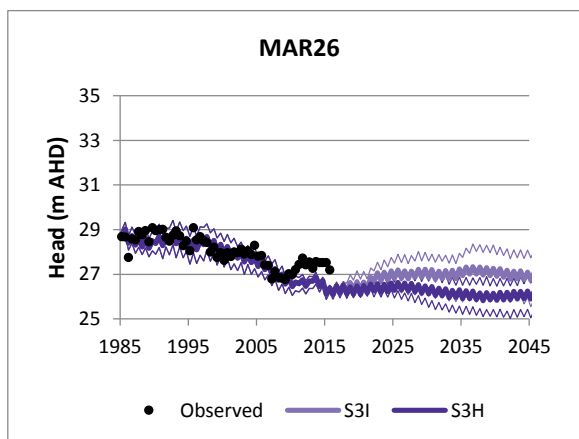
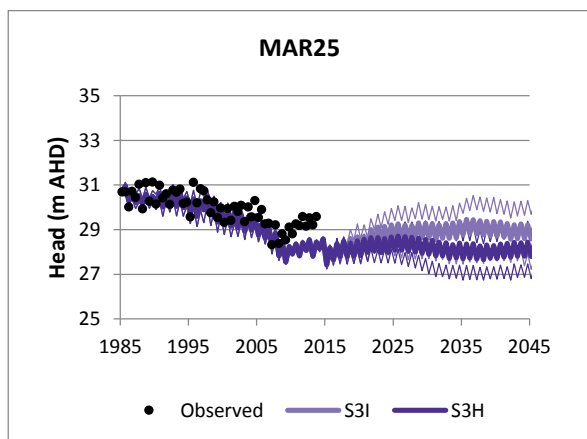
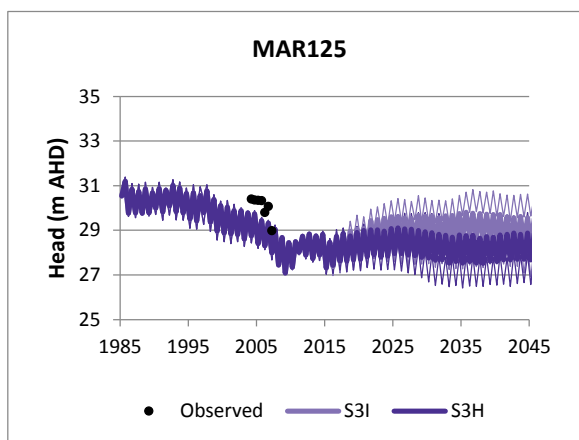
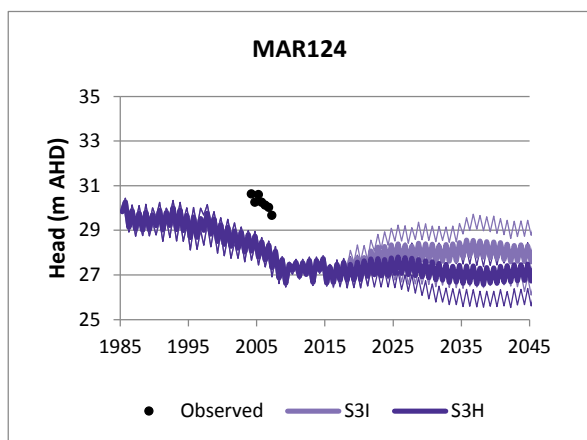
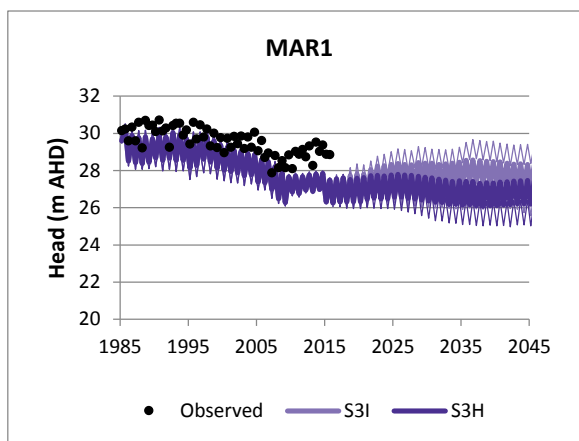
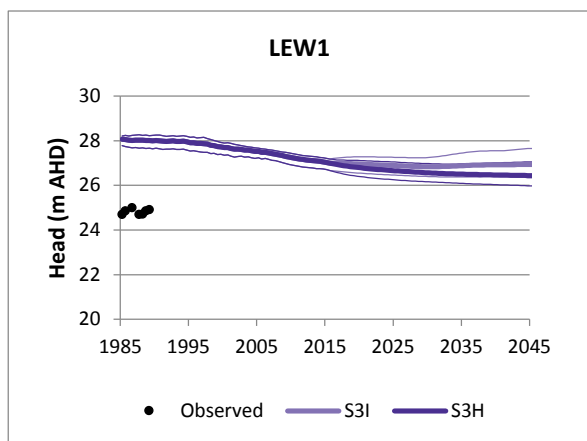
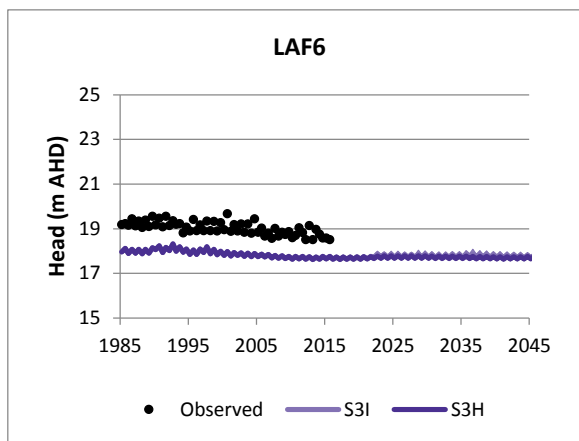
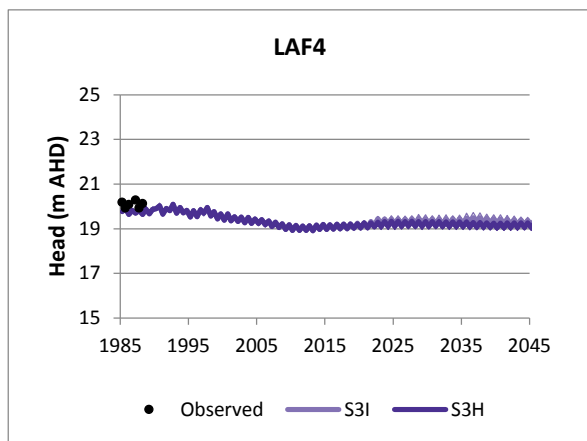


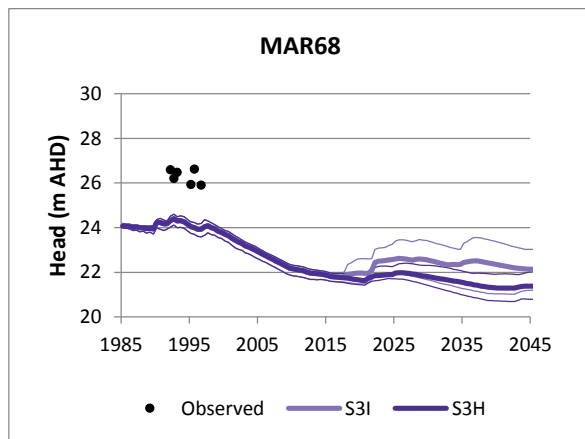
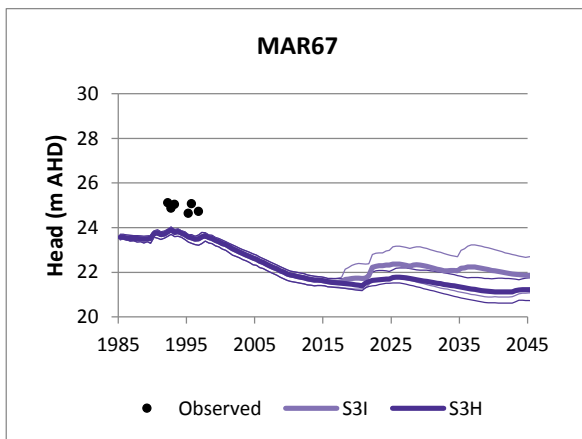
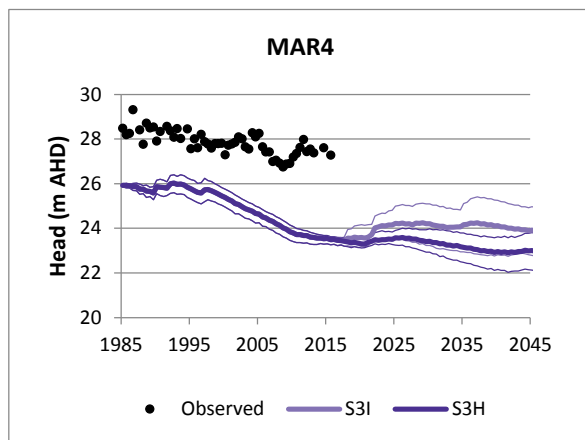
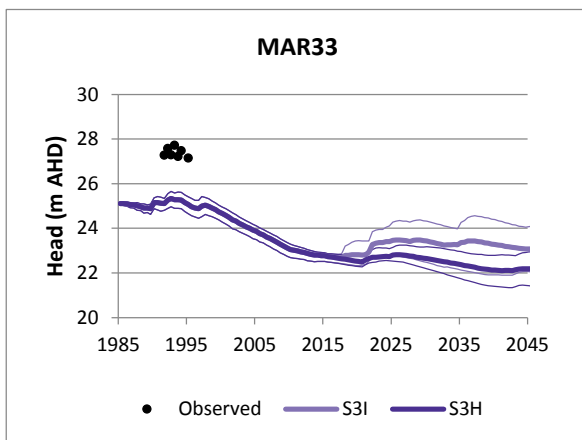
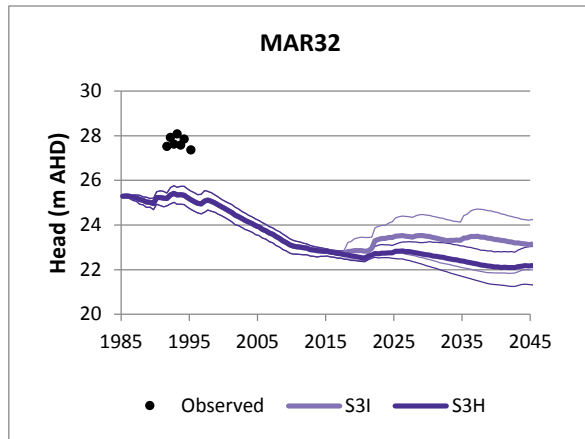
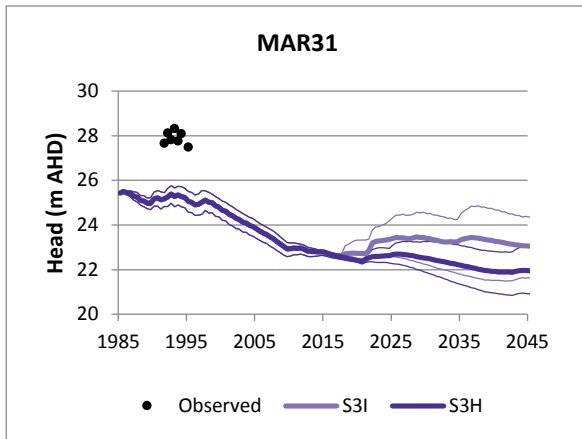
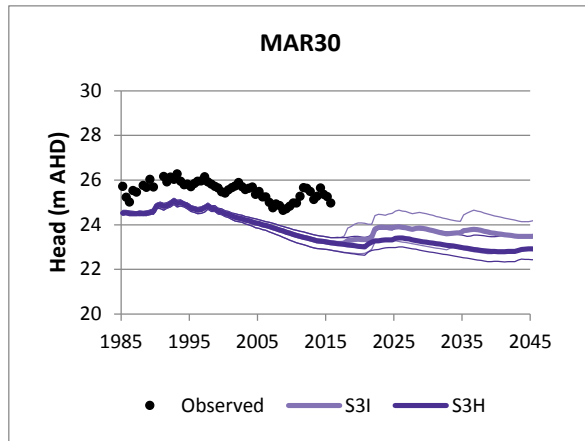
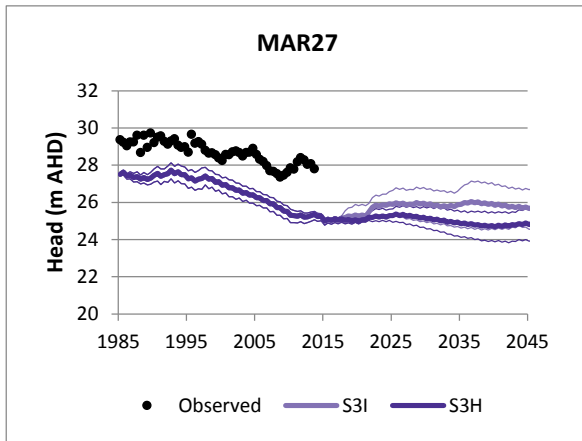


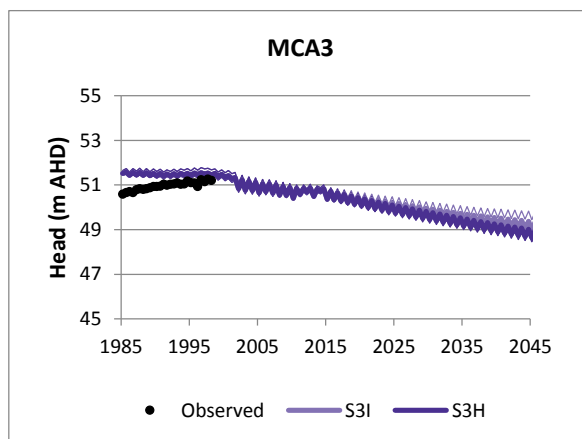
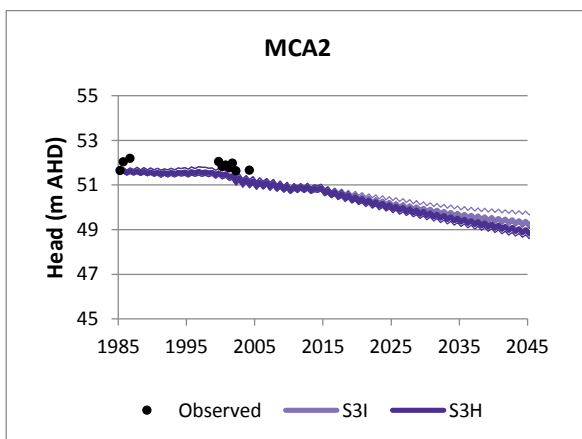
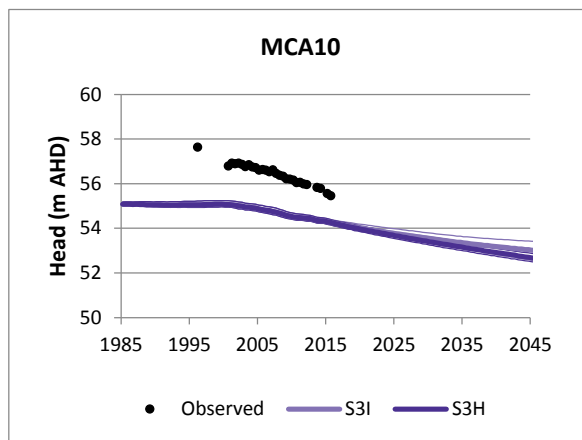
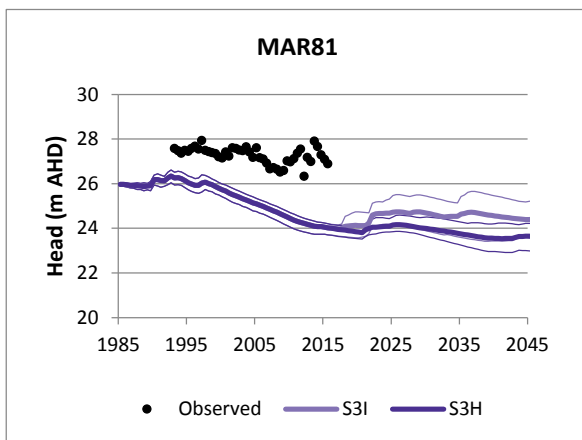
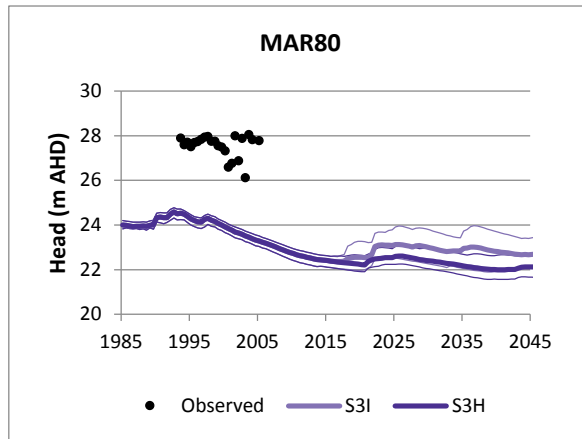
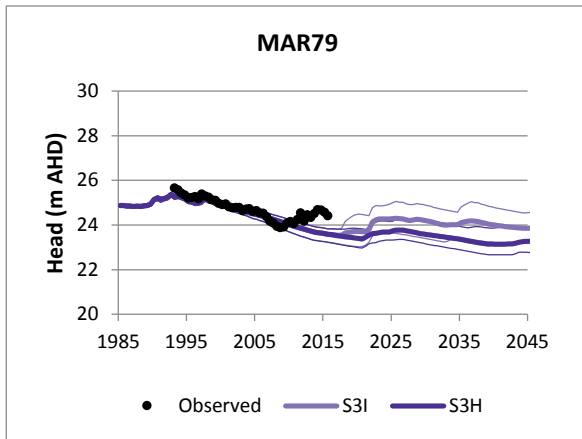
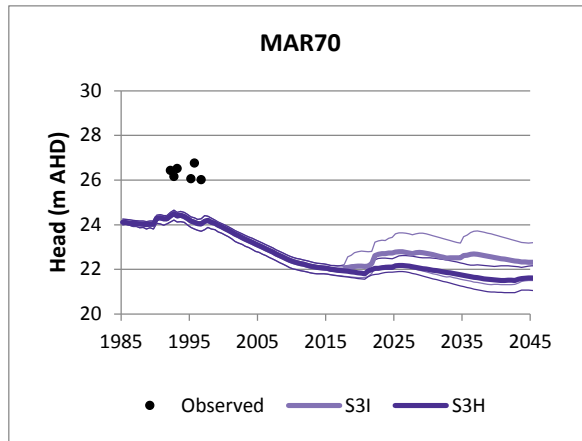
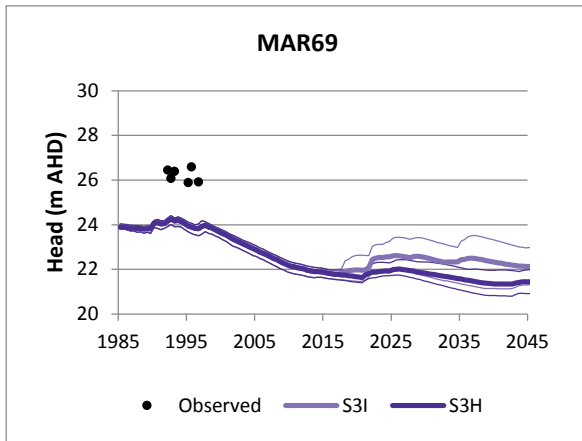


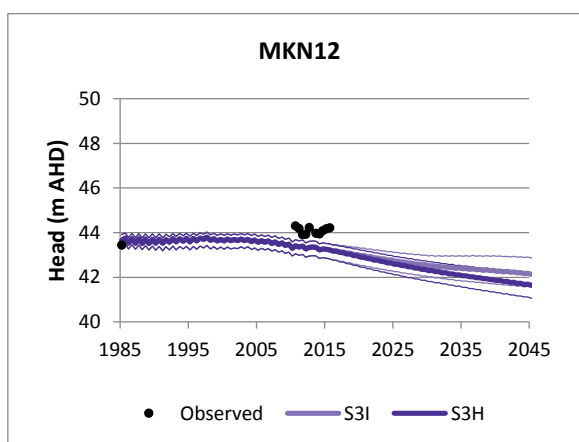
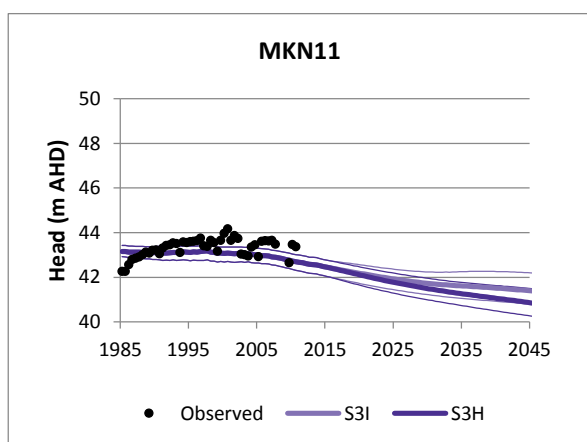
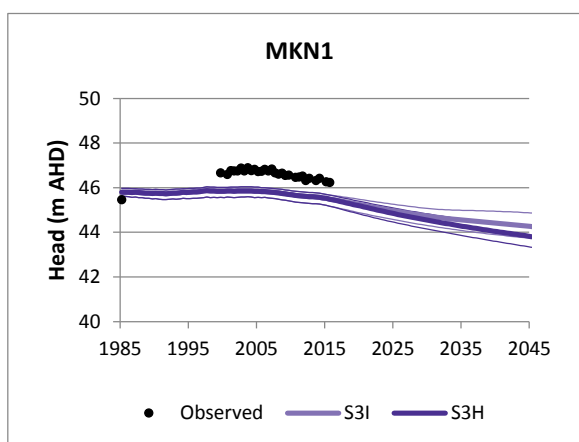
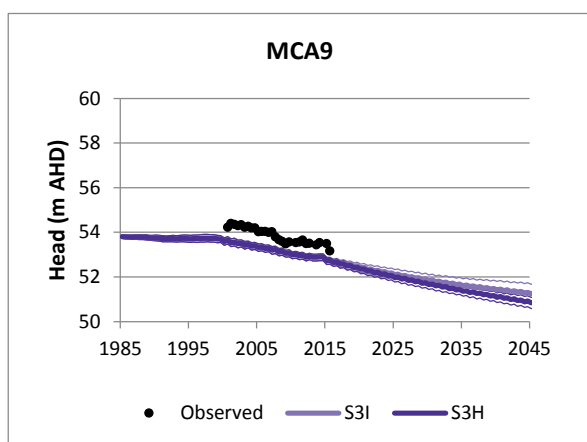
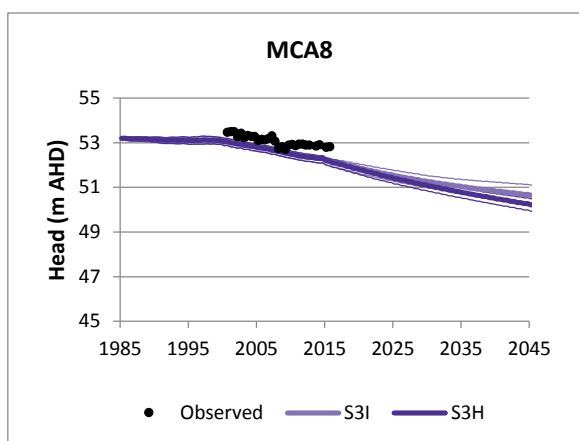
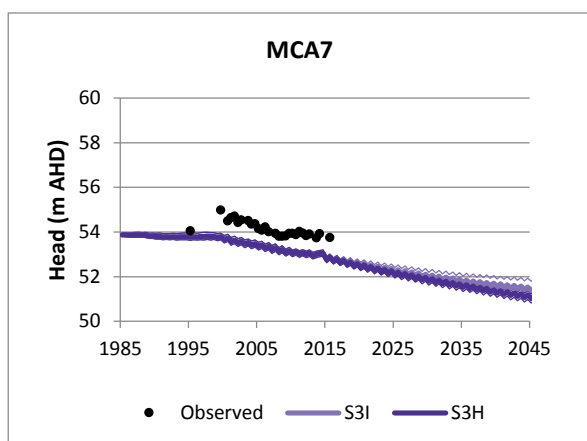
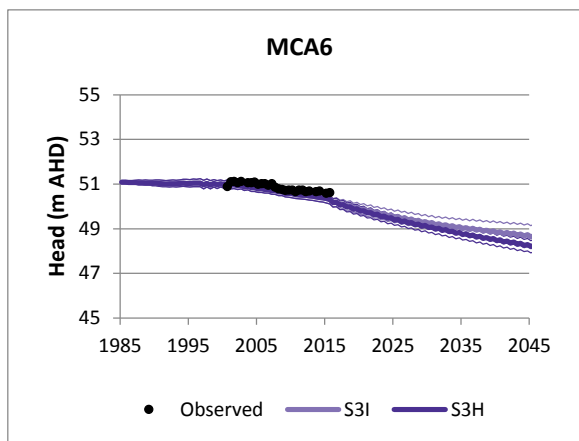
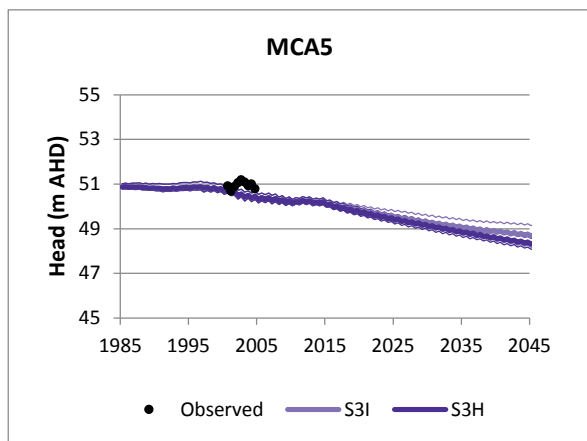


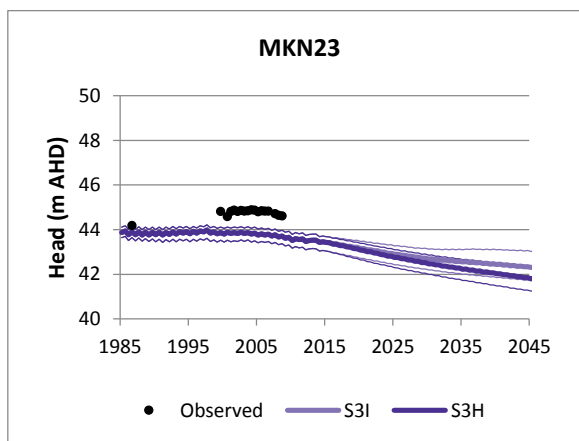
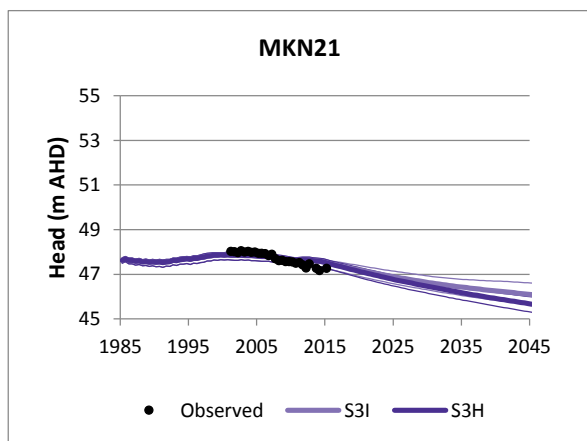
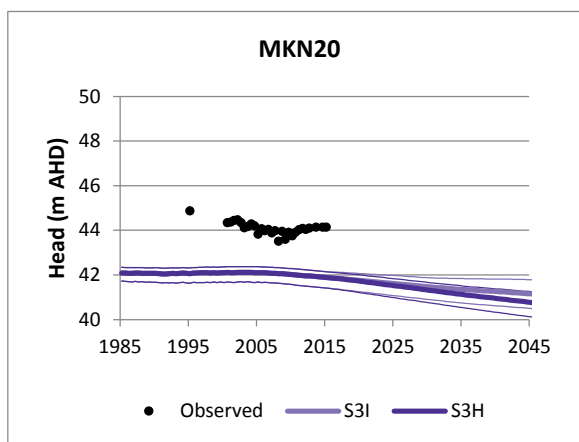
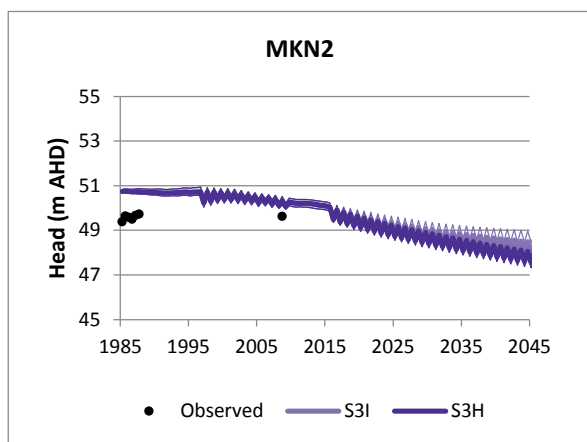
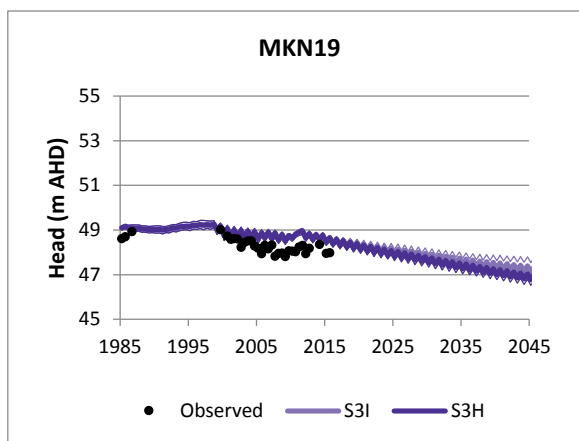
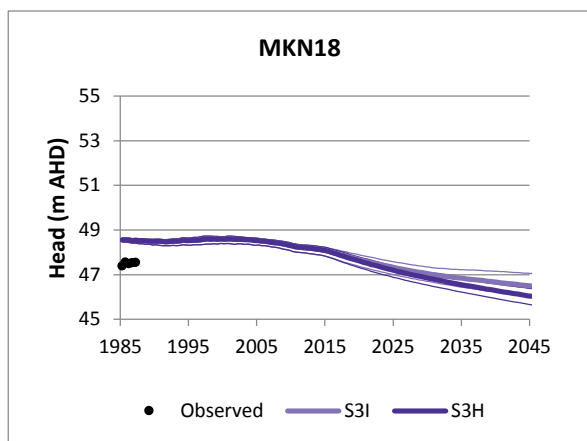
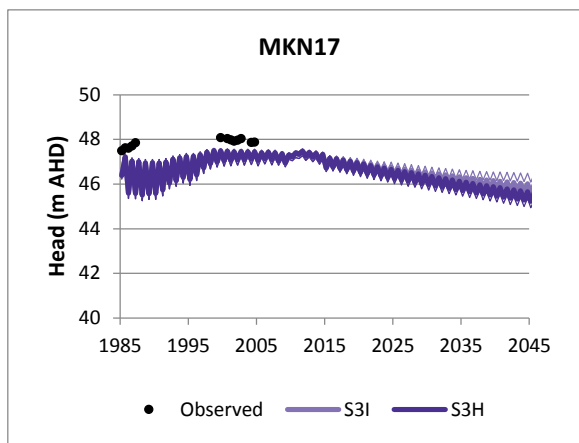
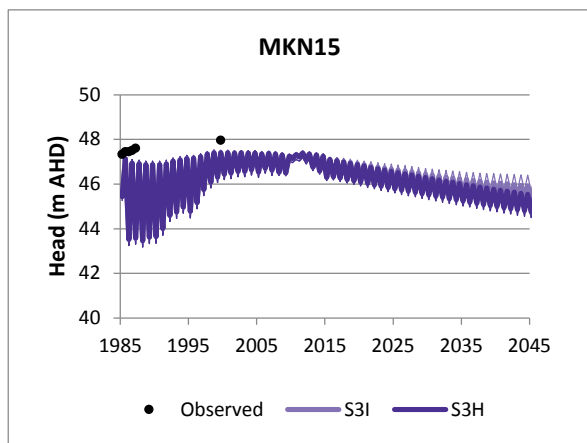


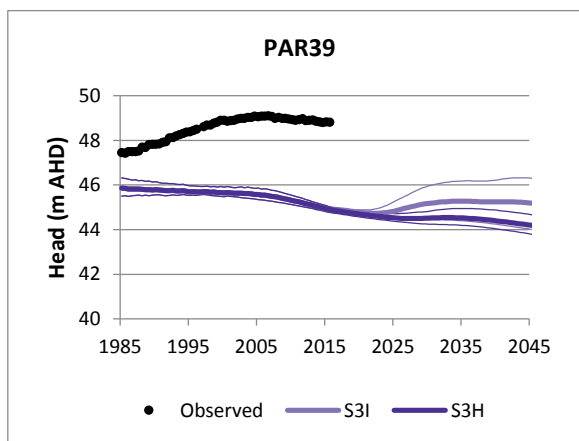
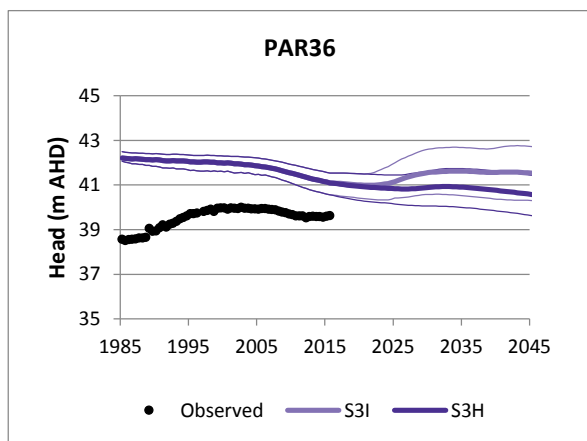
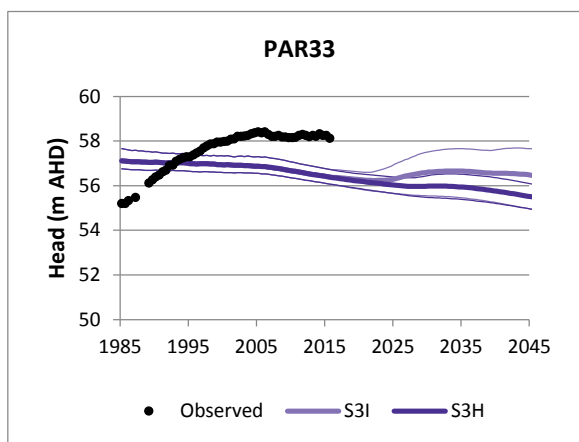
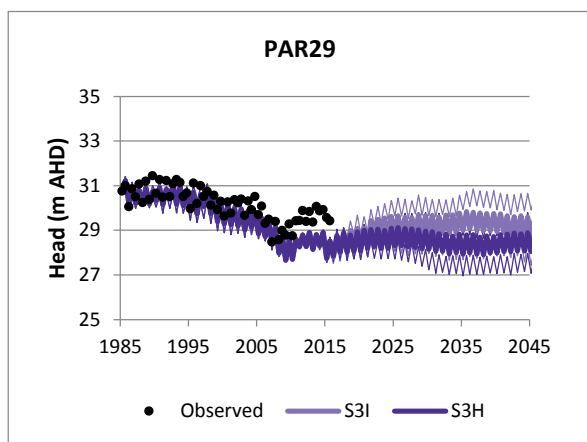
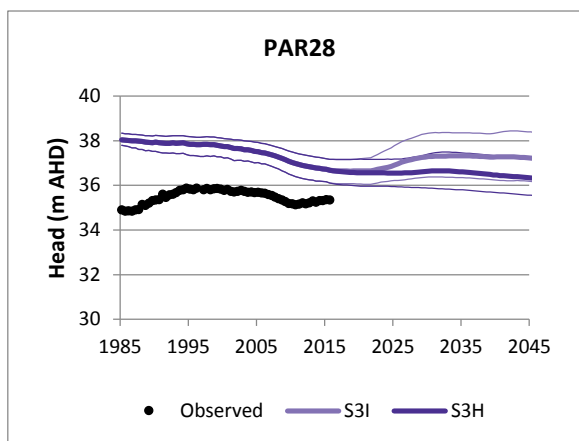
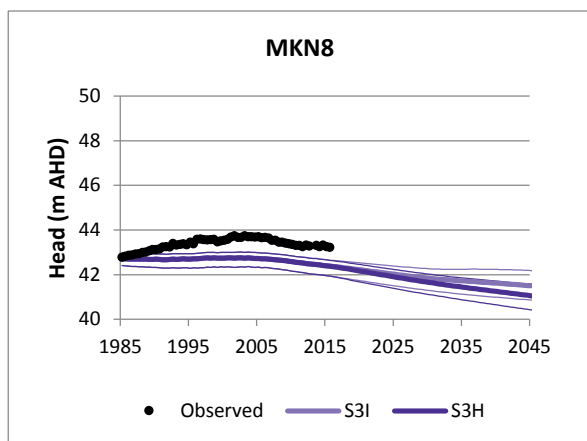
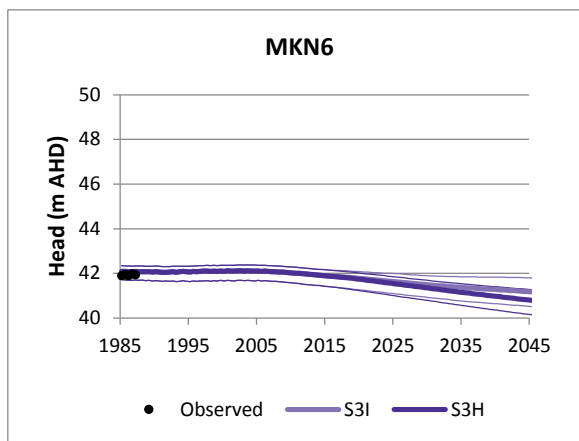
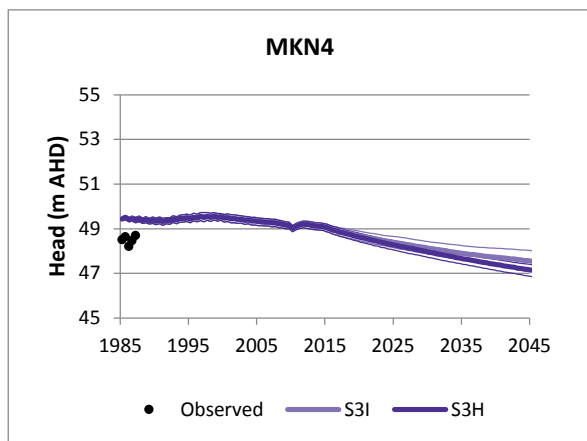


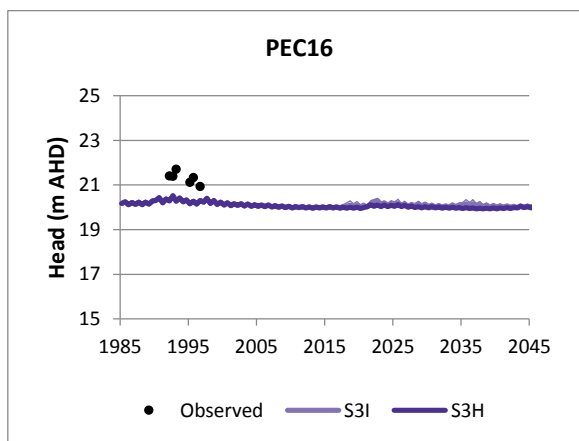
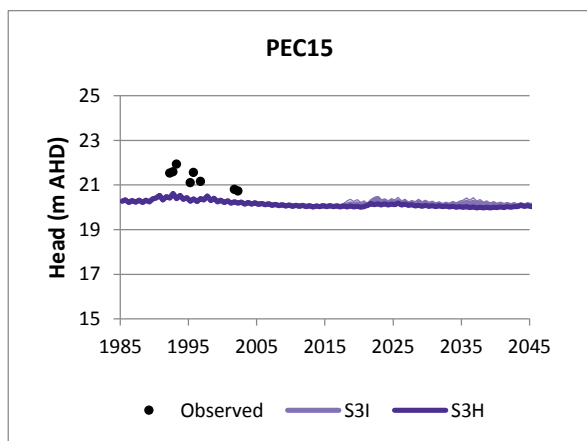
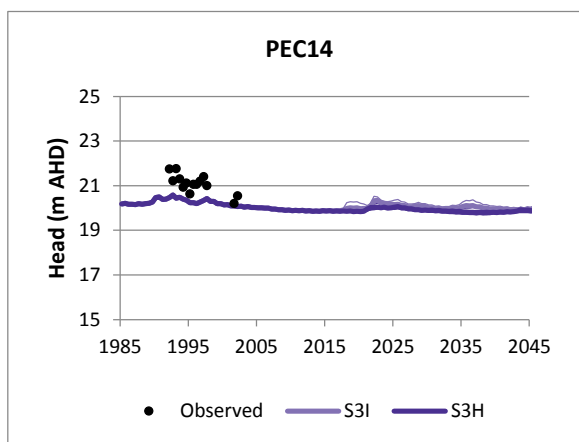
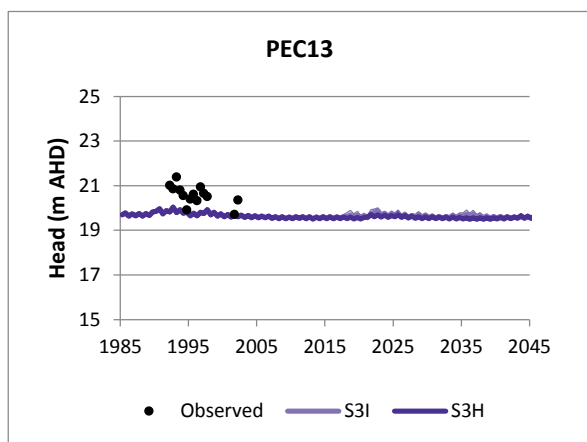
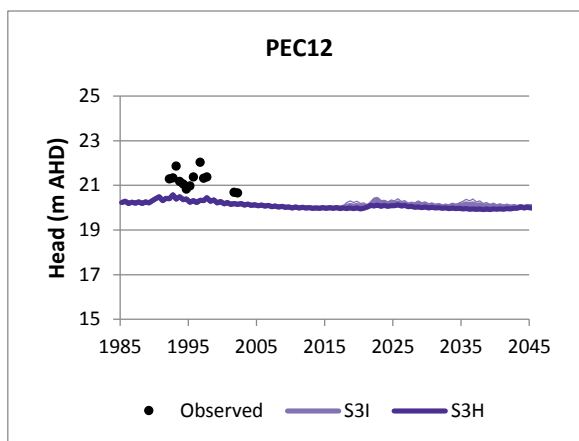
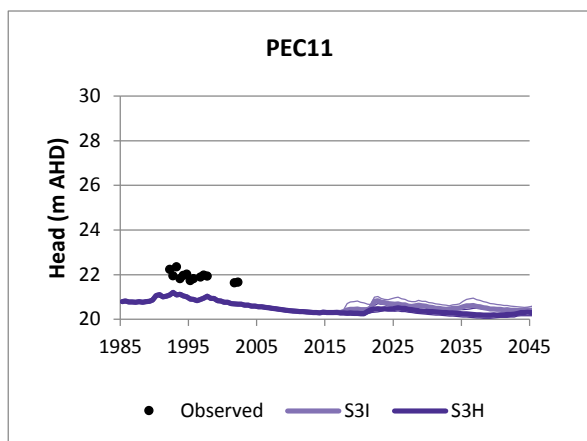
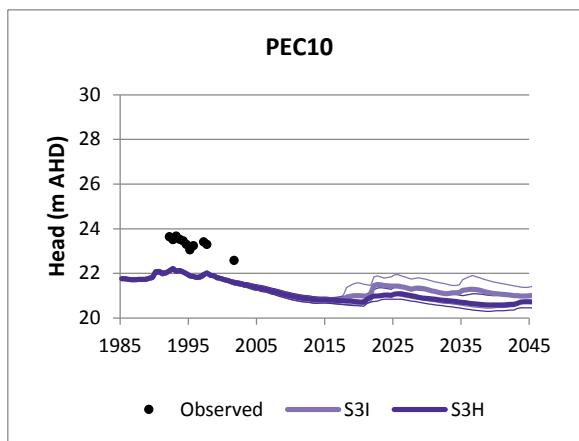
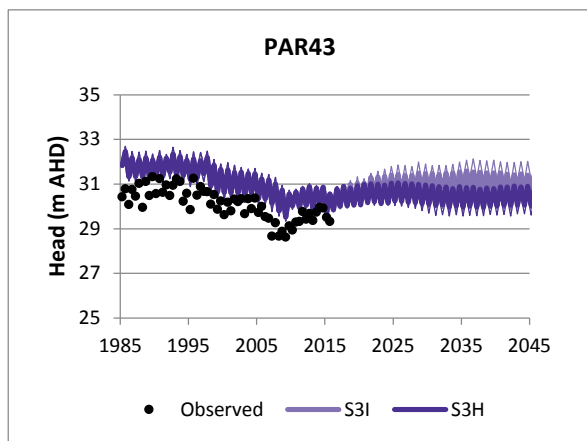


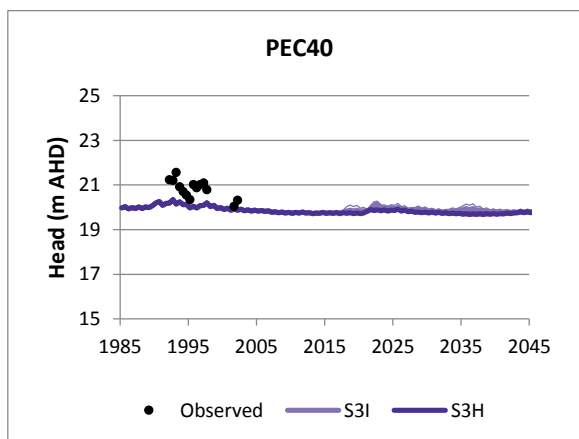
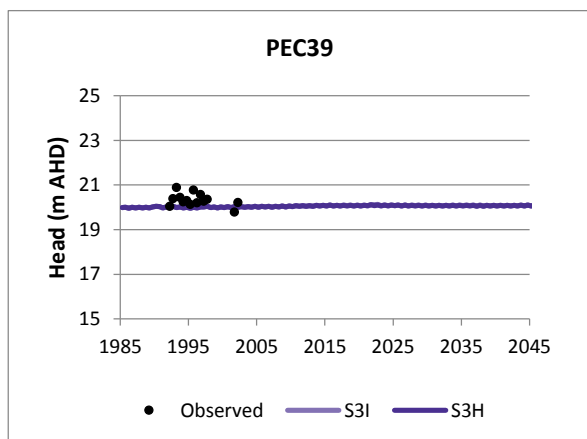
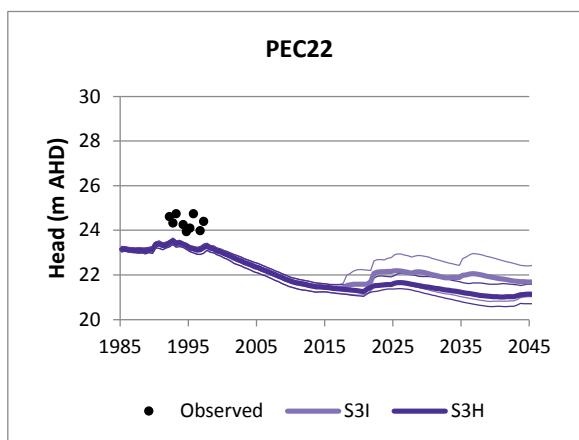
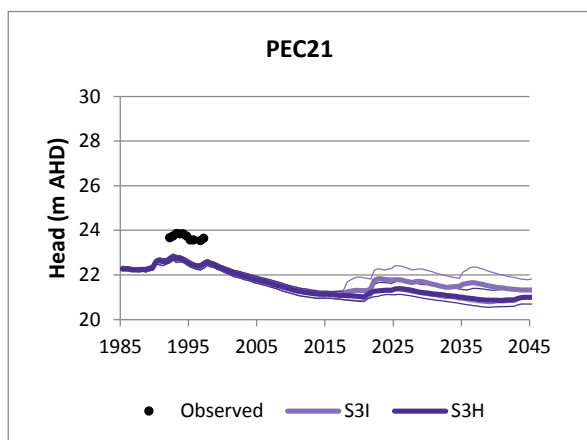
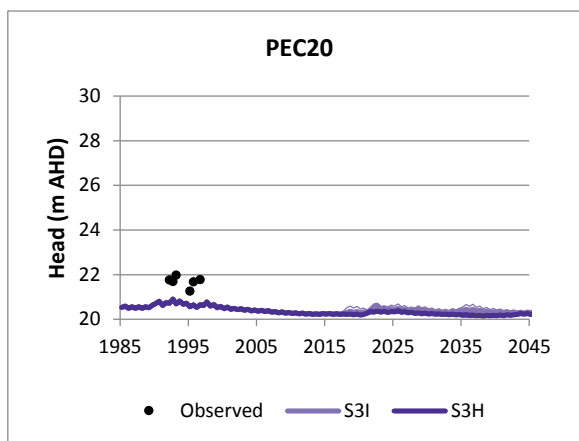
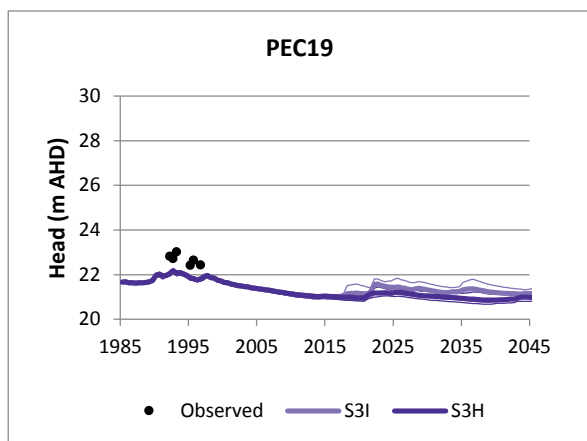
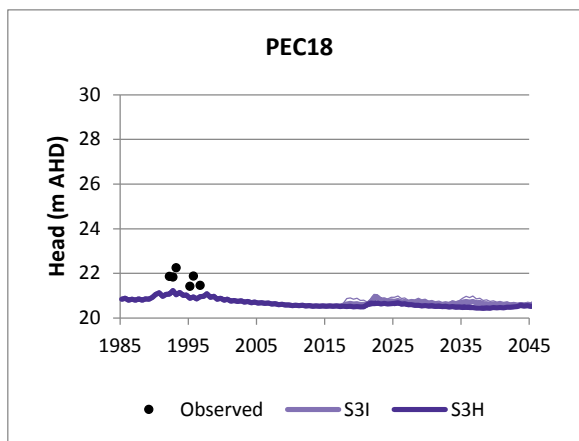
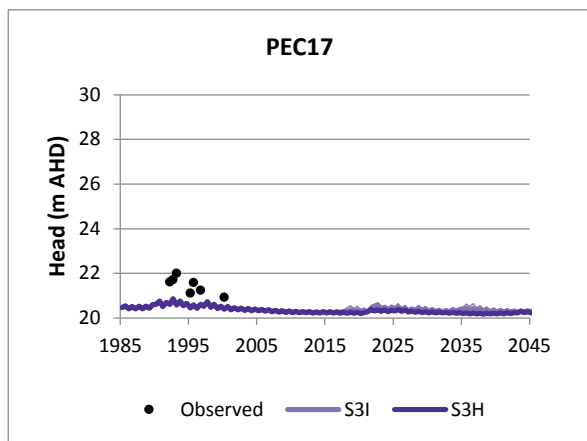


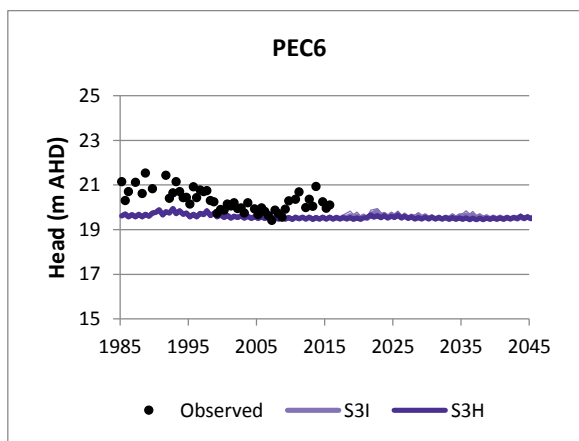
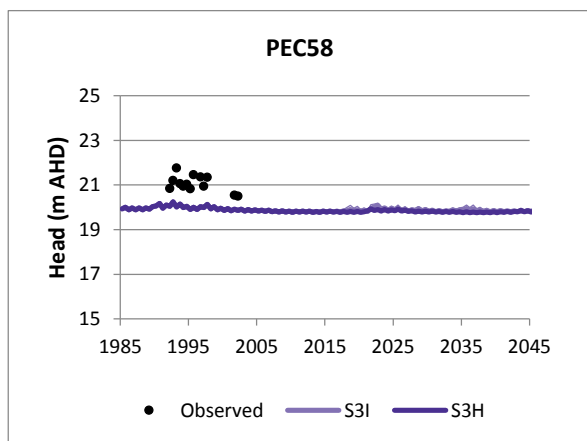
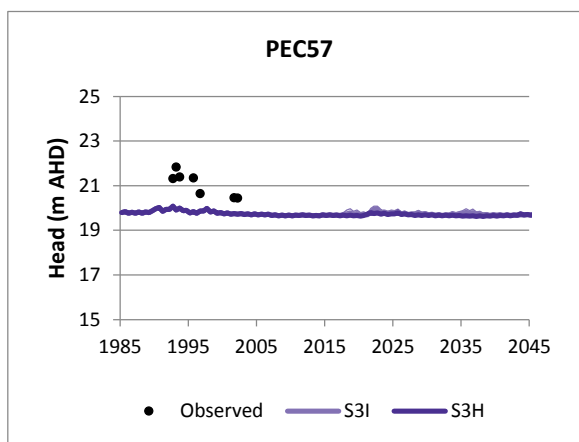
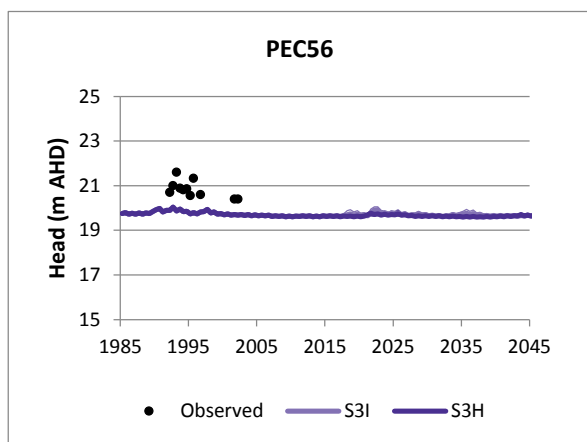
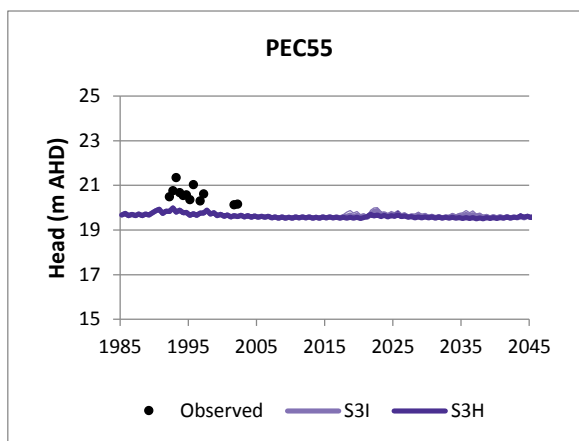
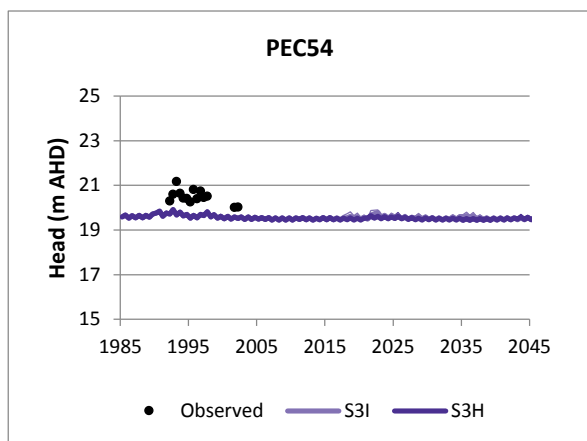
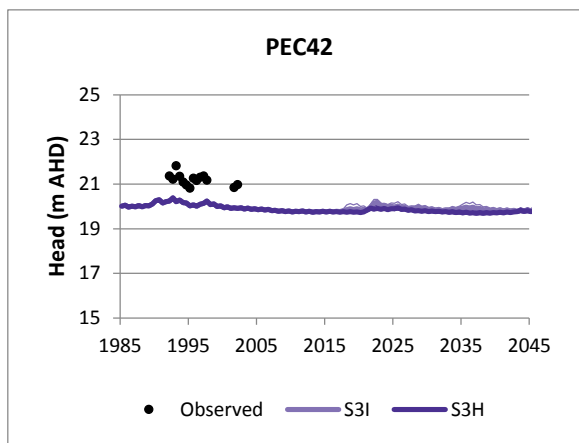
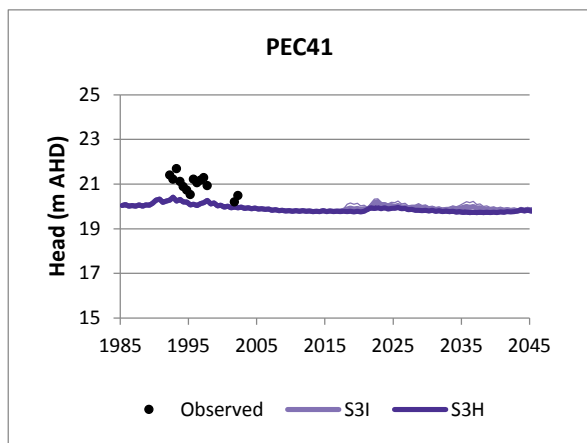


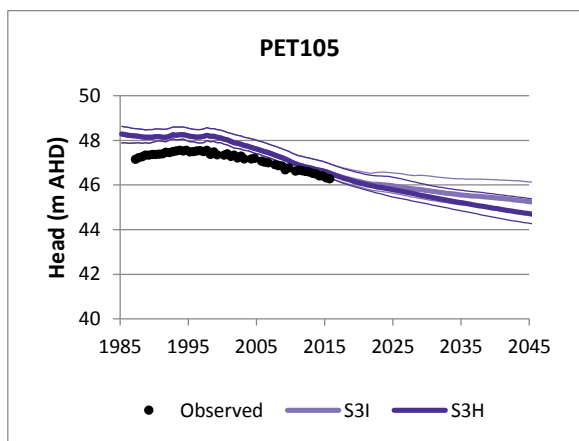
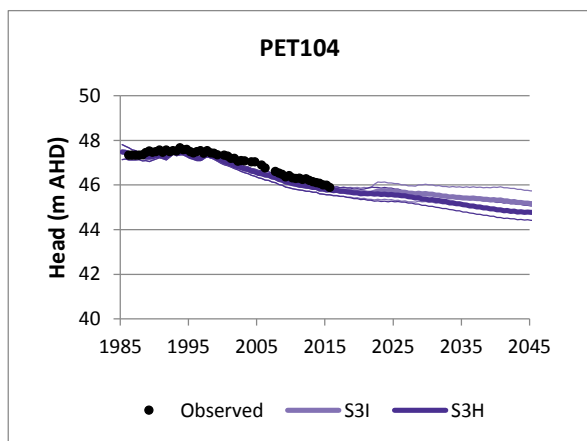
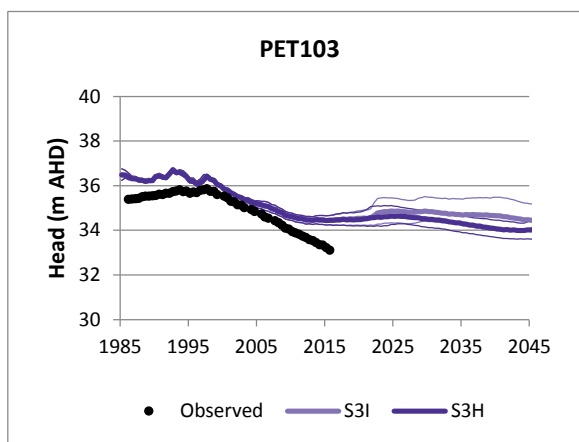
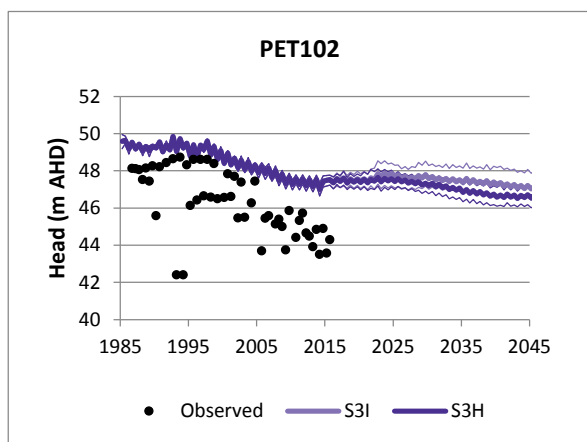
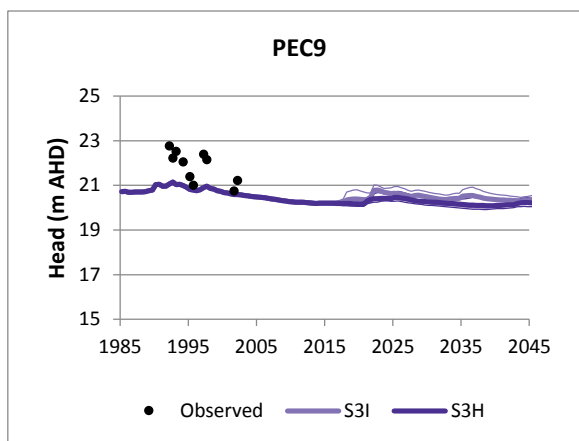
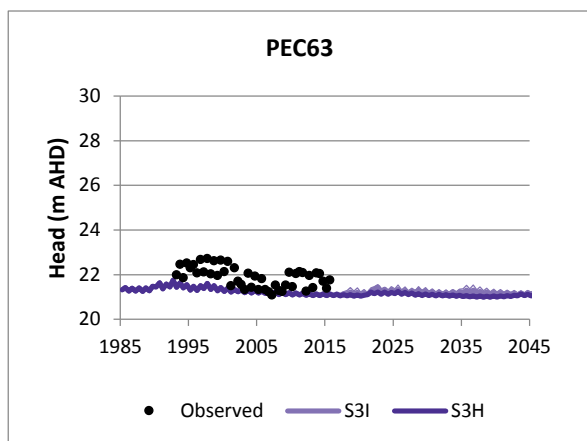
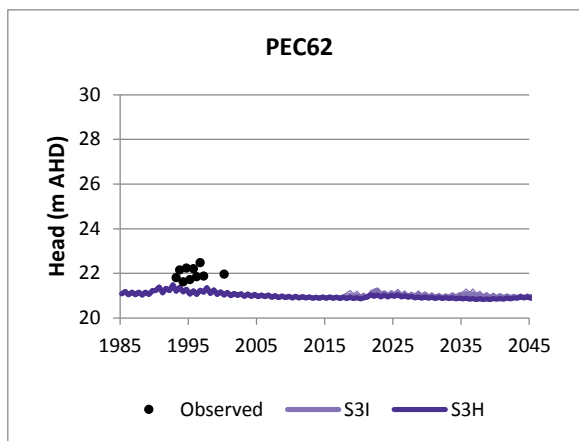
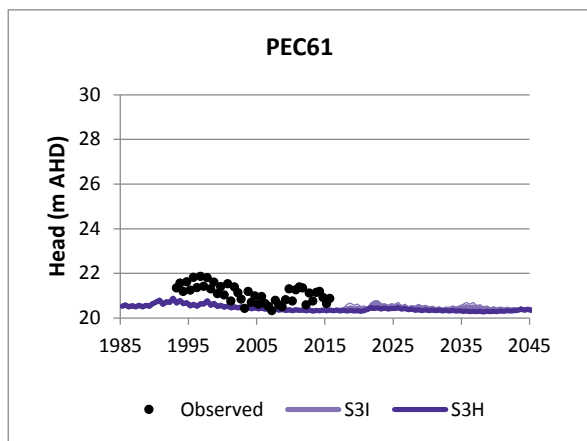


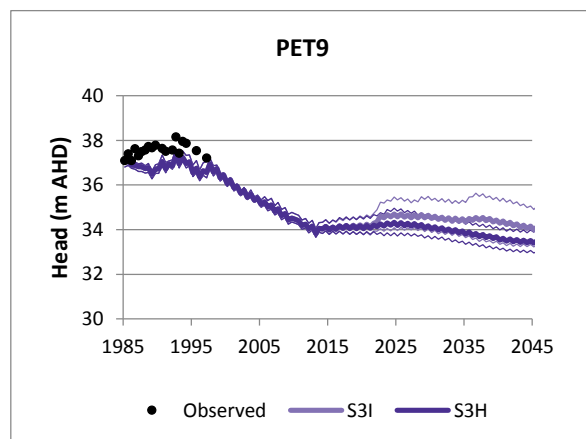
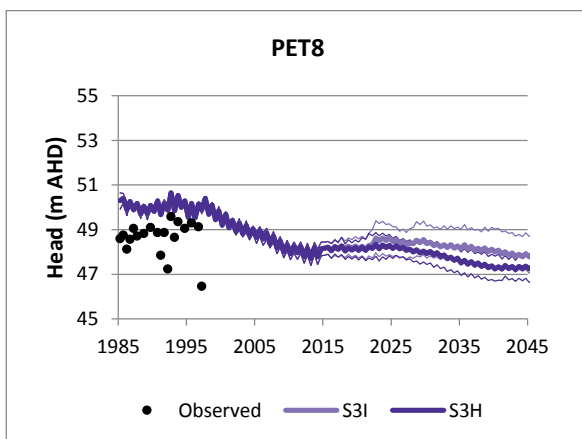
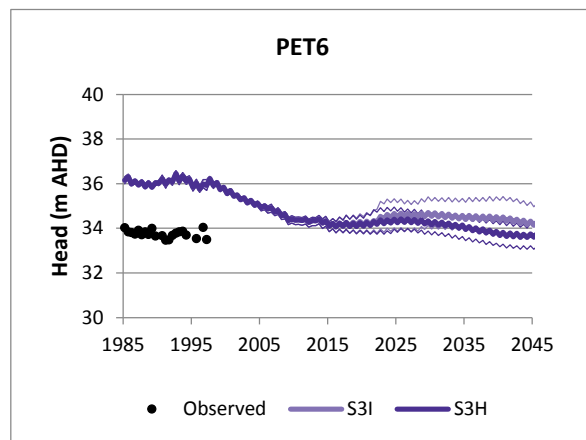
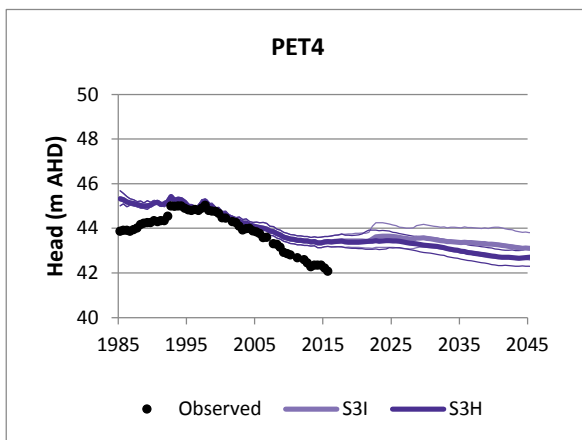
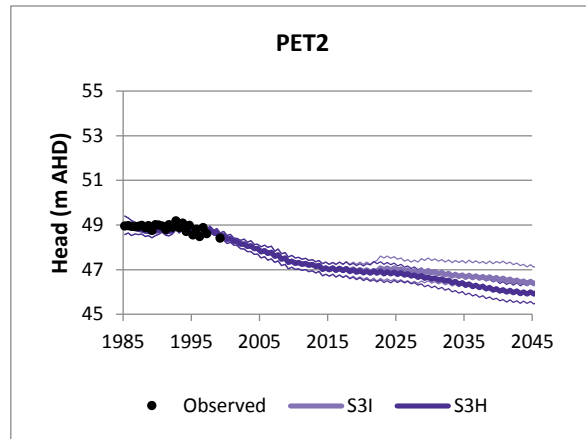
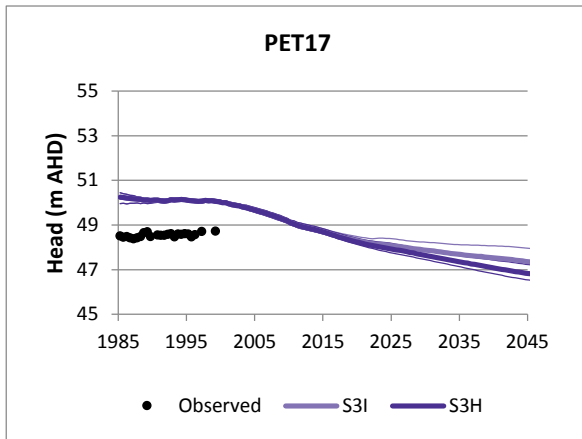
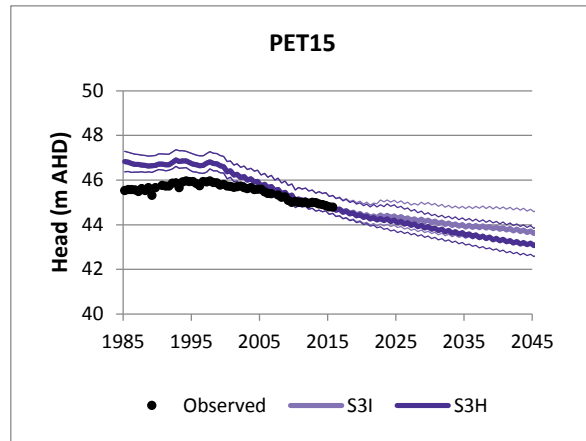
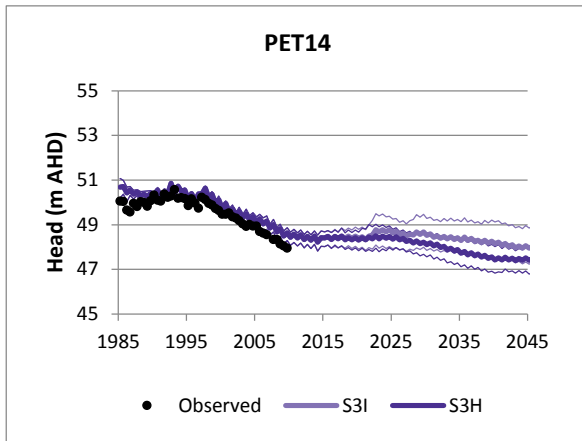


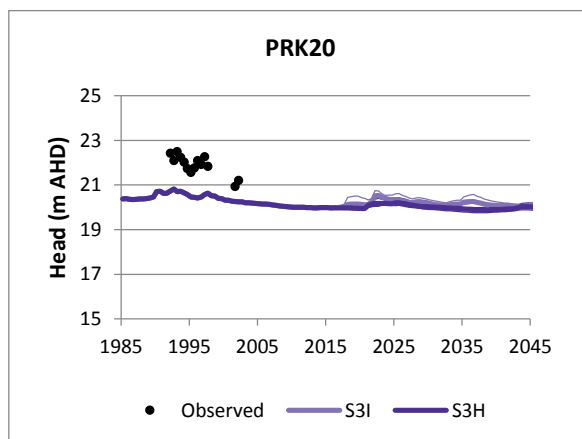
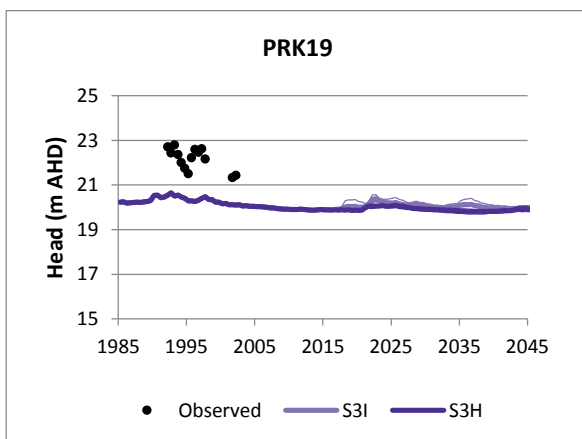
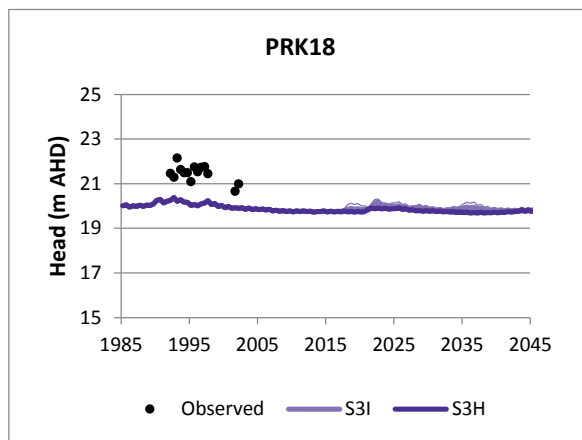
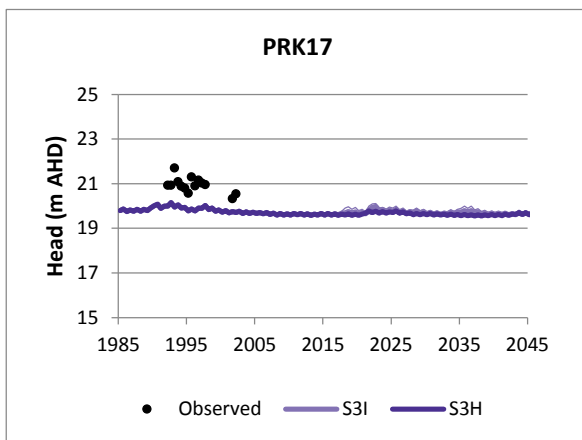
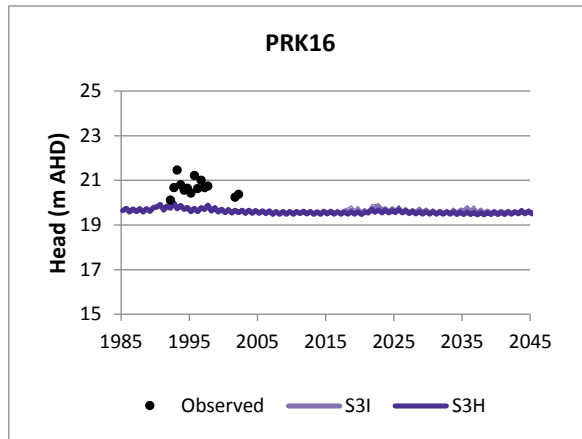
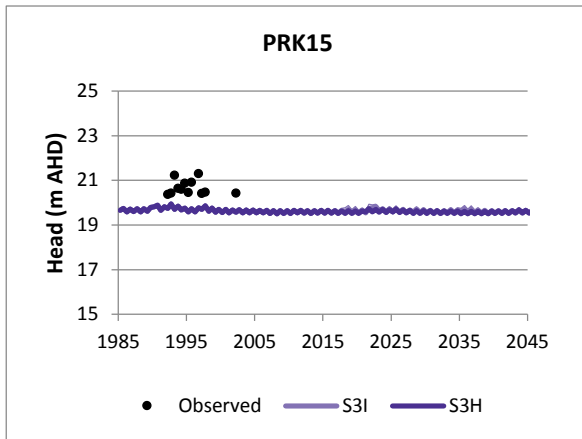
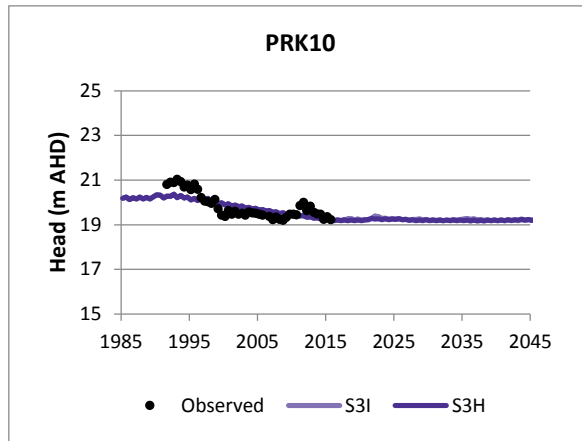
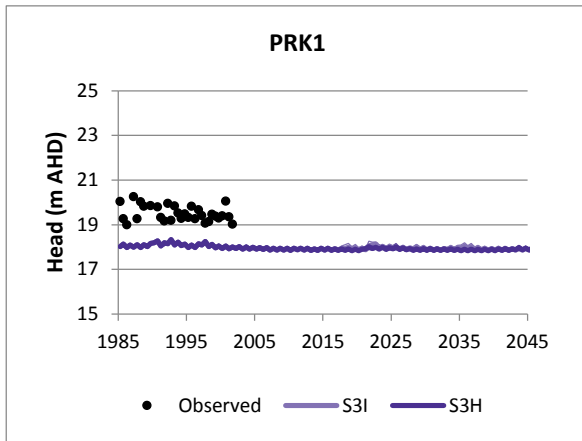


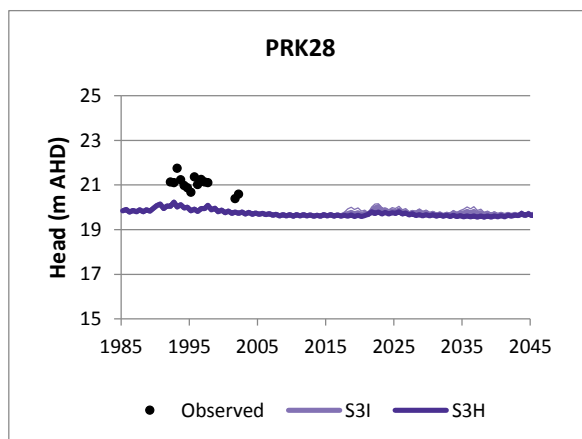
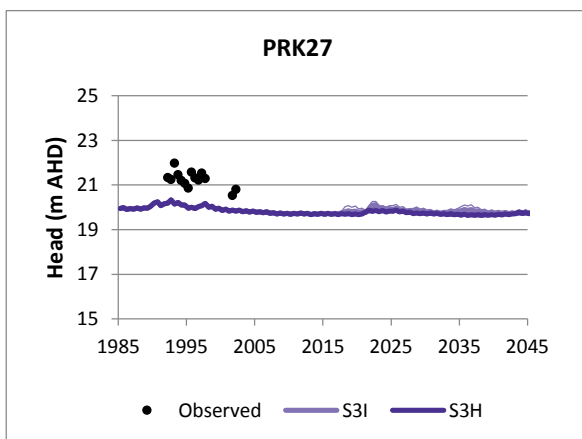
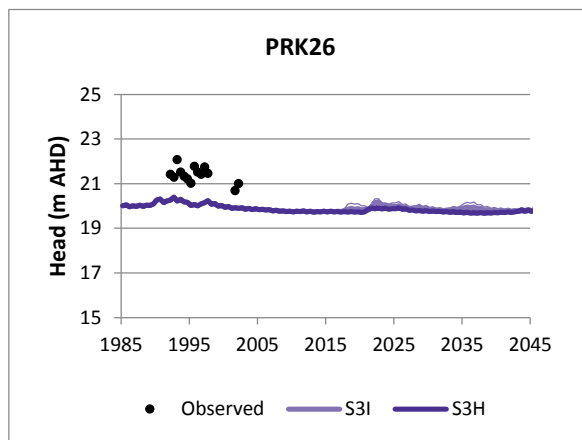
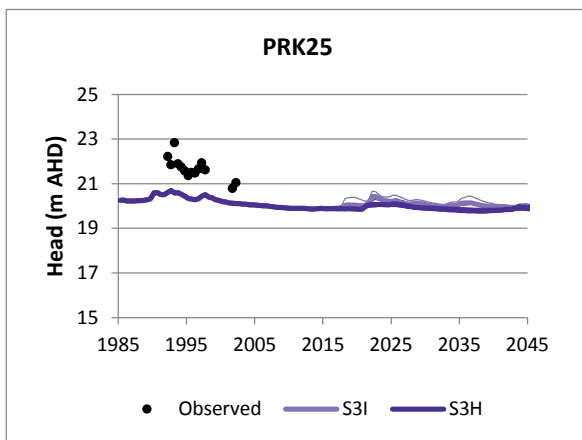
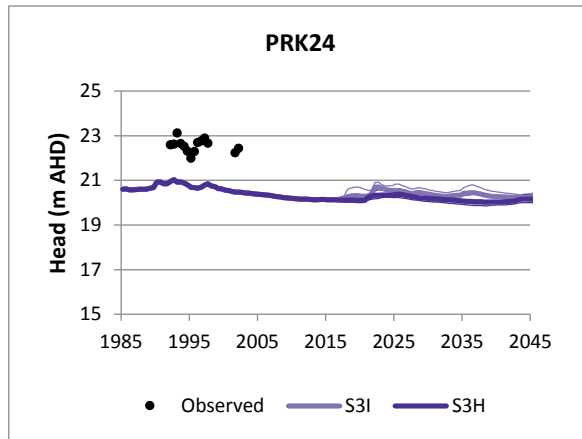
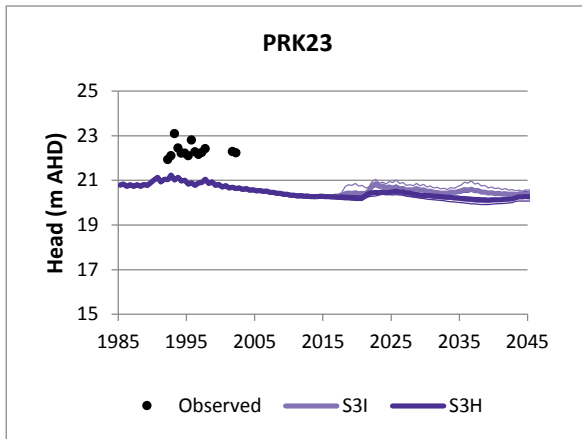
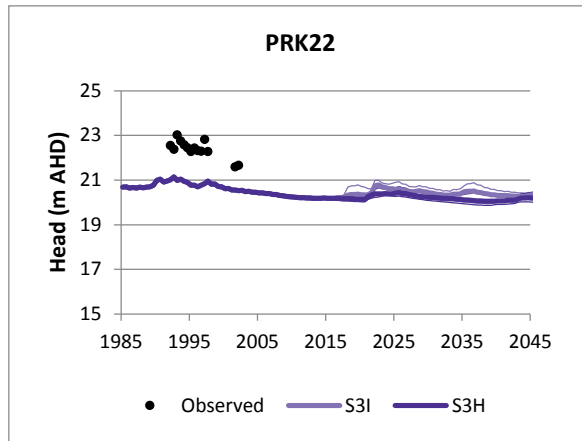
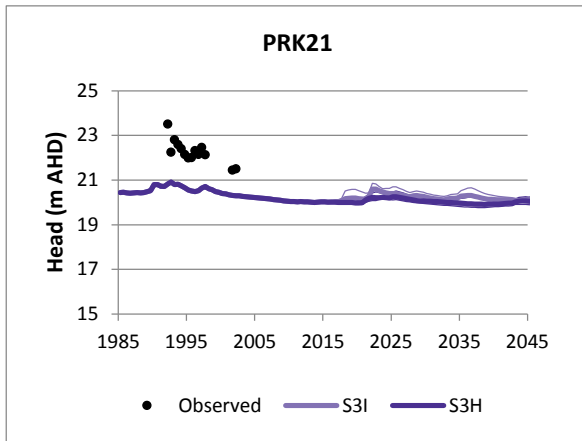


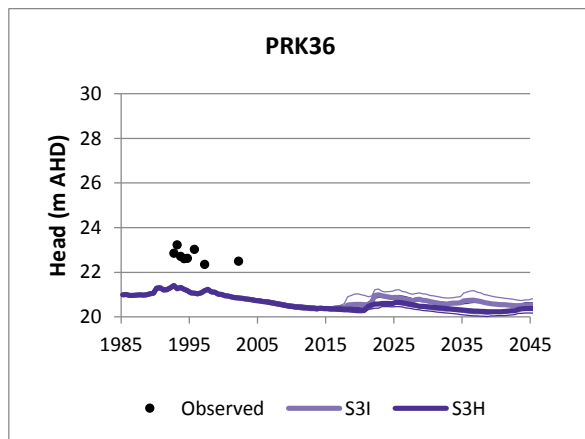
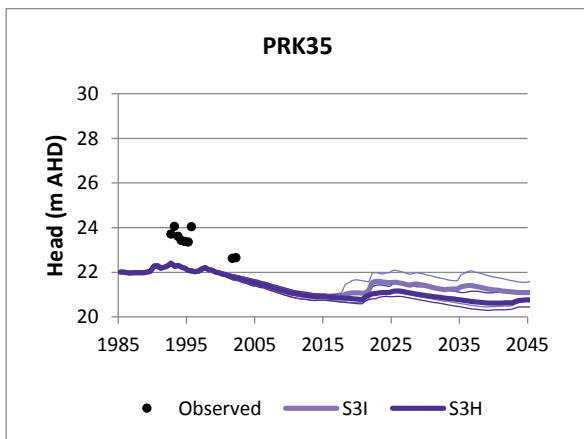
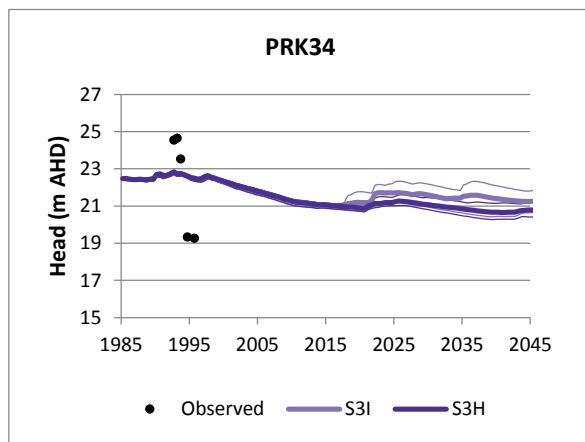
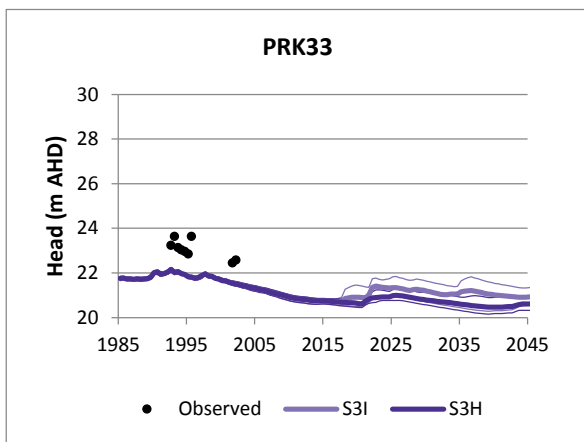
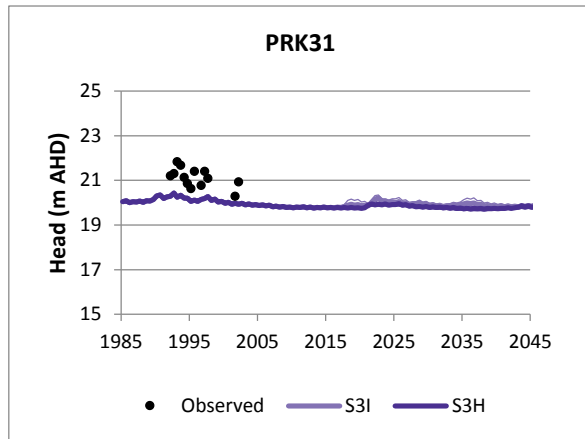
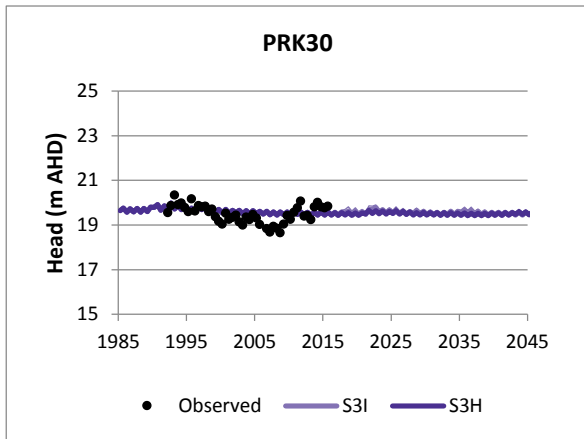
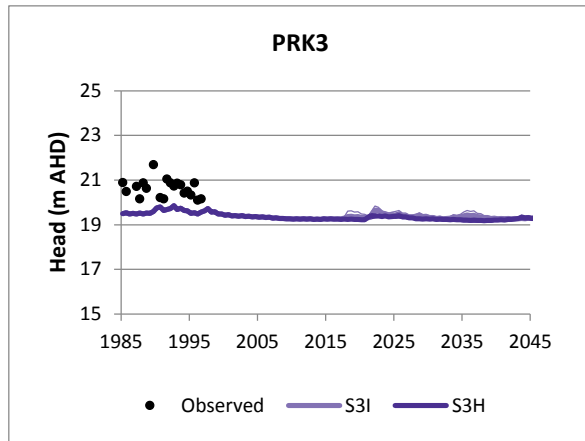
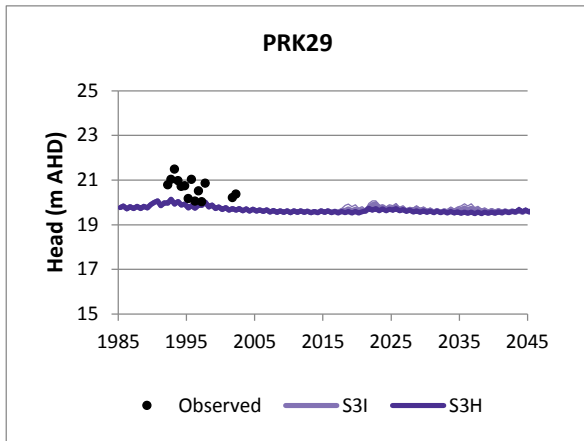


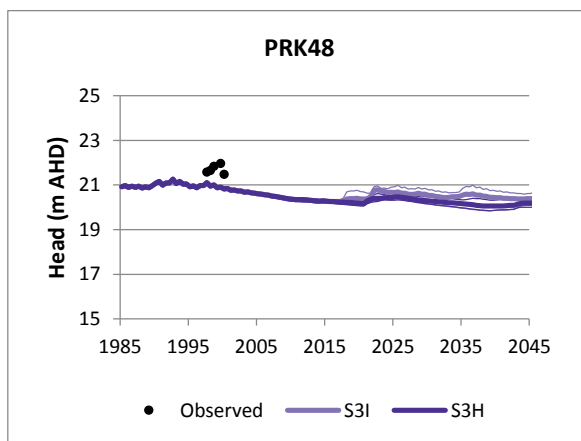
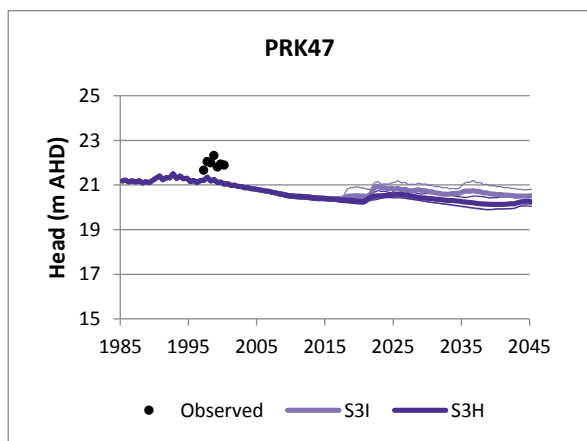
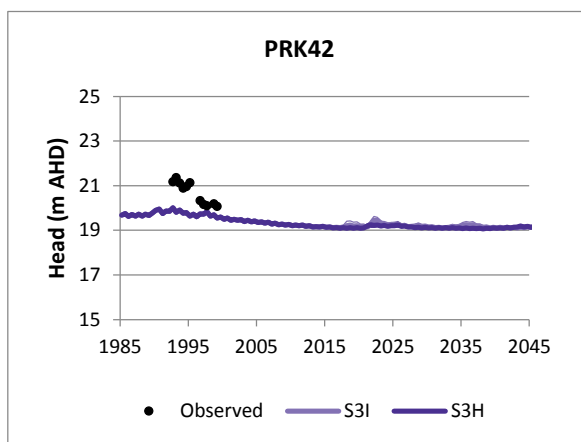
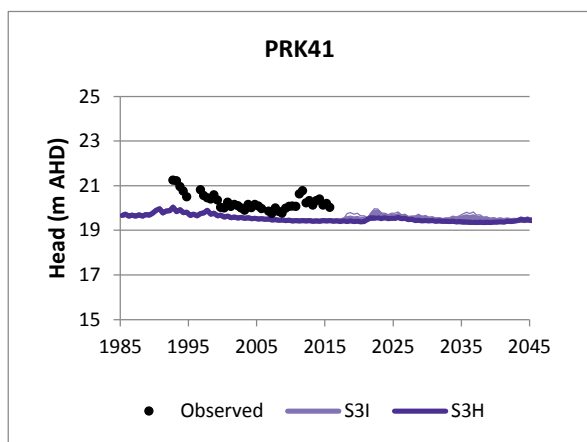
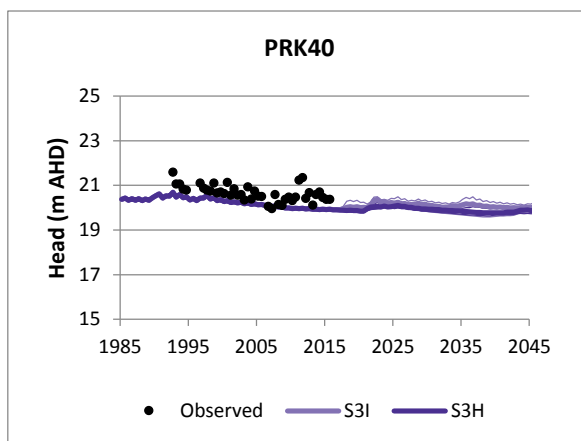
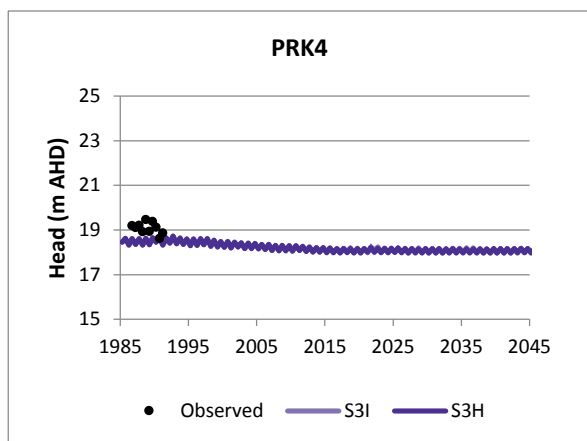
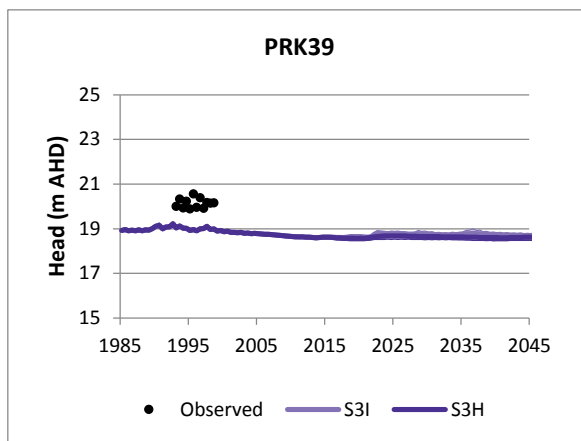
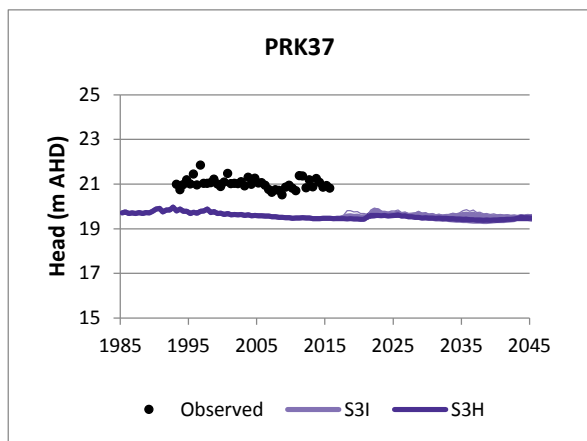


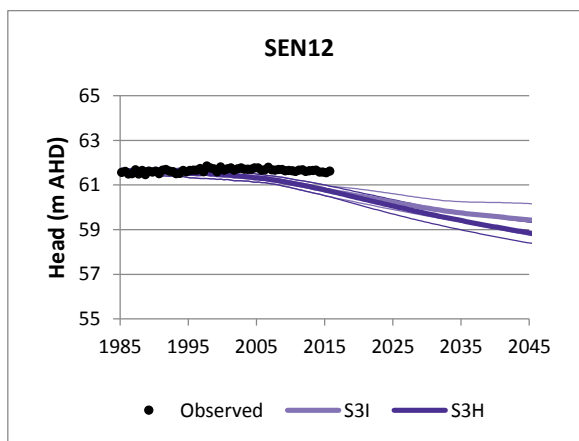
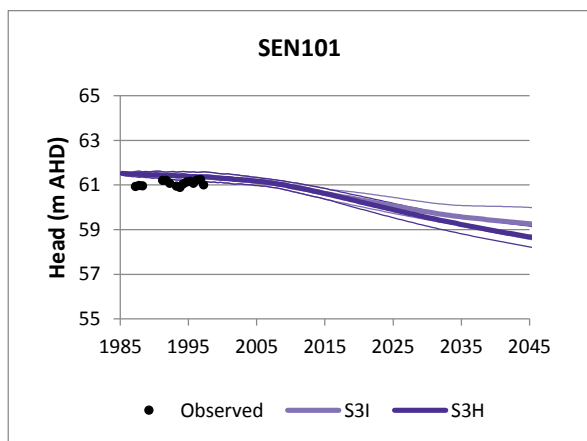
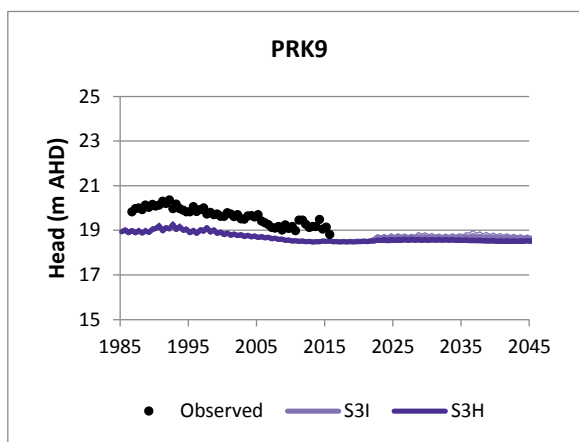
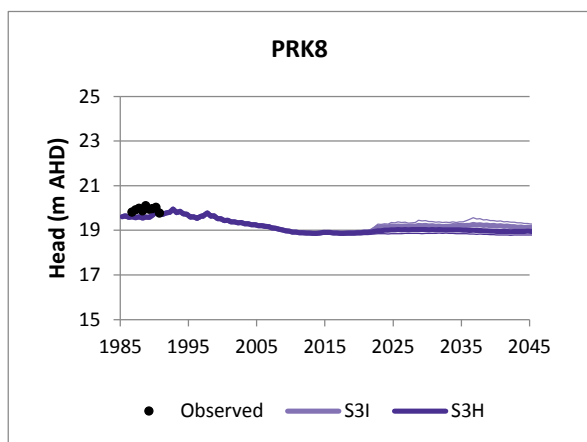
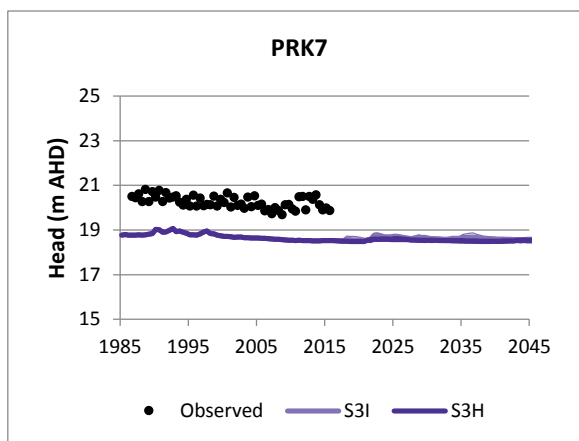
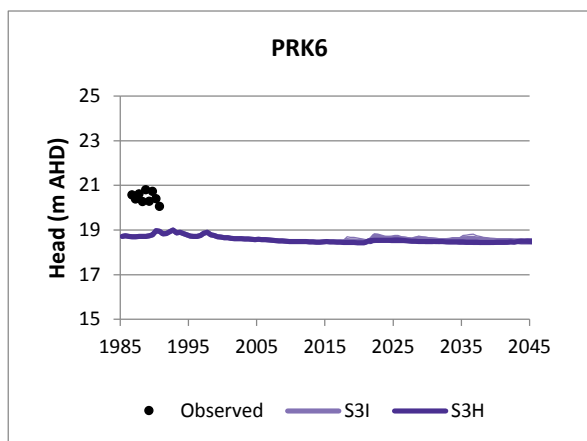
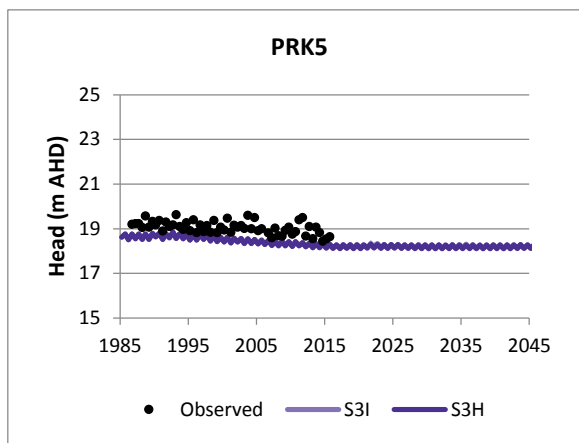
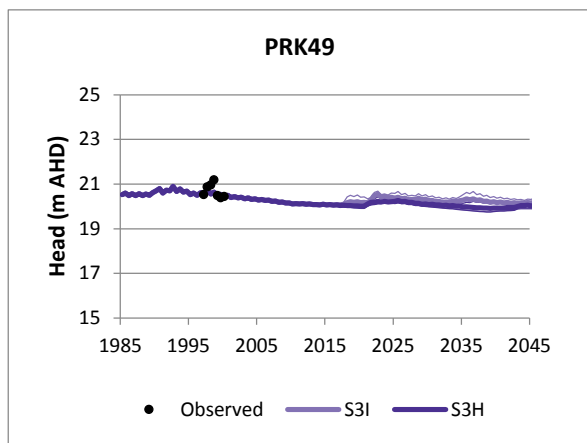


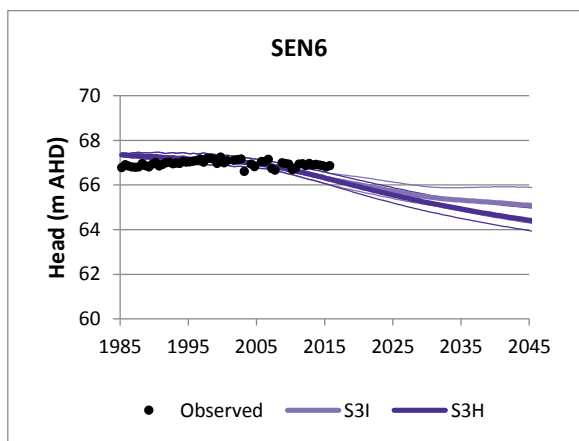
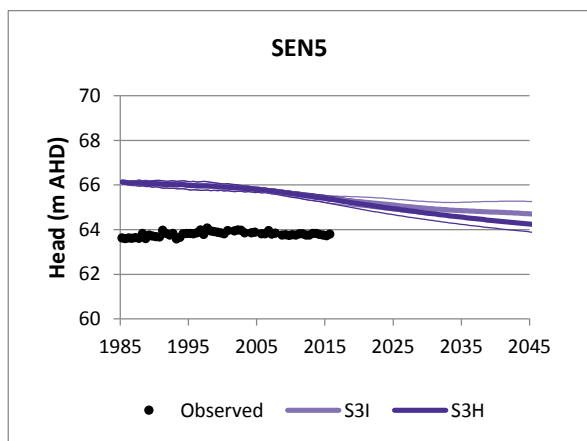
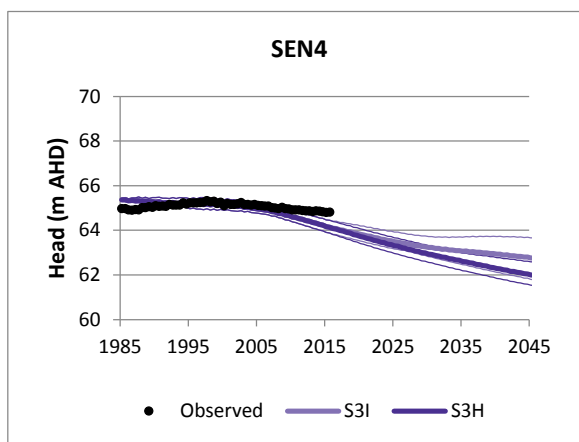
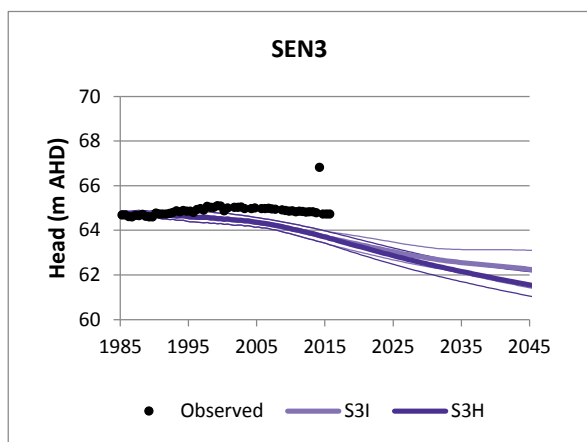
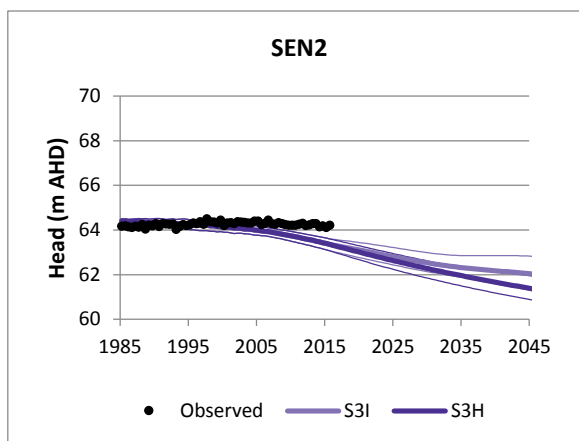
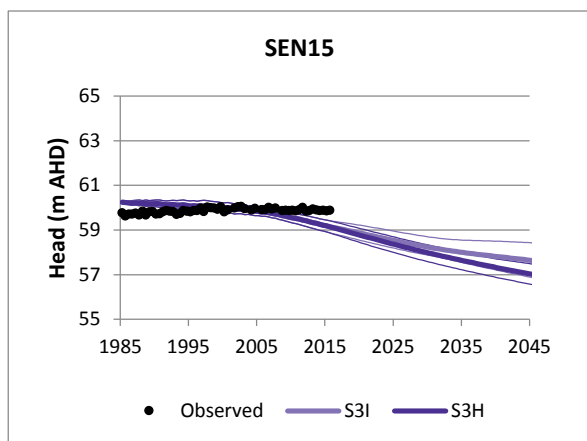
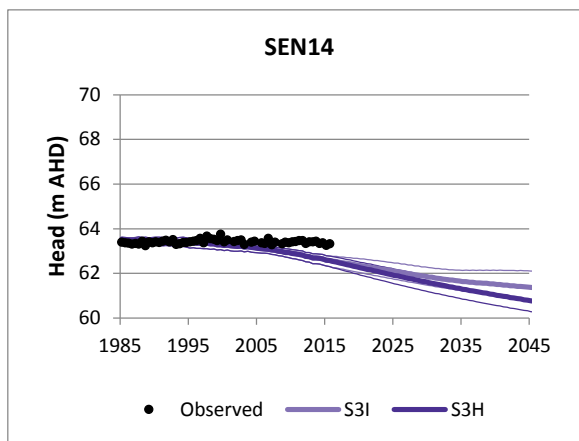
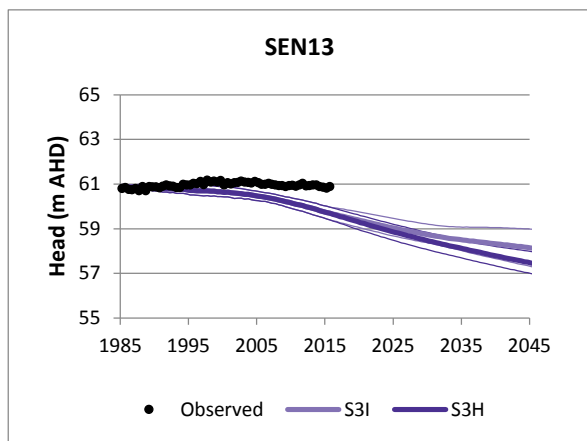


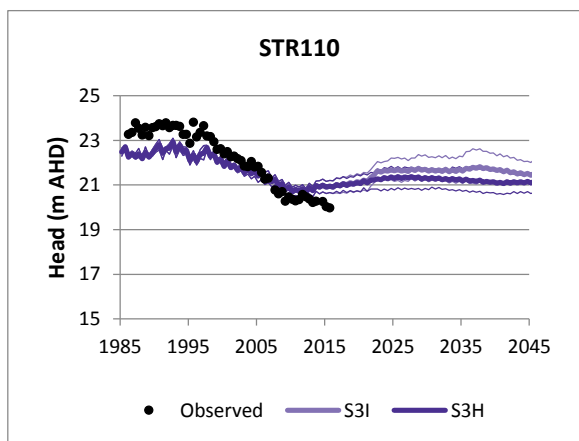
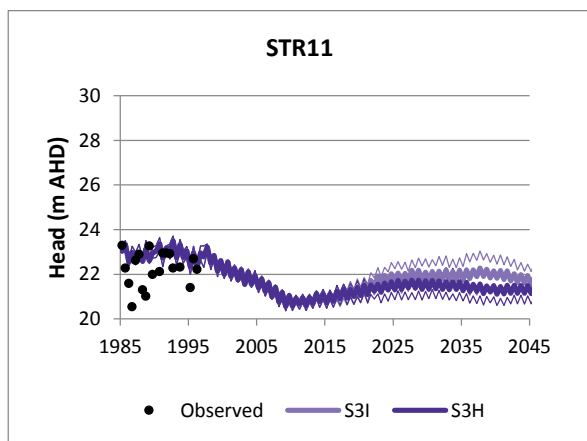
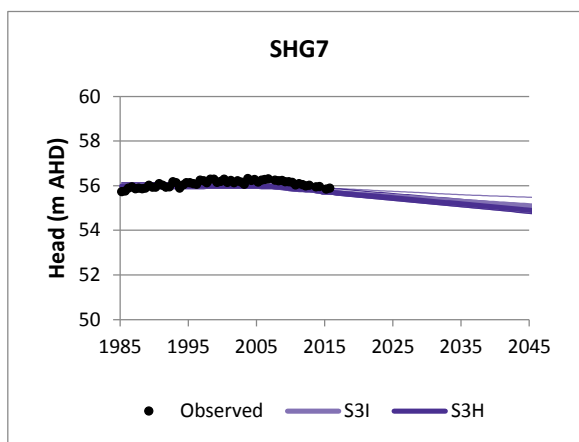
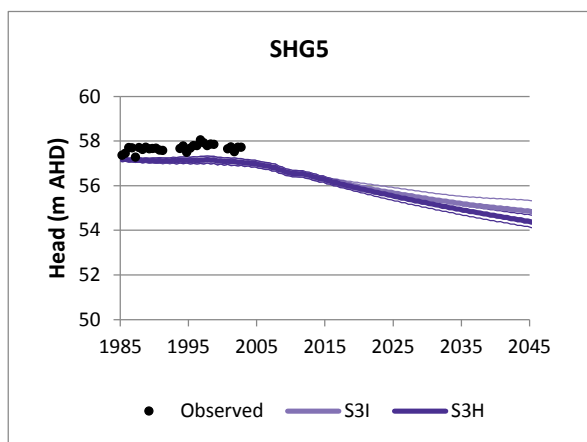
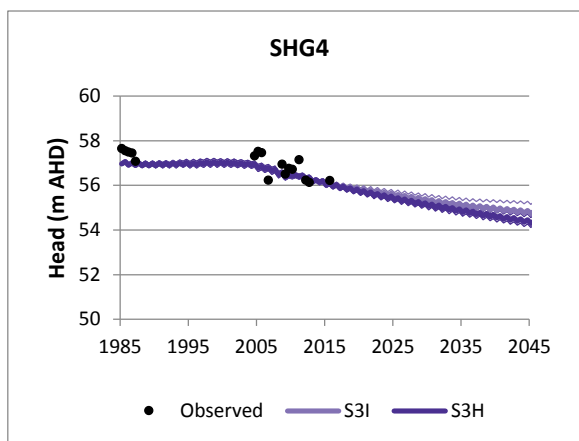
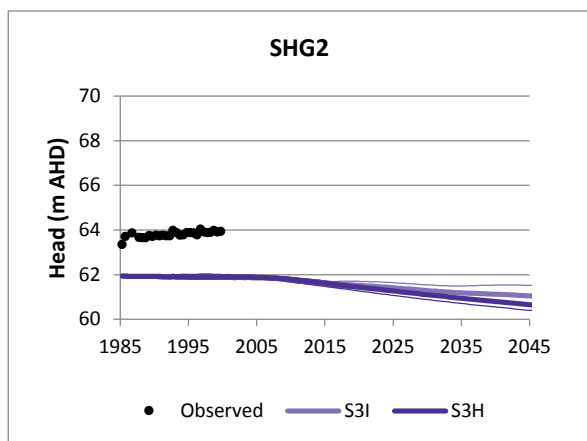
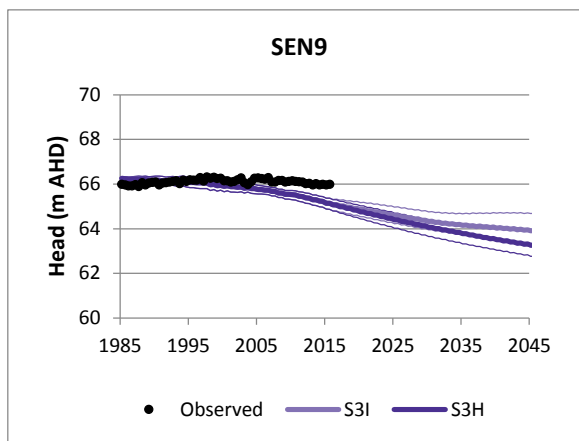
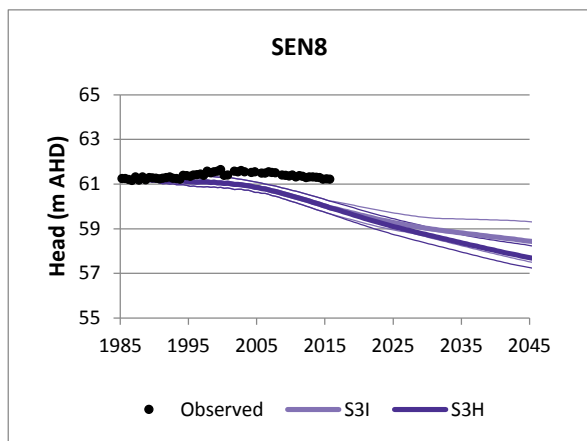


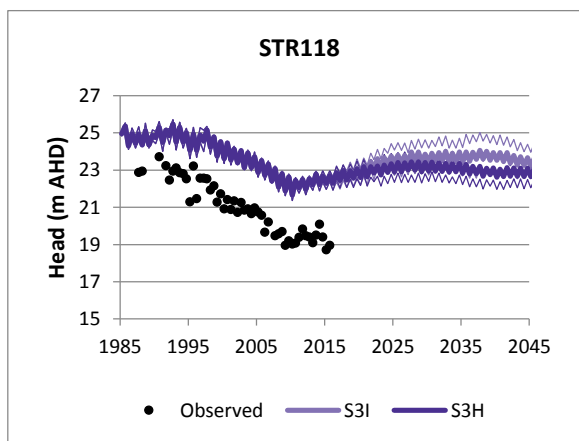
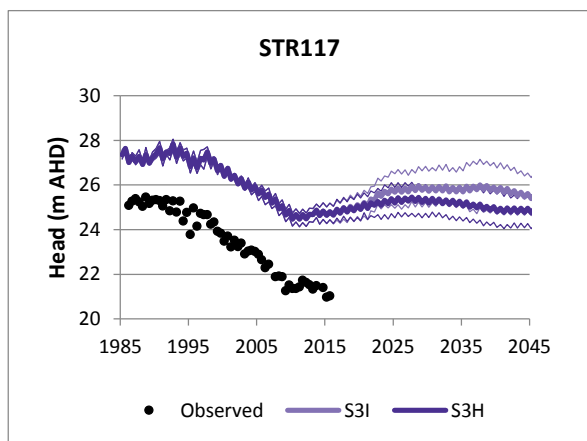
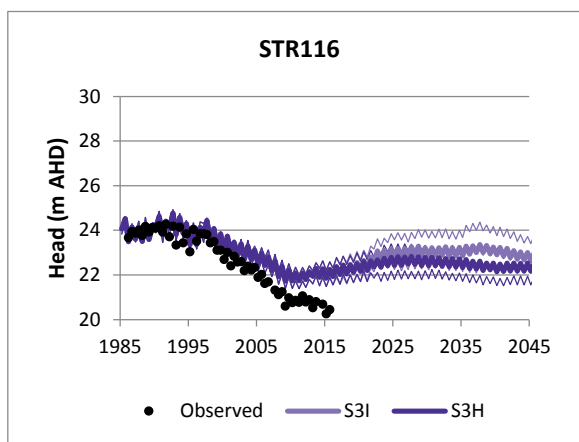
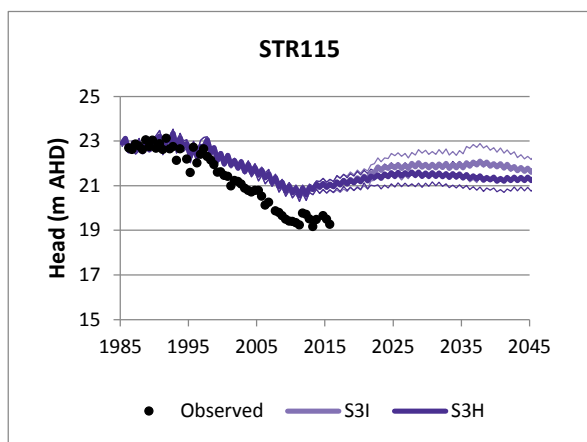
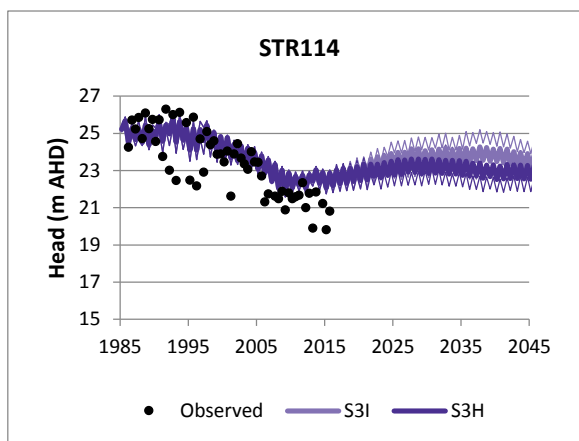
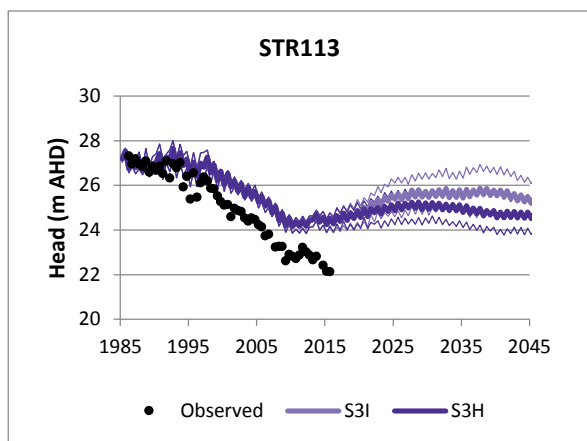
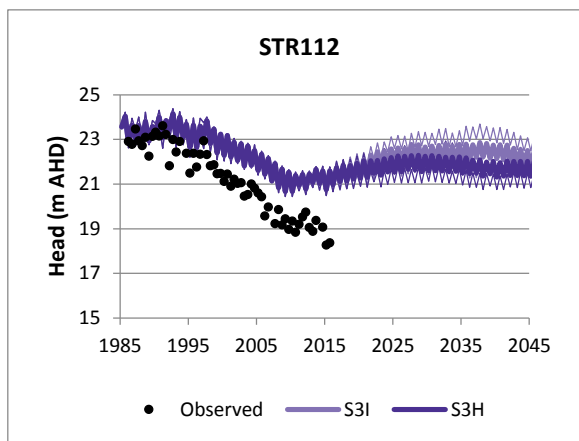
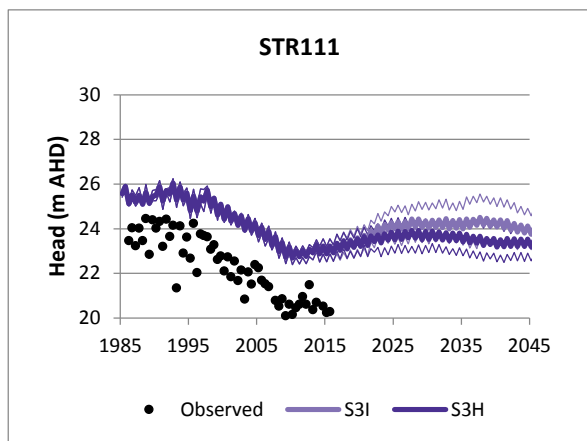


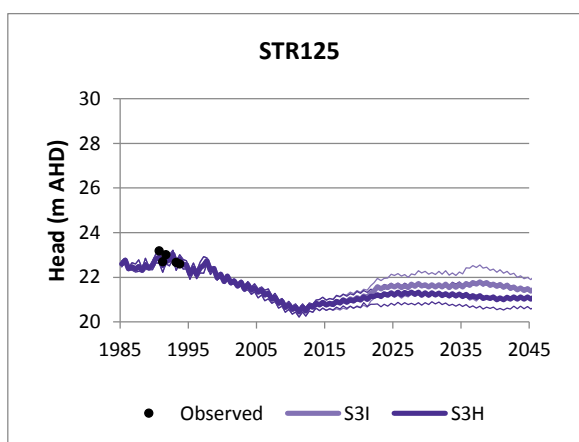
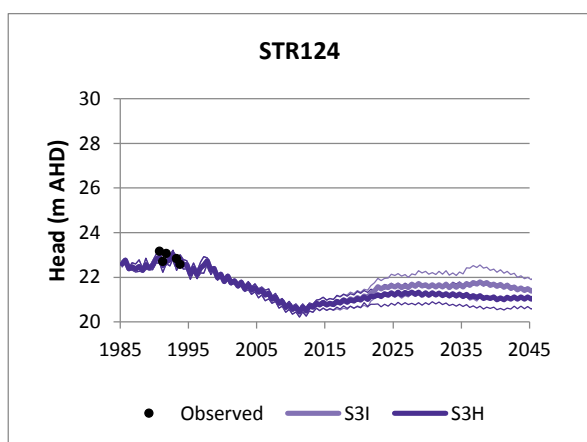
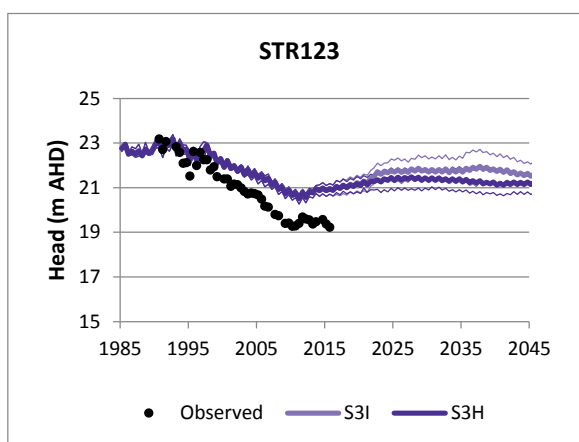
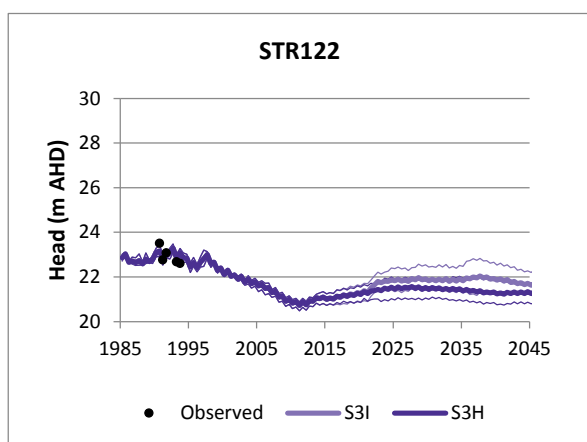
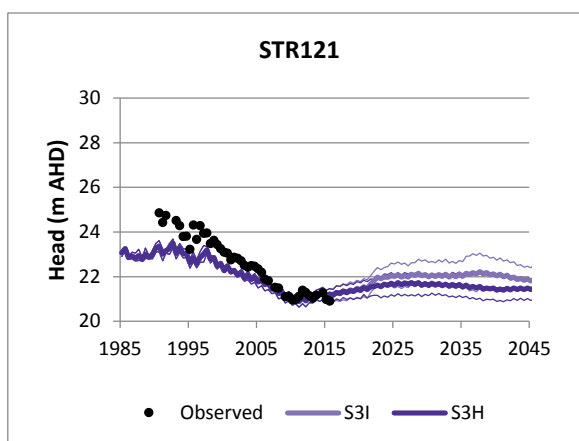
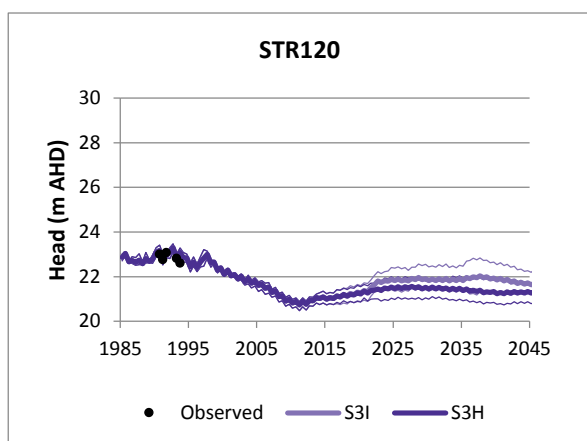
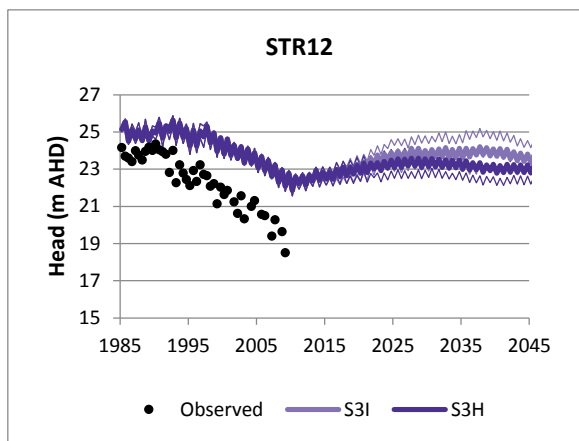
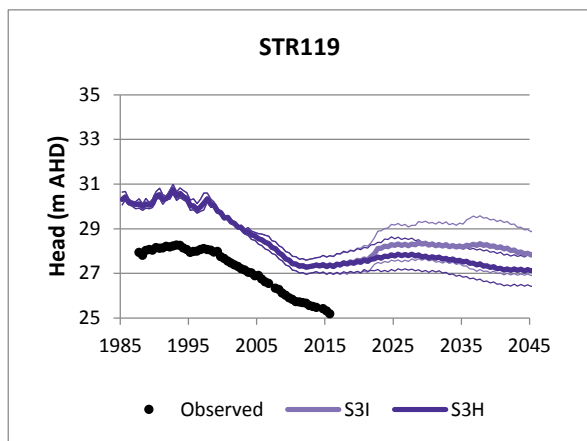


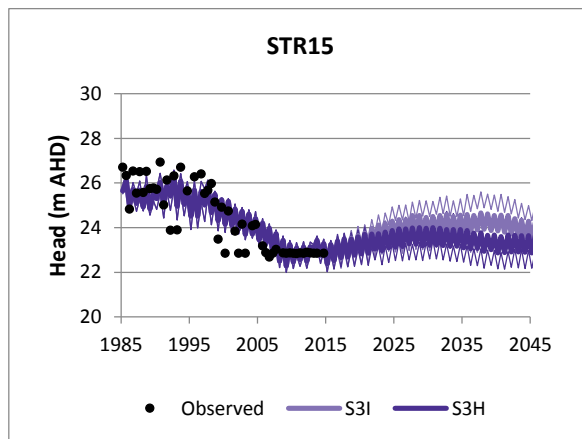
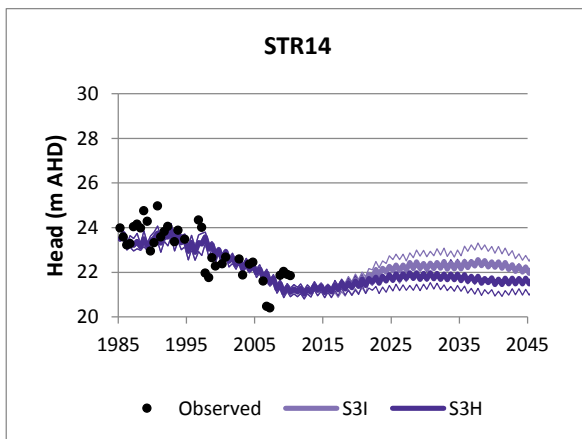
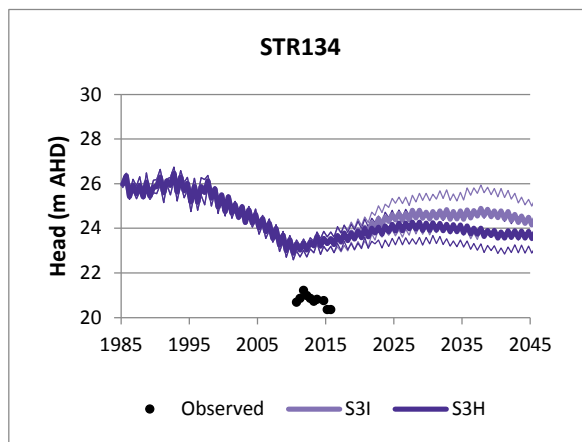
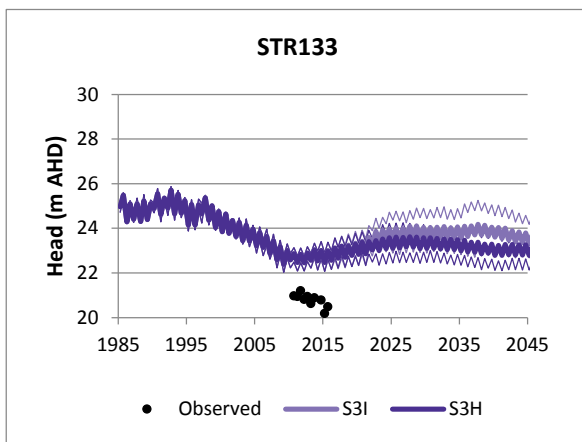
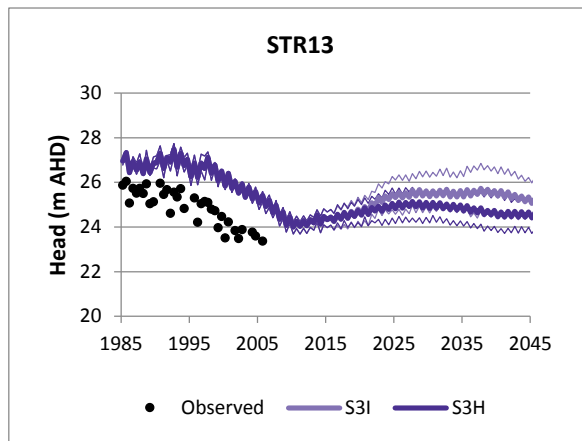
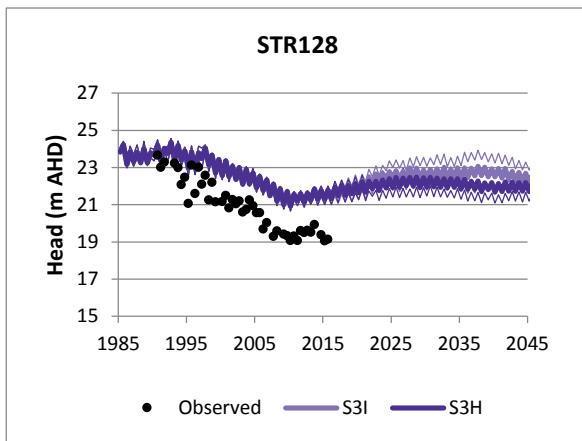
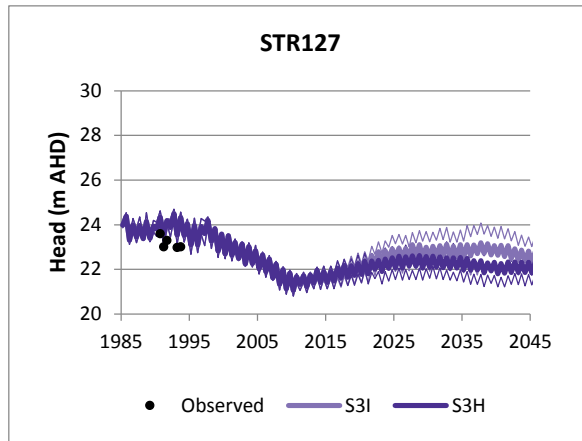
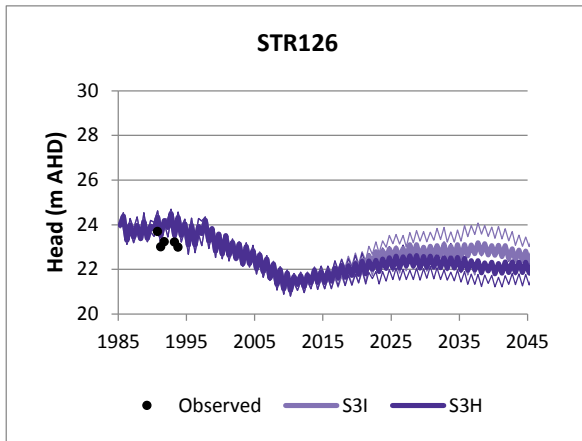


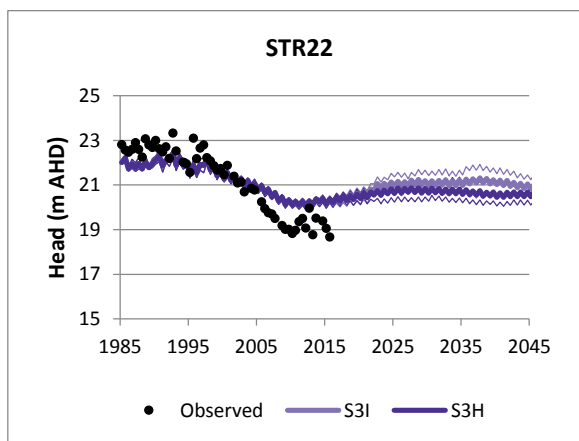
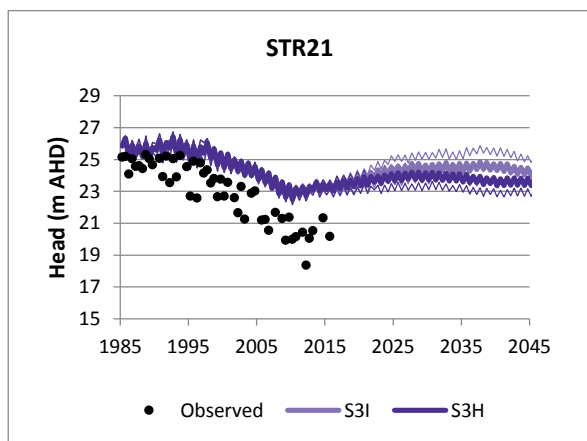
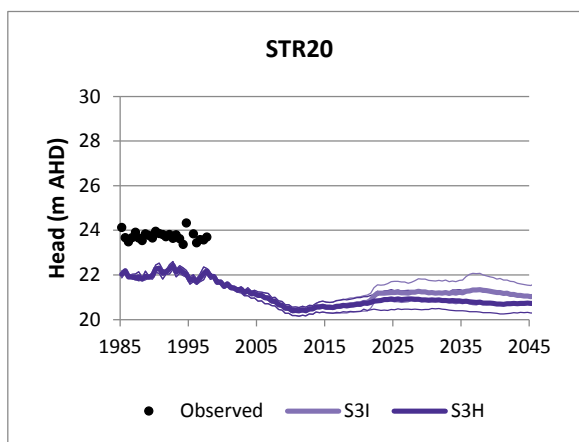
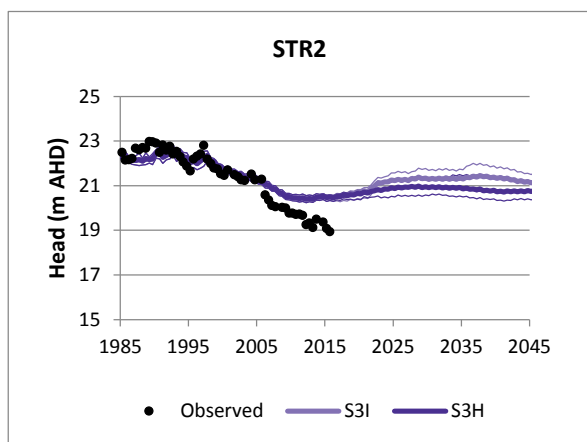
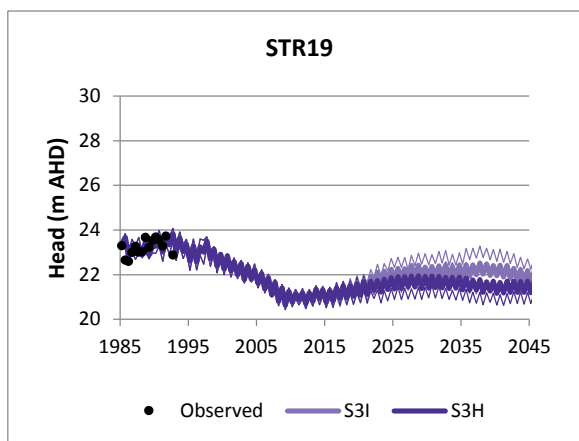
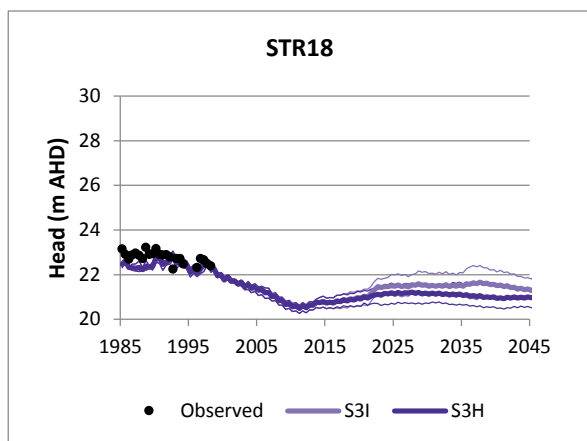
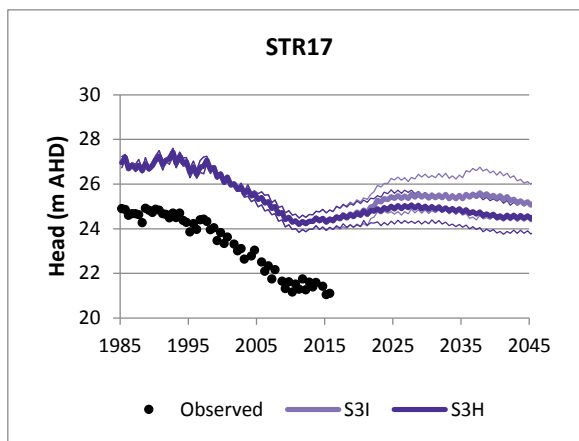
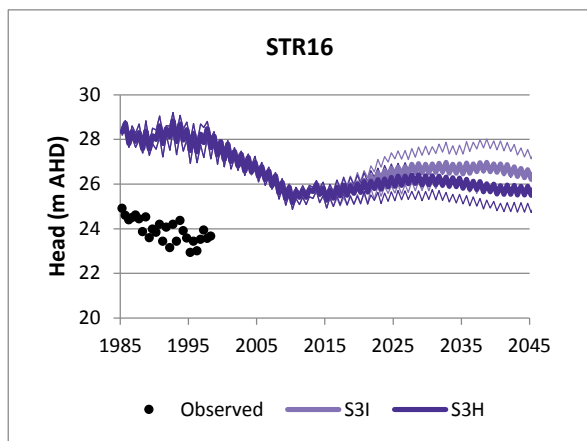


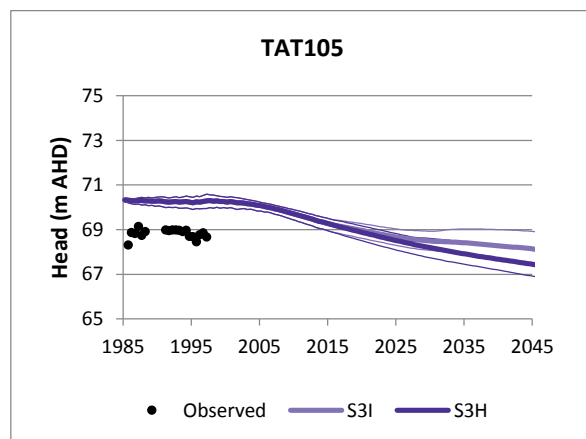
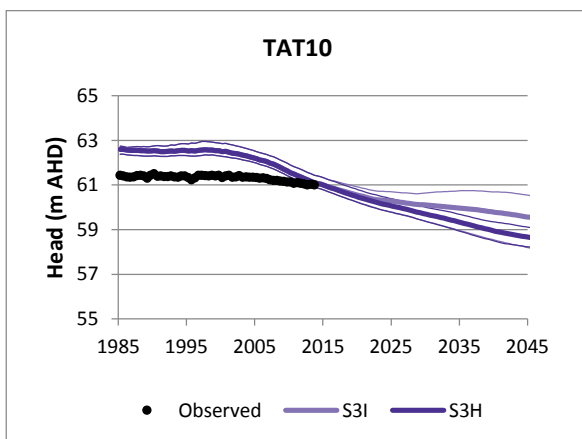
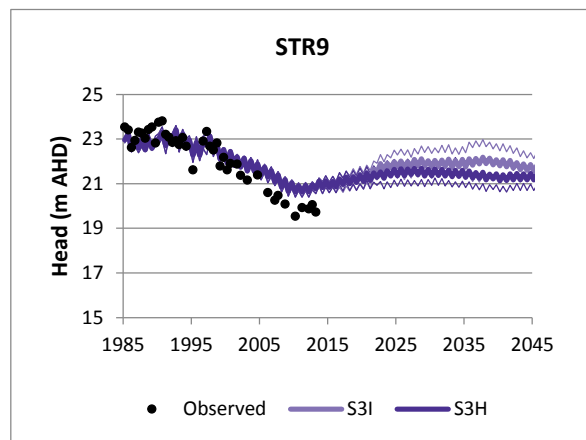
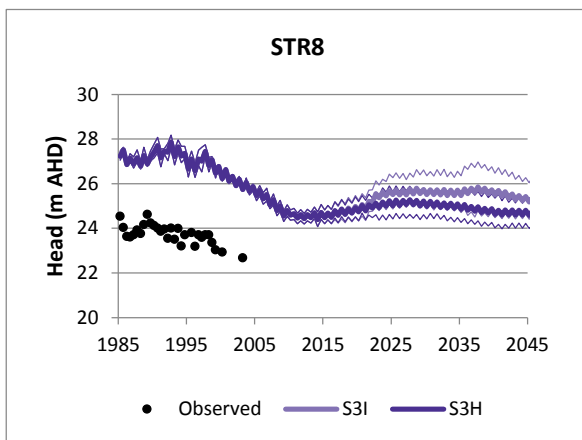
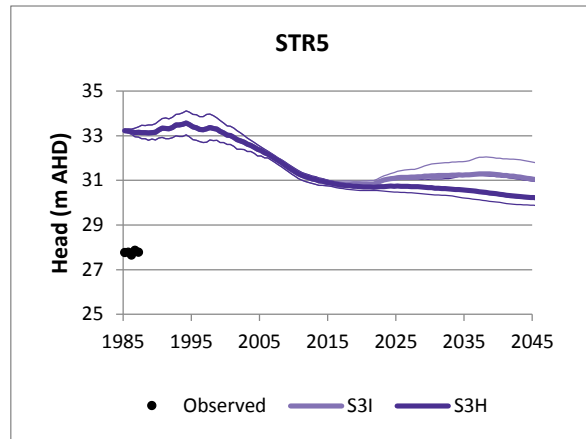
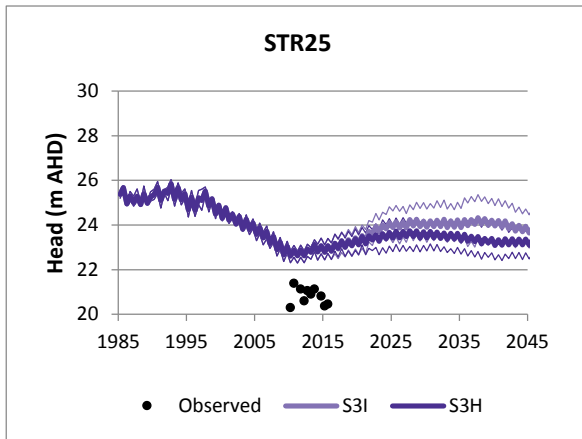
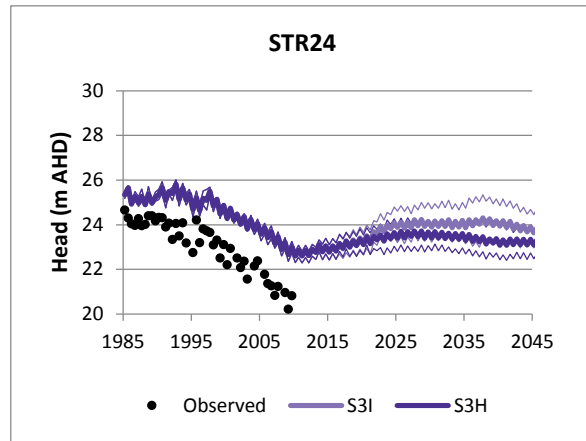
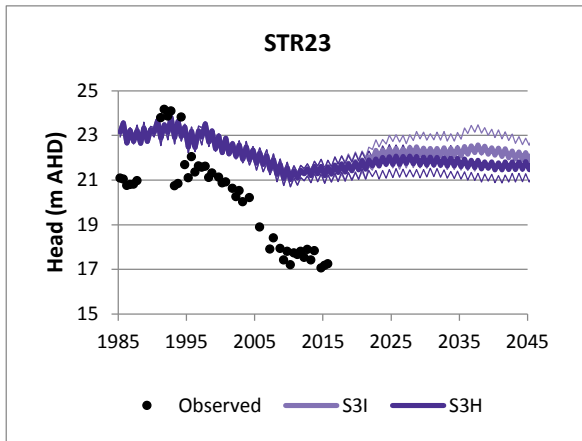


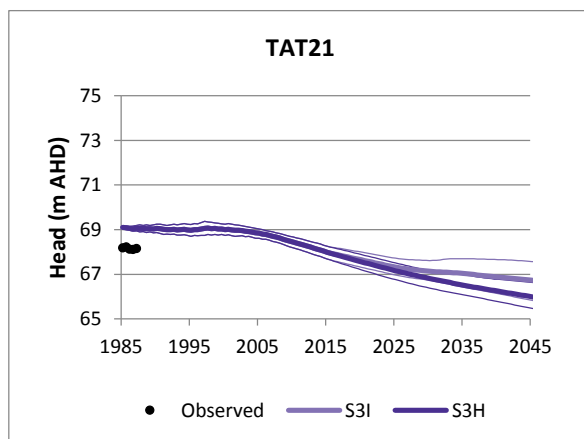
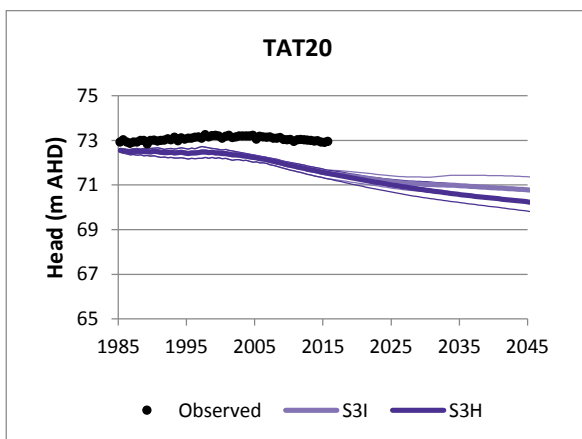
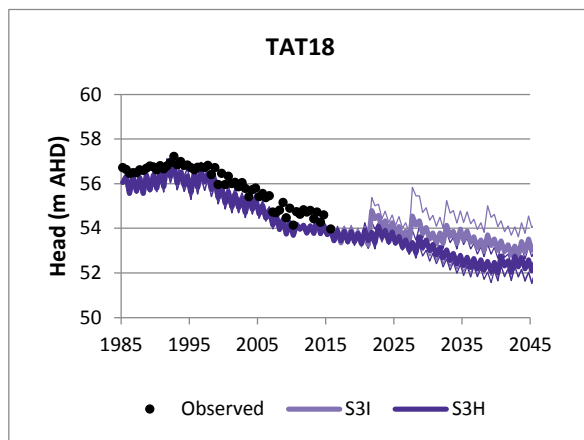
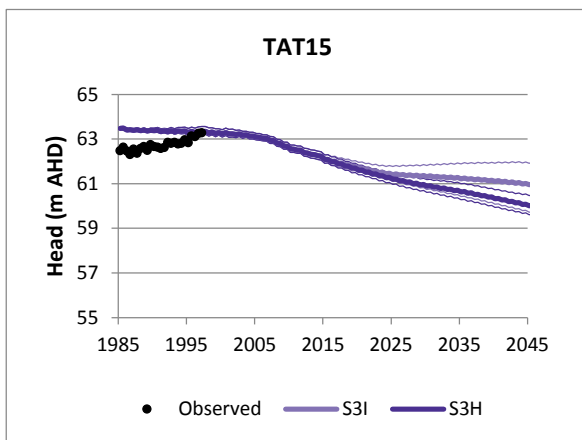
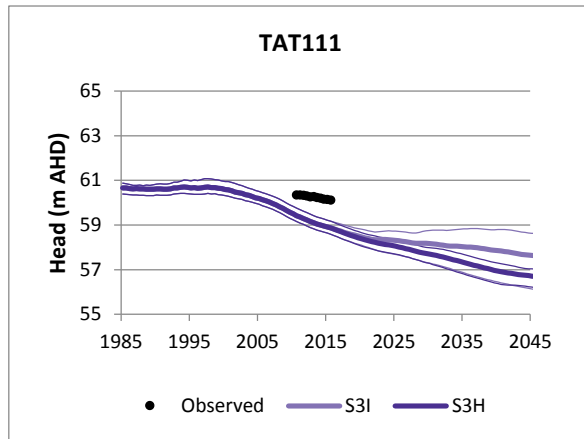
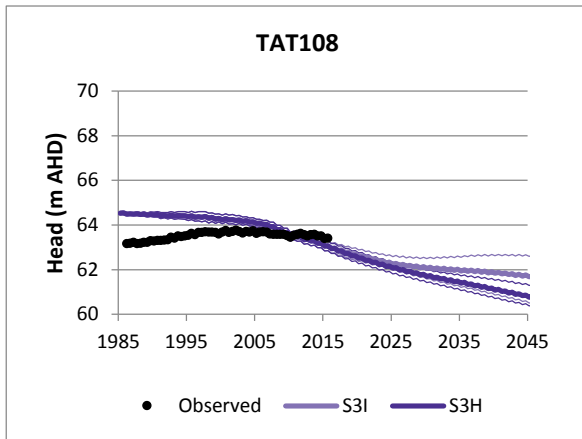
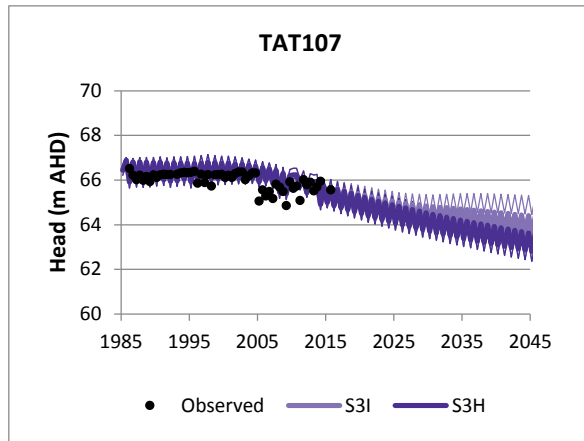
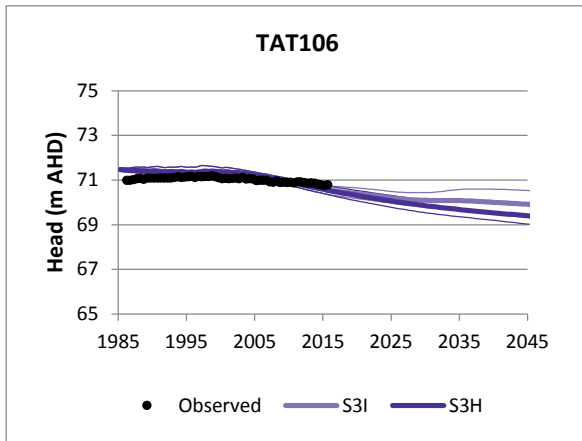


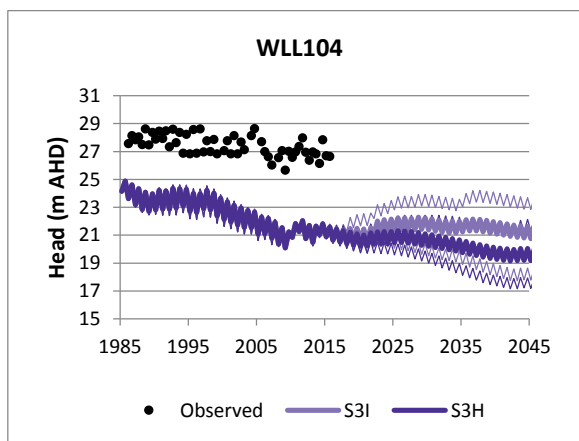
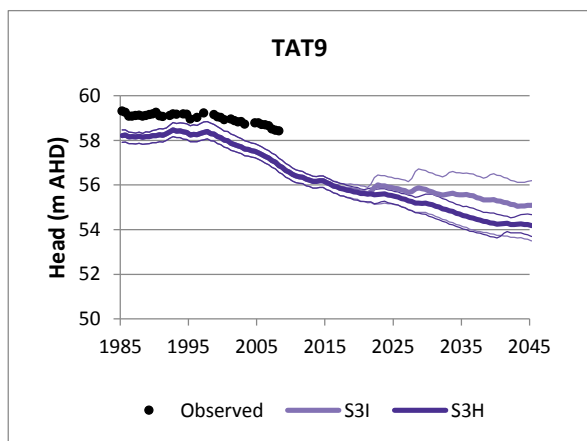
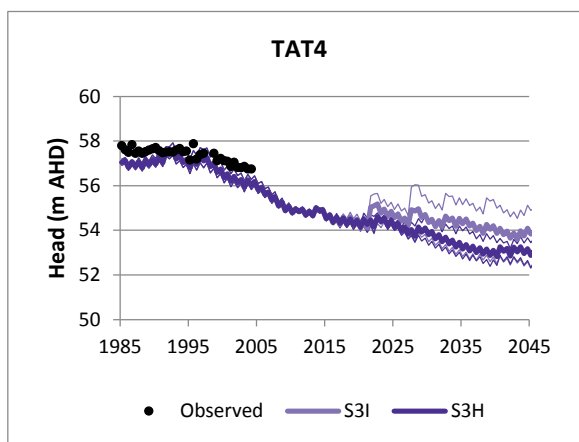
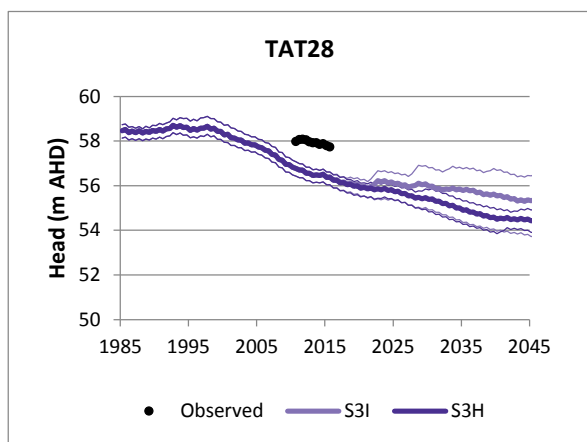
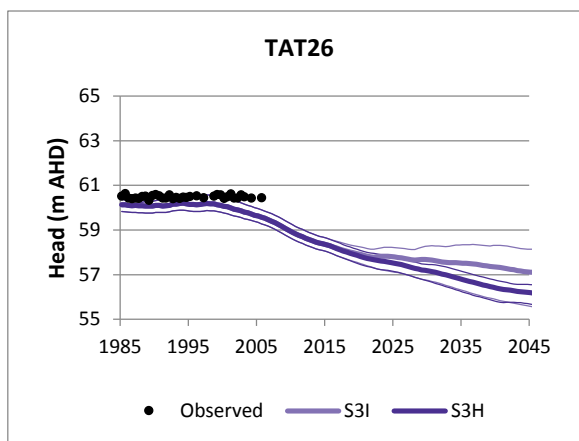
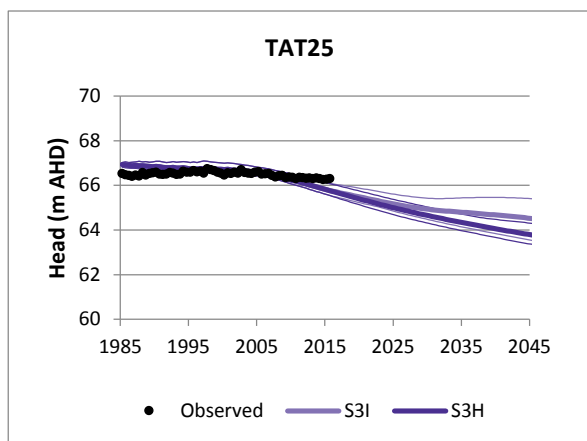
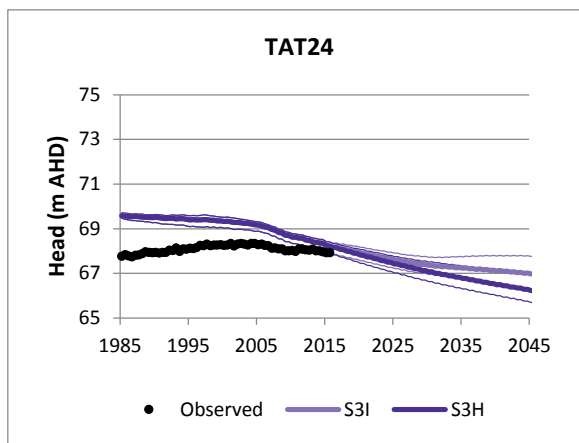
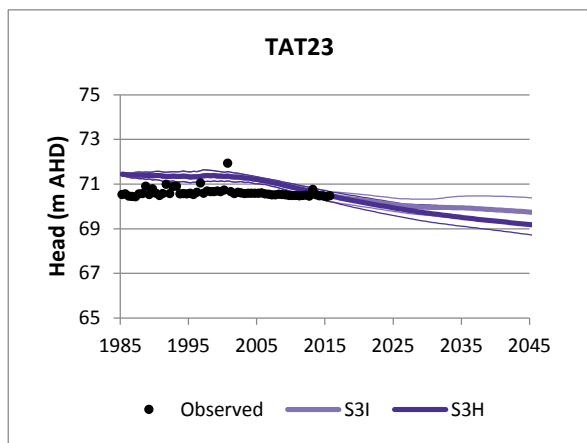


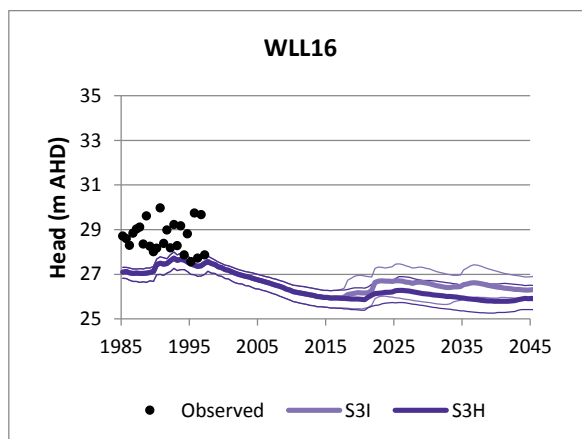
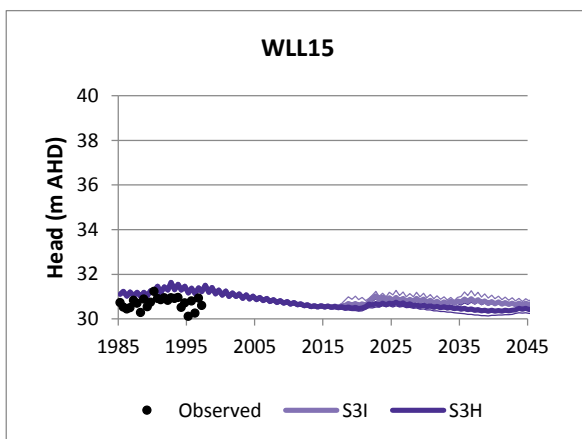
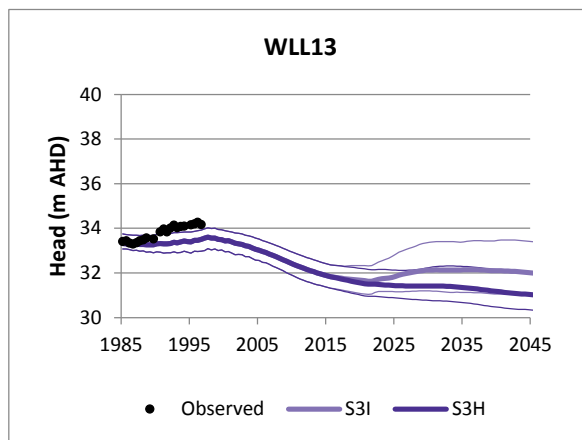
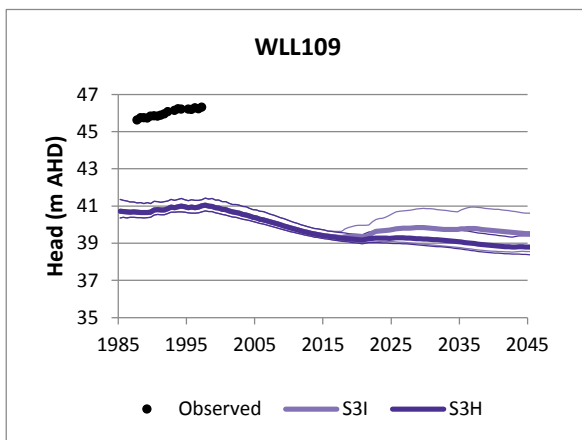
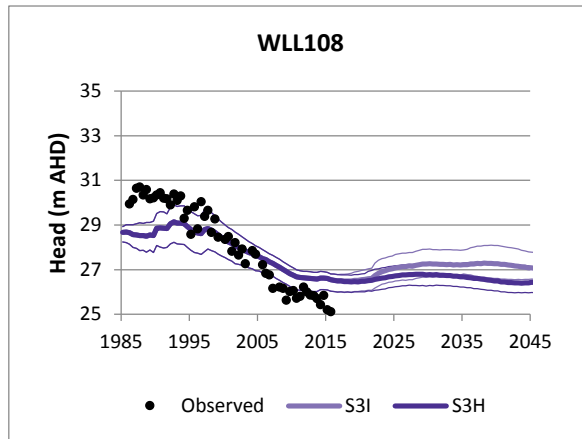
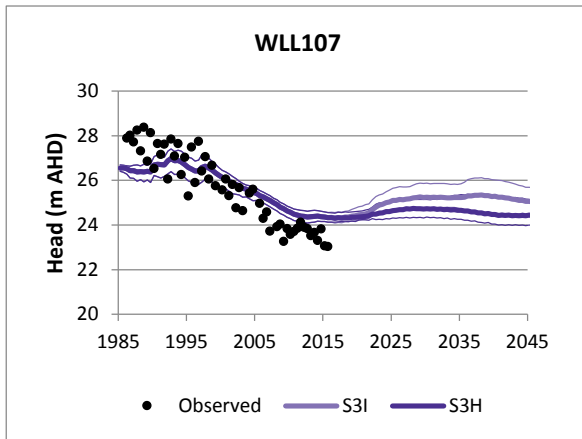
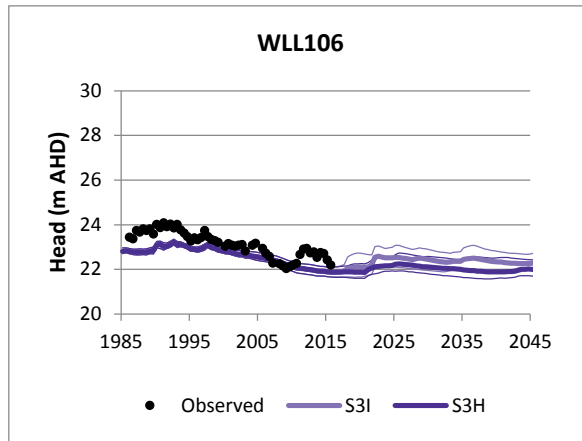
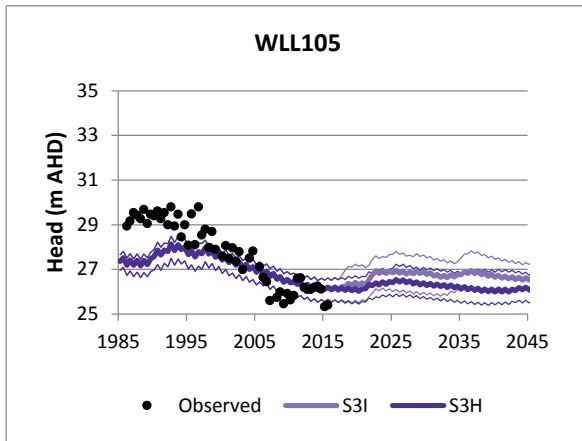


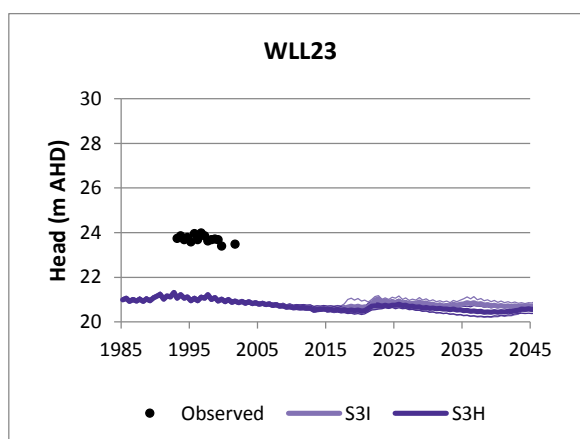
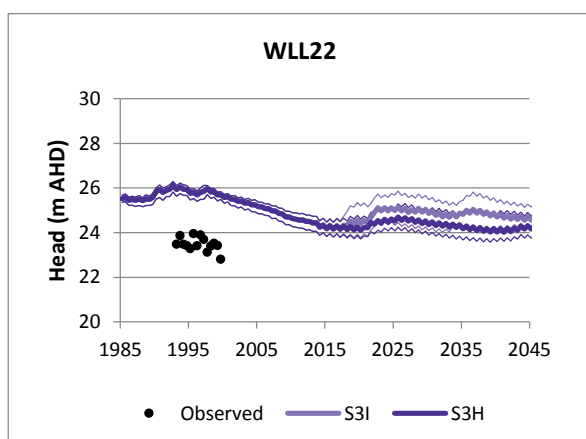
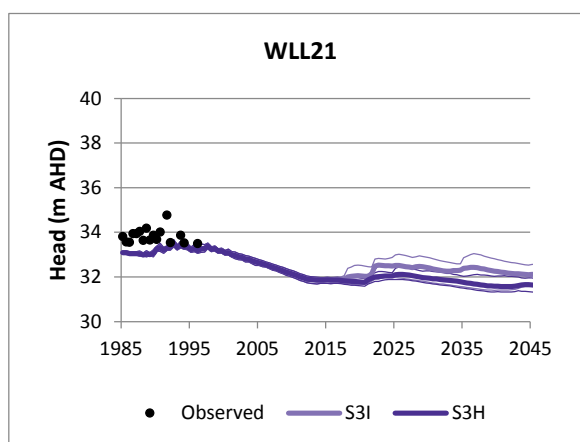
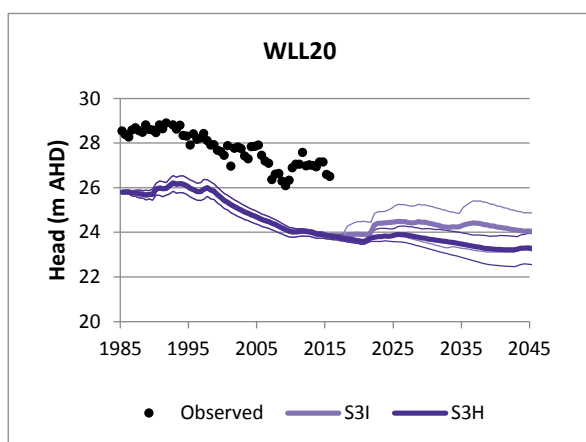
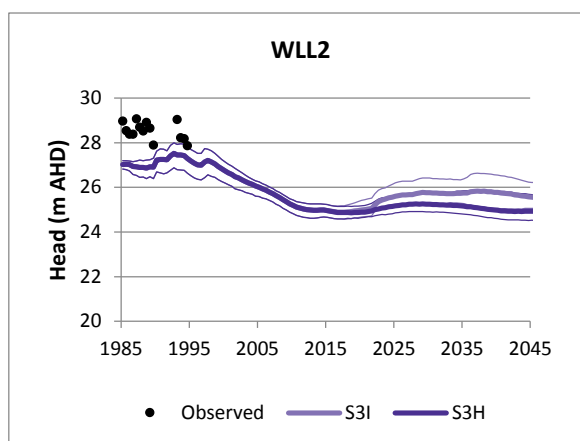
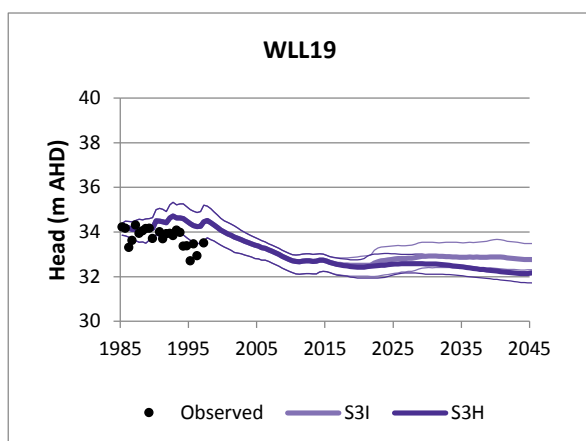
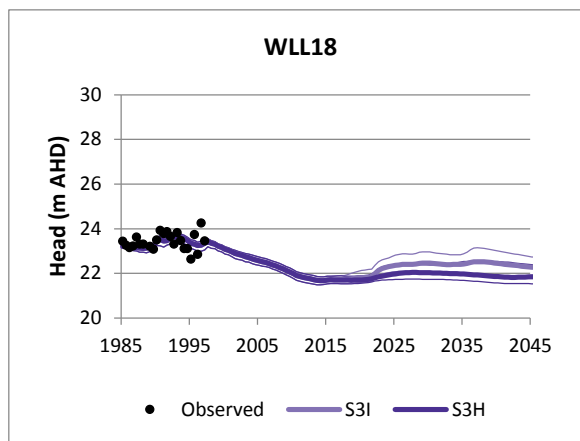
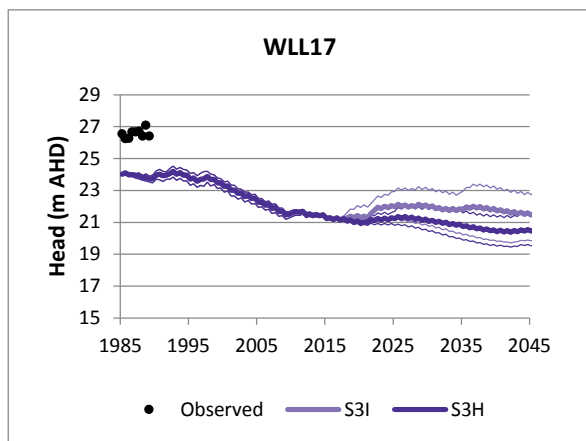


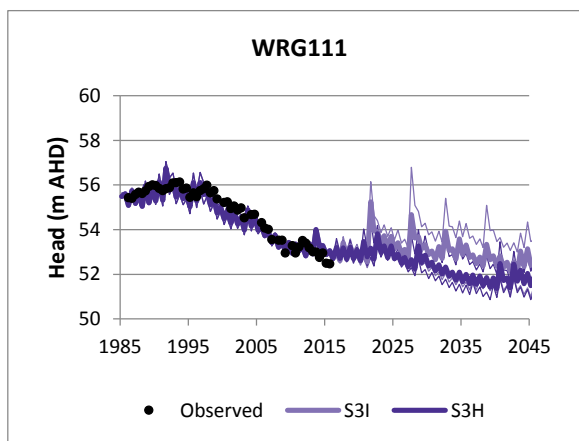
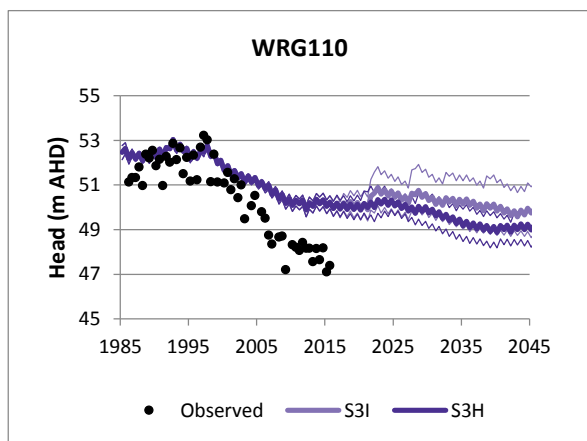
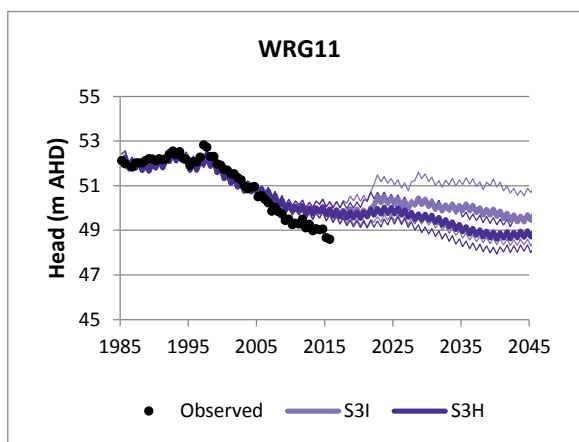
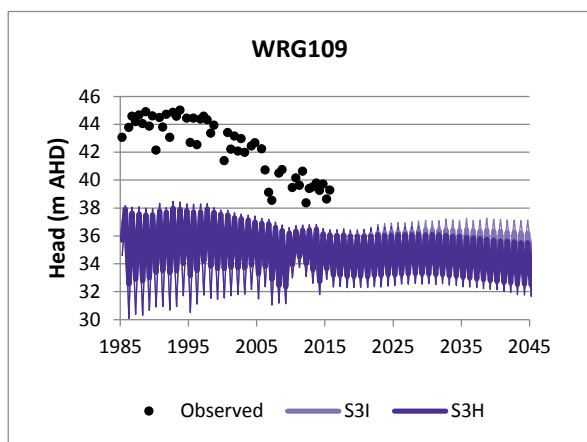
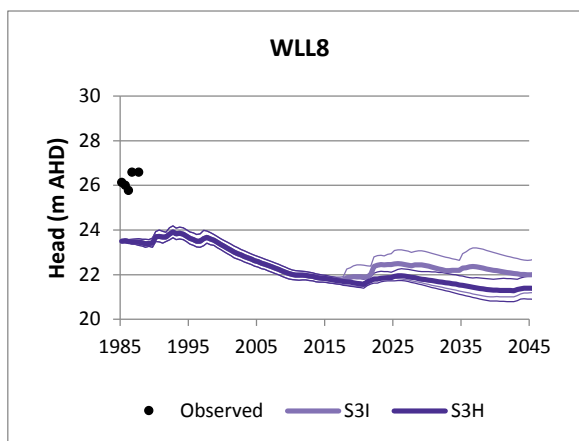
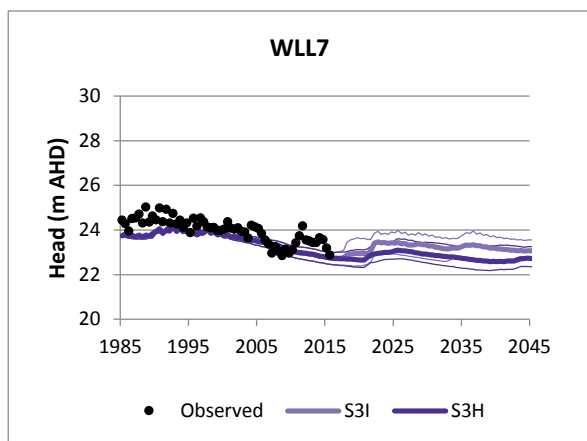
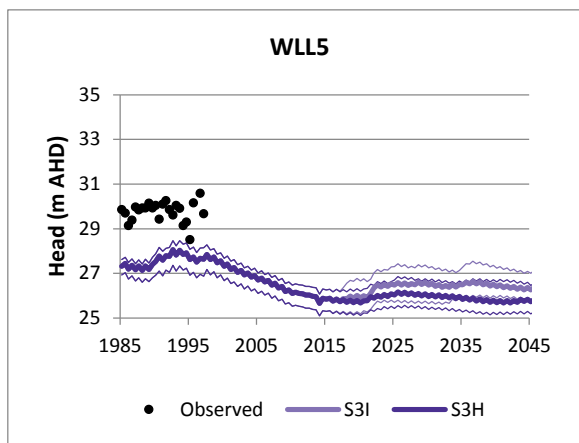
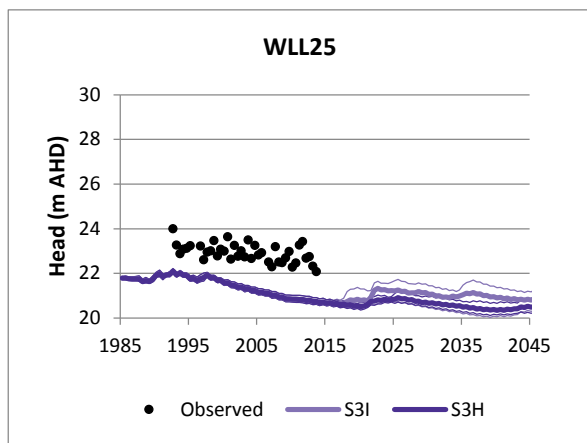


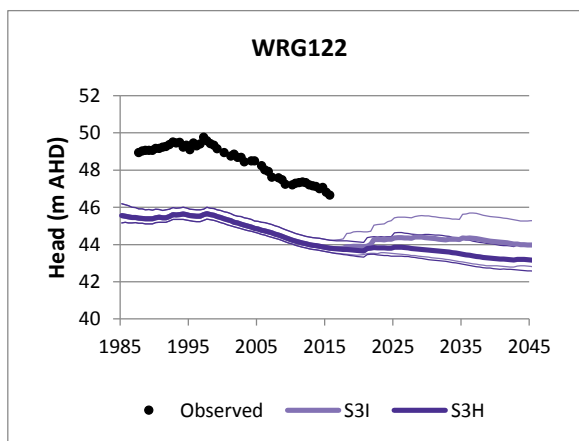
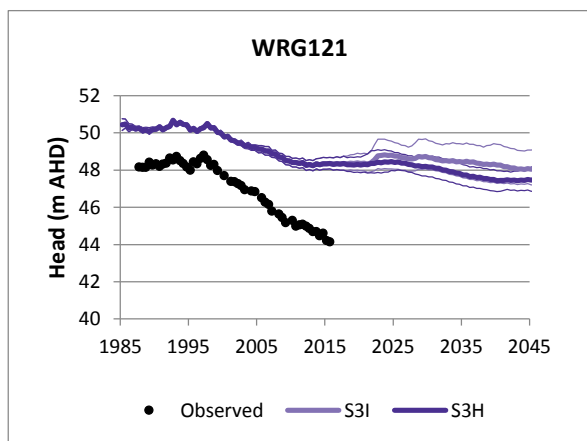
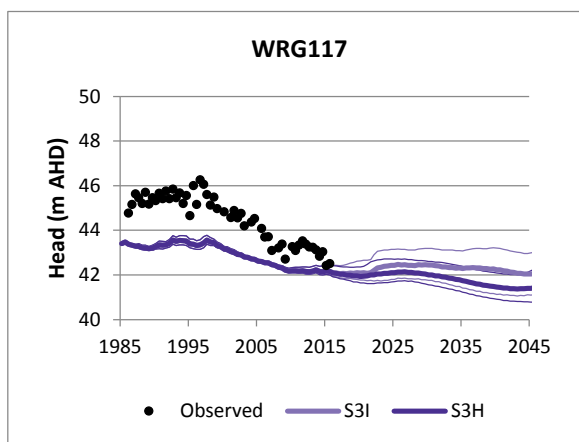
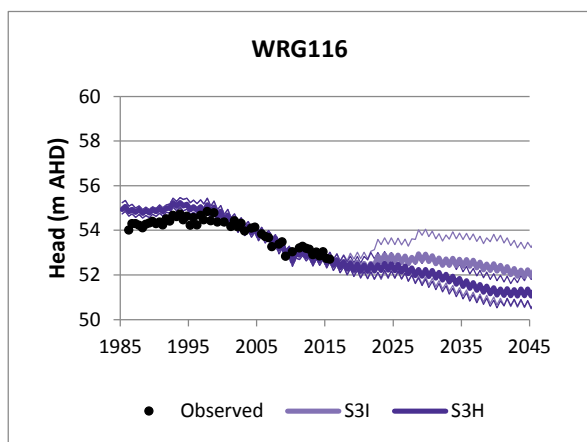
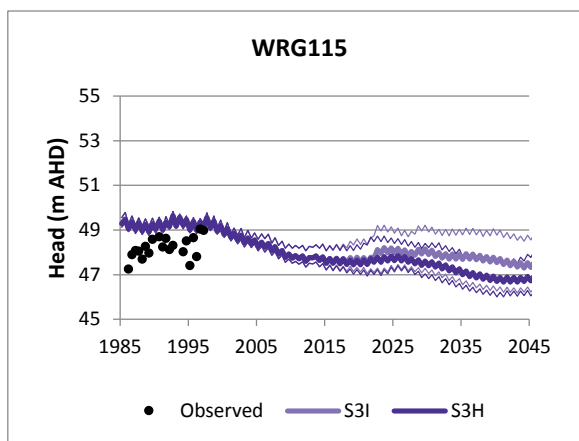
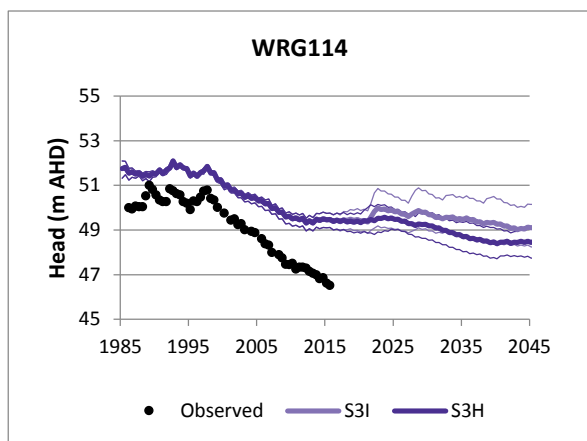
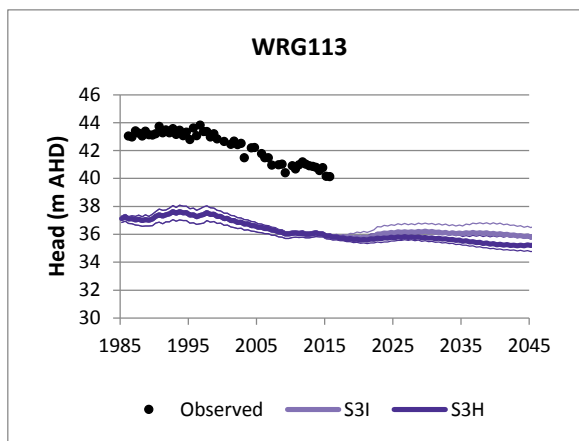
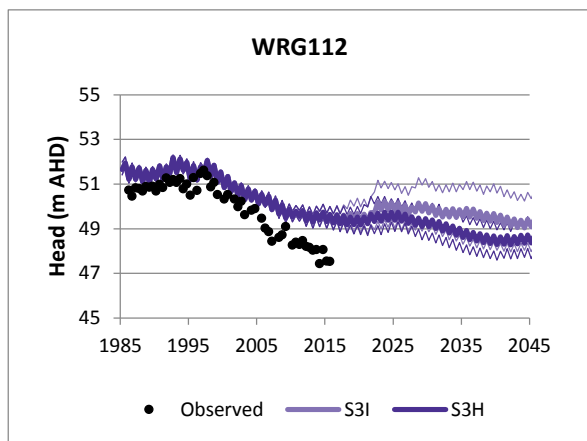


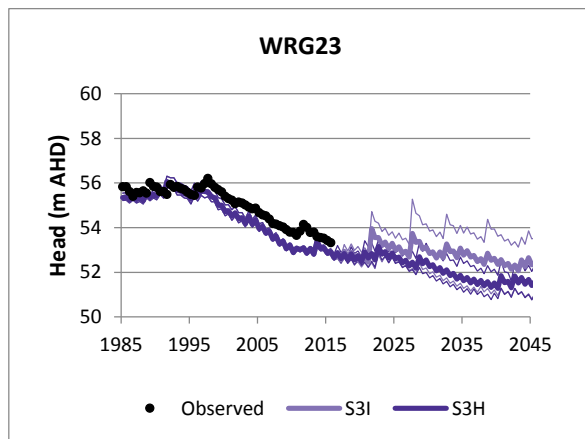
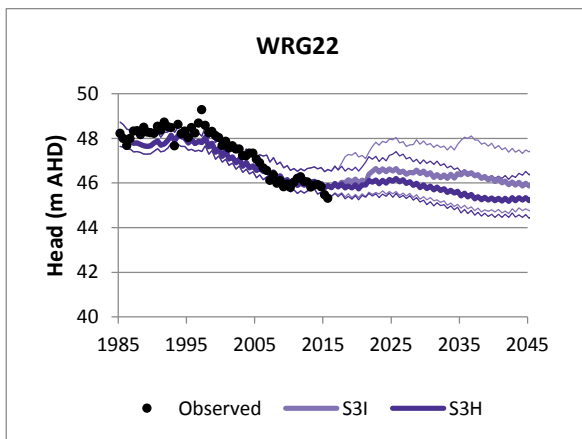
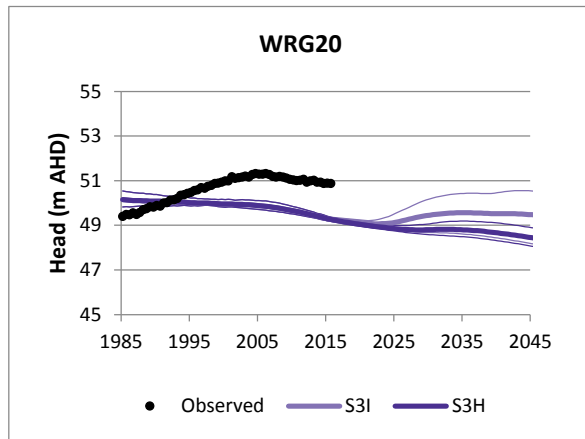
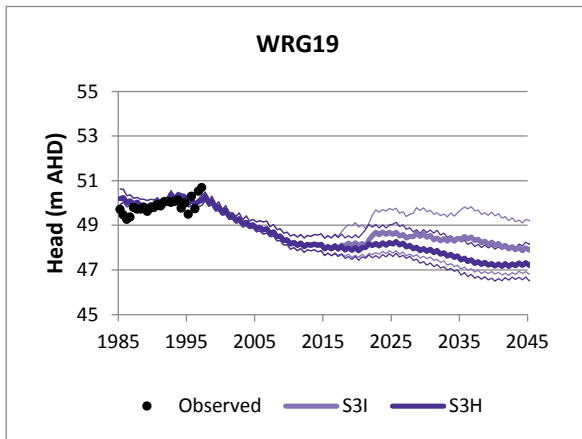
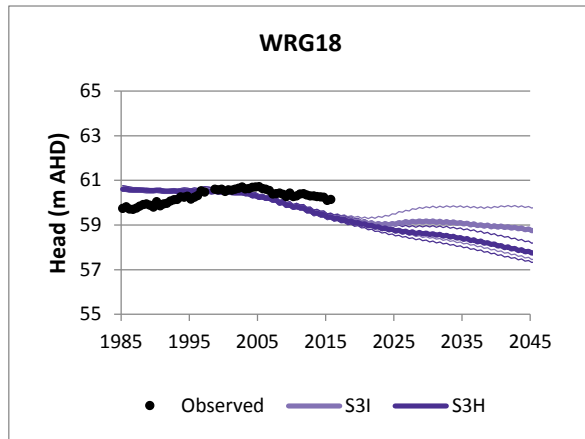
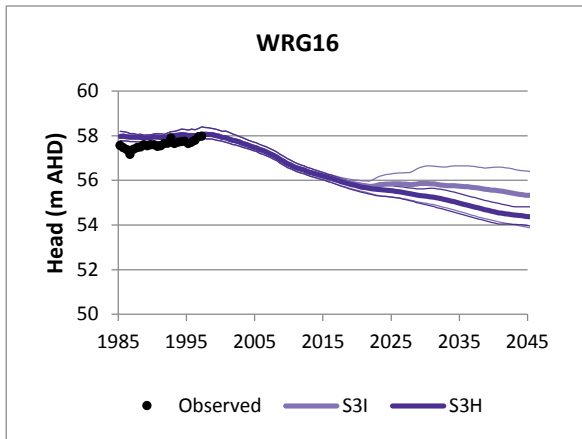
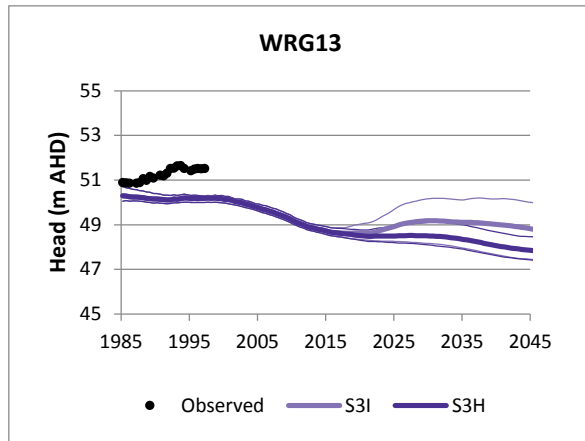
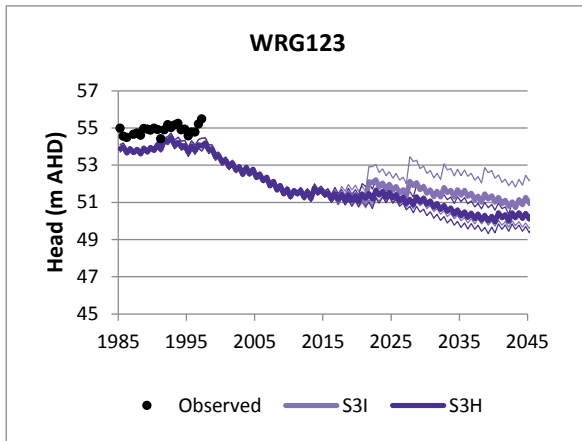


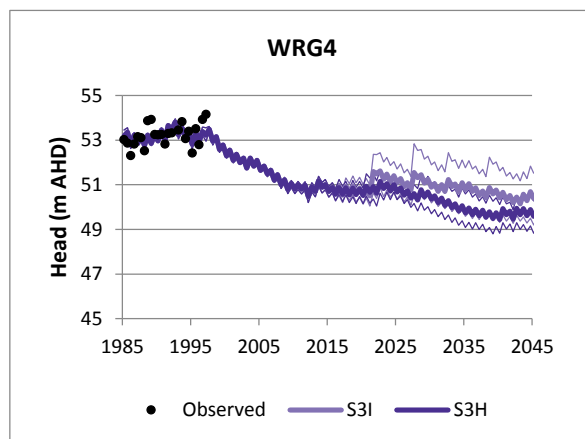
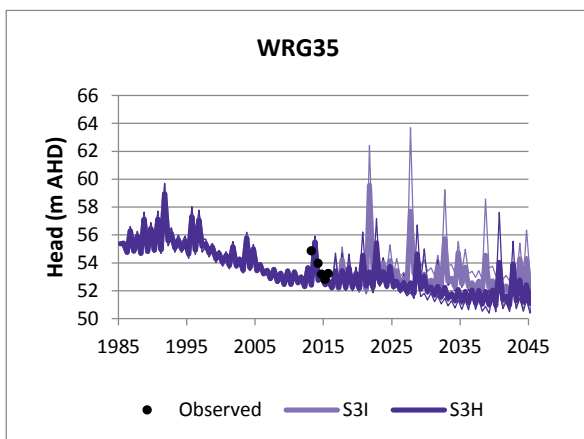
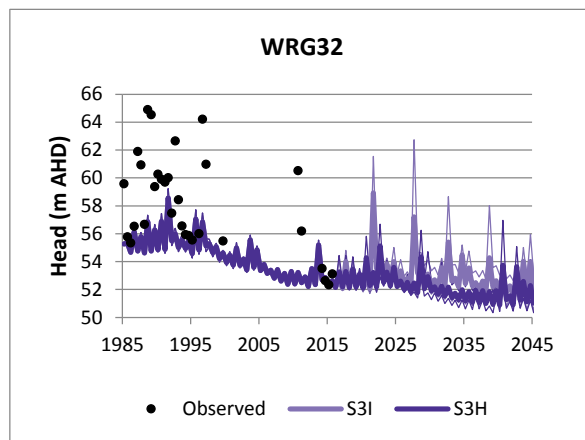
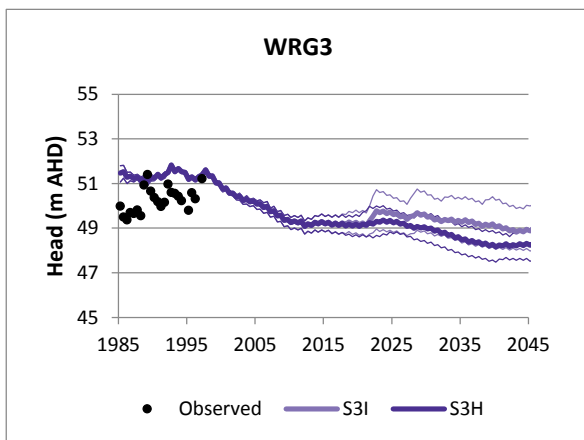
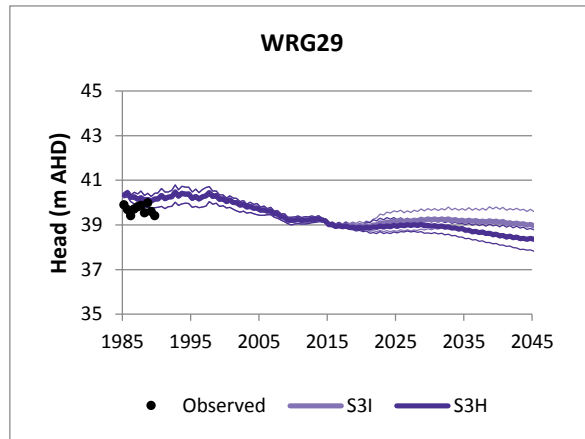
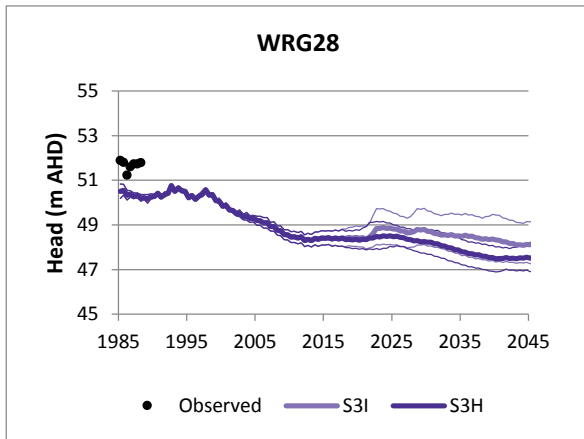
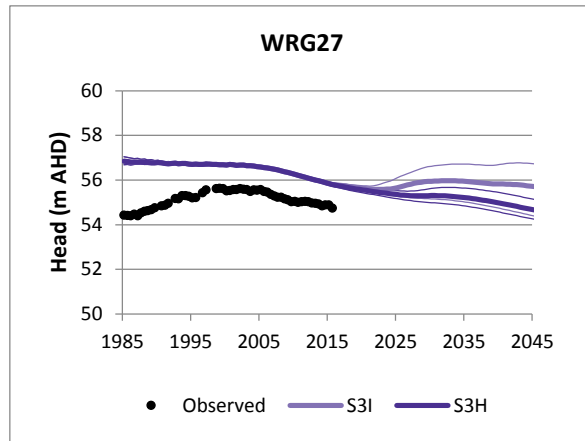
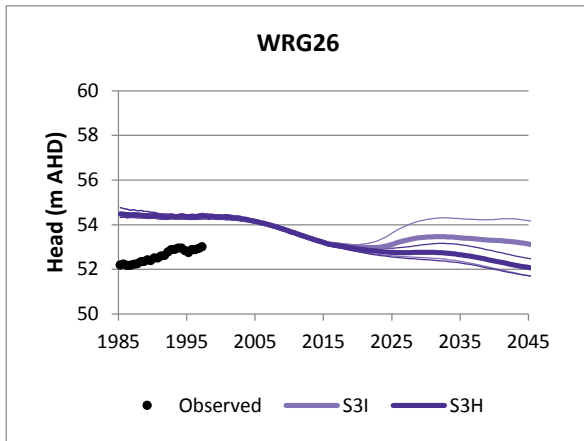


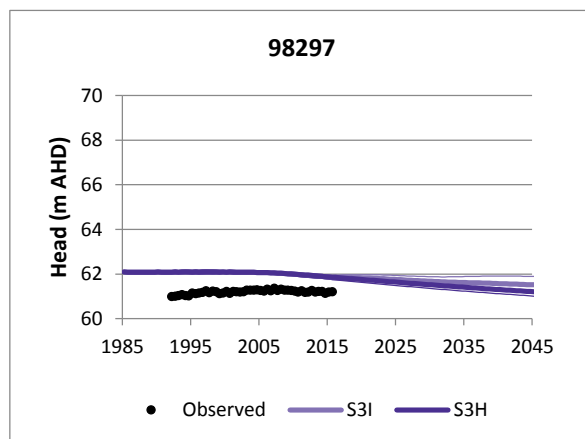
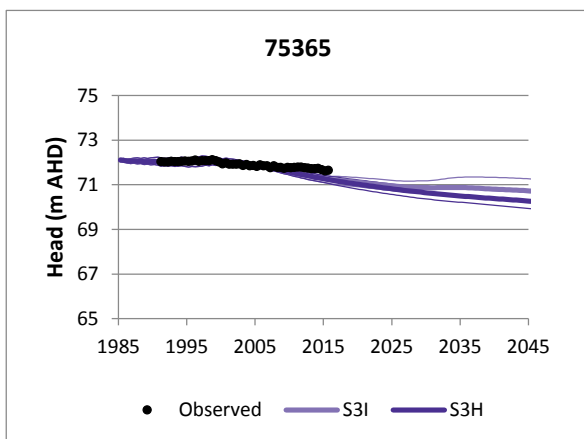
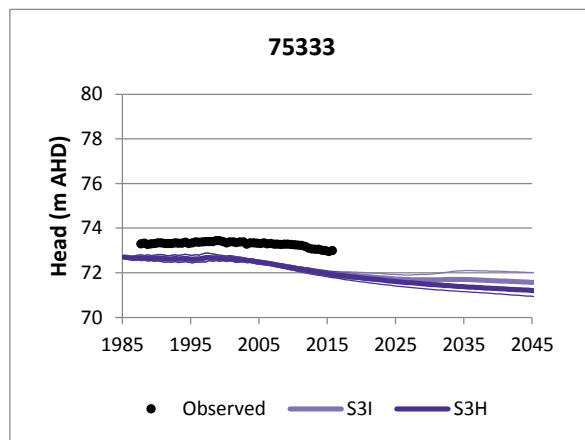
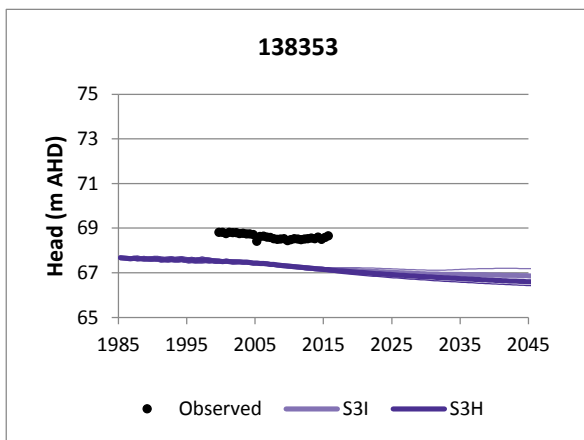
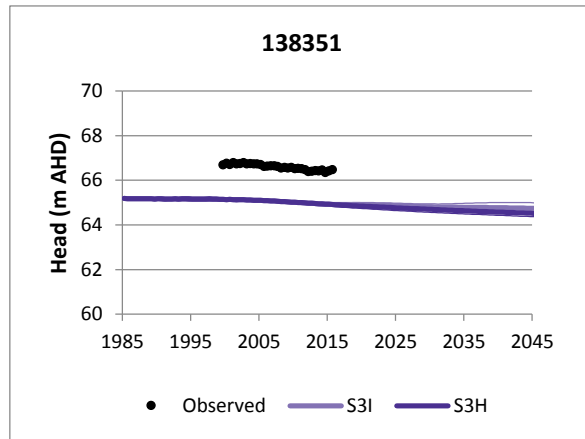
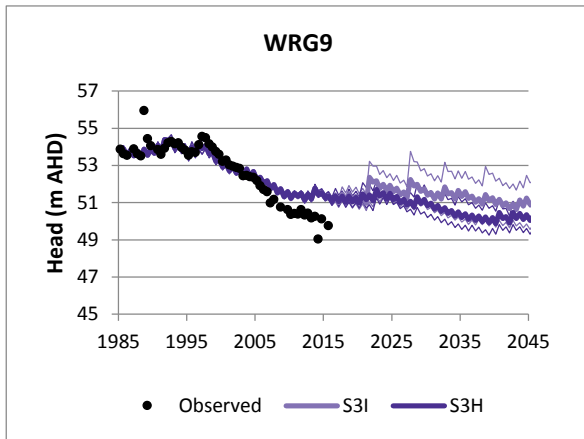
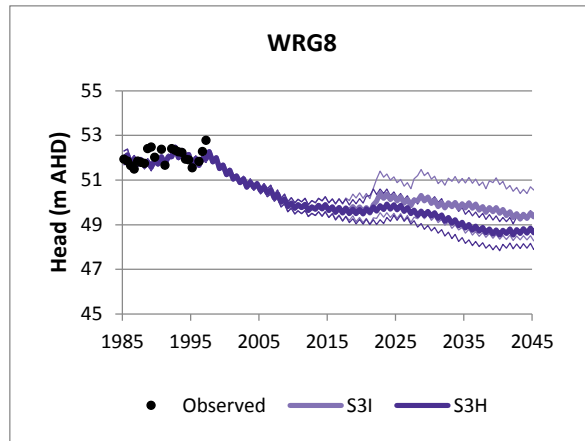
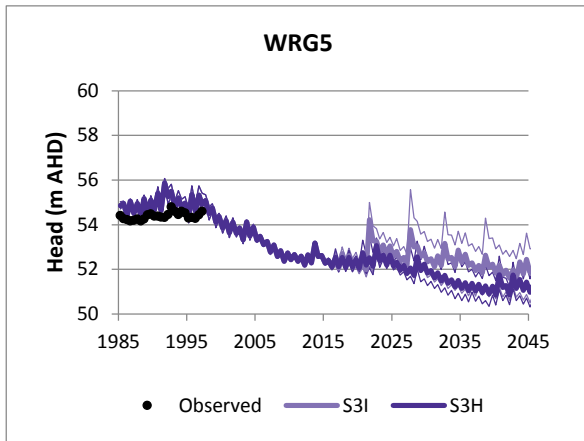






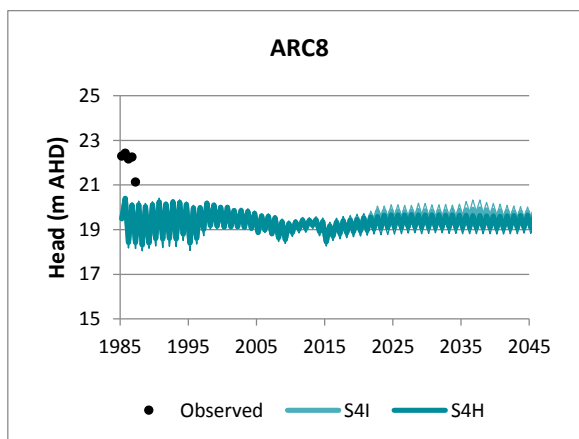
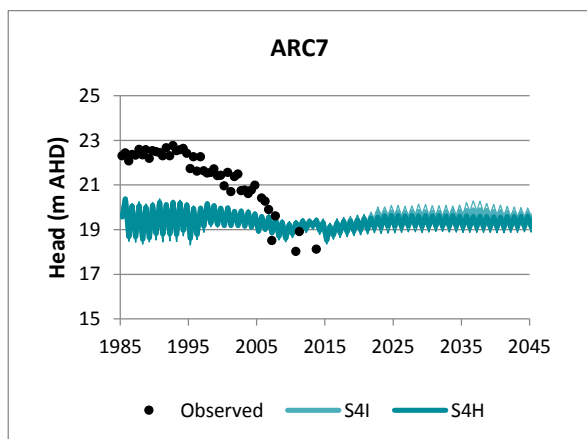
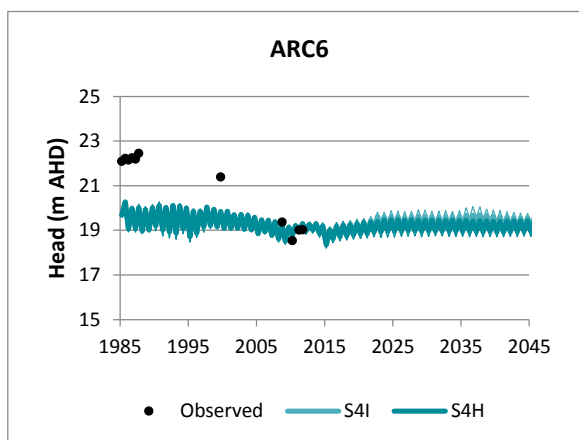
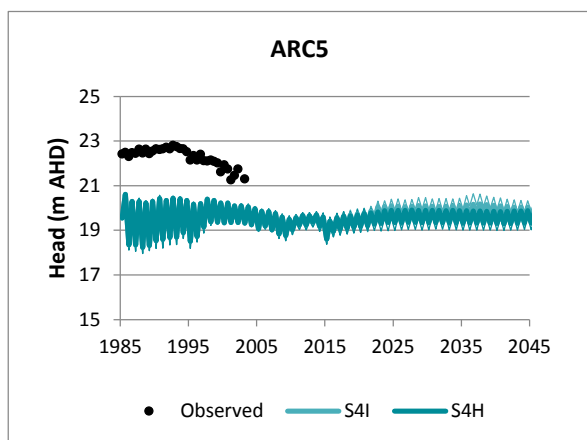
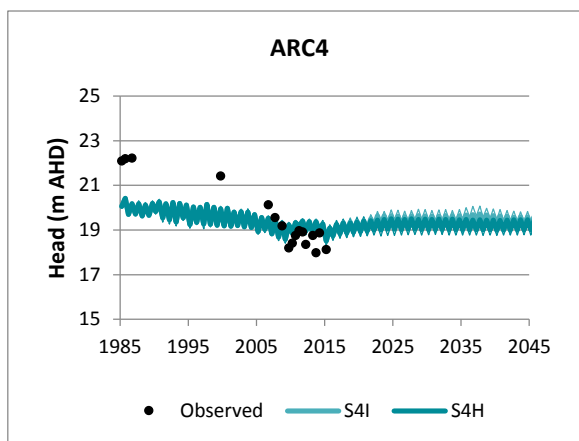
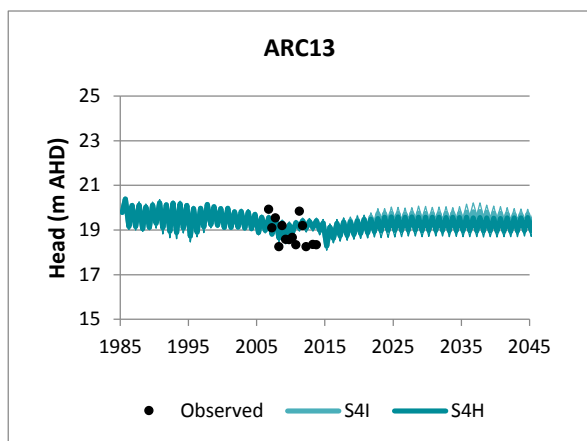
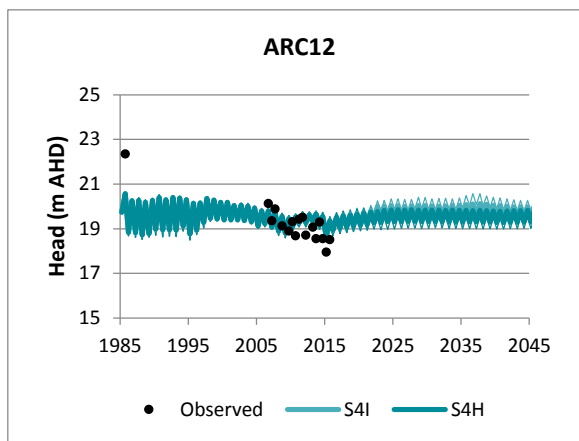
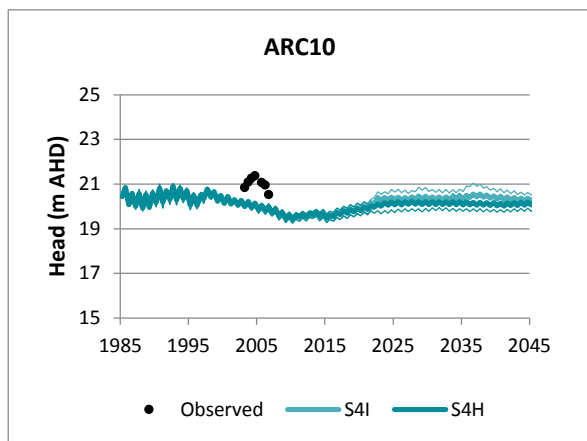


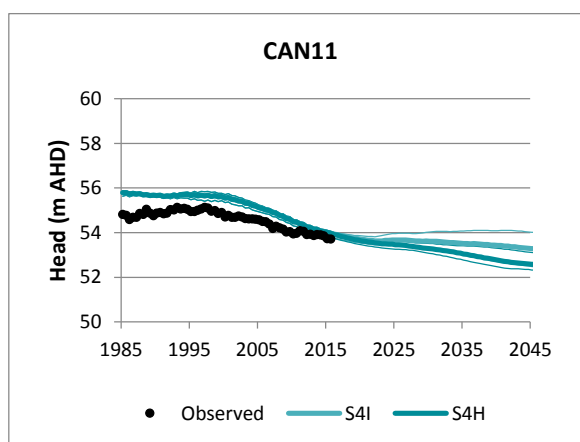
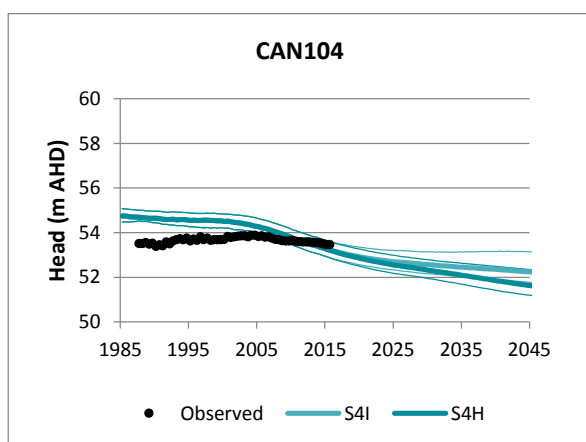
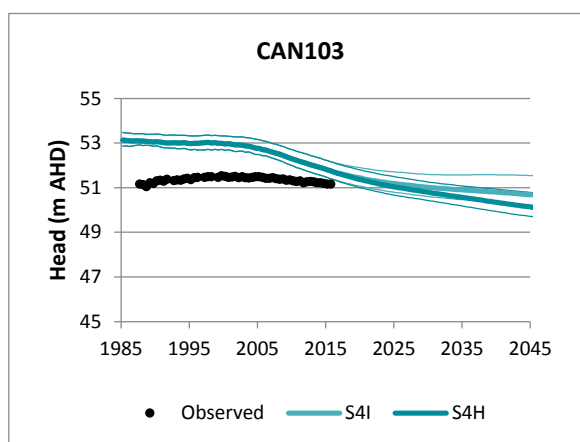
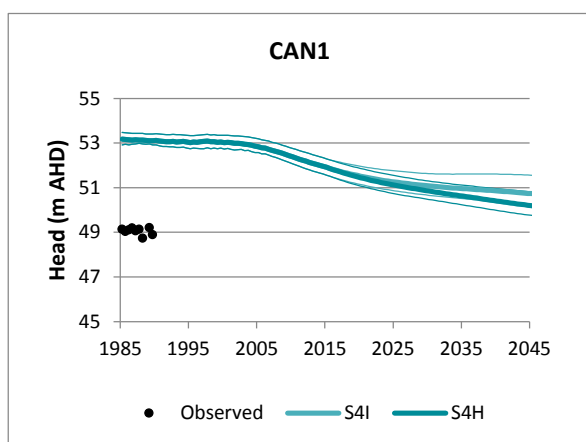
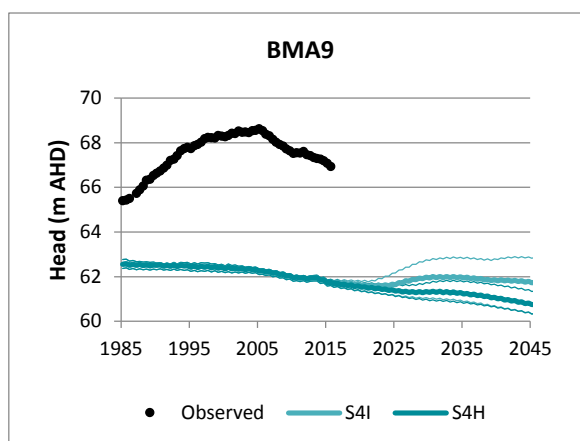
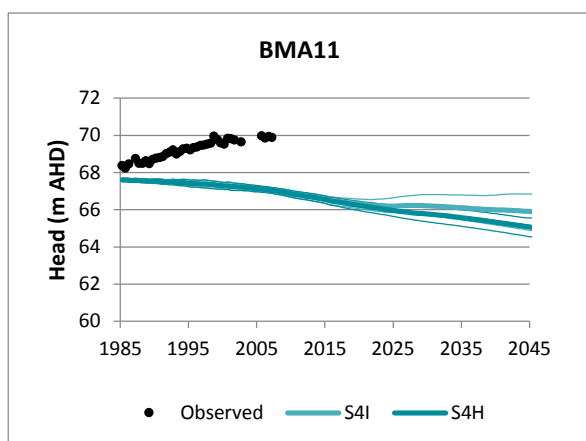
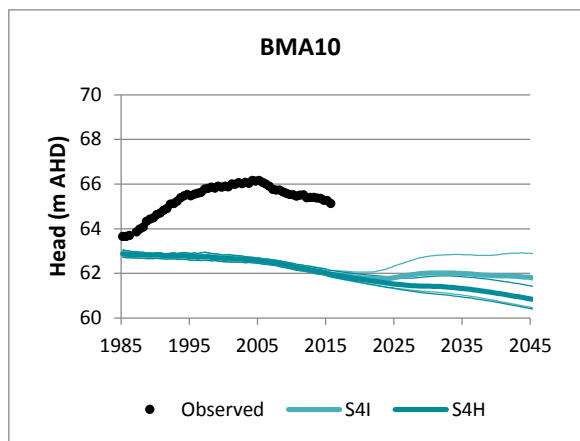
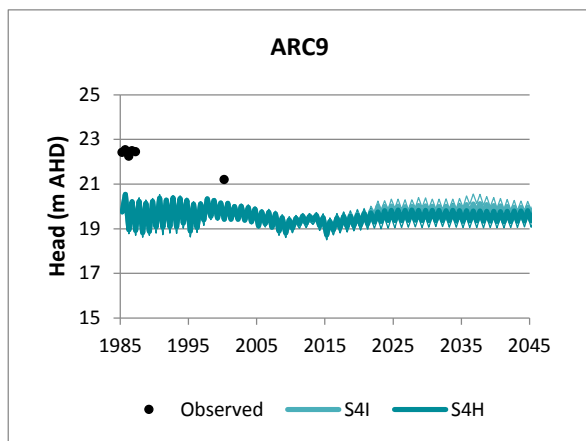


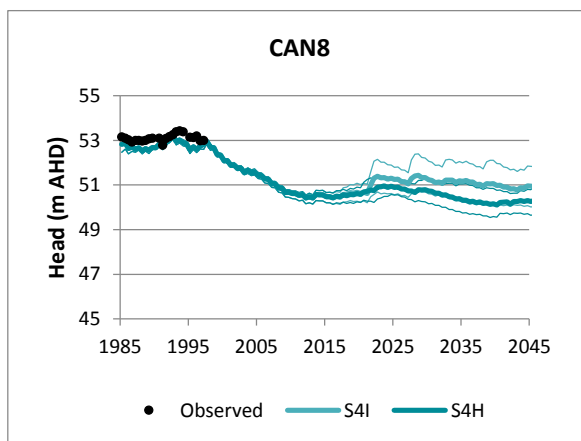
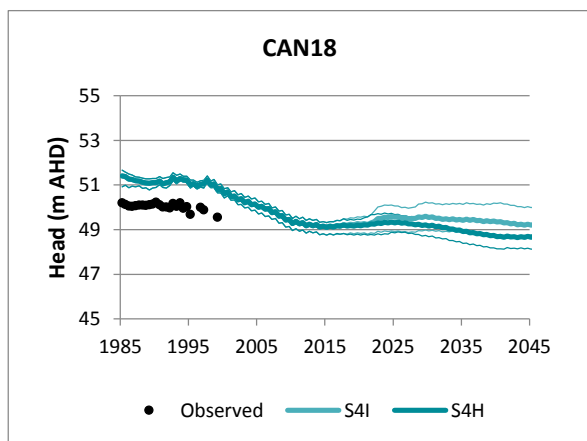
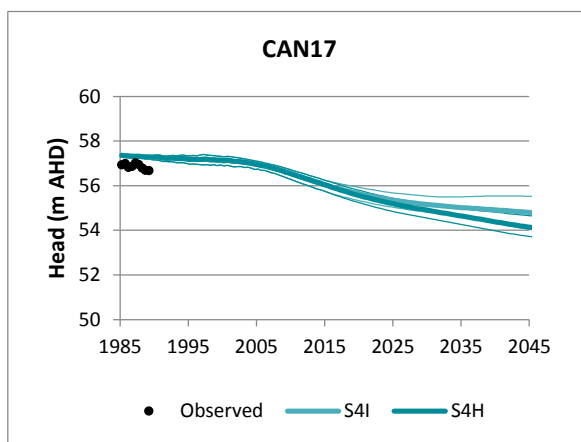
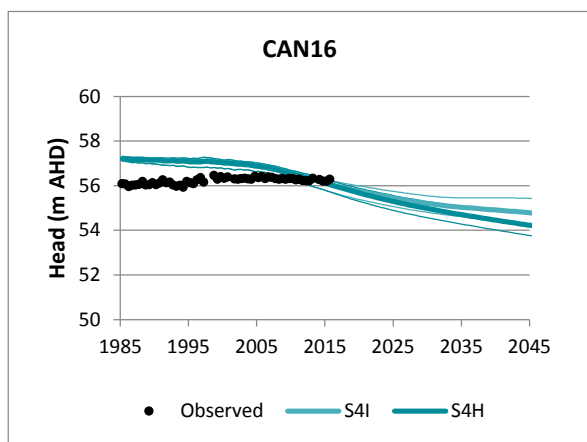
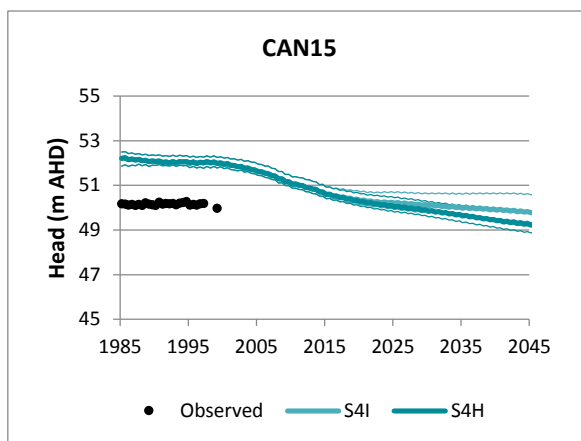
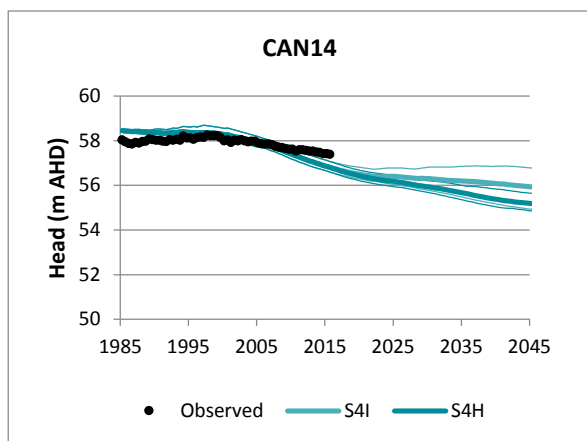
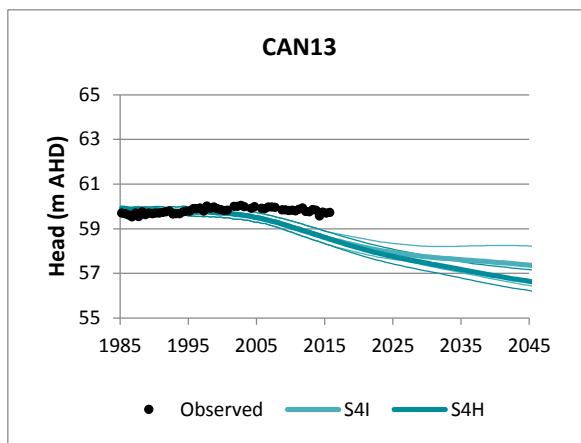
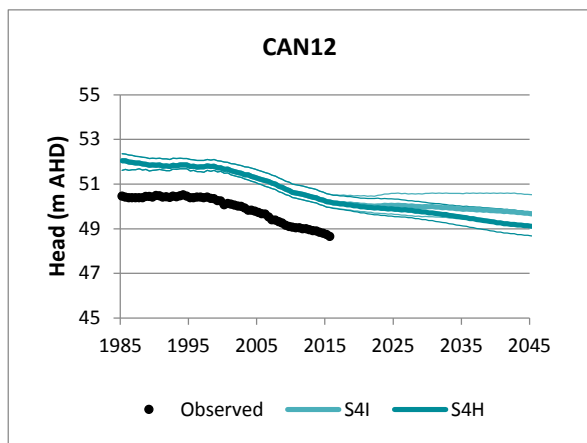


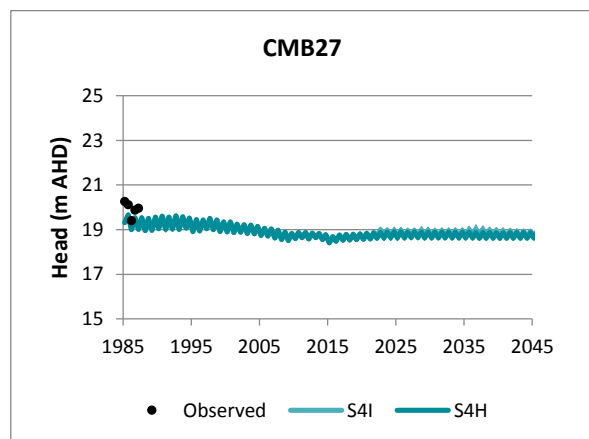
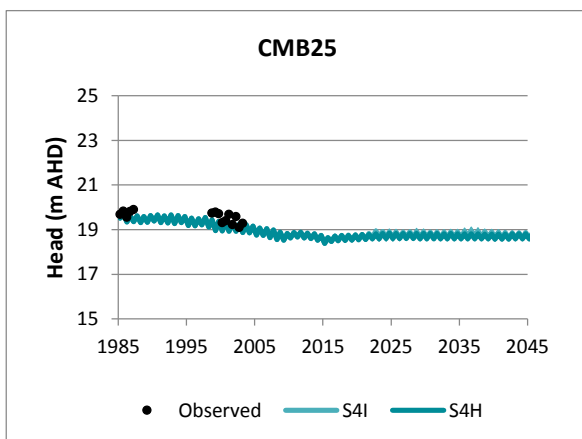
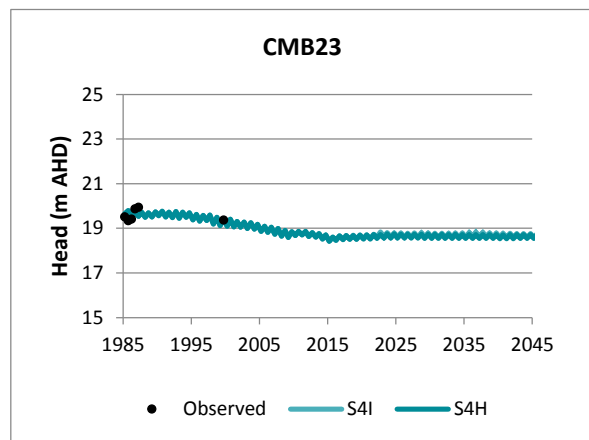
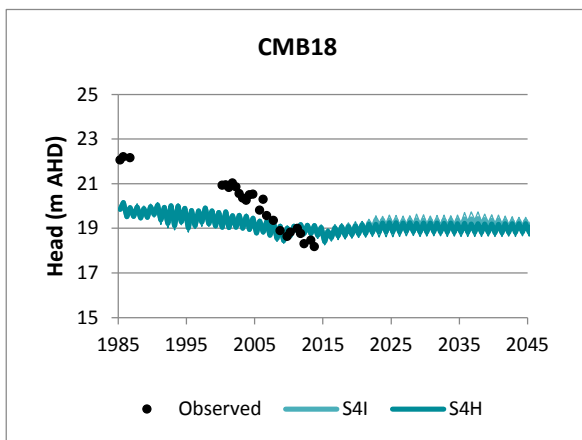
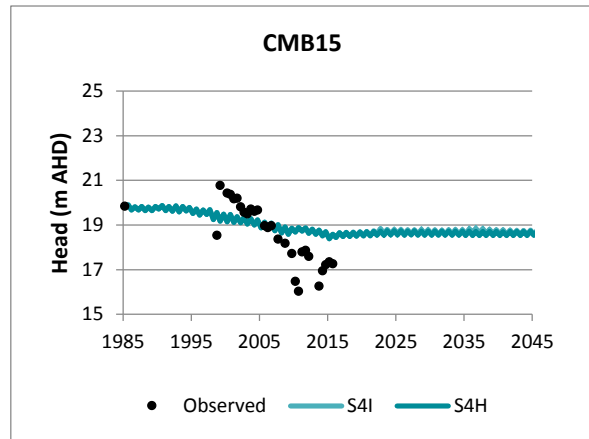
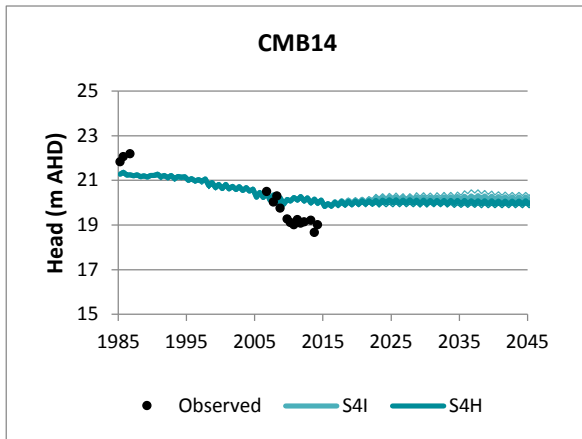
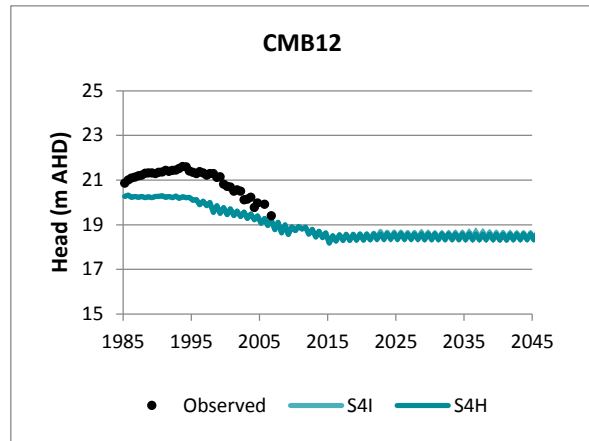
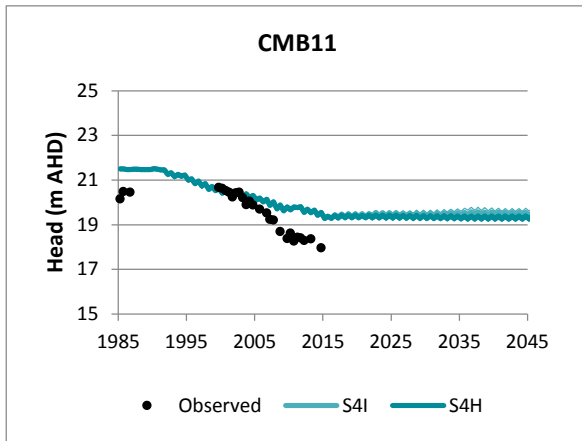
G. Hydrograph projections for lower extraction with both intermediate and high carbon emission climates (S4I and S4H)

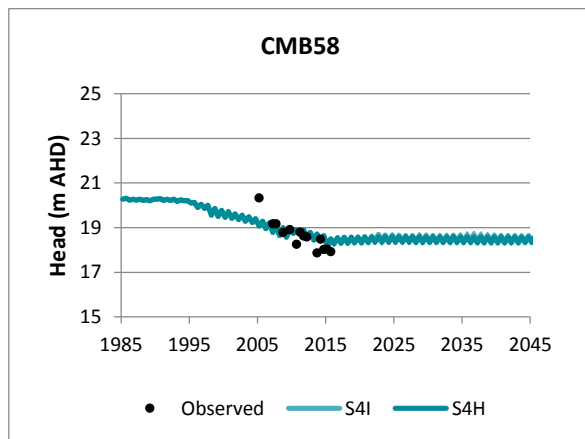
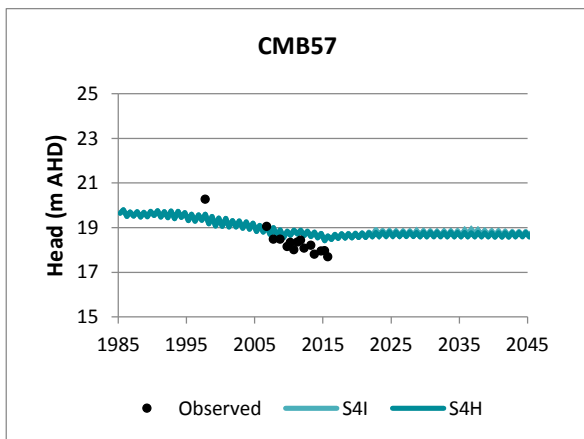
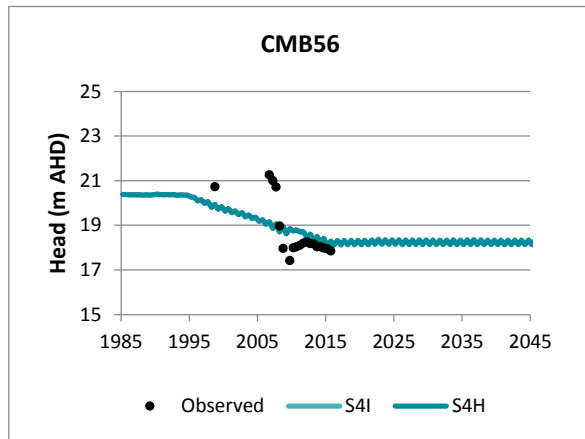
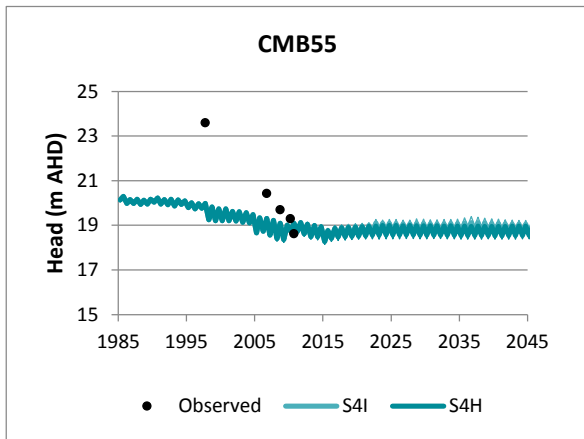
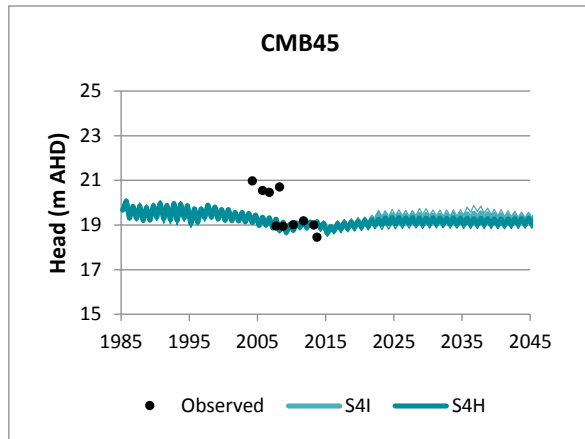
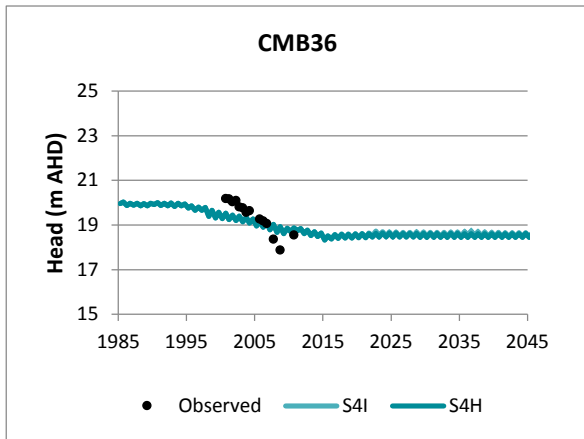
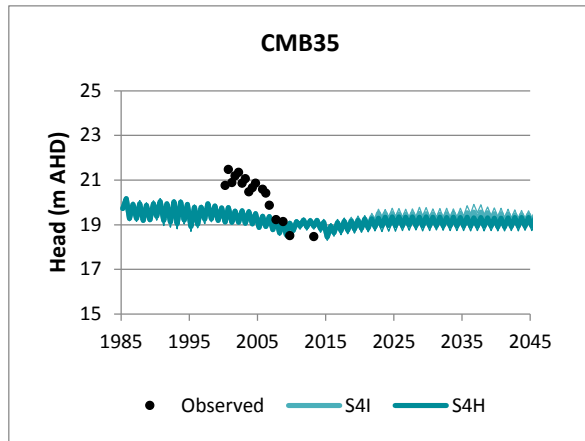
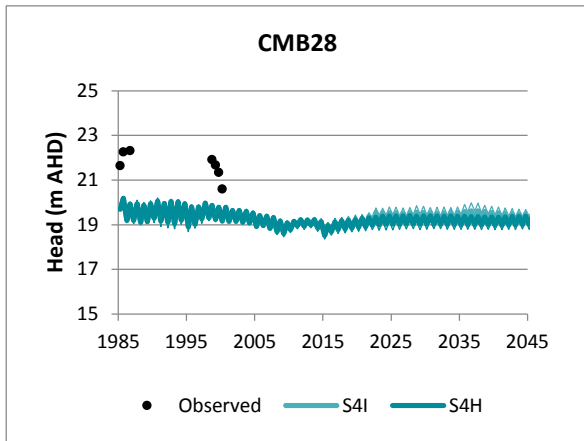
The following section shows the average (thick line), maximum and minimum (thin lines) projected groundwater levels for the lower extraction scenario with both intermediate and high carbon emission climate projections.

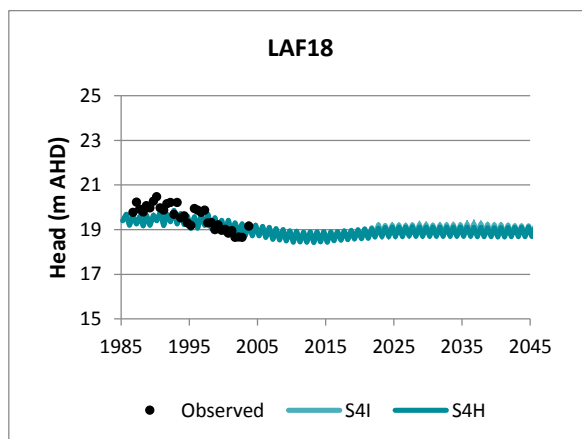
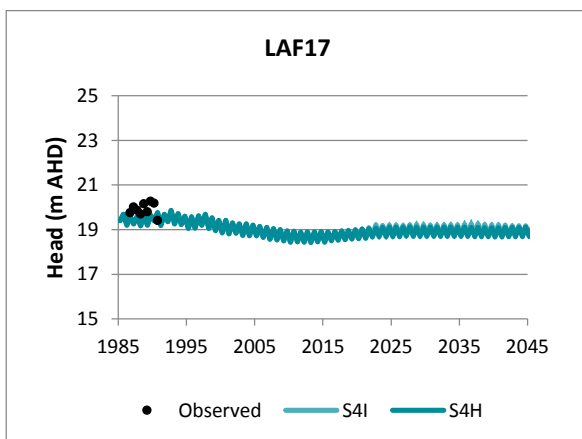
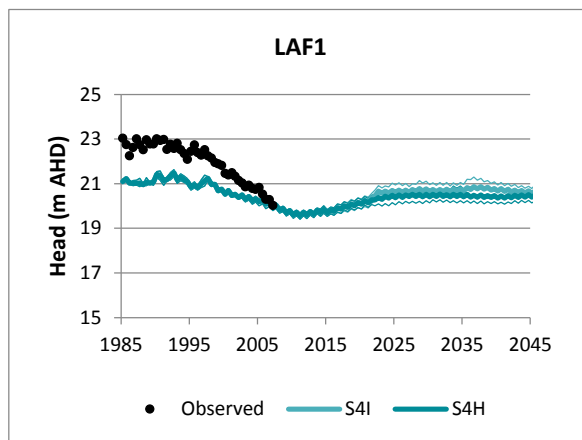
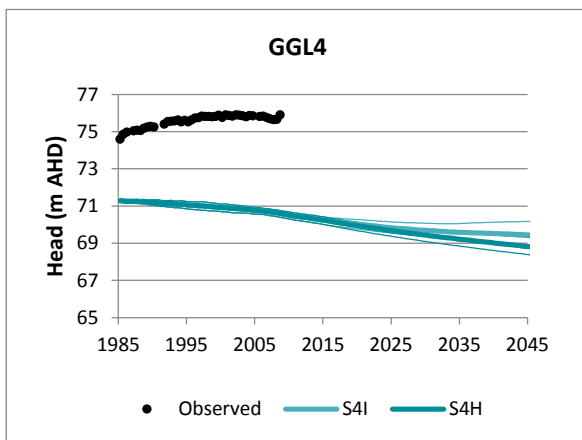
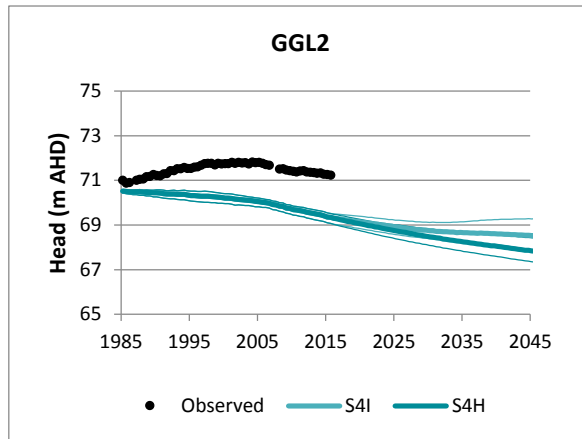
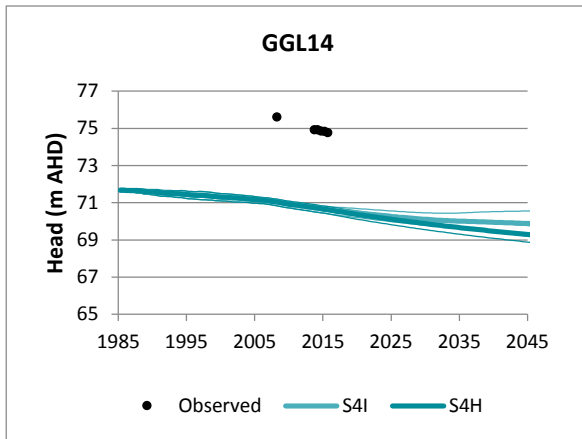
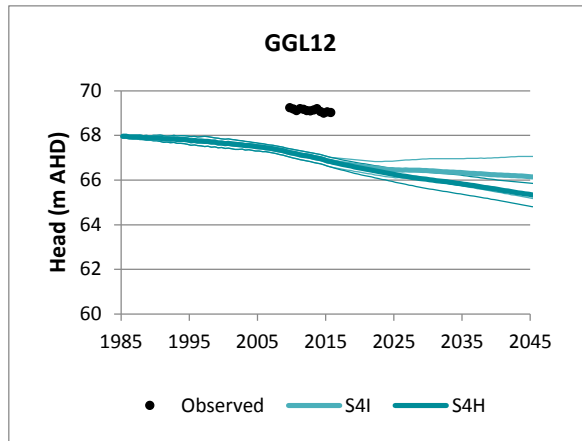
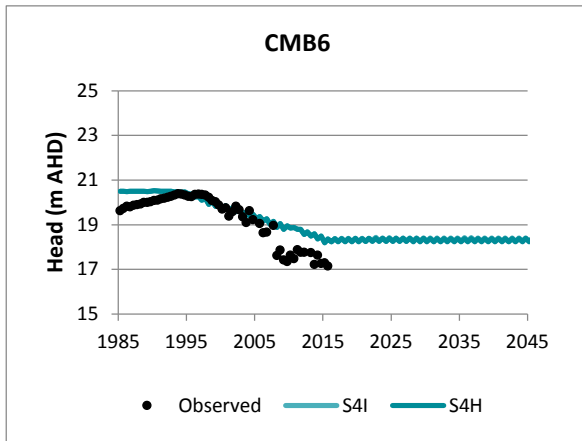


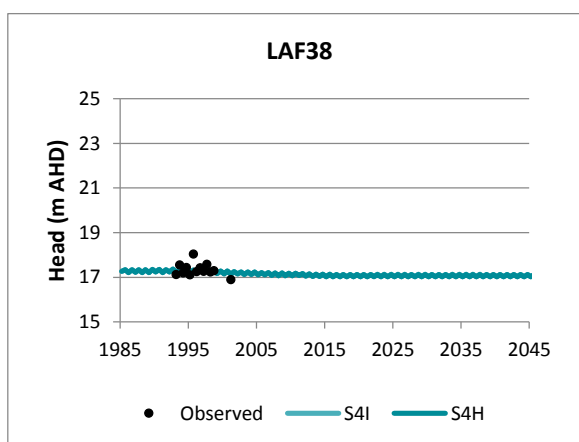
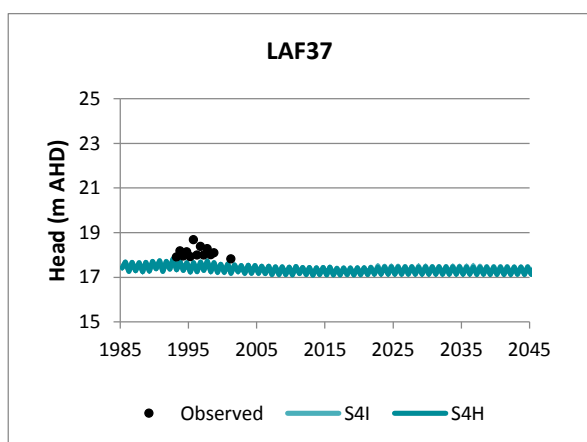
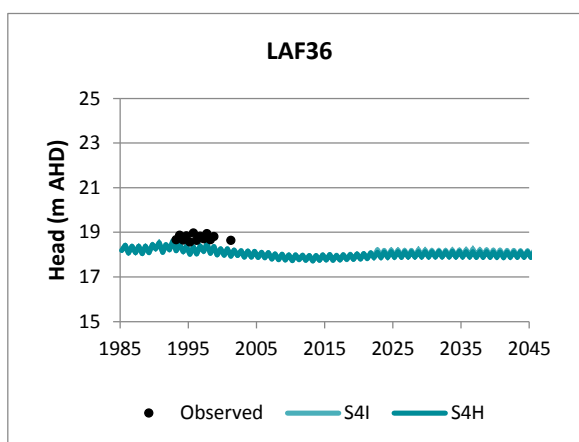
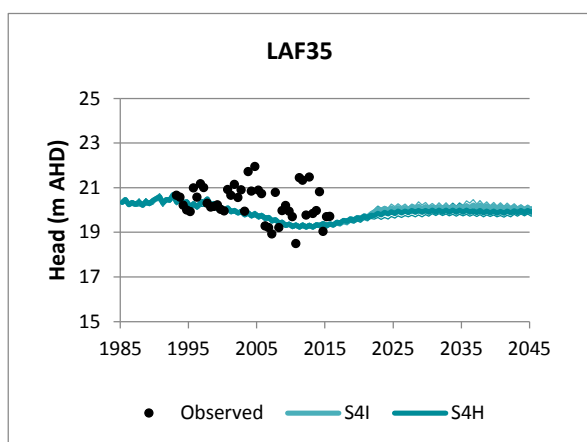
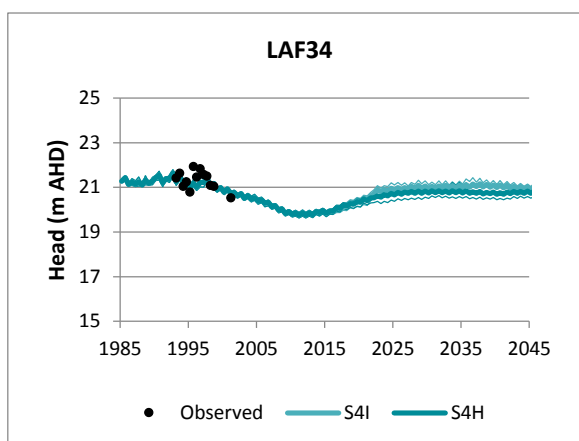
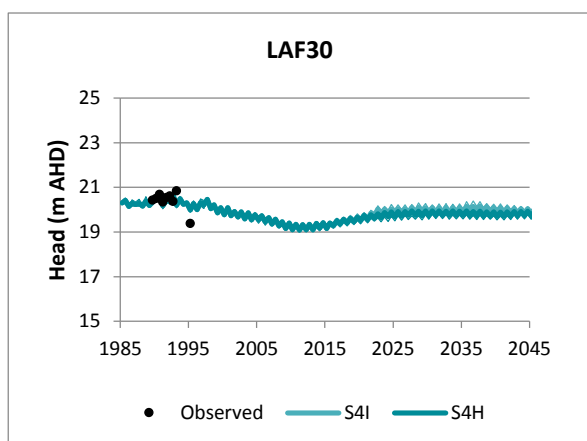
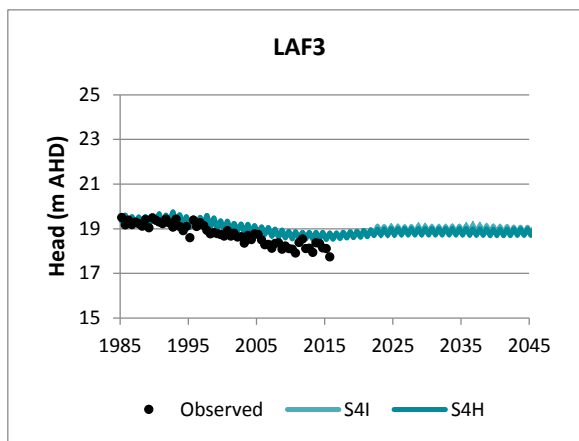
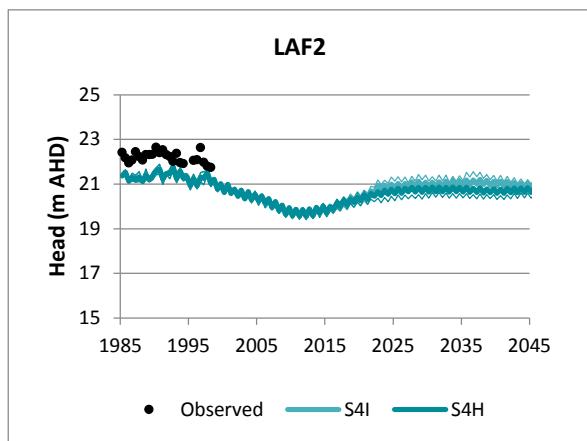


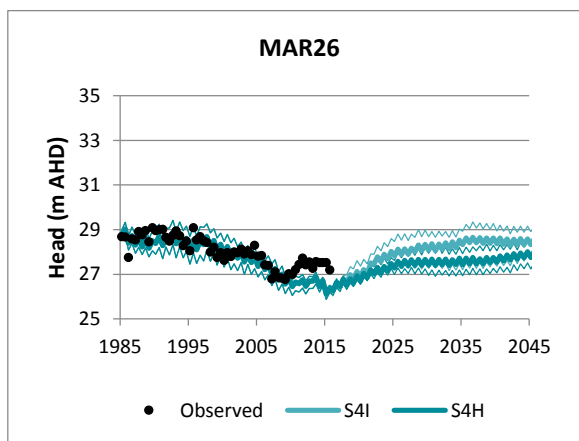
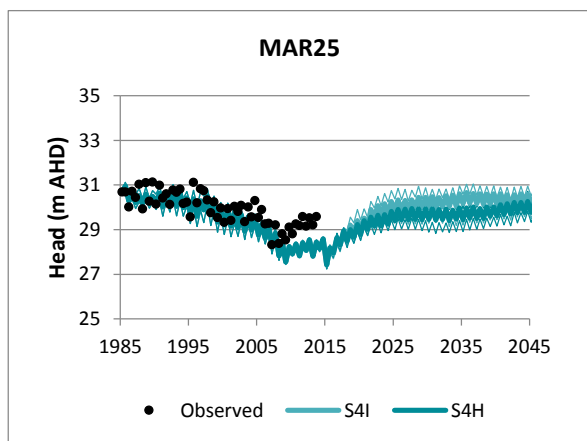
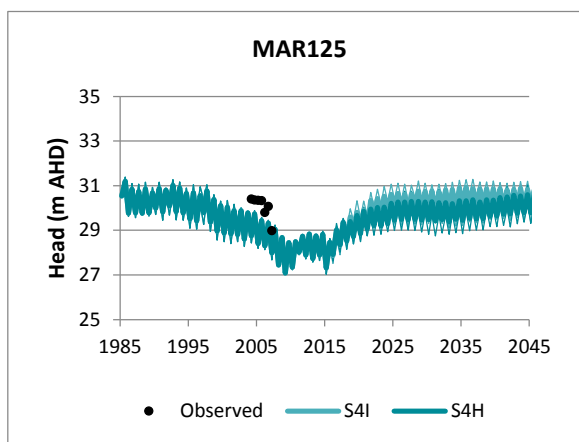
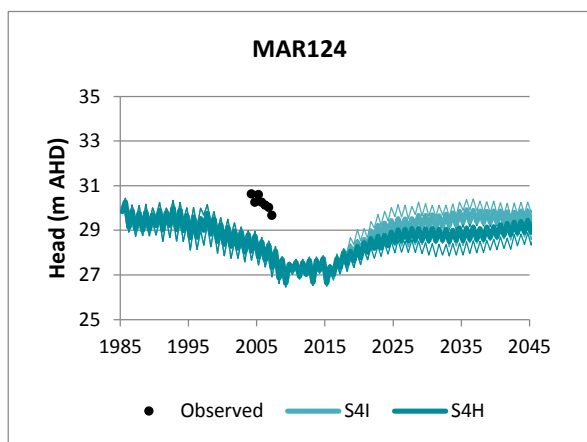
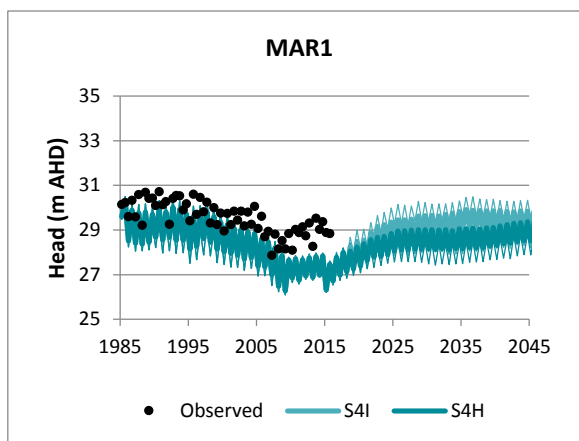
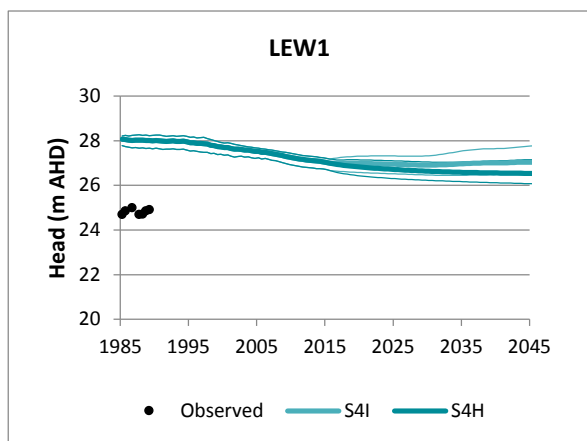
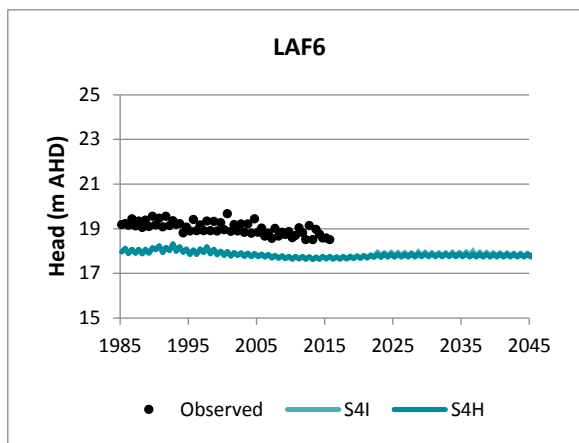
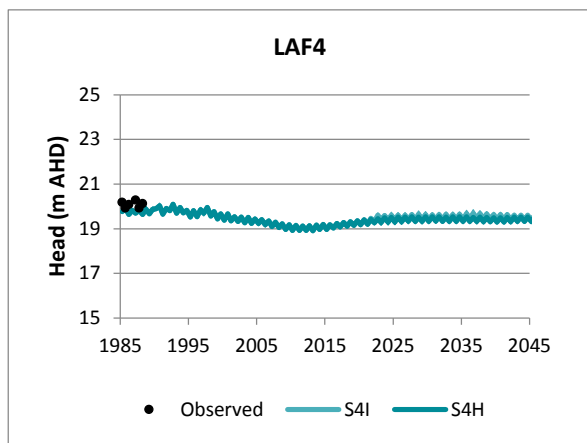


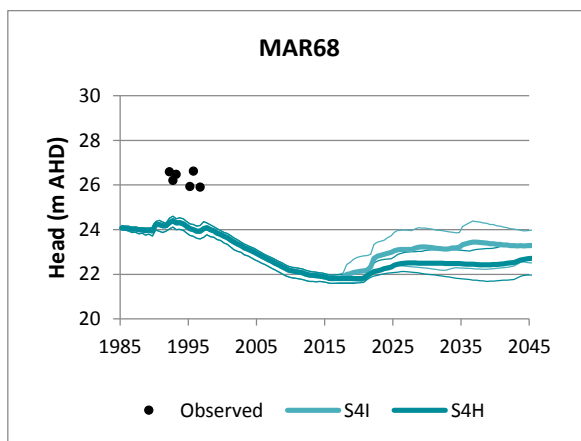
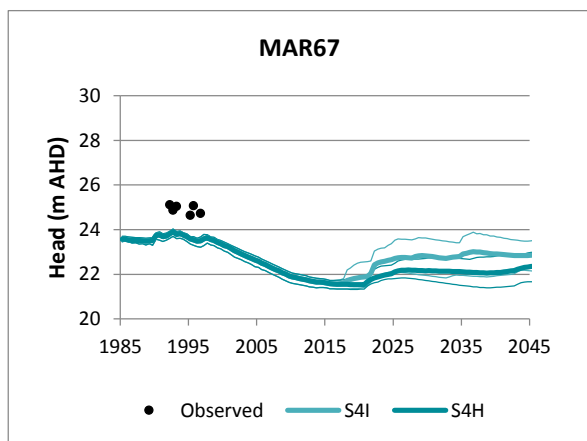
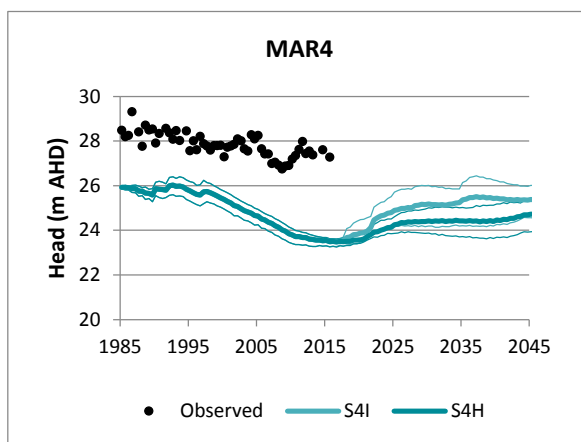
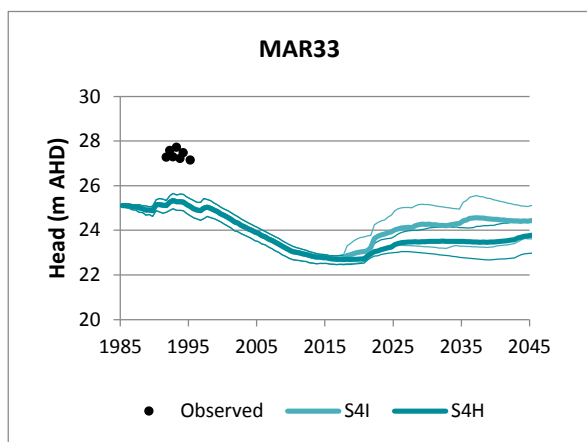
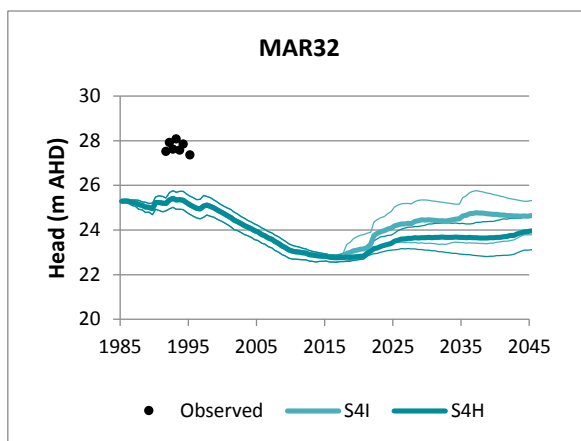
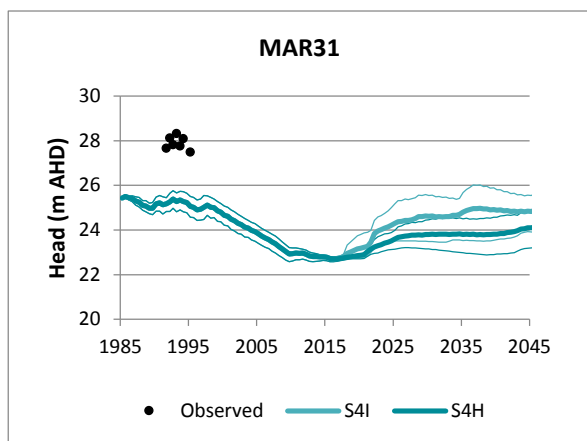
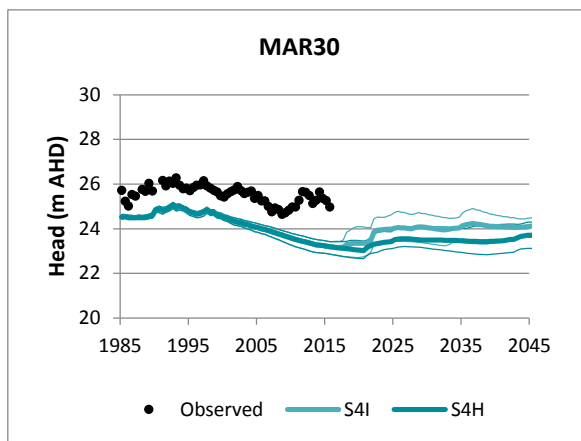
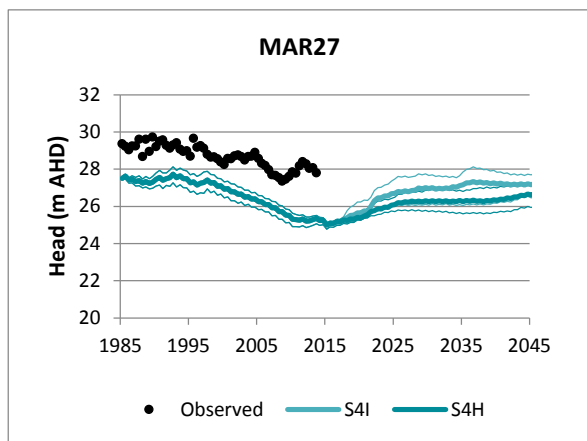


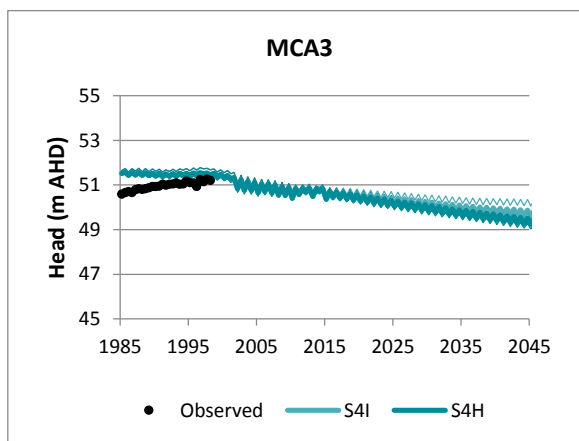
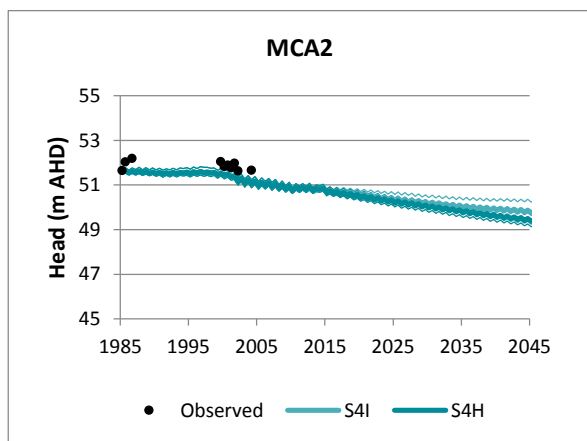
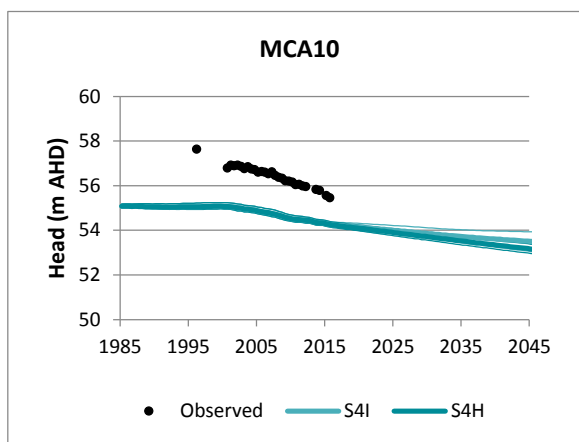
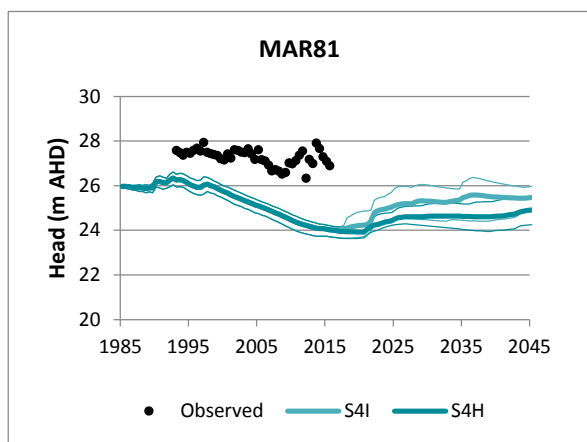
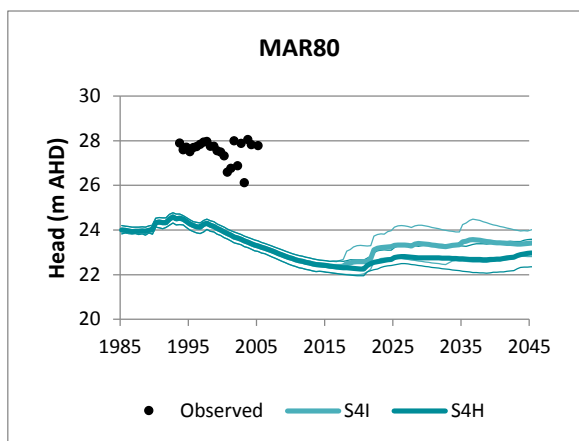
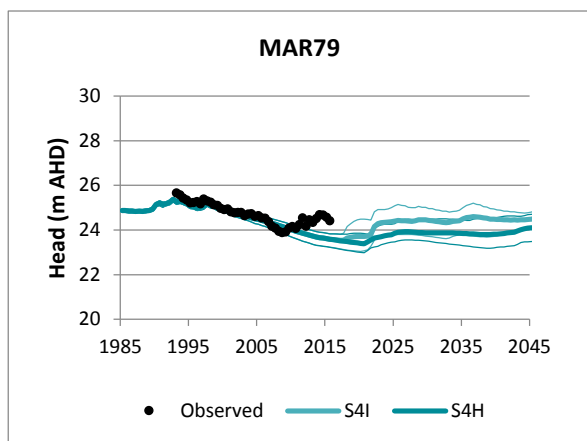
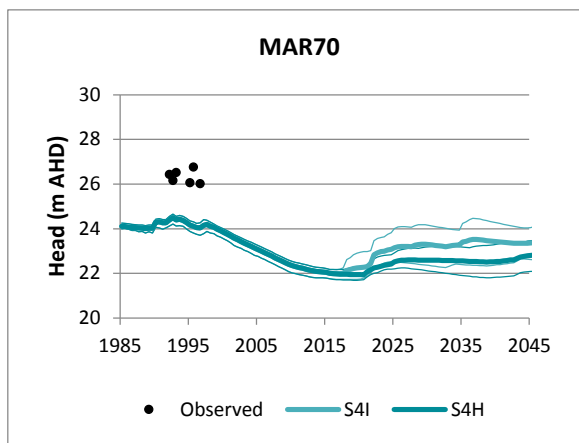
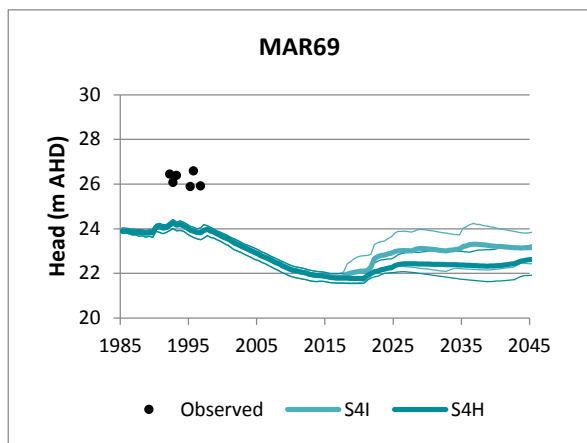


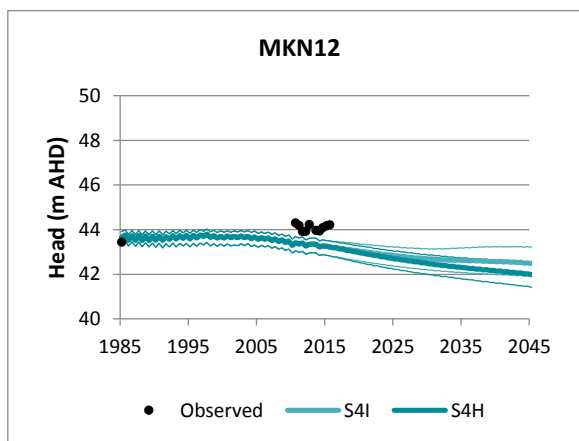
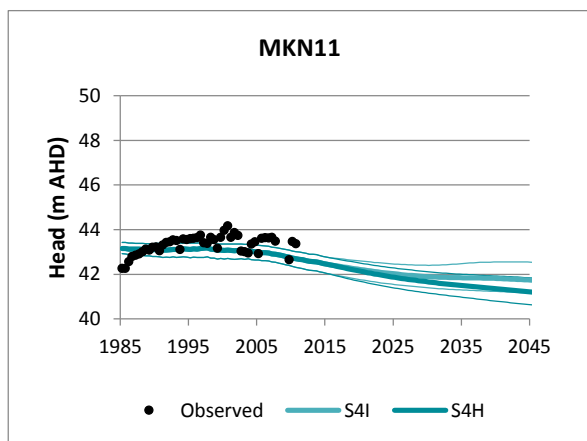
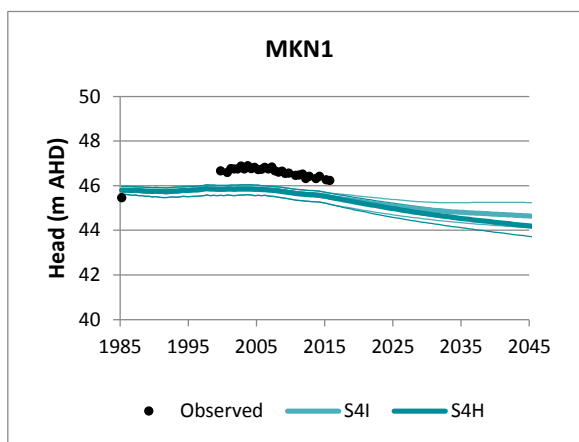
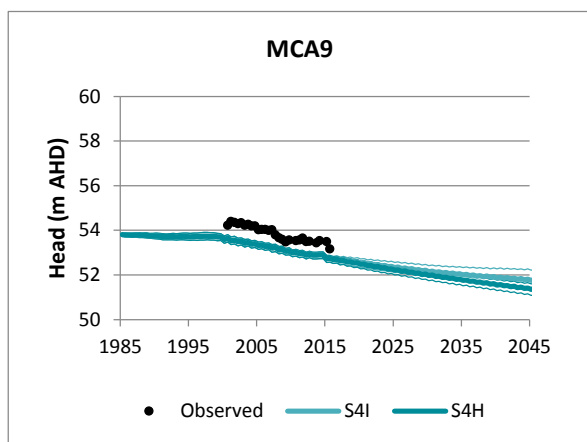
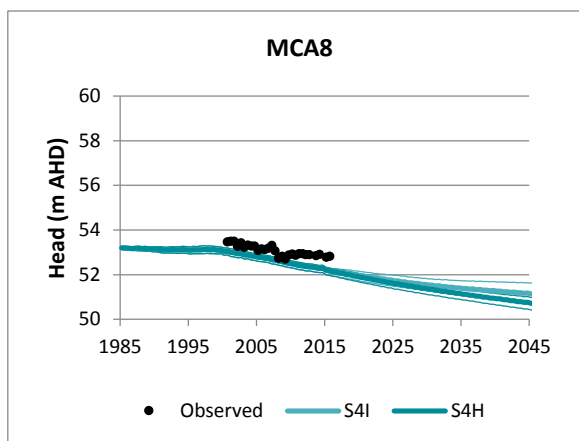
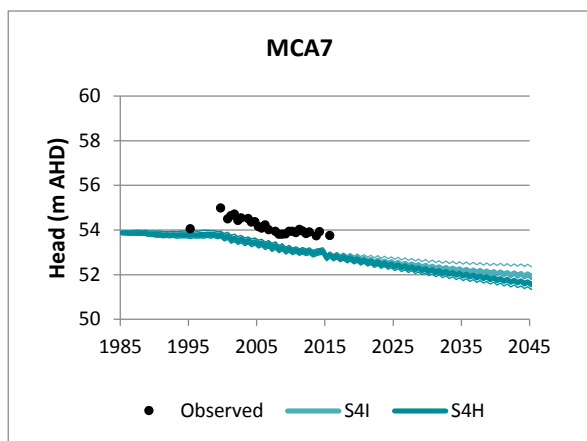
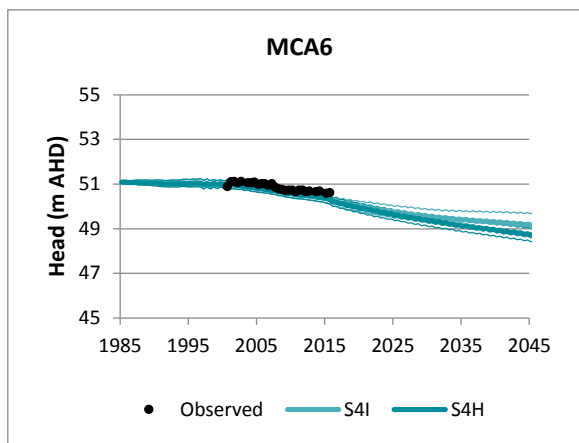
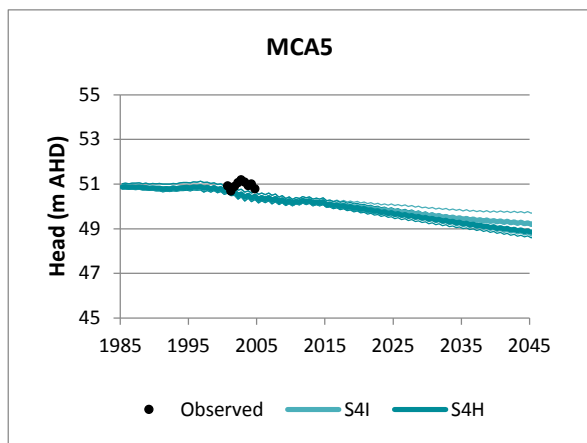


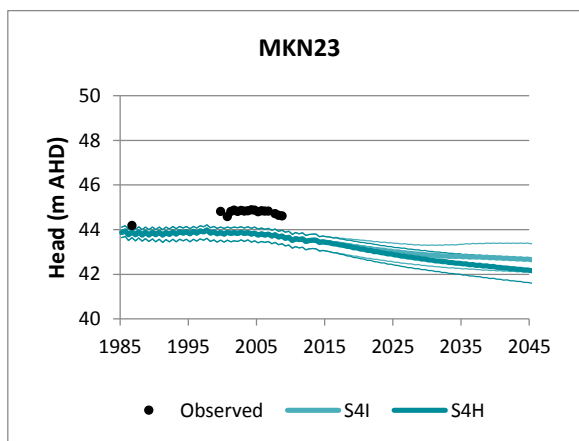
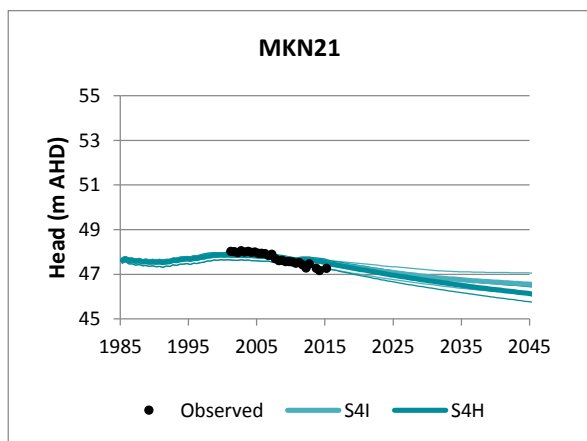
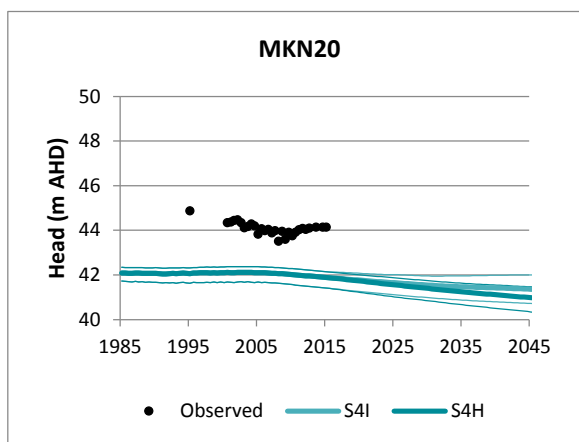
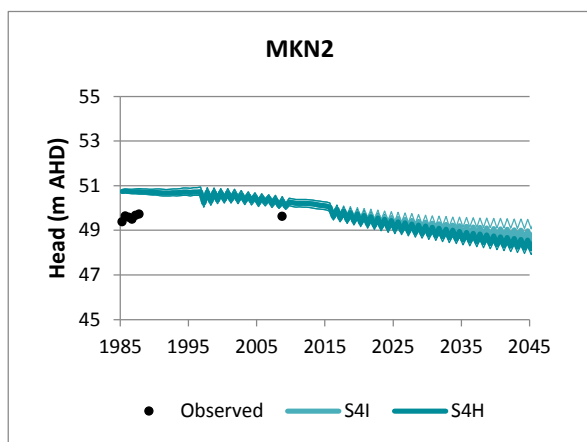
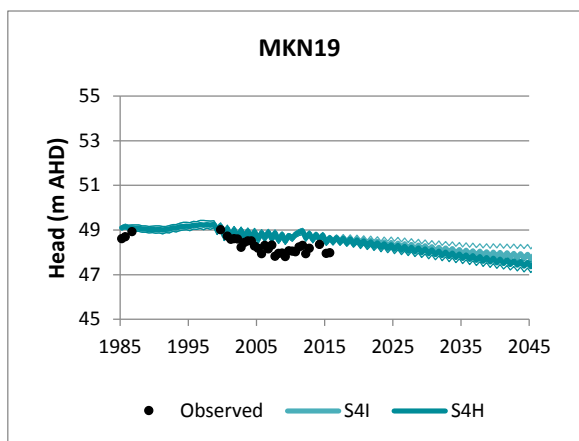
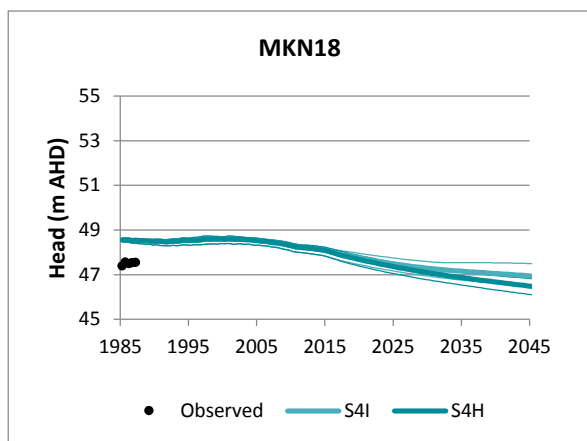
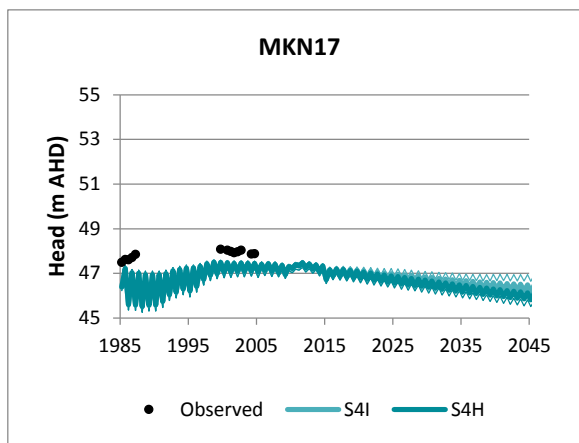
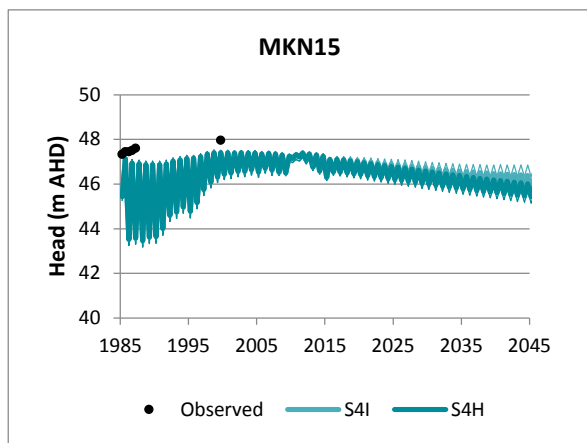


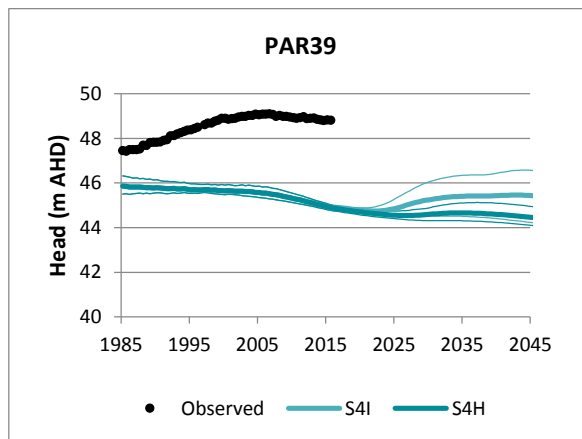
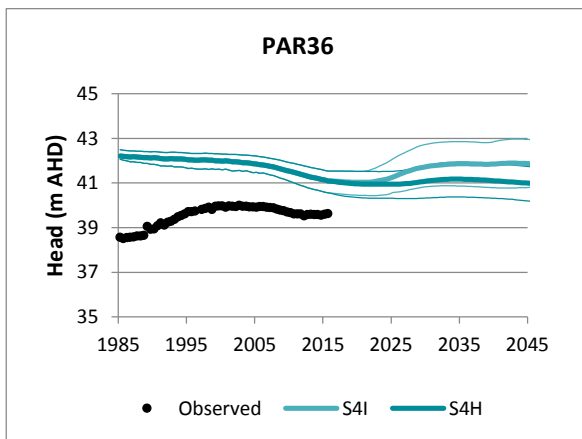
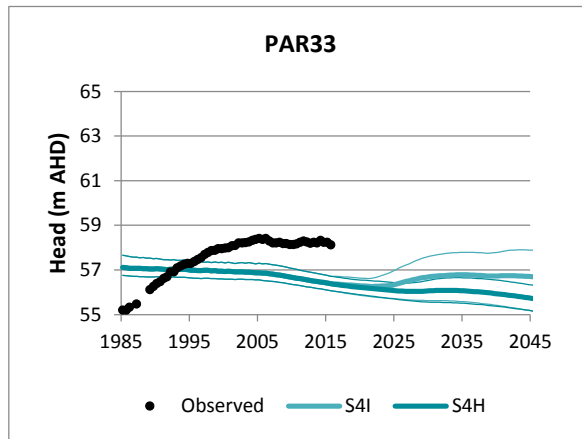
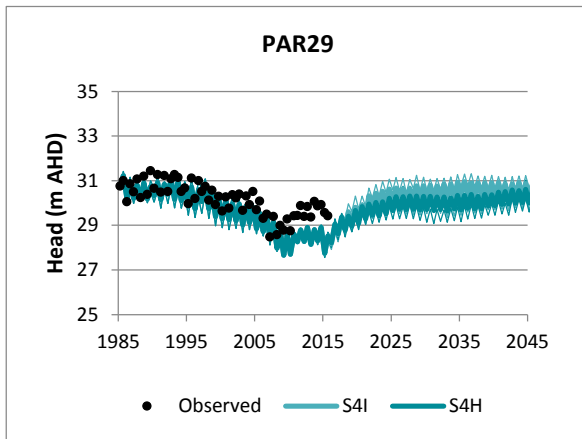
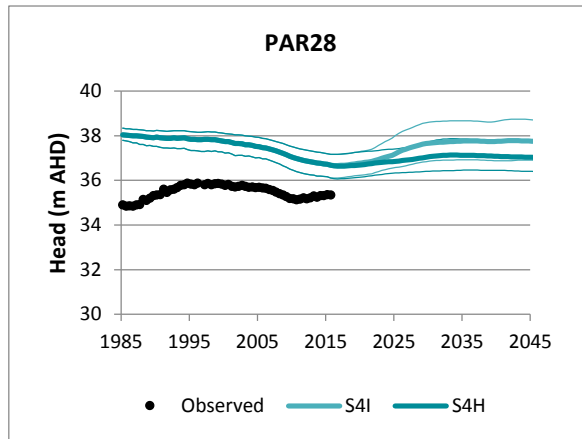
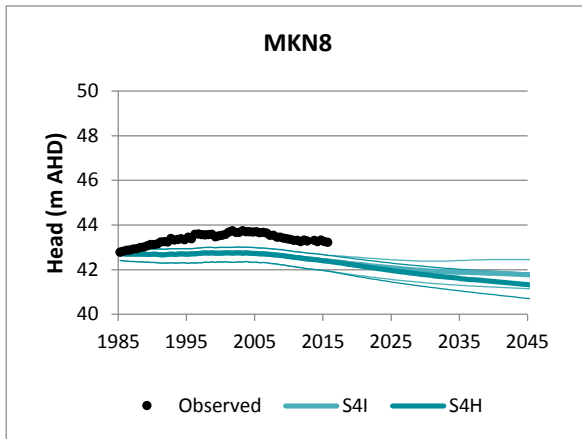
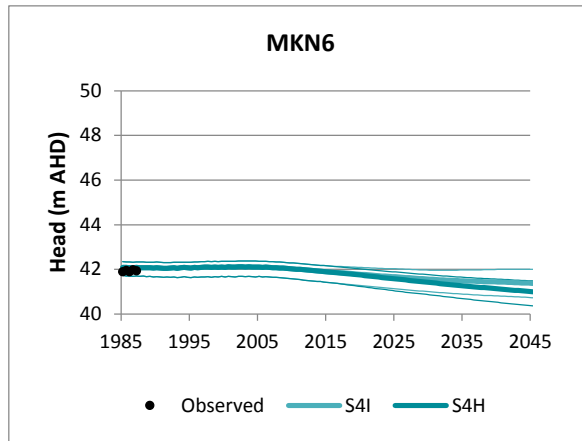
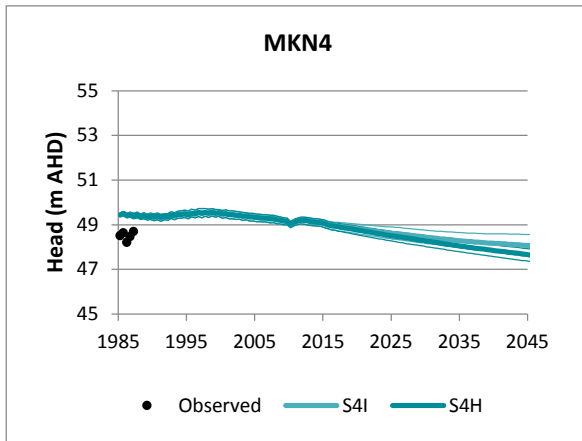


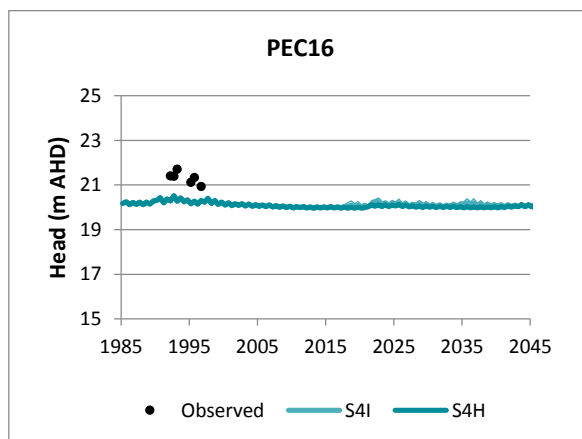
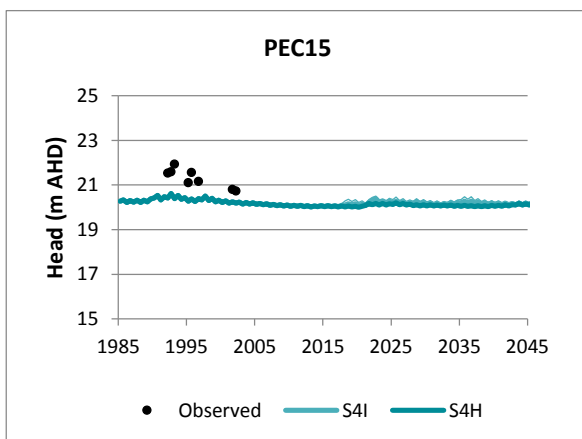
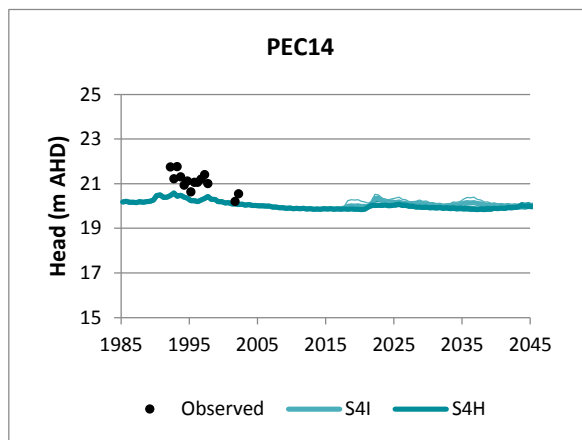
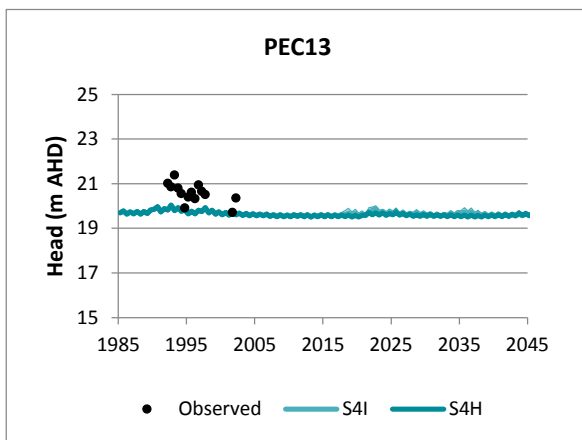
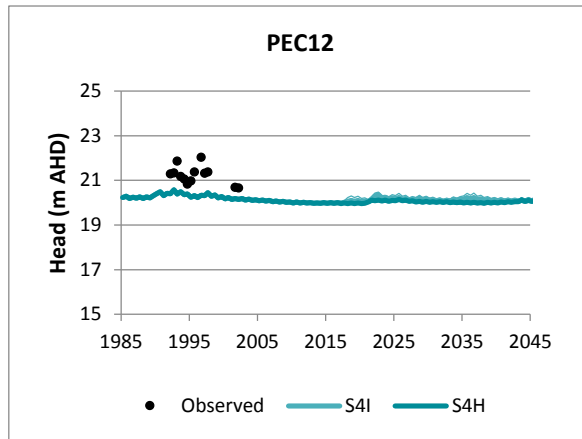
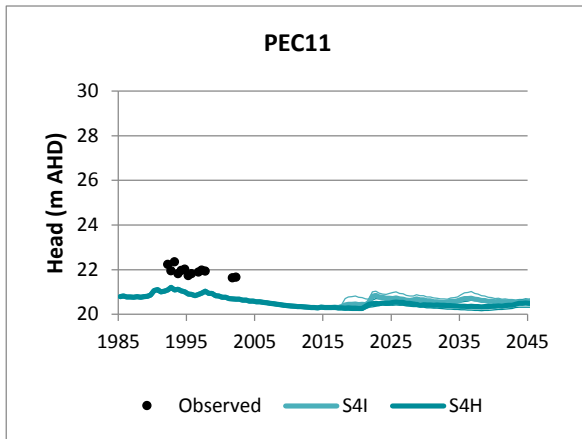
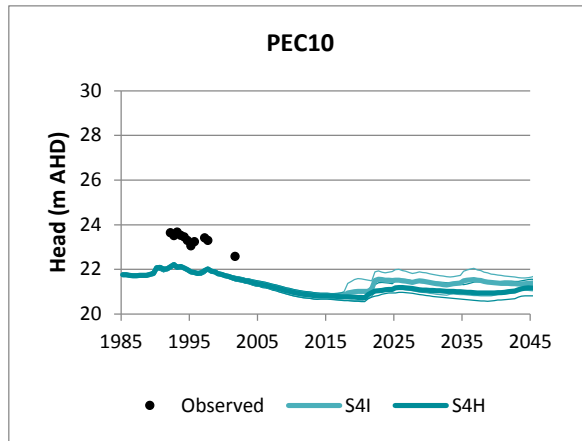
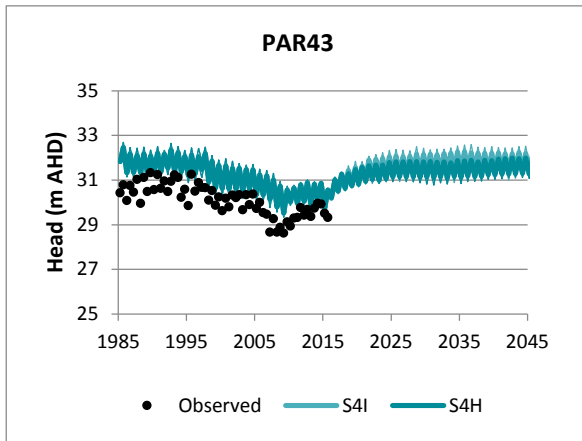


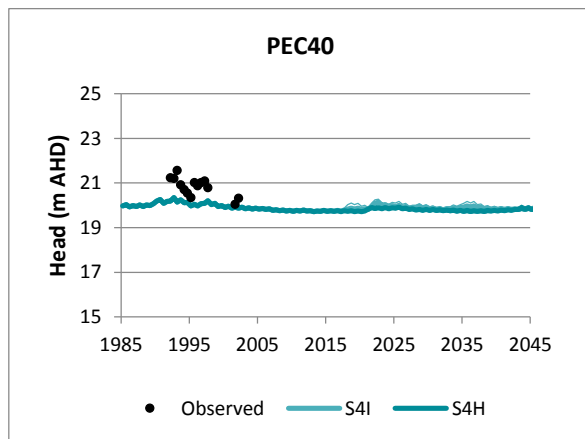
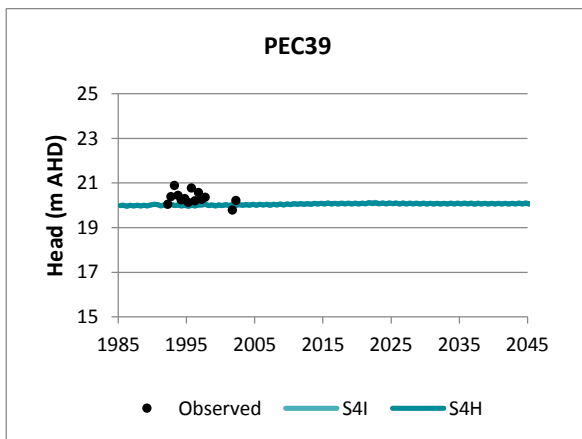
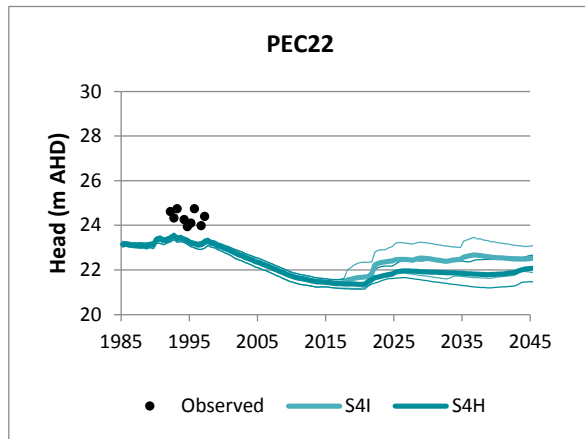
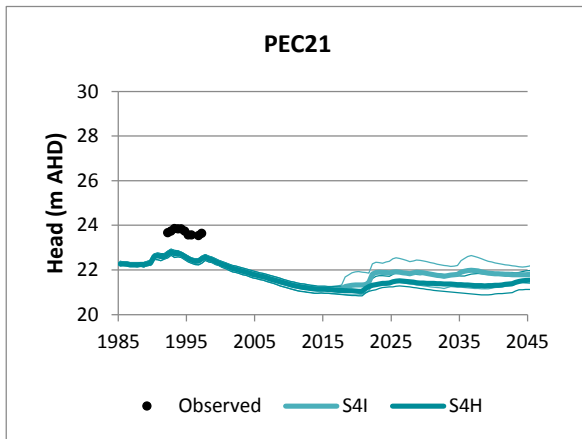
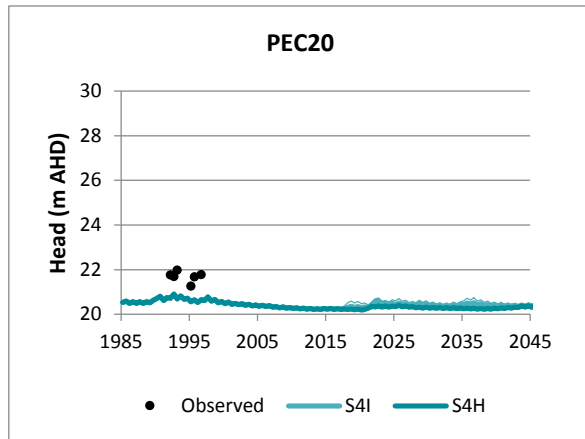
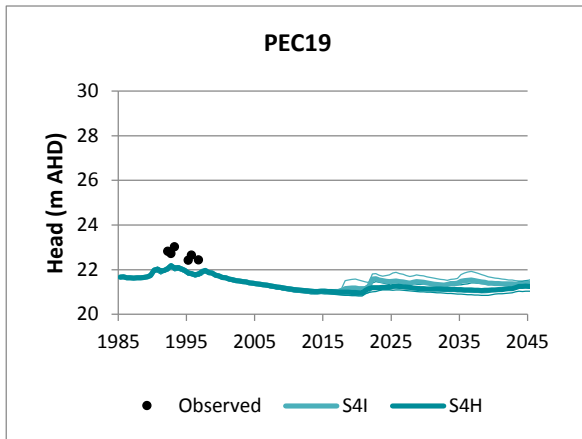
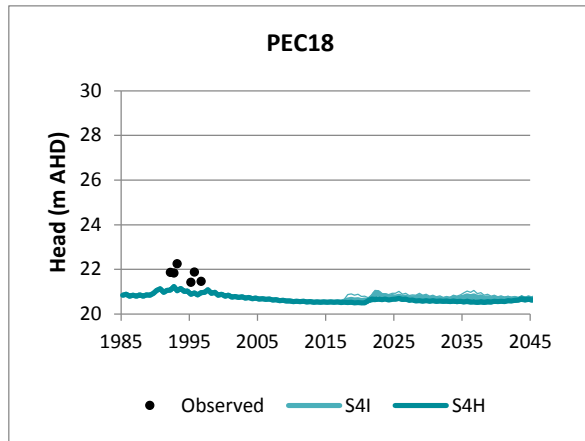
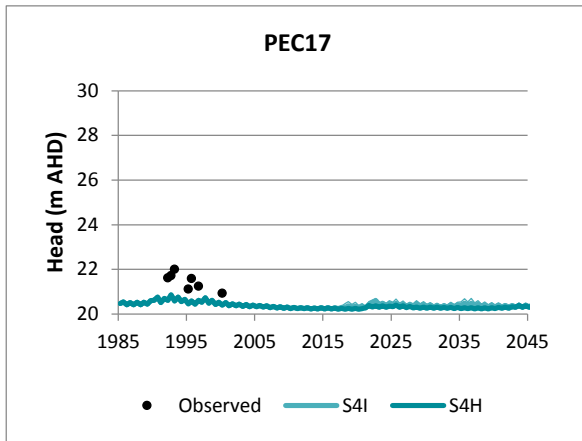


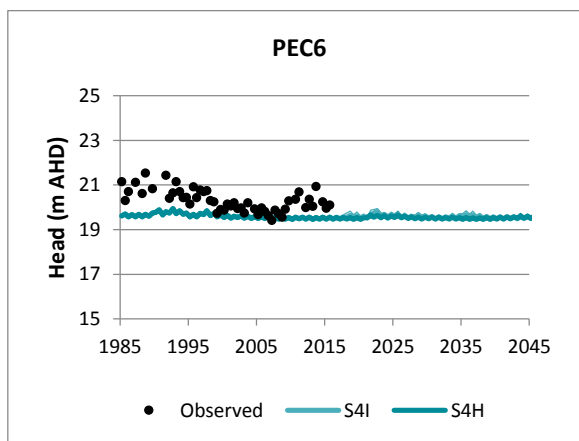
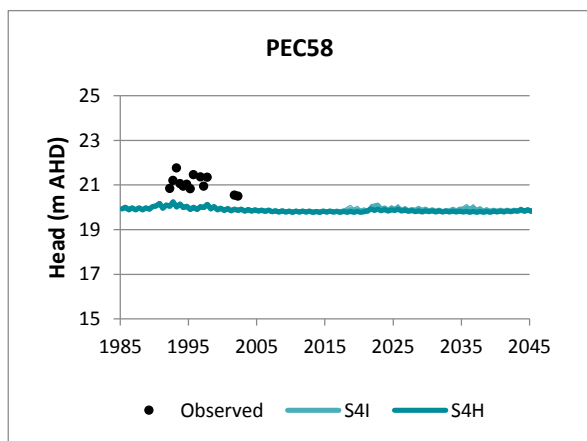
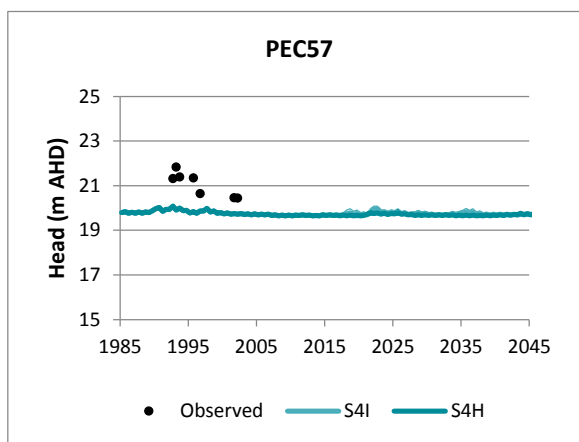
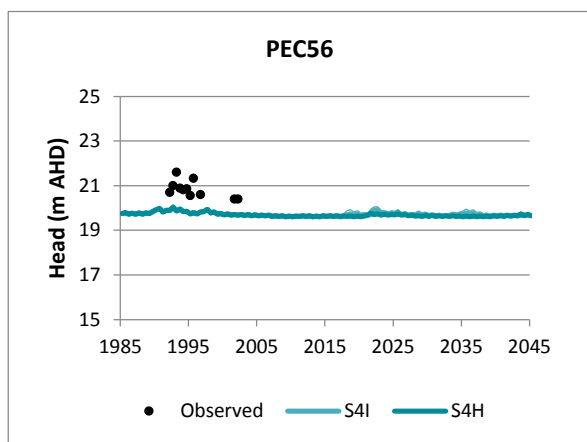
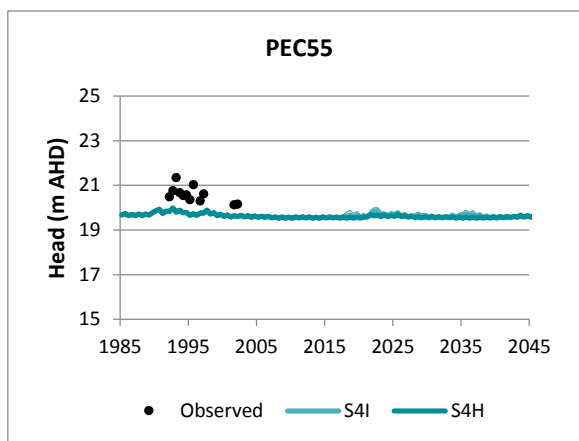
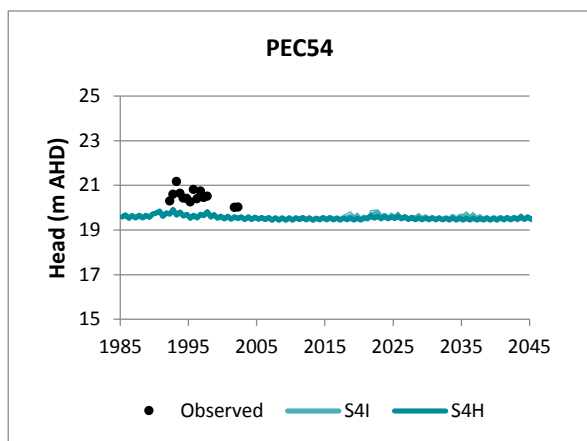
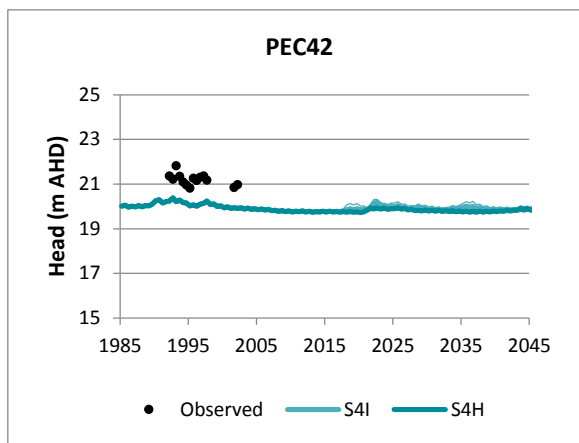
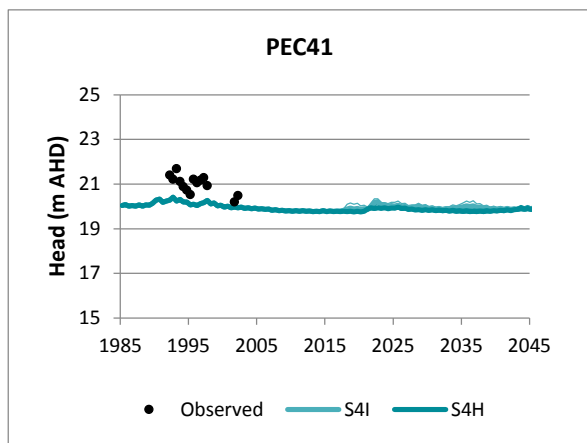


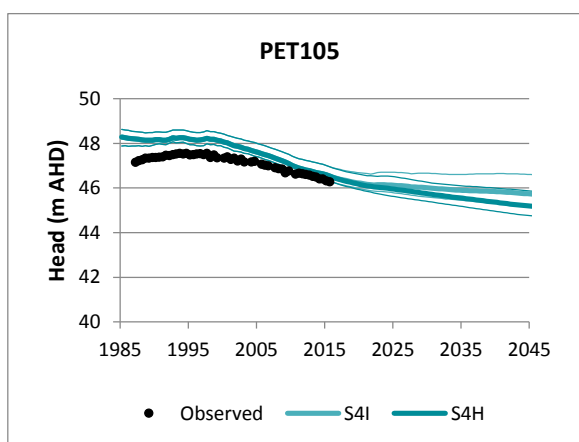
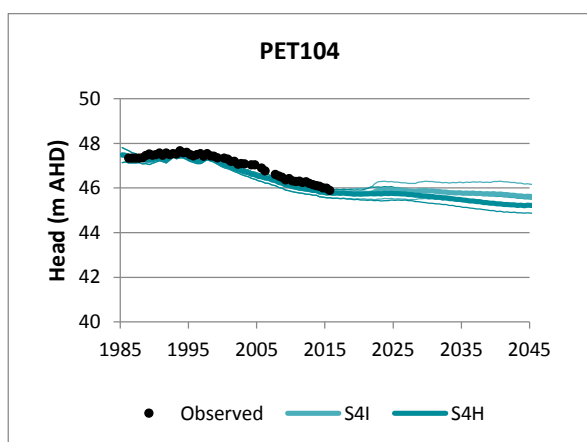
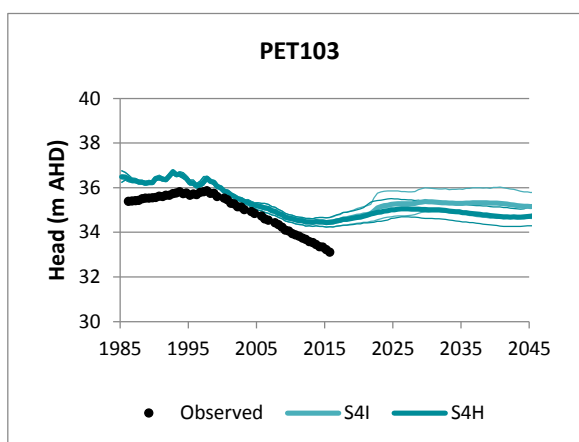
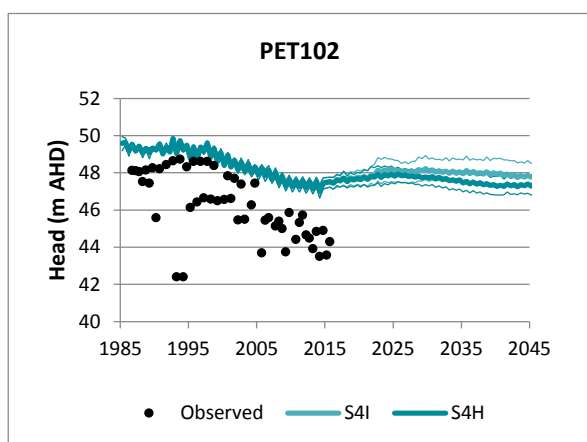
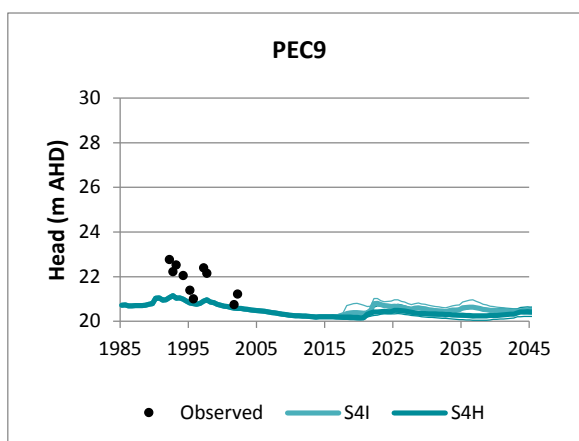
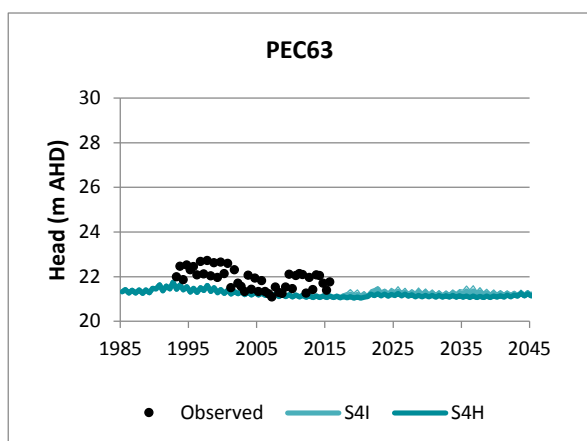
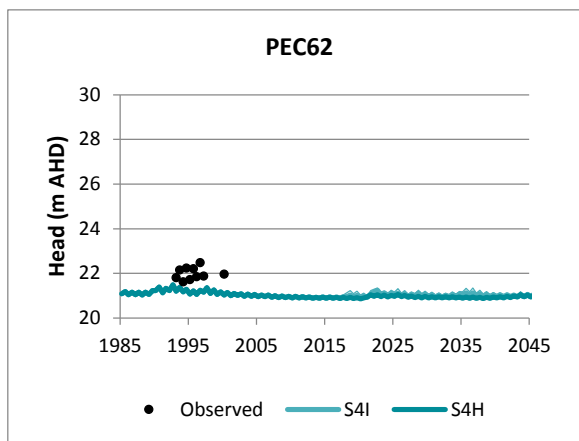
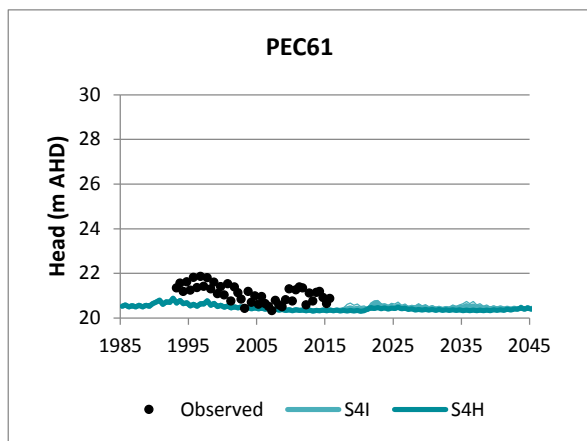


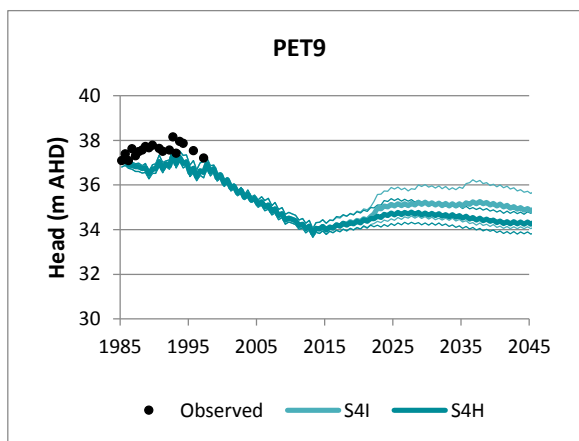
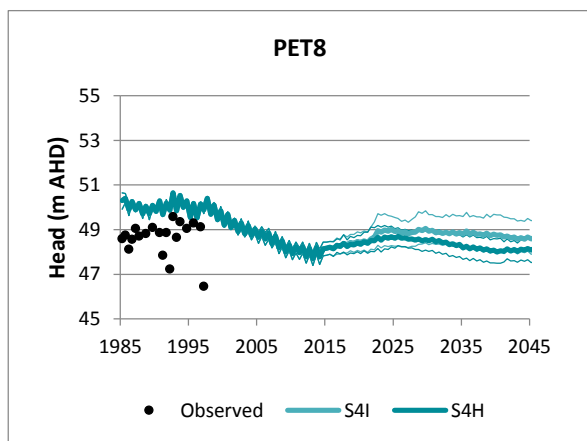
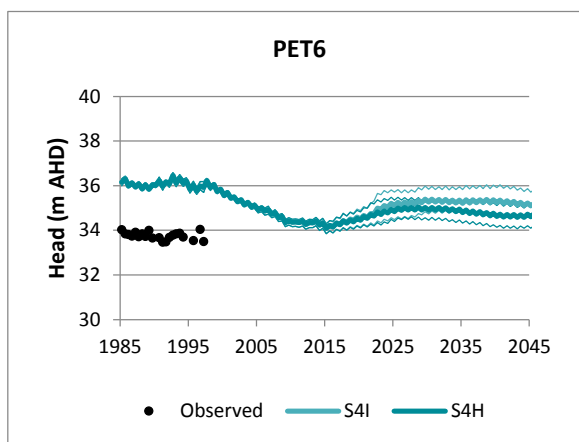
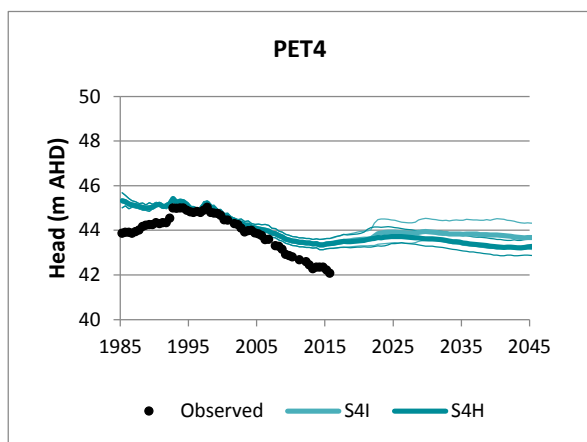
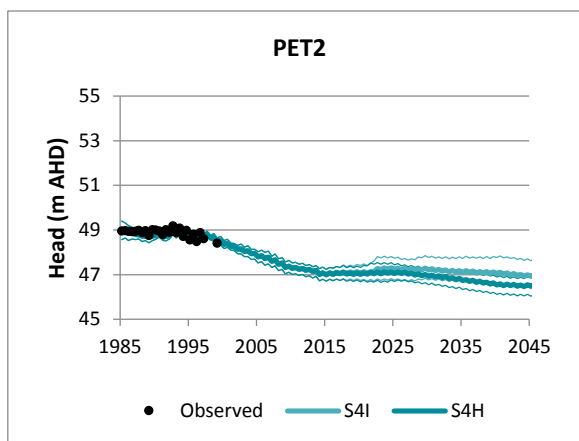
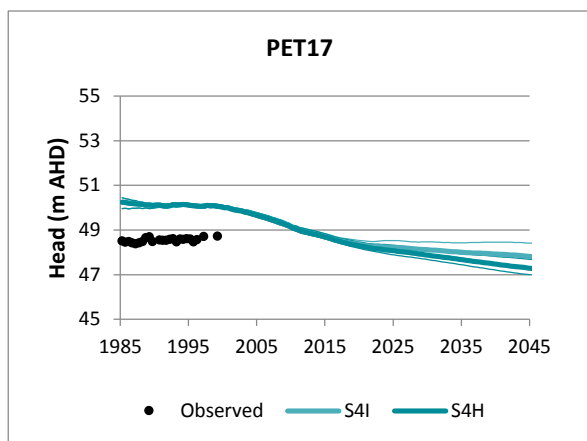
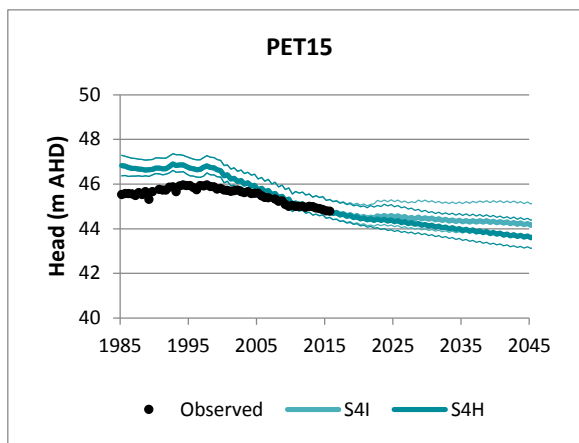
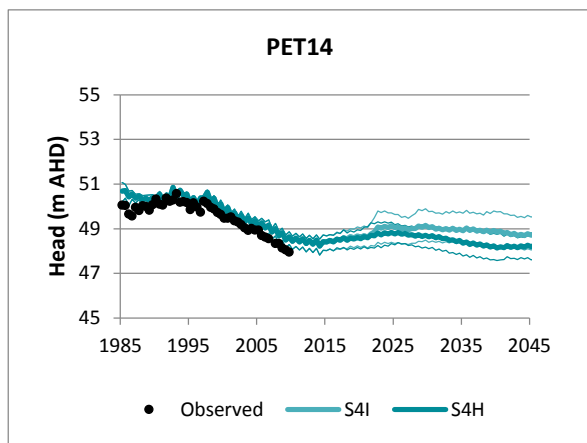


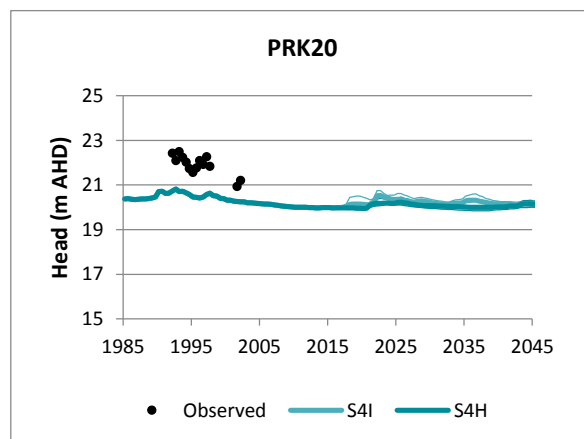
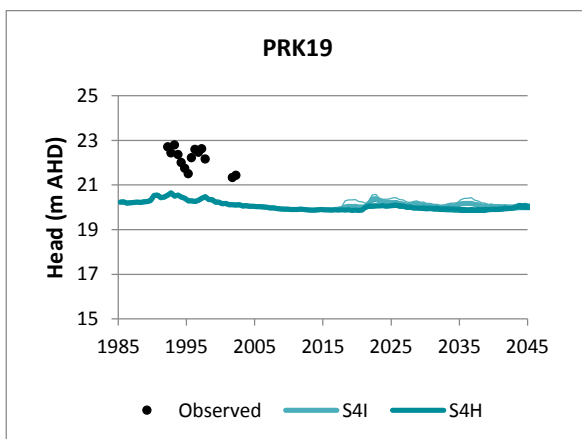
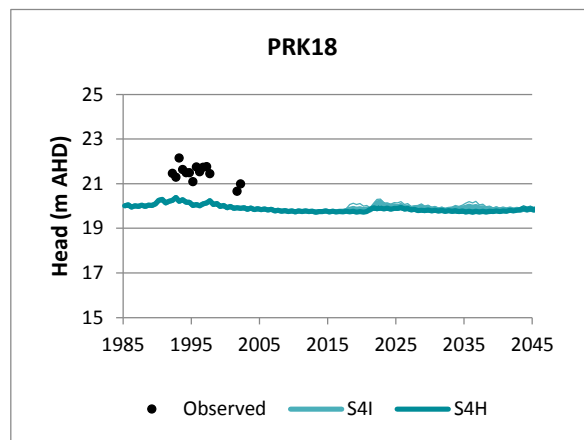
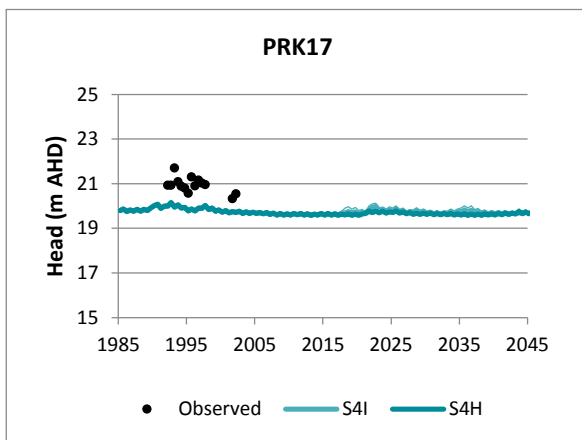
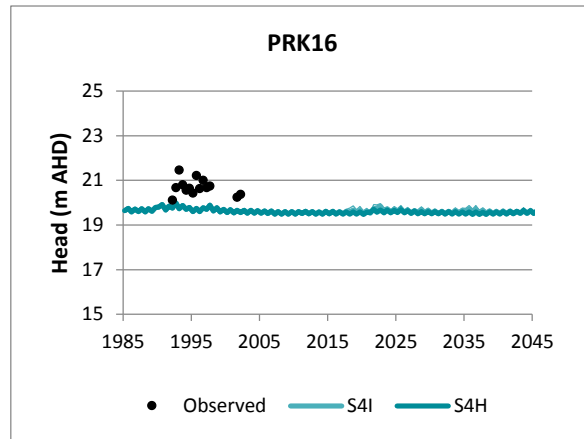
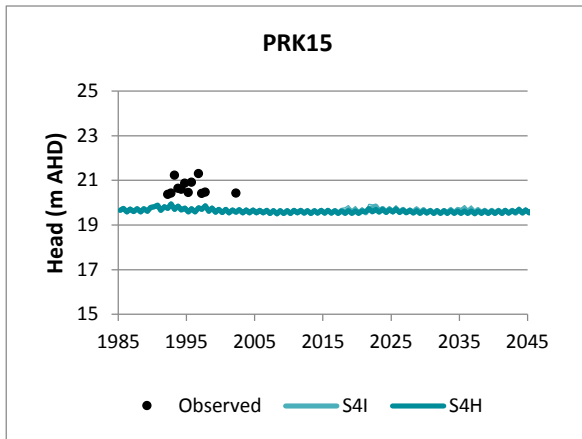
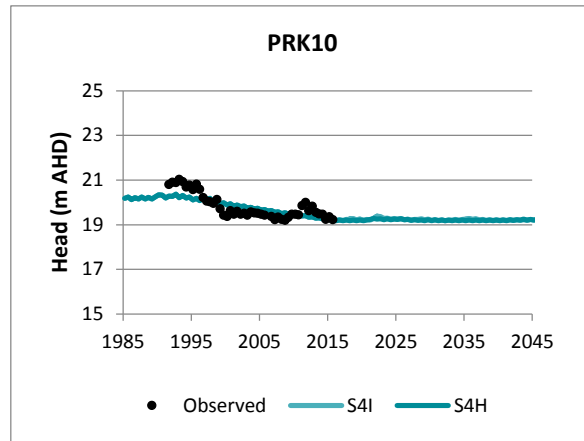
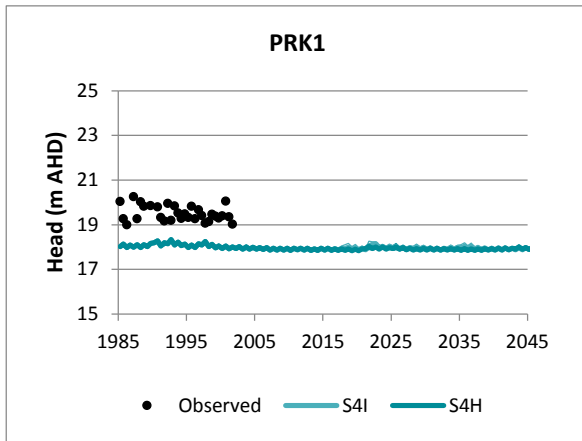


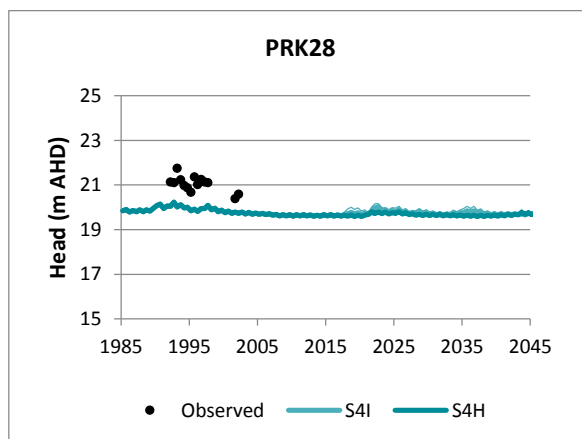
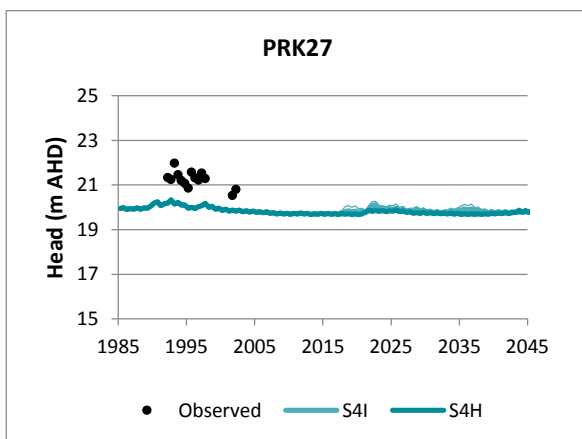
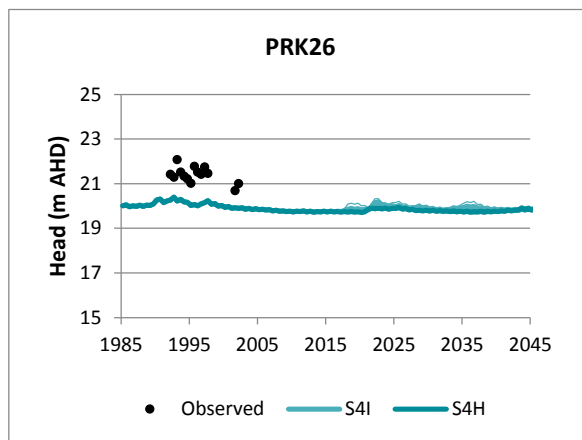
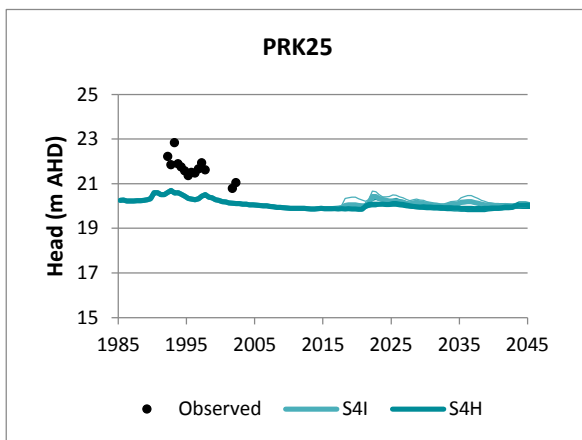
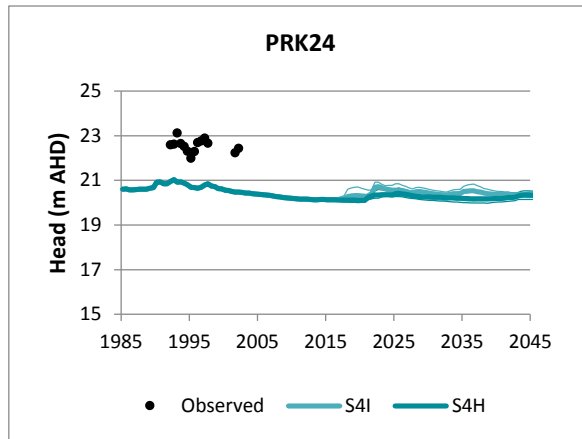
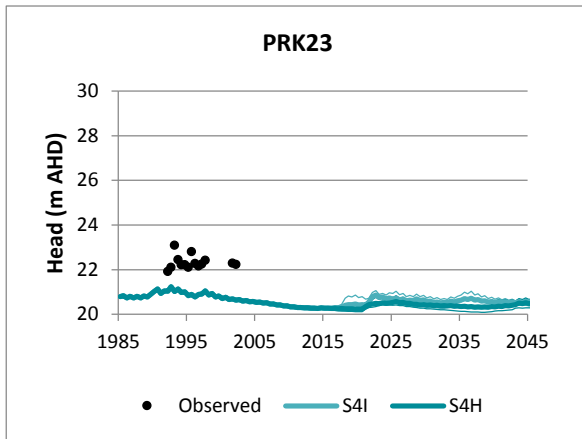
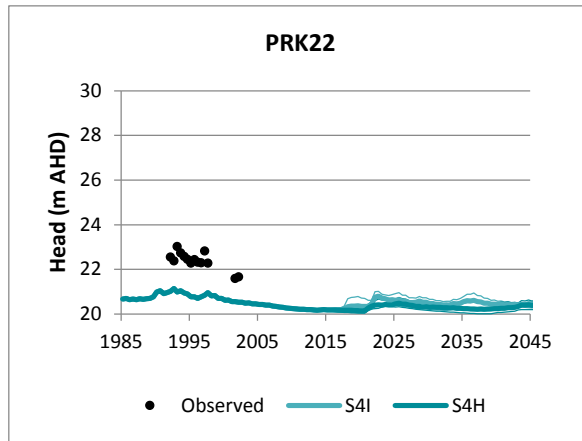
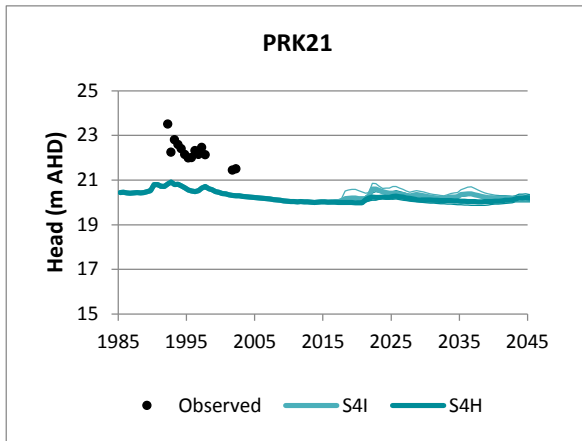


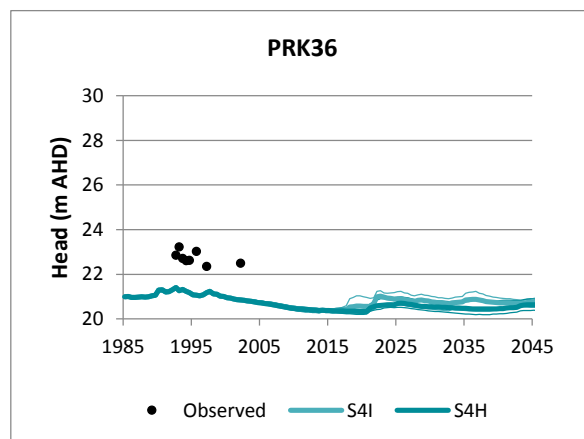
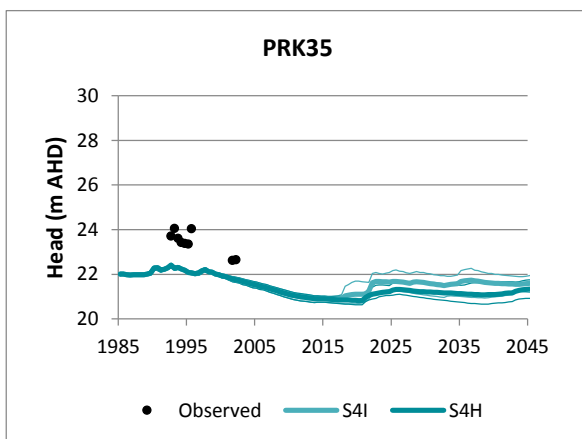
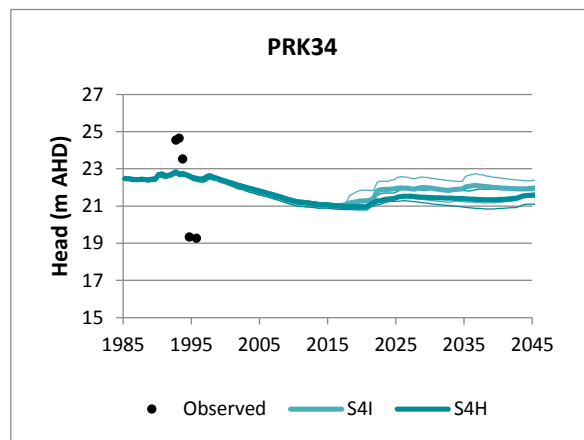
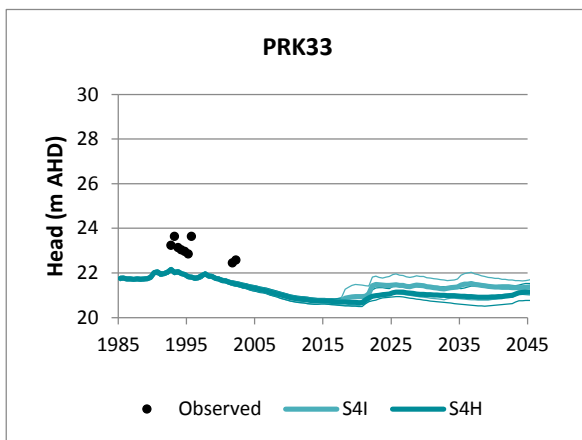
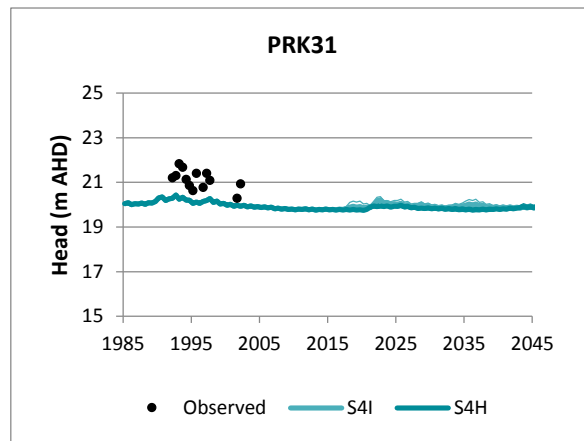
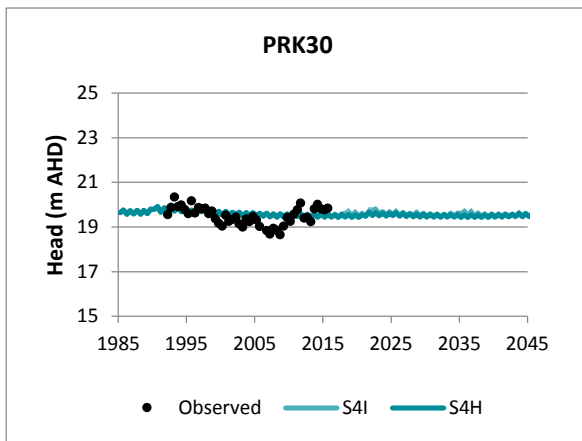
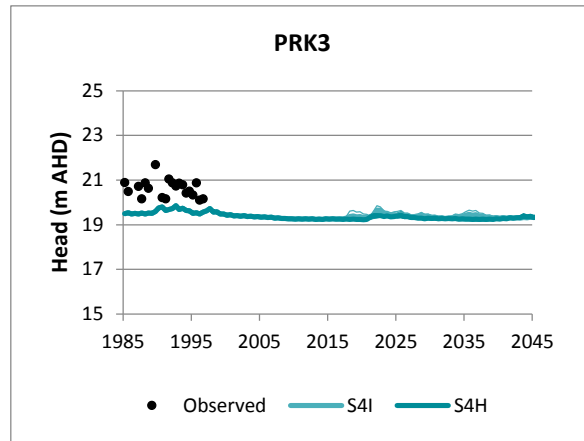
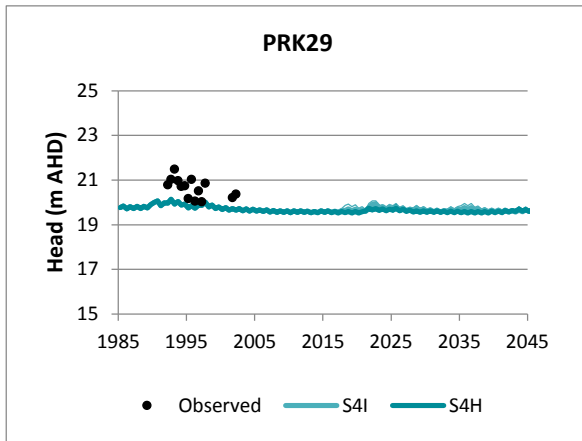


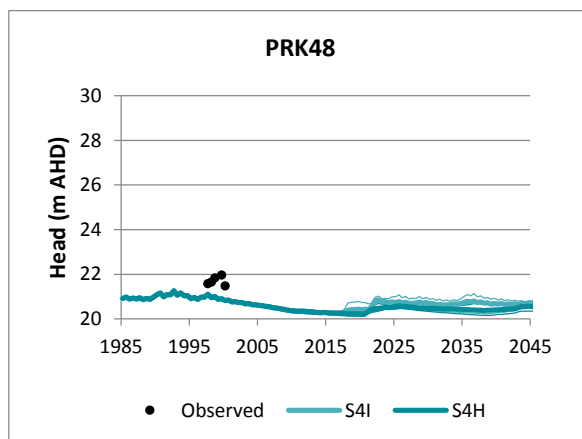
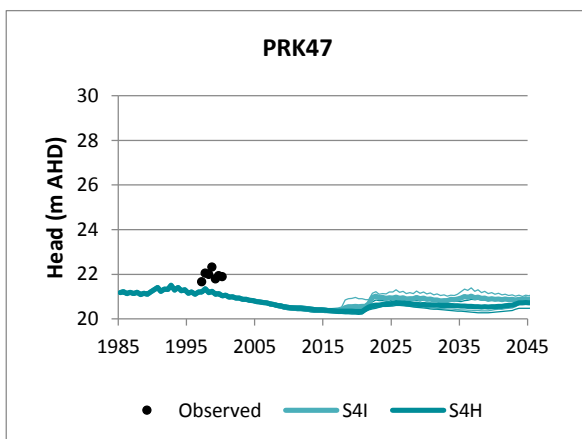
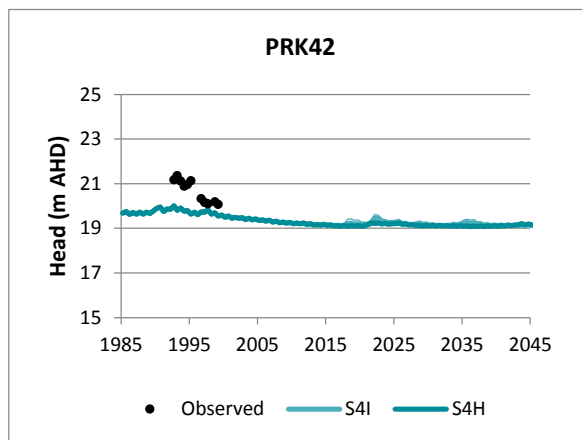
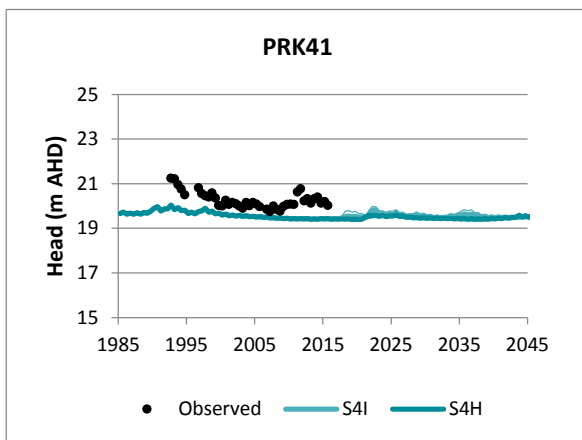
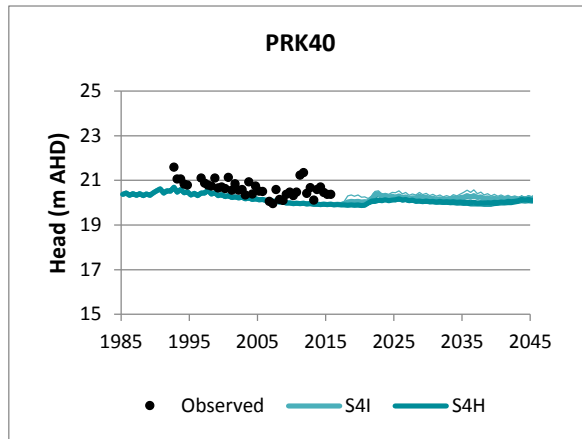
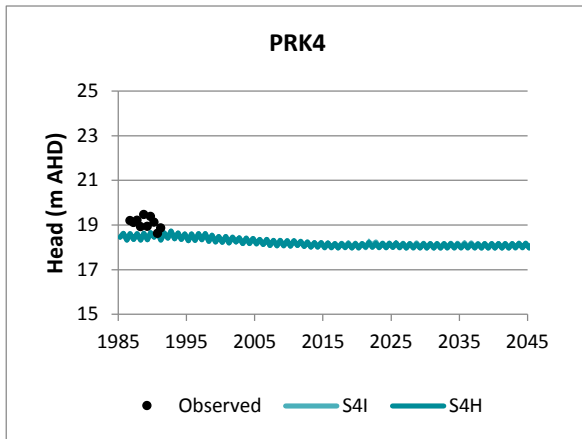
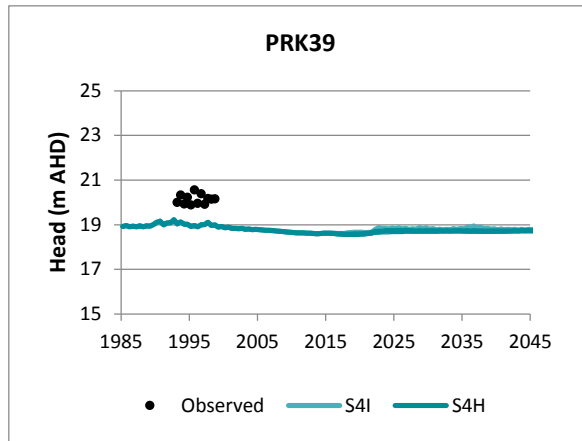
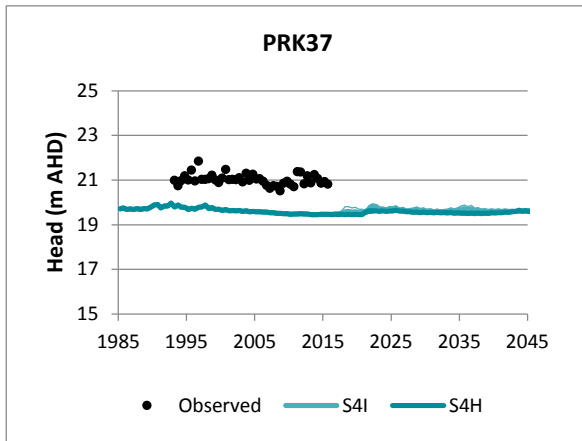


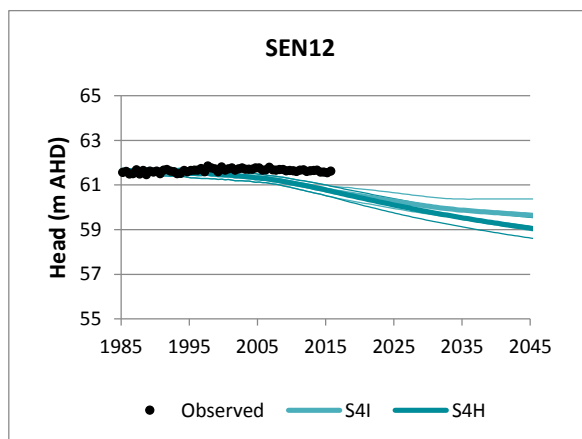
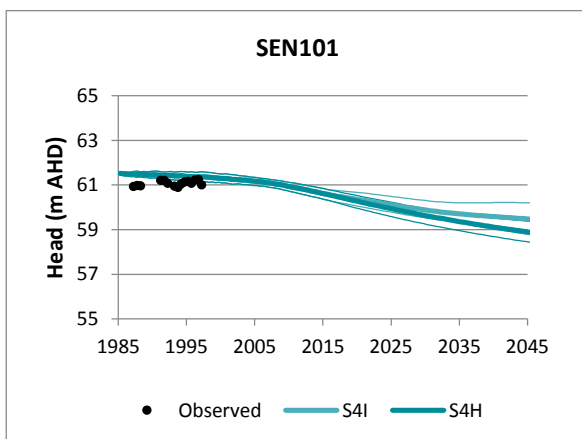
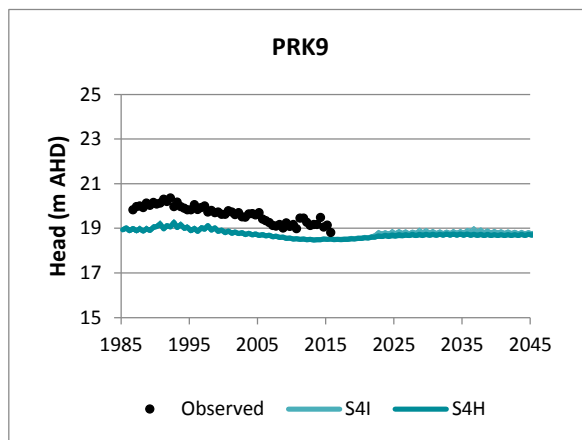
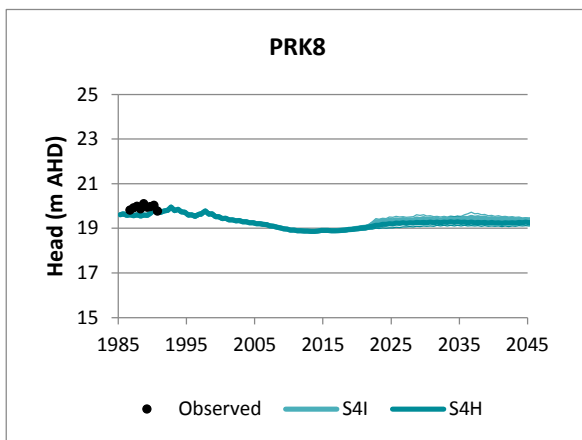
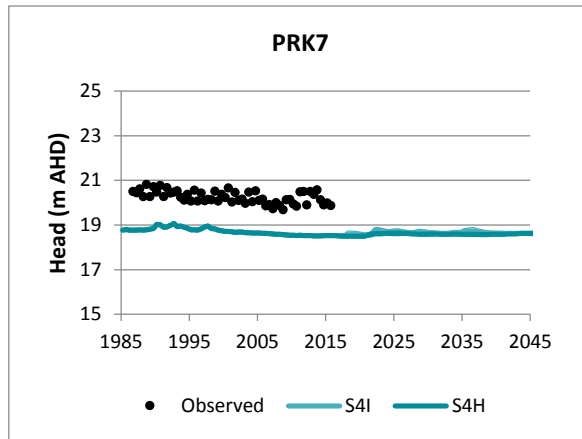
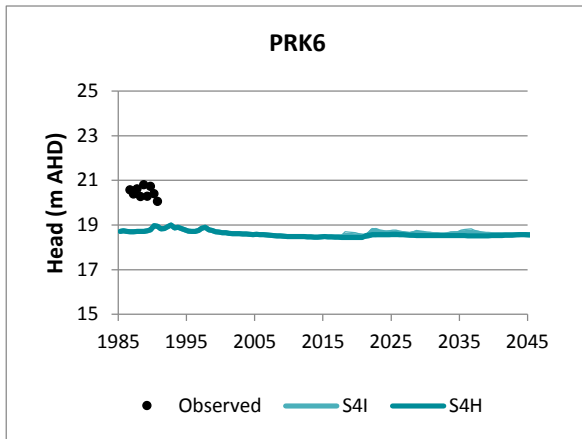
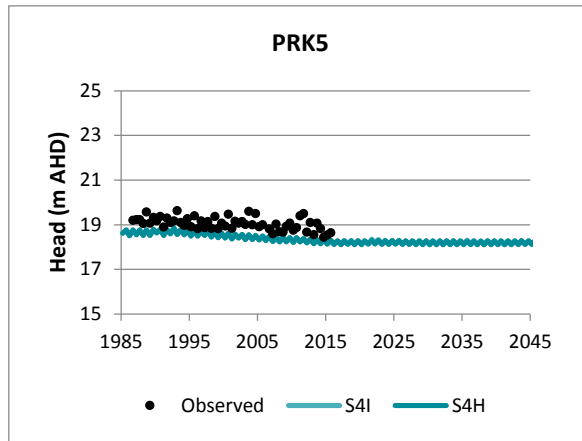
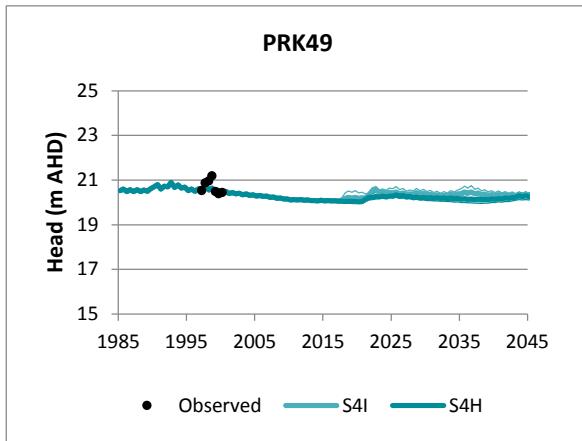


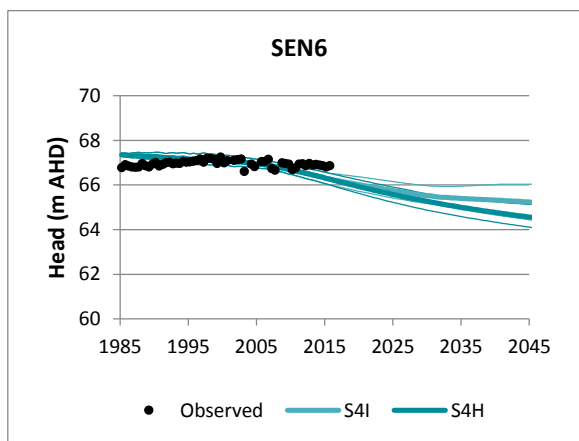
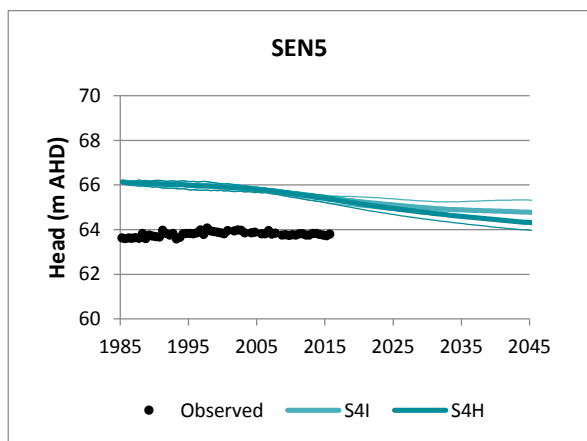
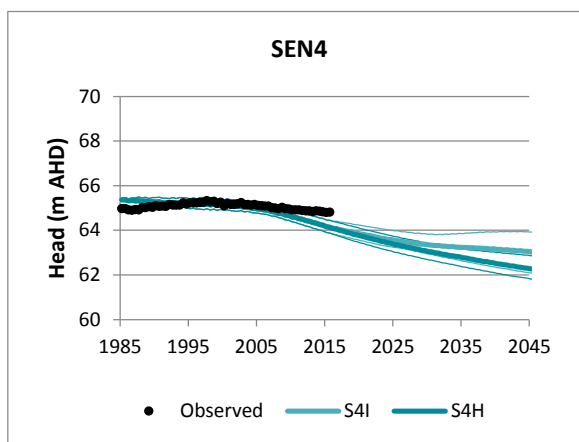
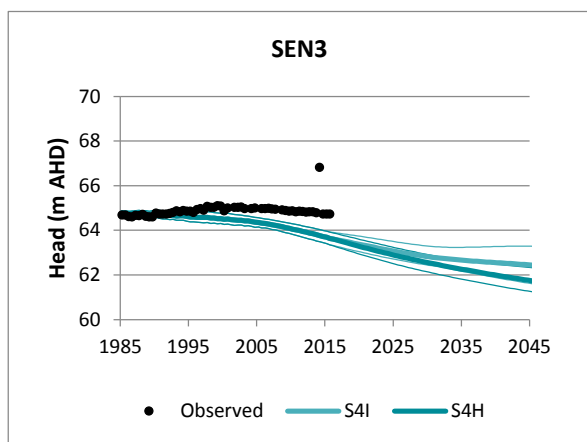
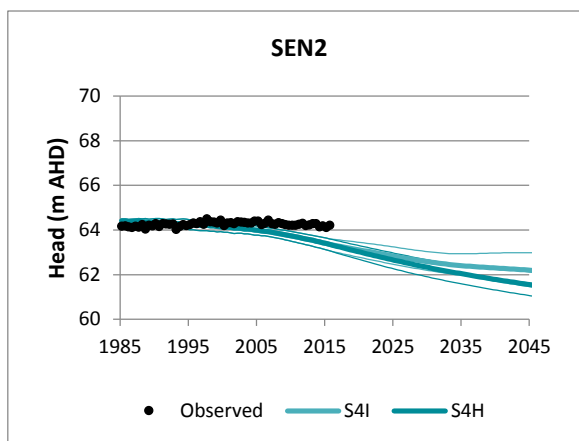
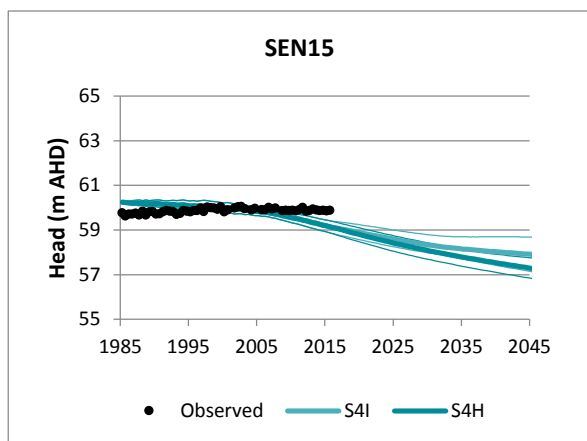
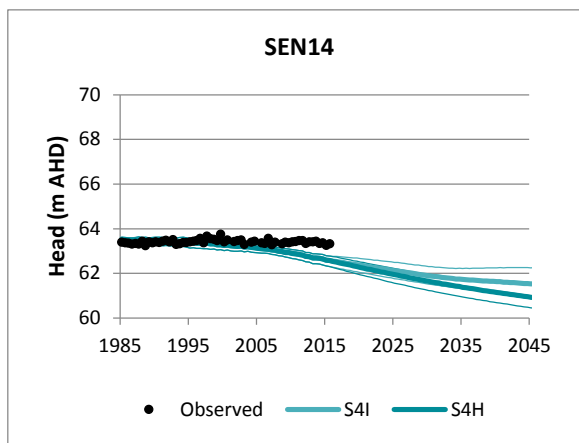
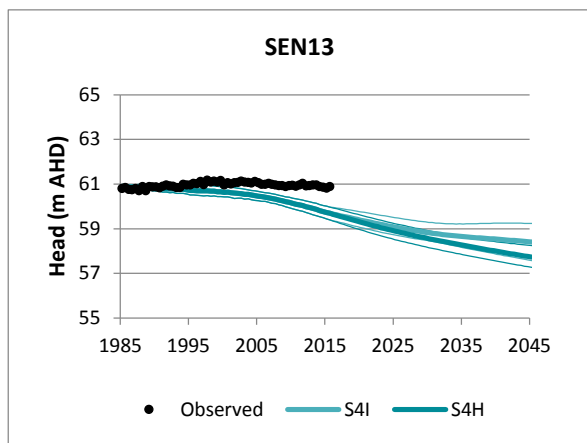


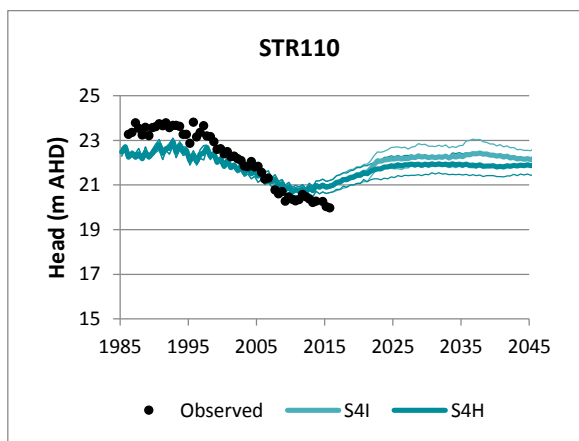
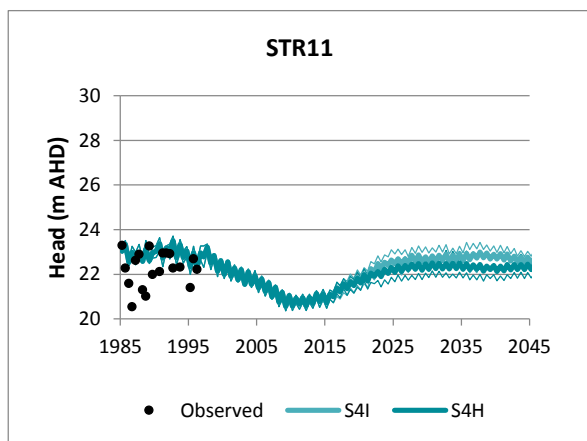
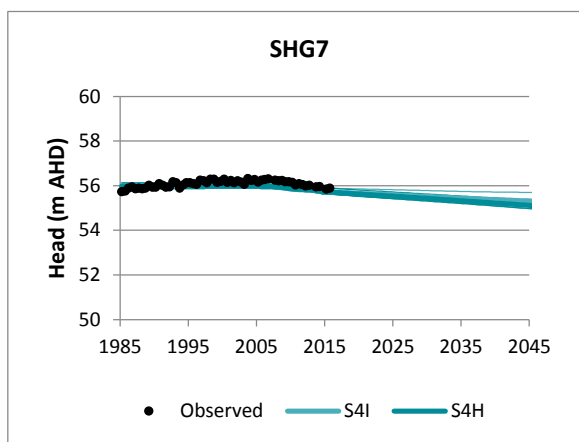
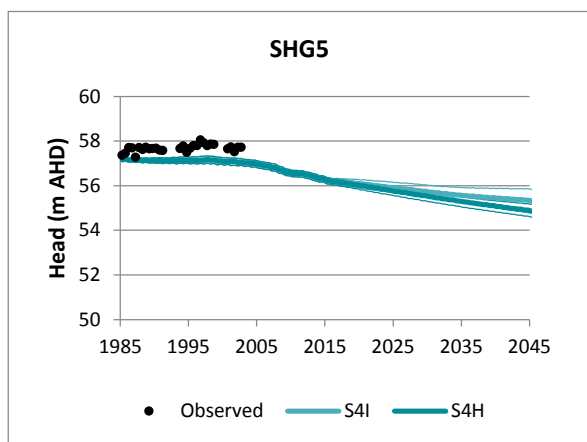
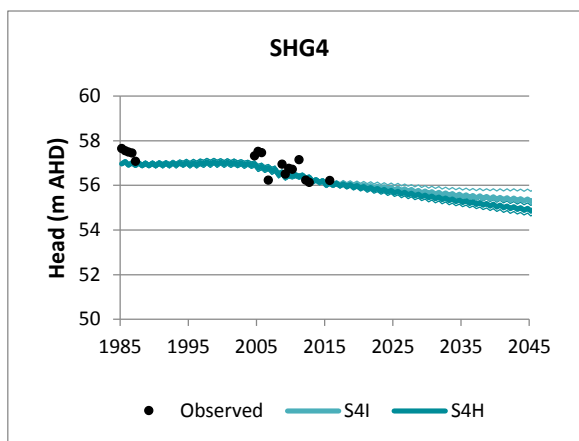
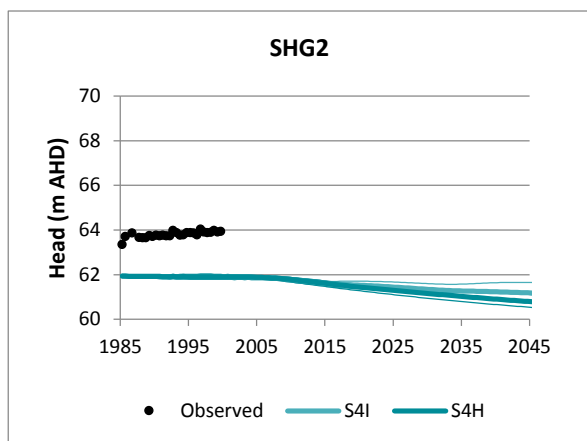
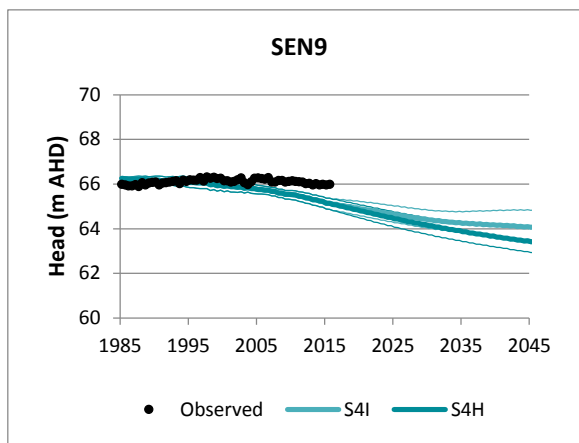
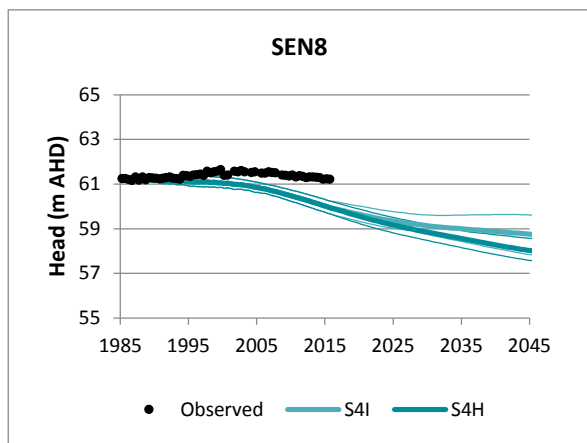


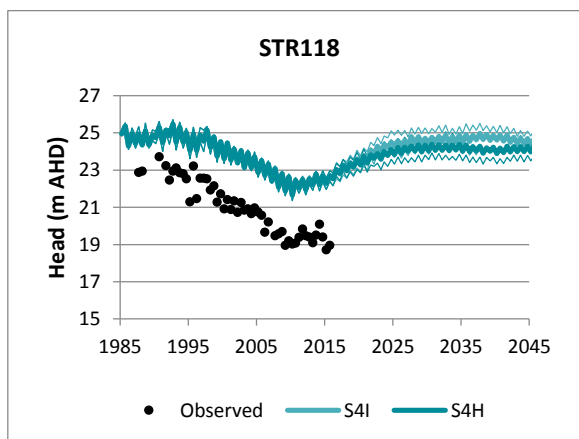
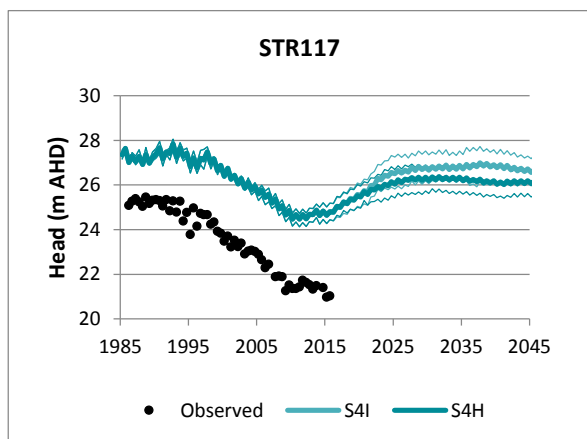
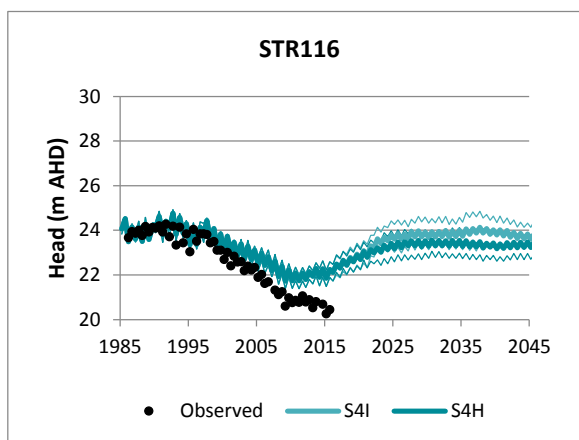
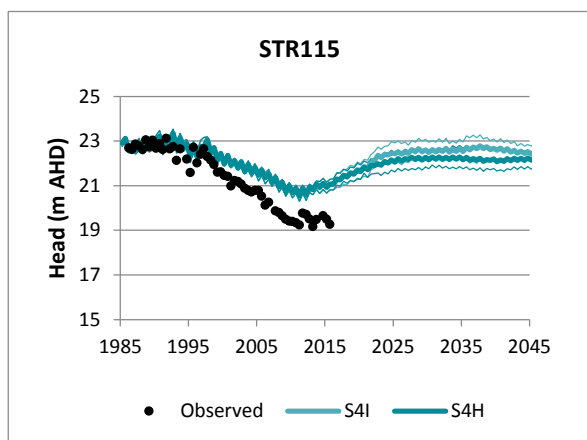
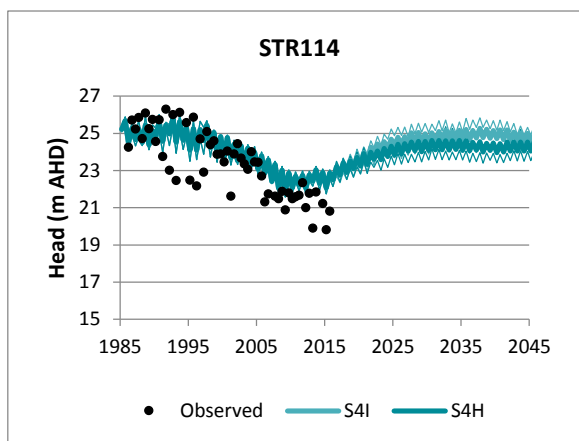
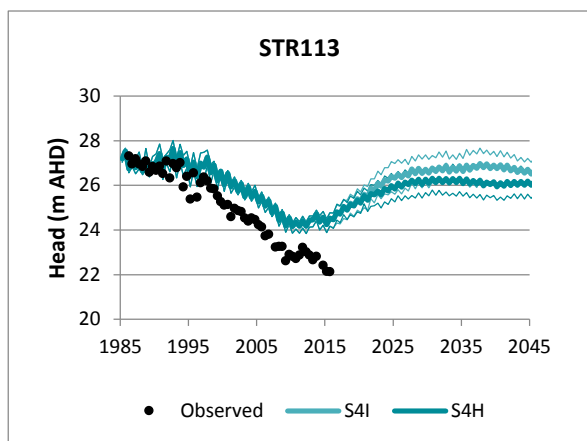
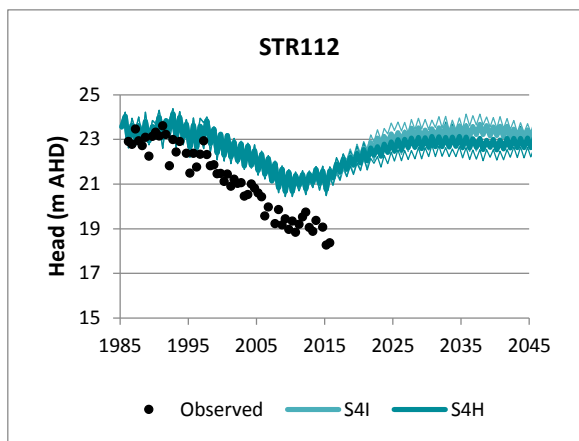
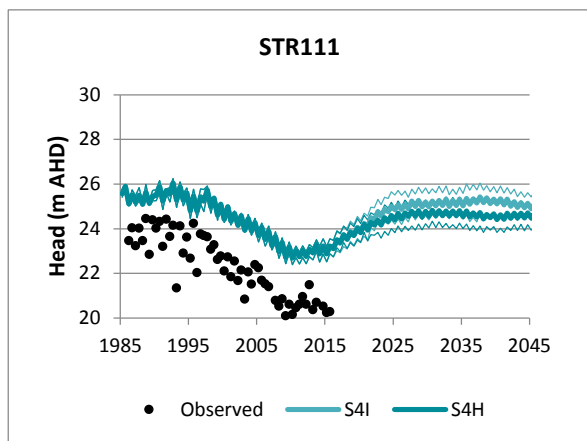


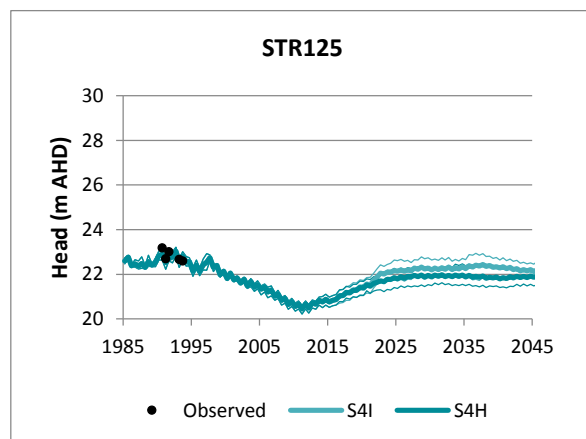
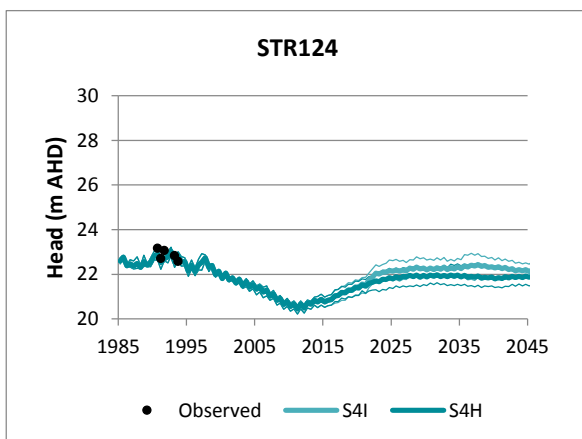
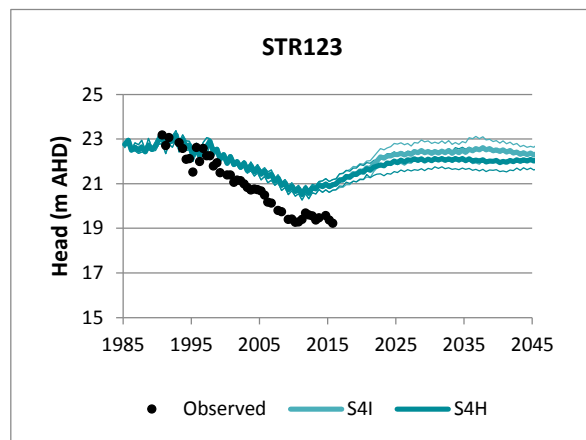
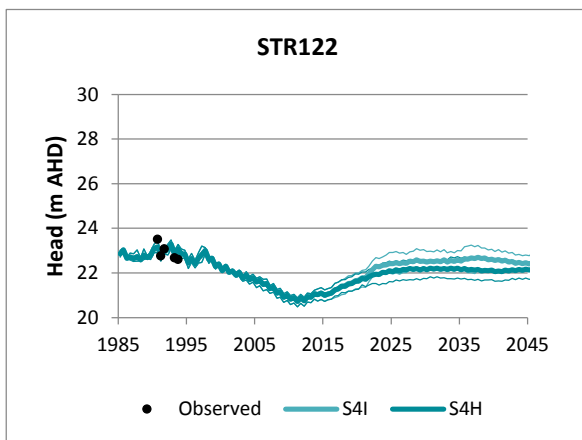
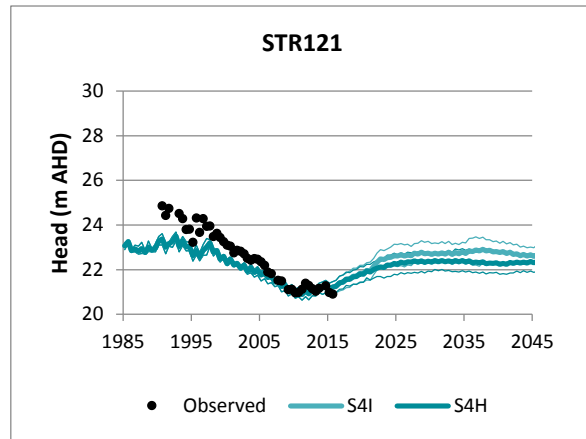
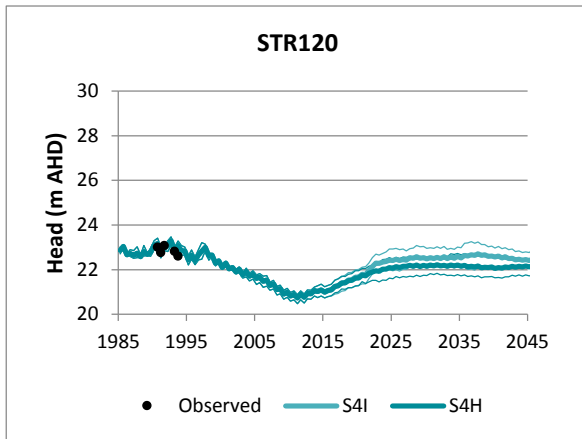
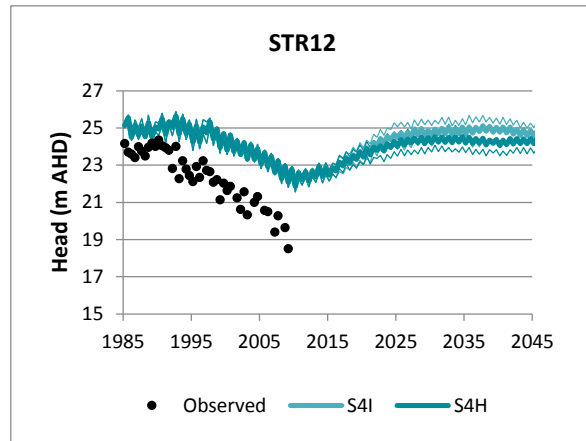
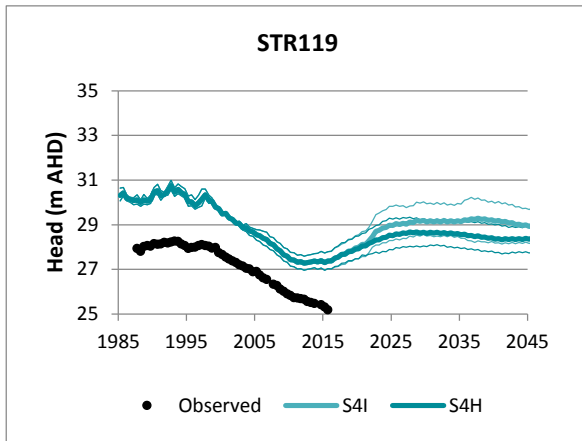


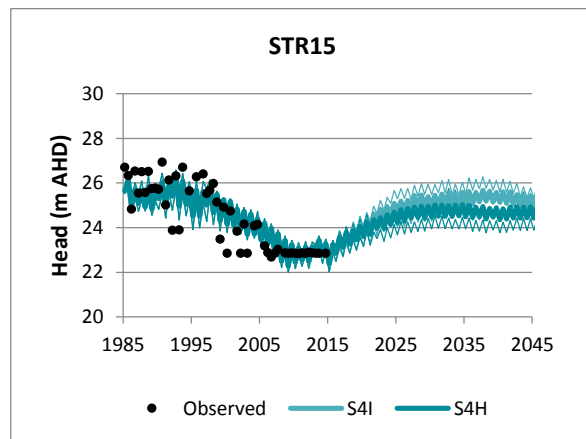
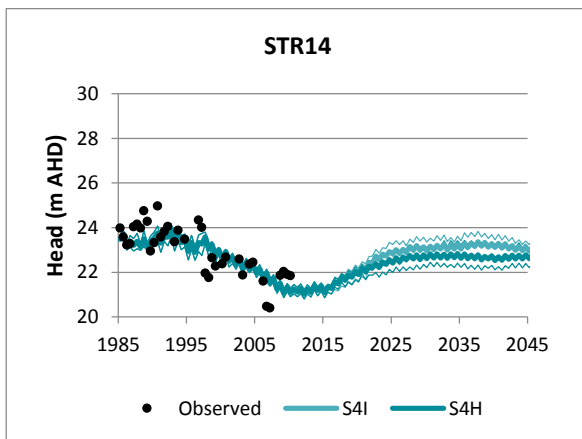
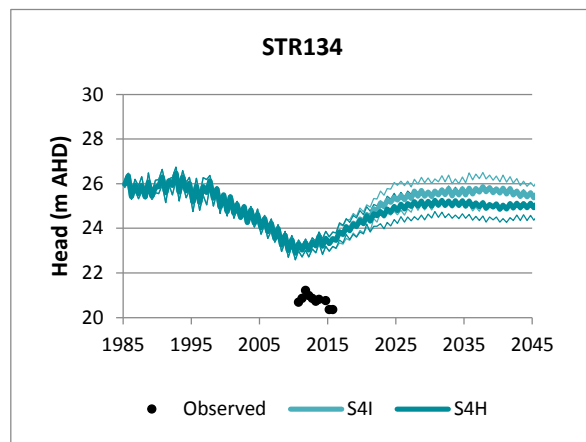
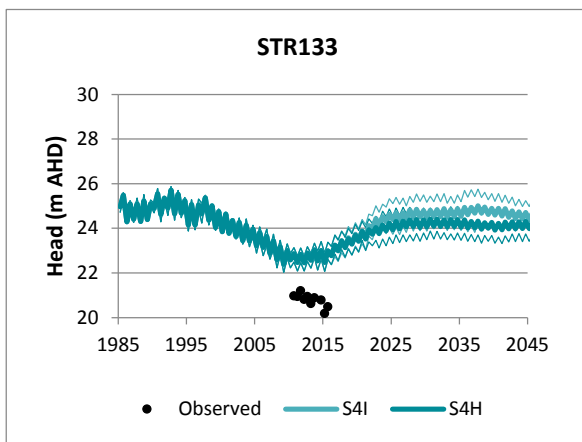
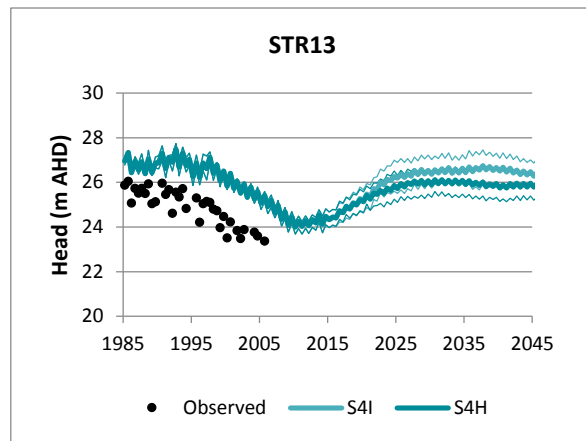
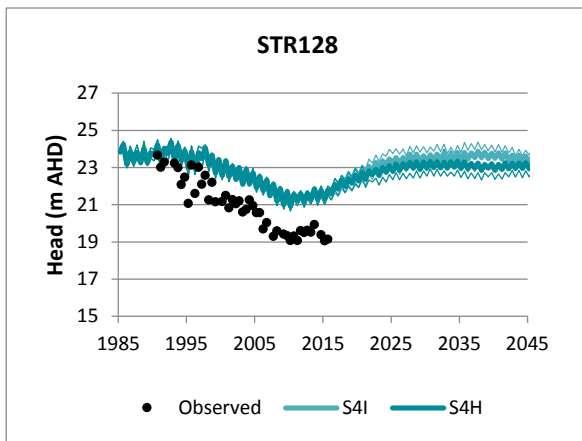
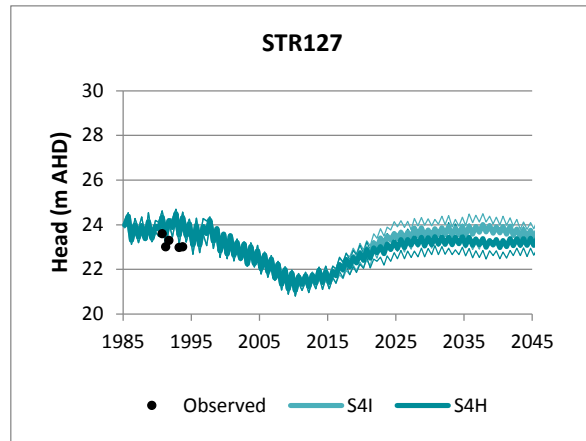
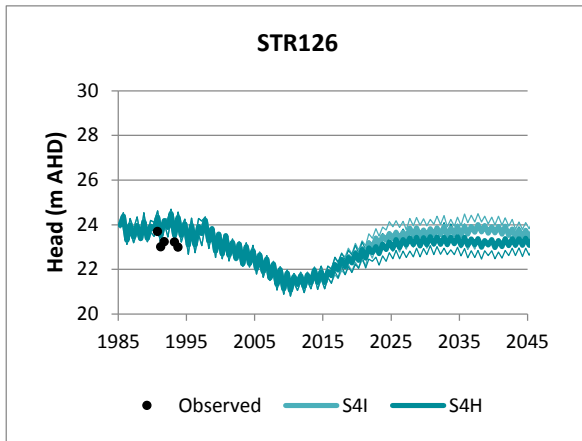


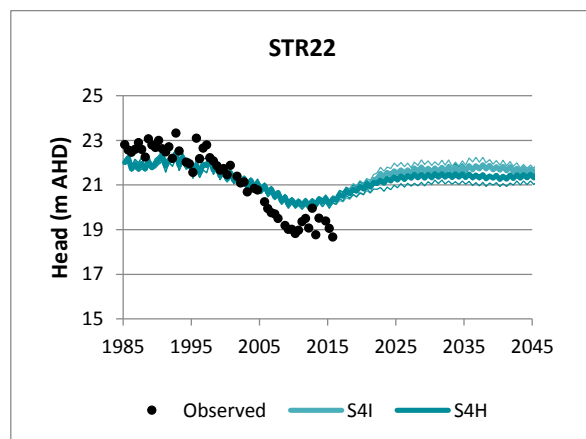
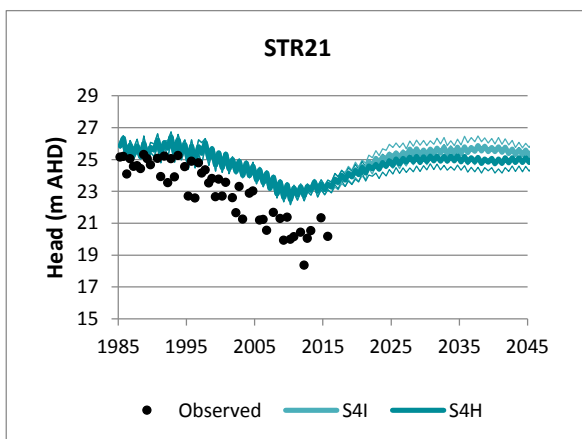
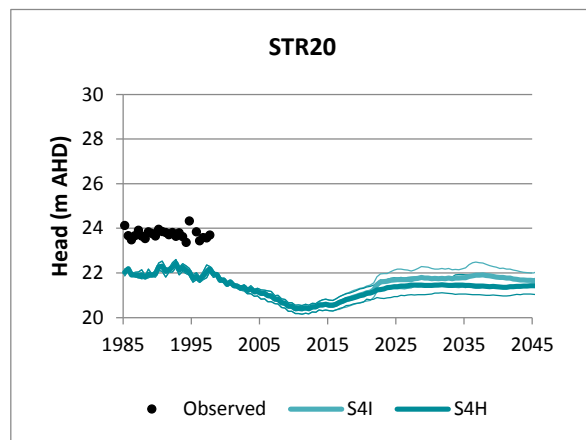
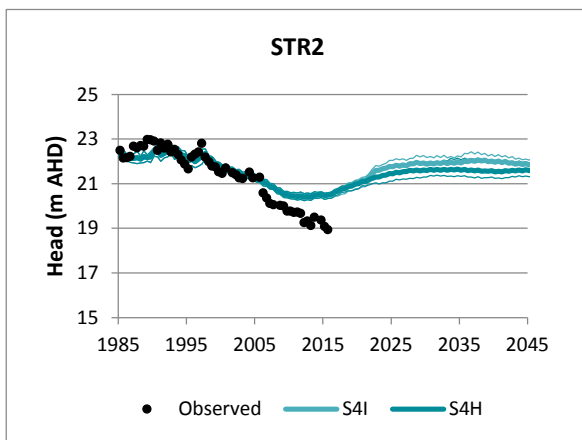
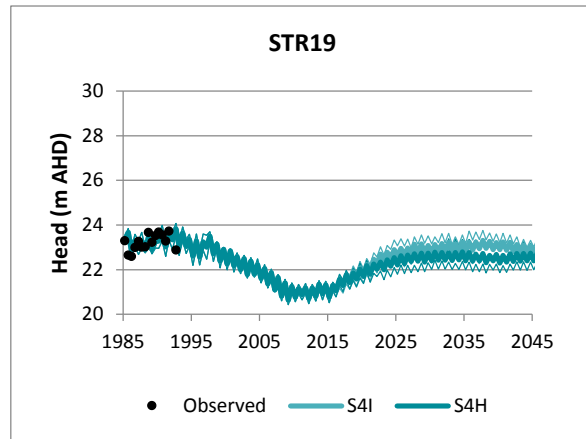
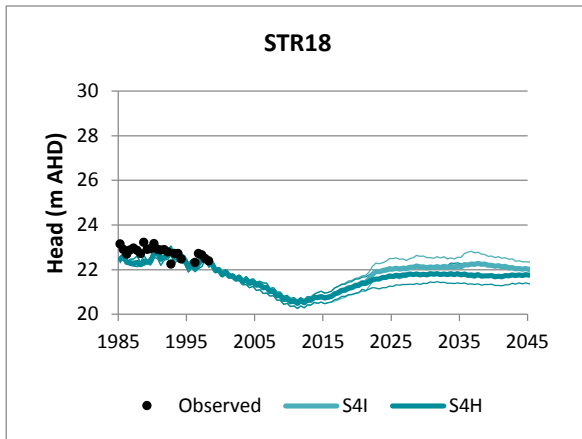
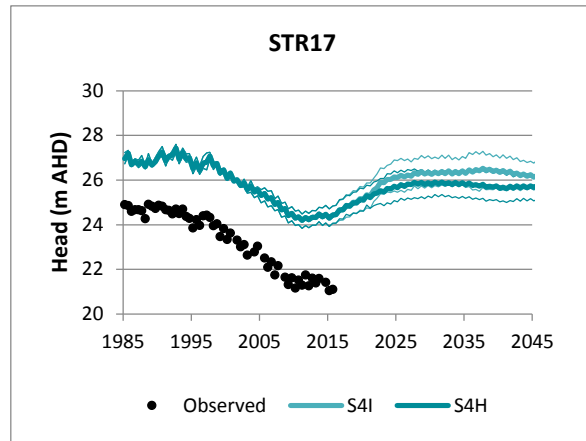
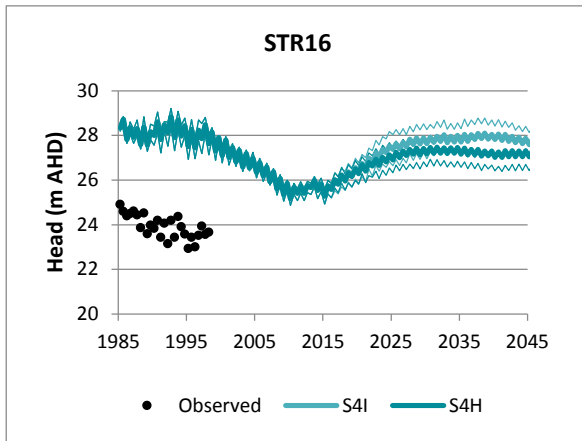


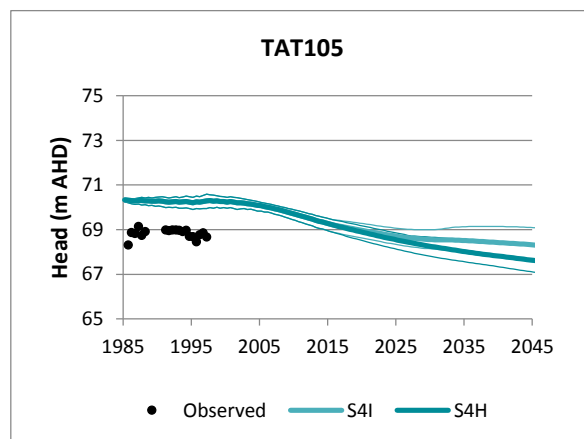
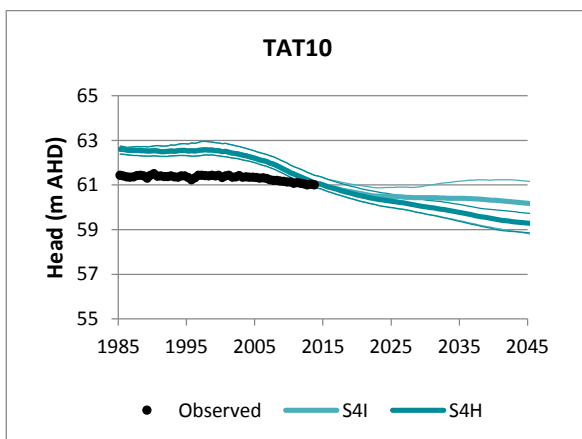
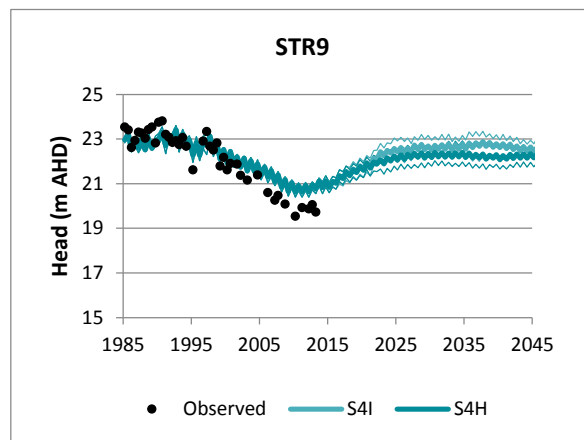
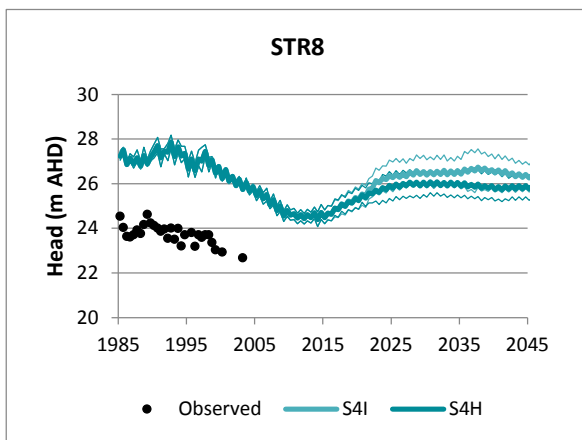
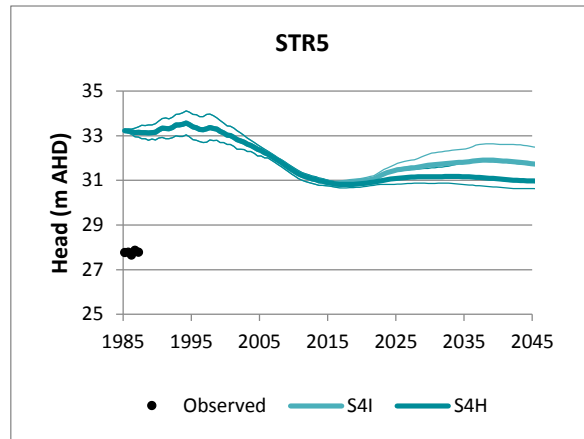
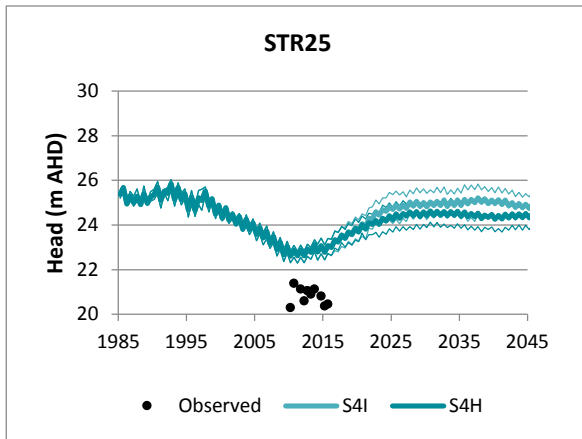
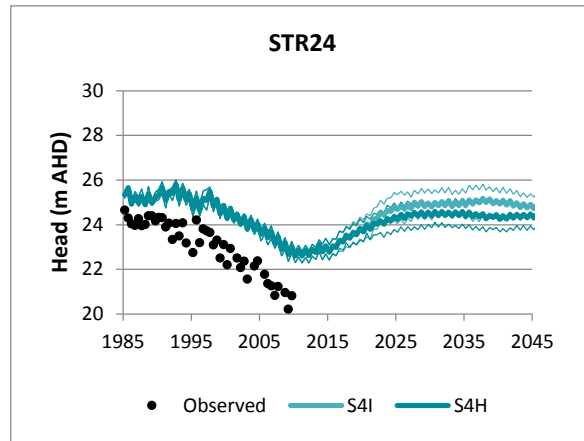
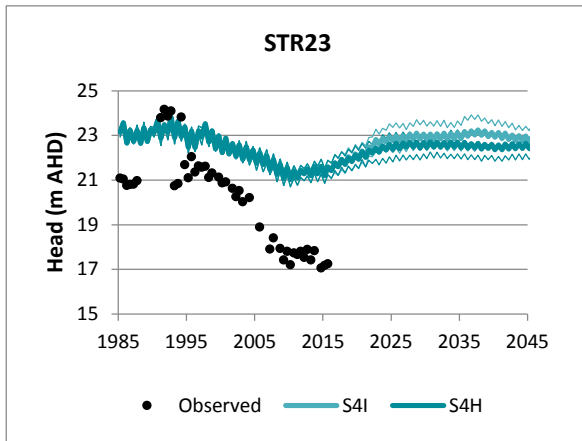


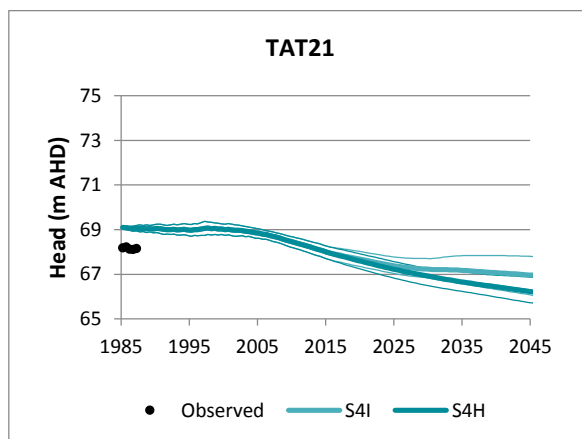
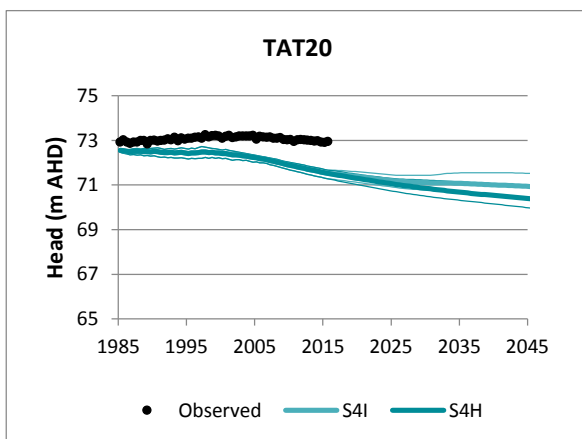
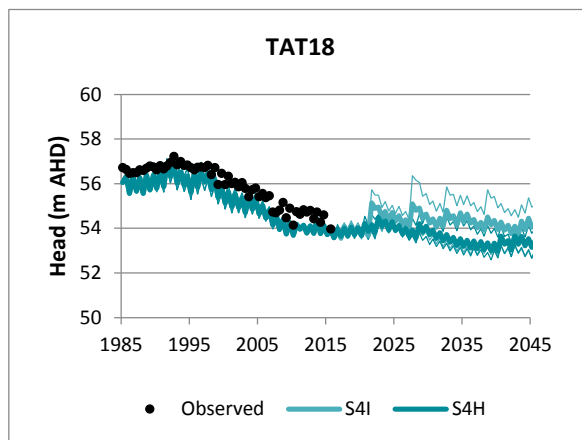
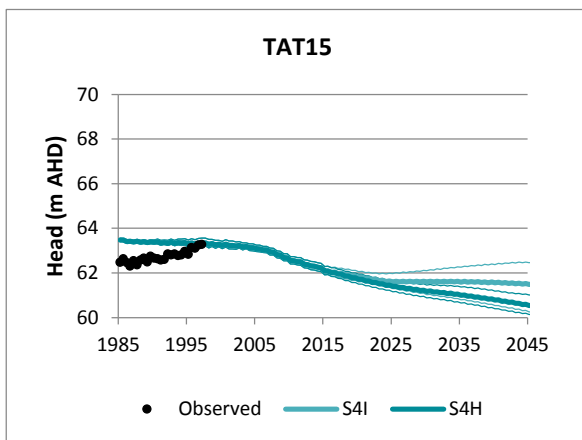
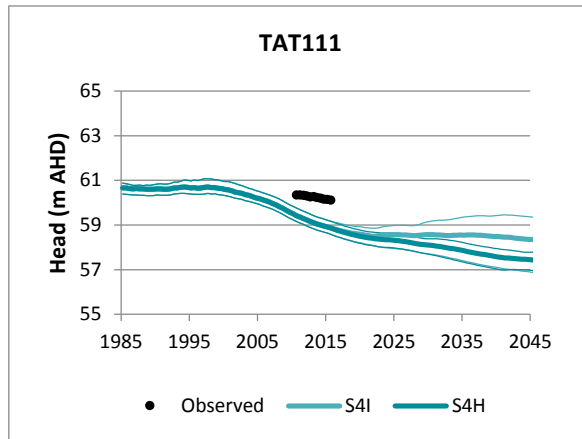
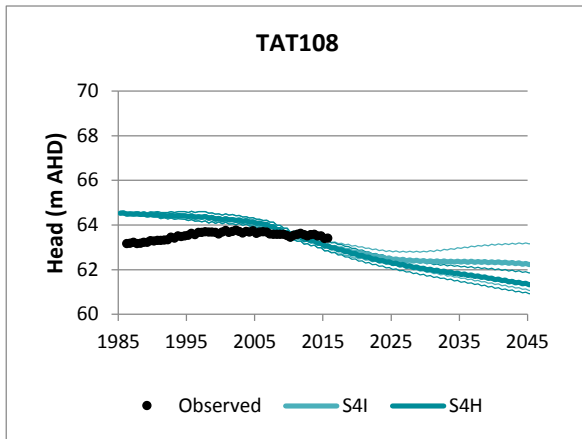
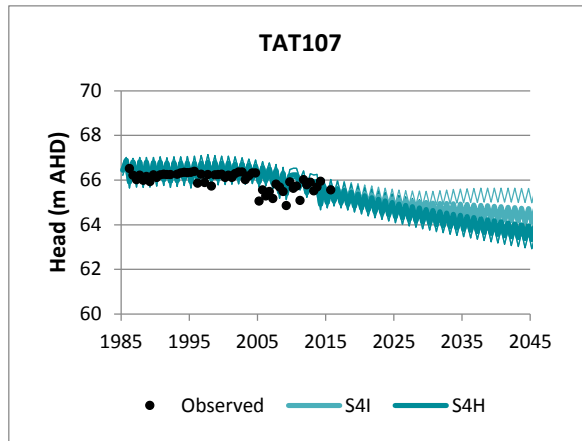
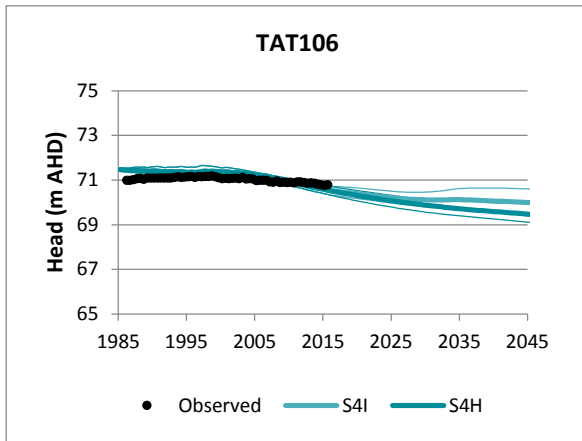


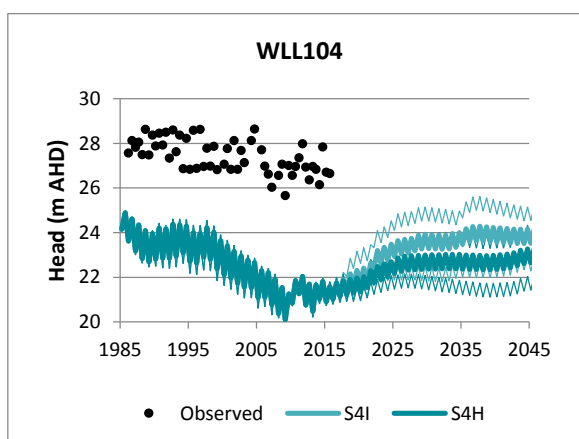
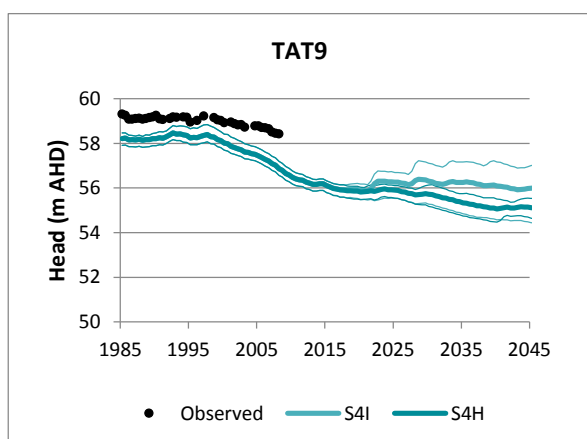
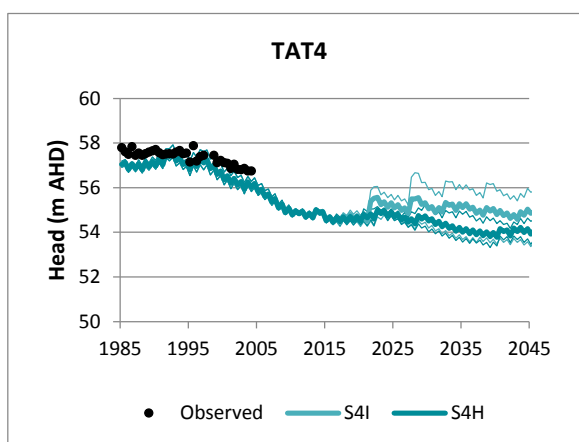
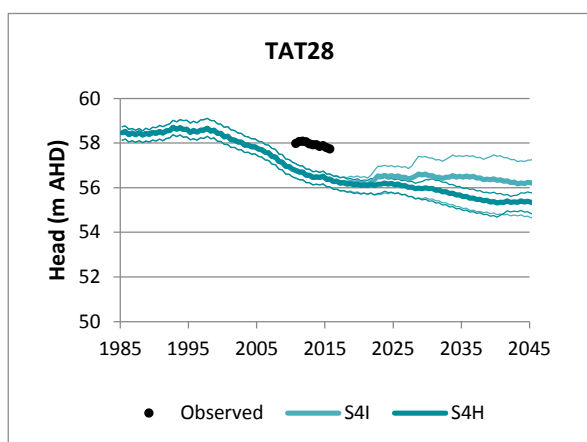
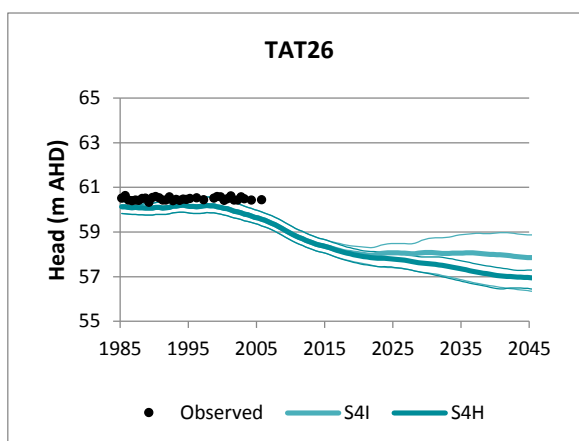
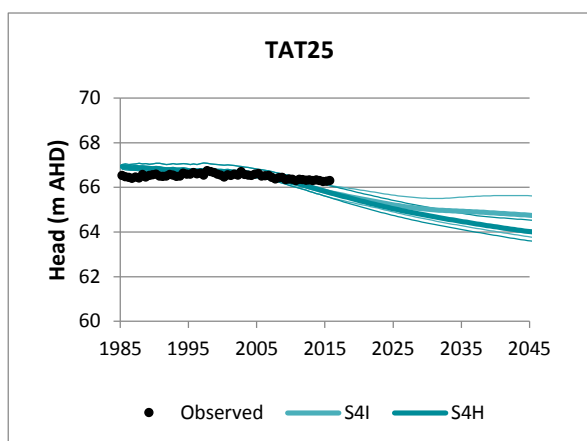
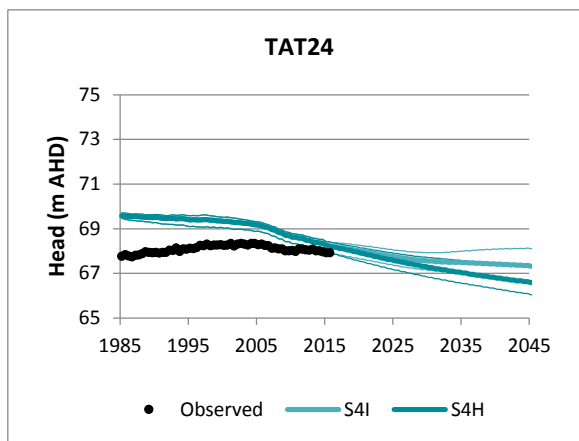
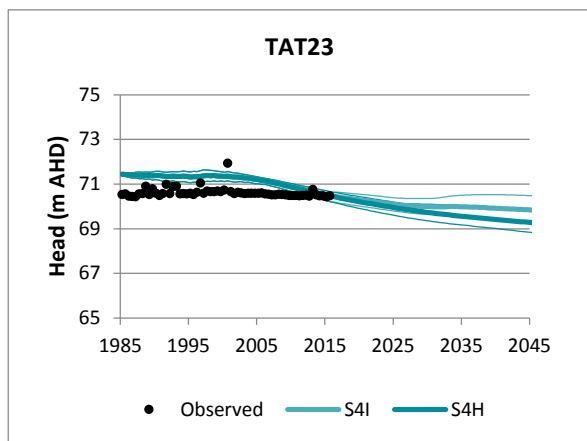


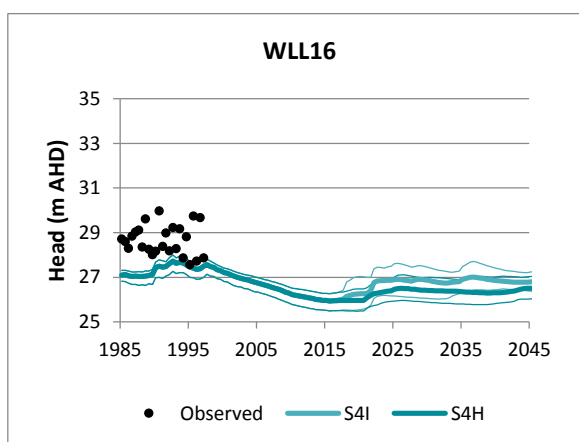
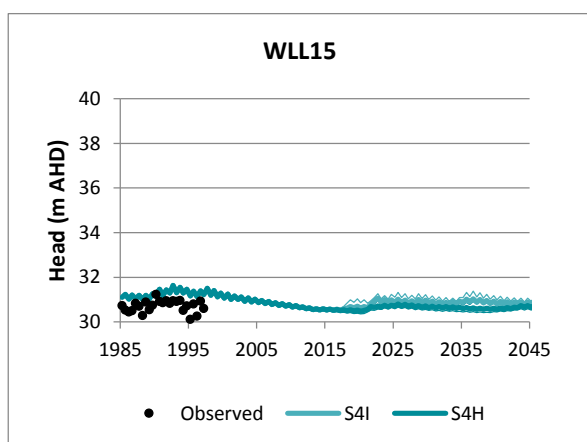
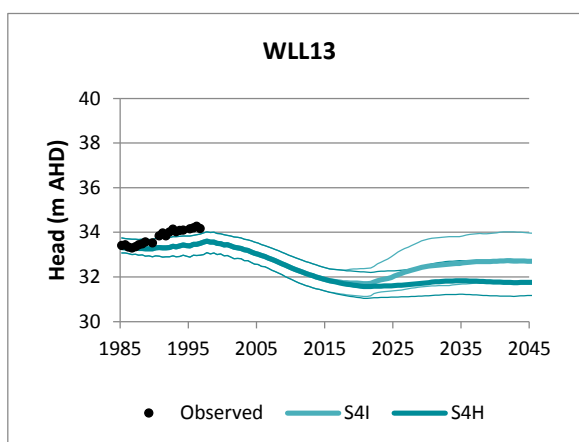
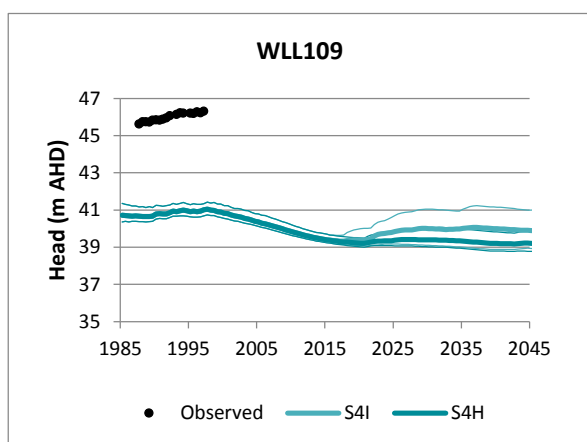
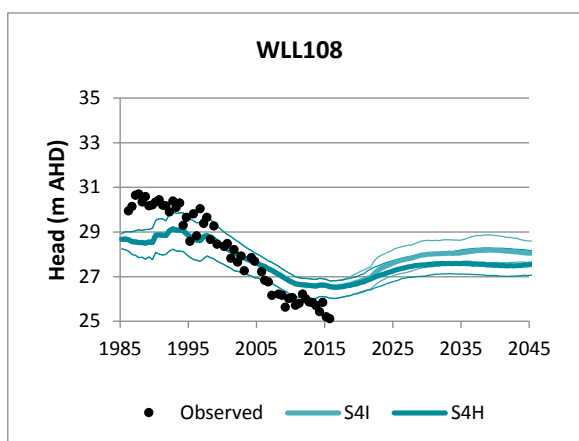
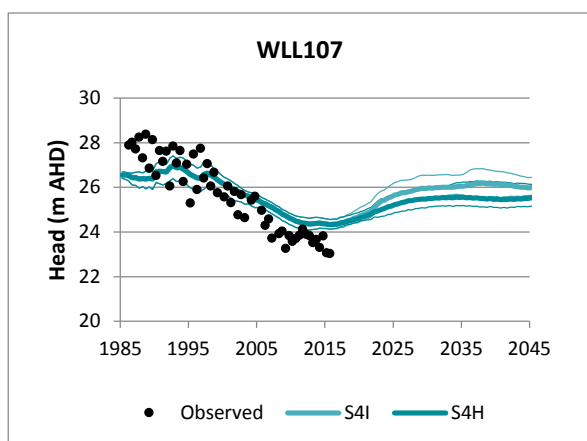
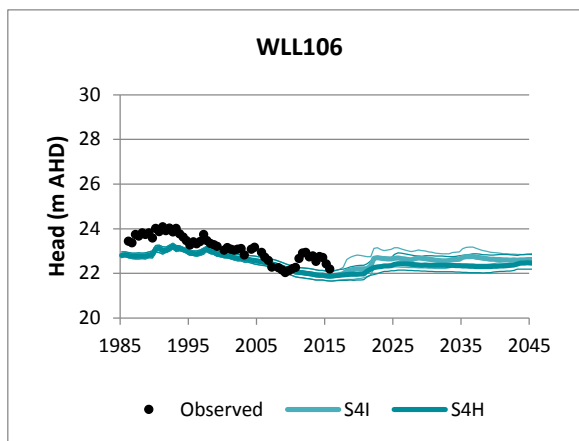
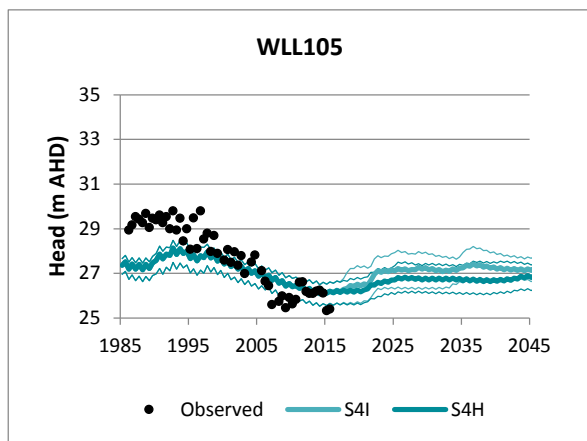


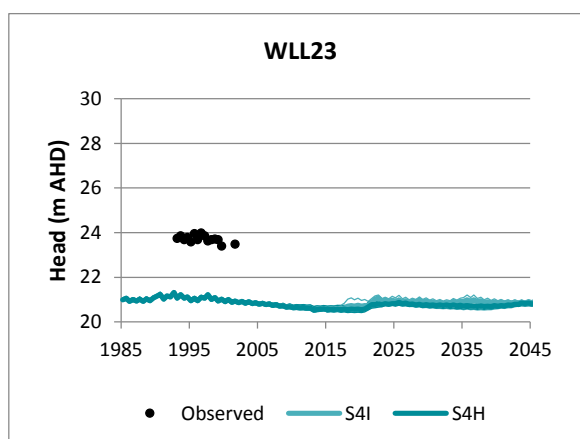
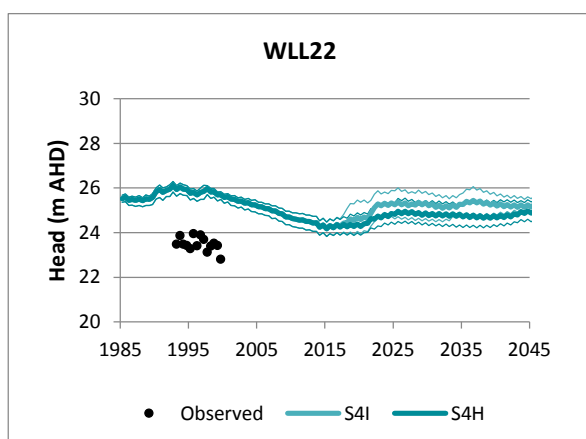
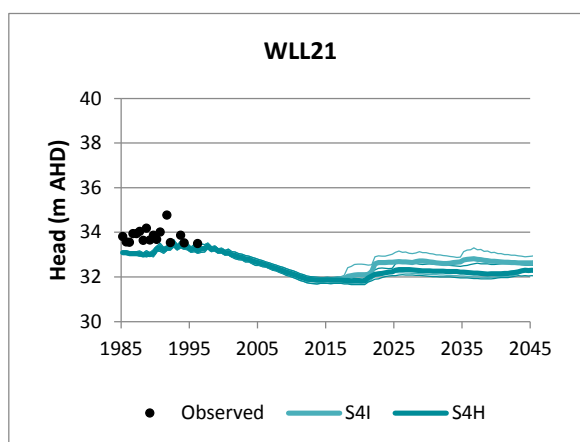
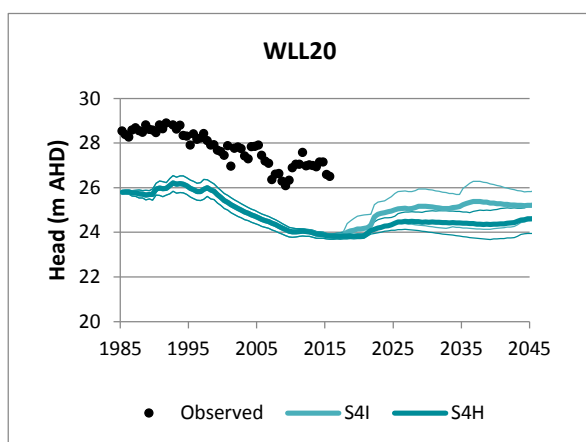
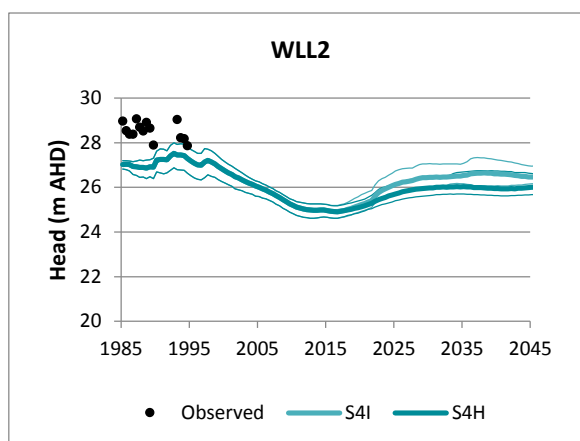
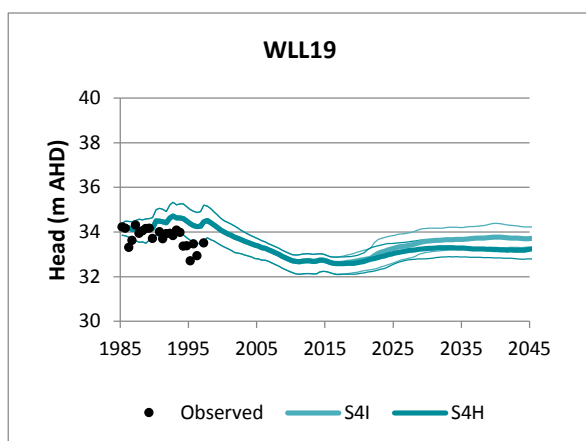
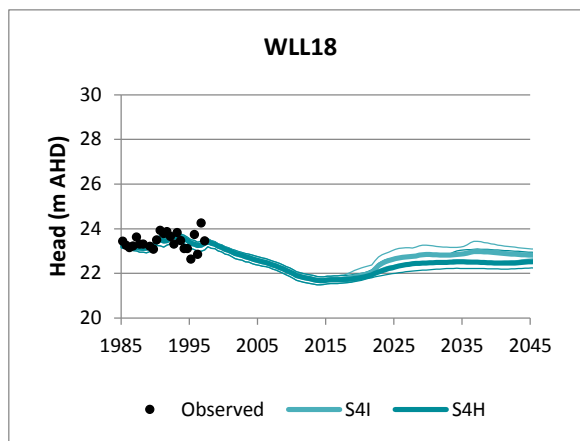
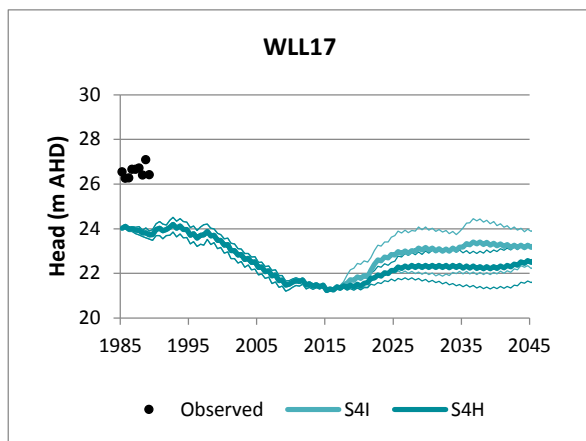


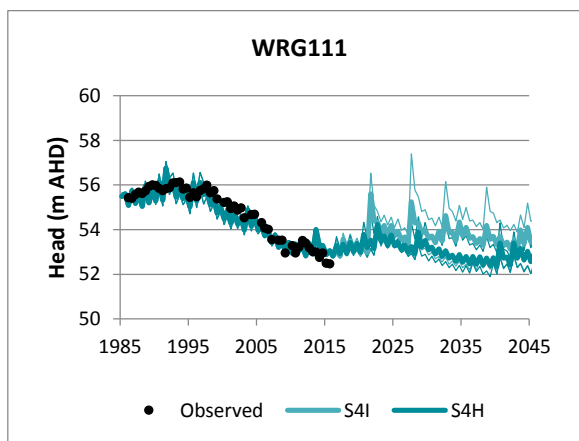
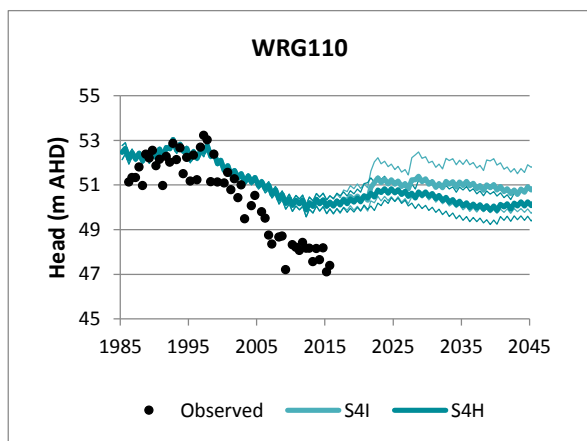
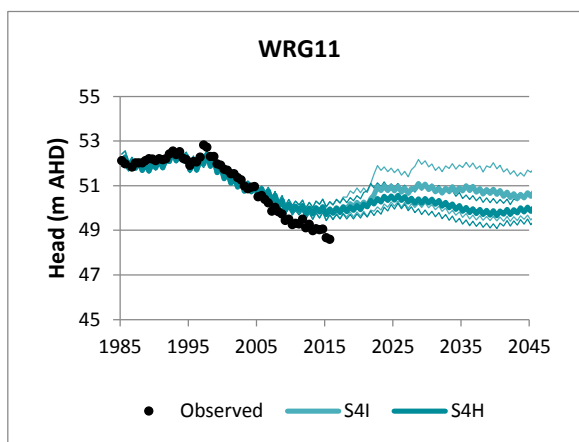
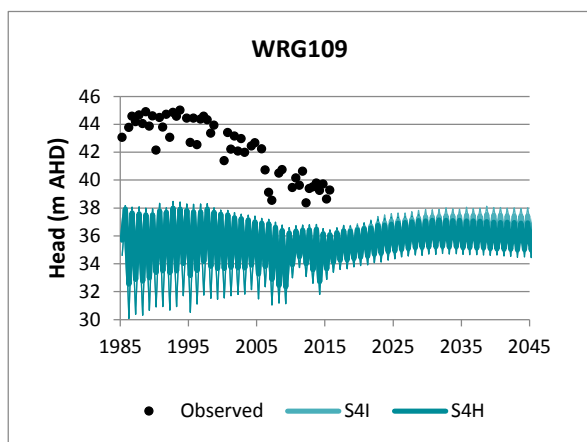
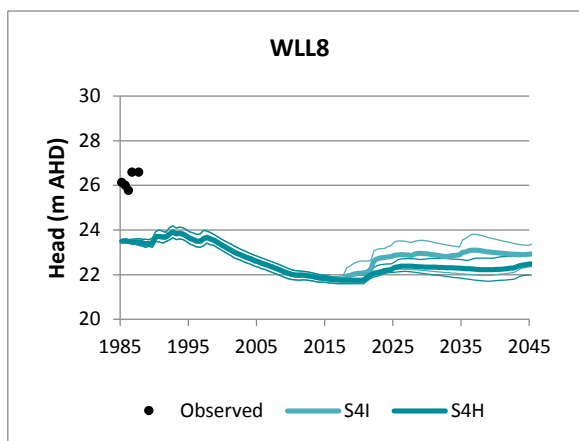
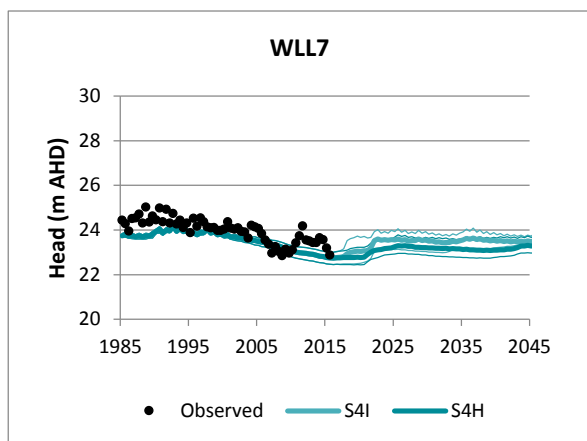
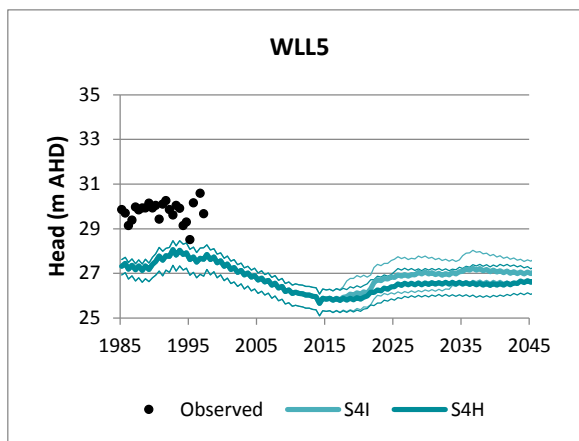
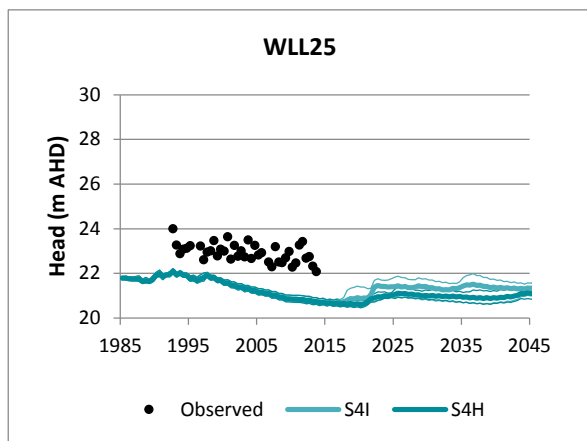


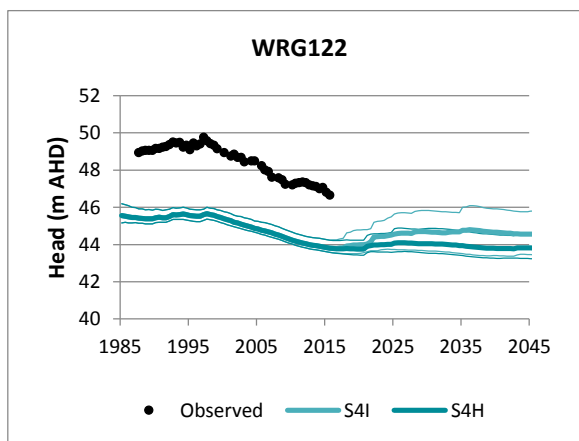
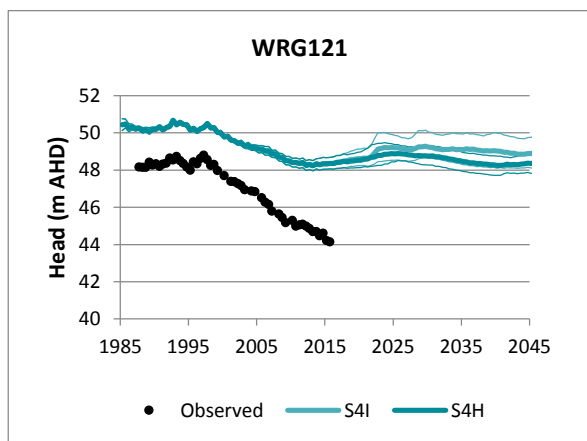
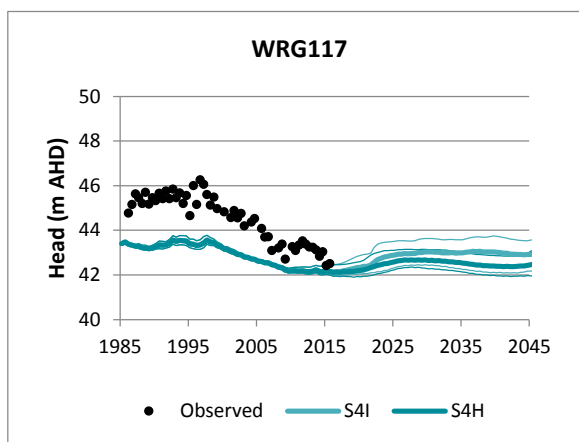
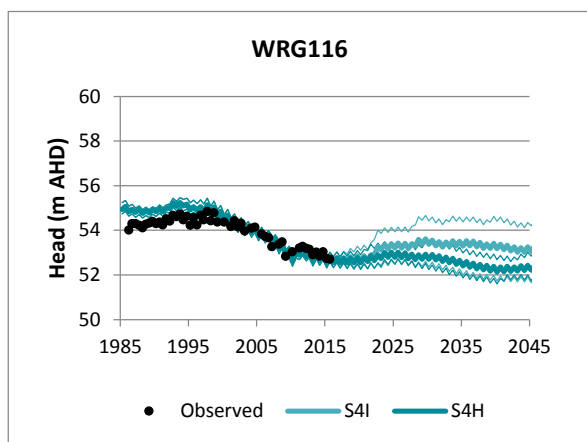
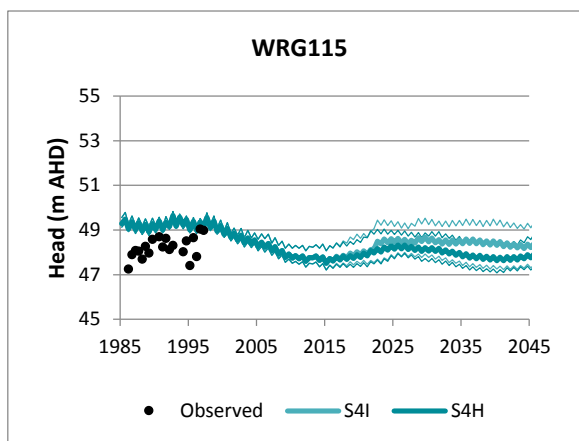
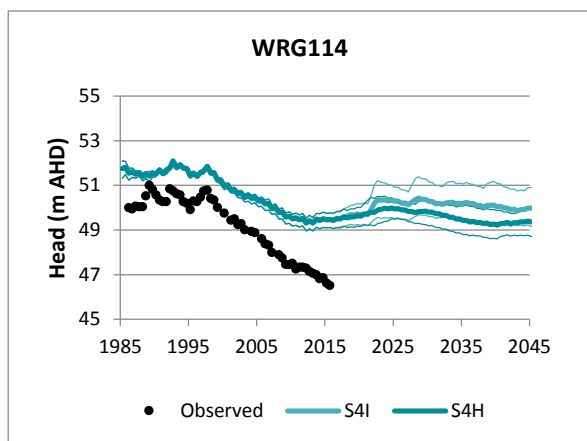
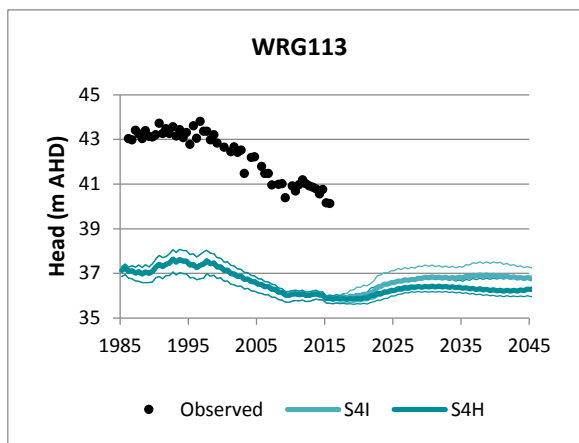
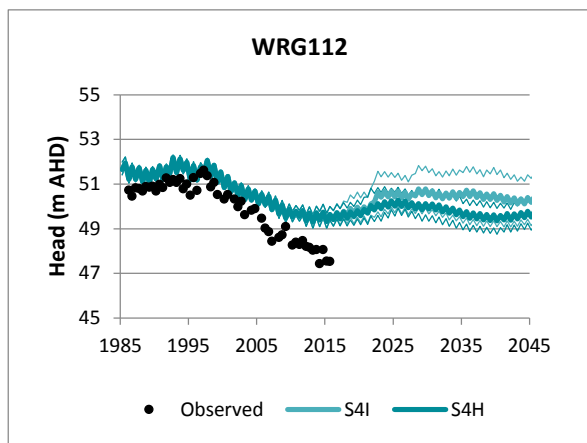


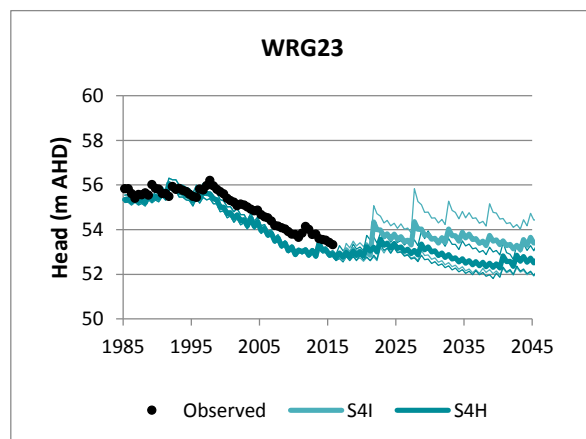
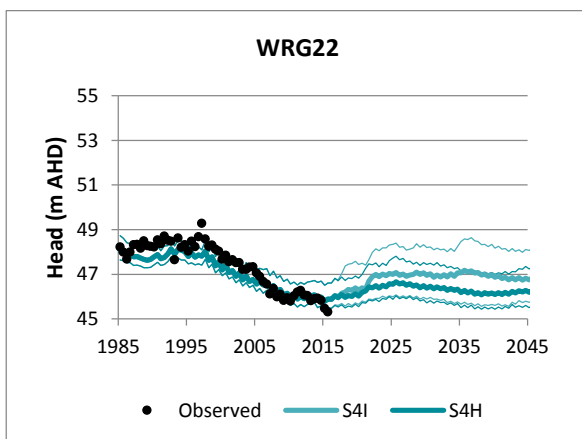
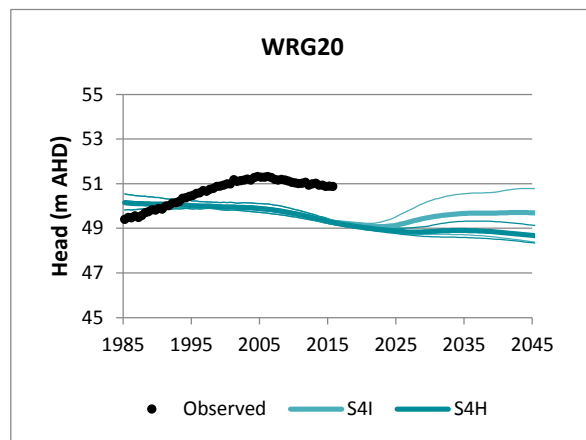
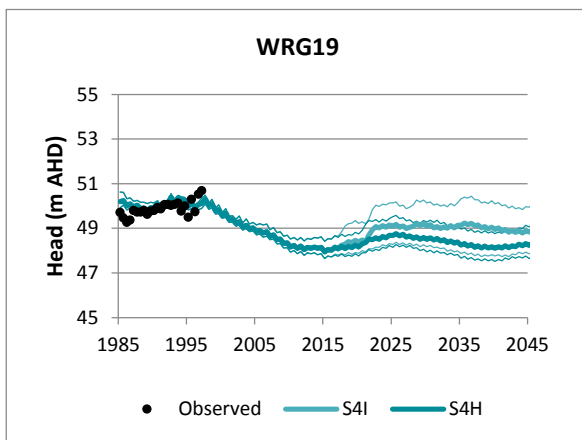
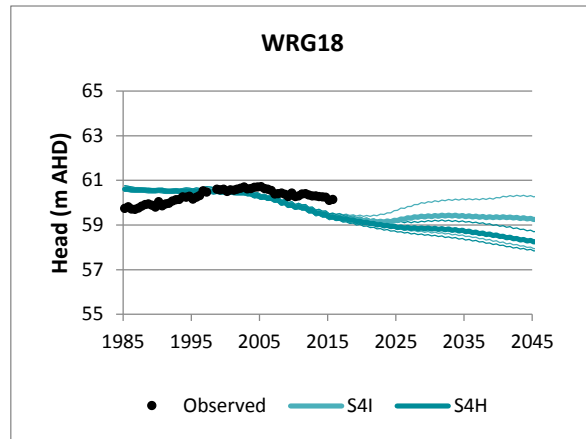
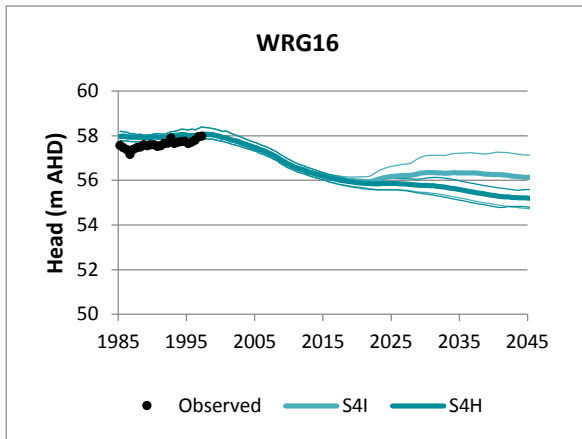
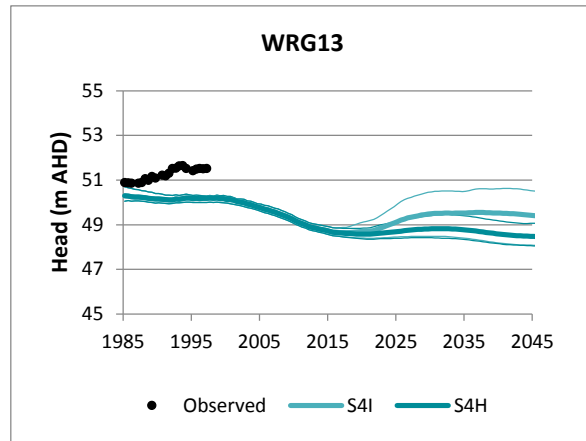
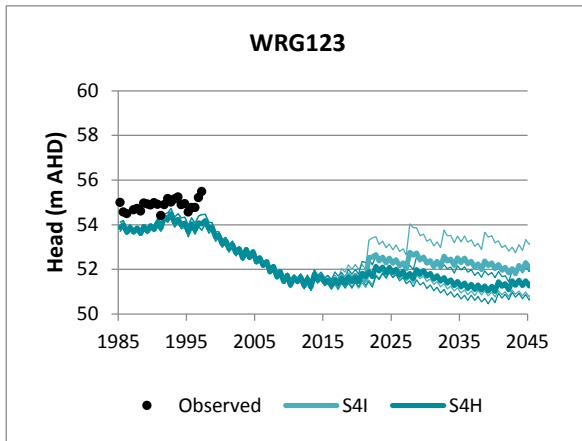


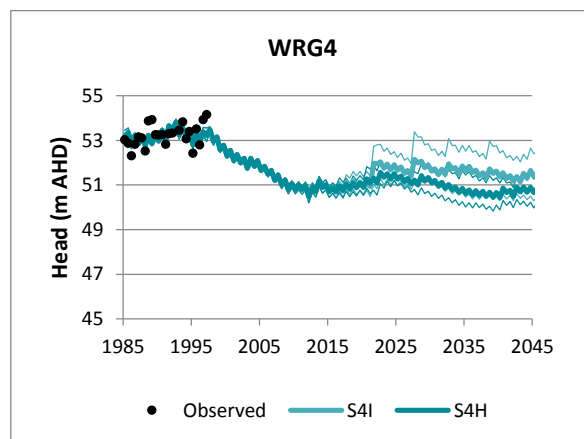
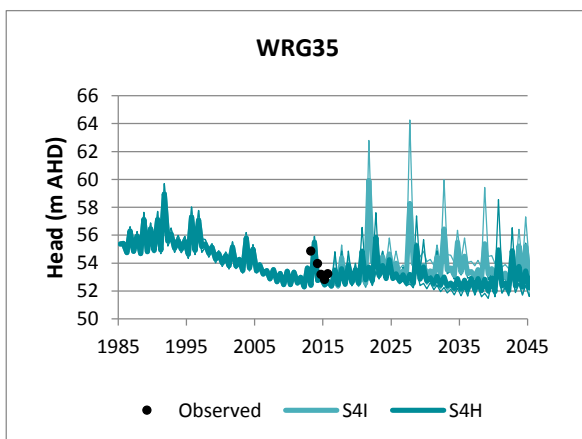
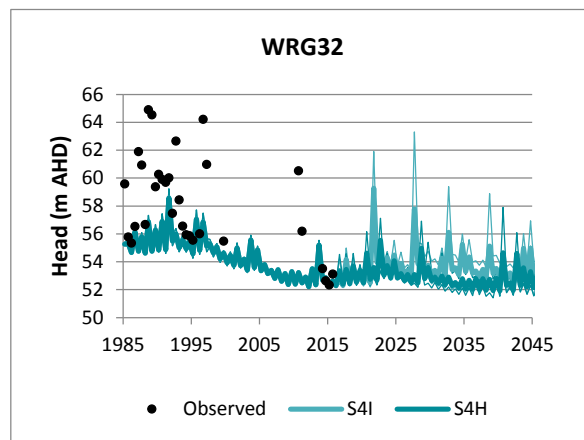
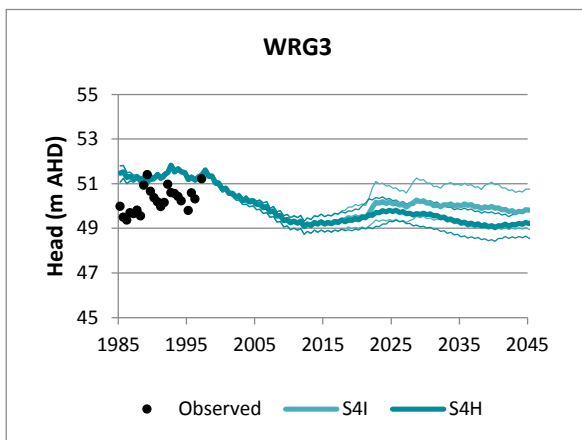
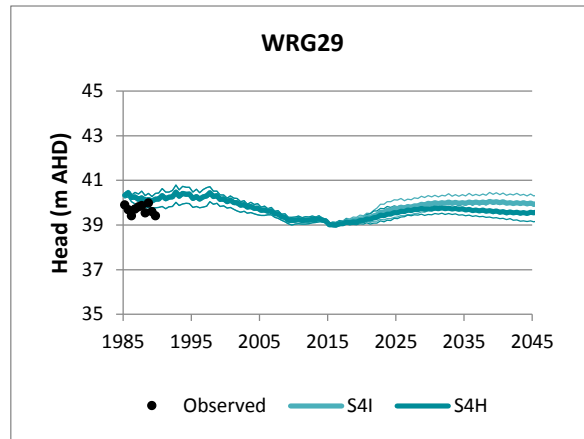
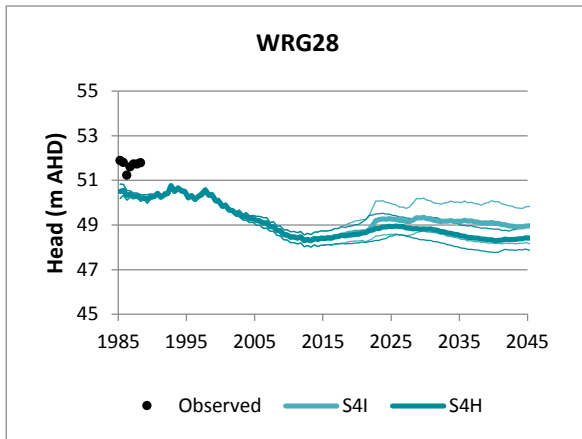
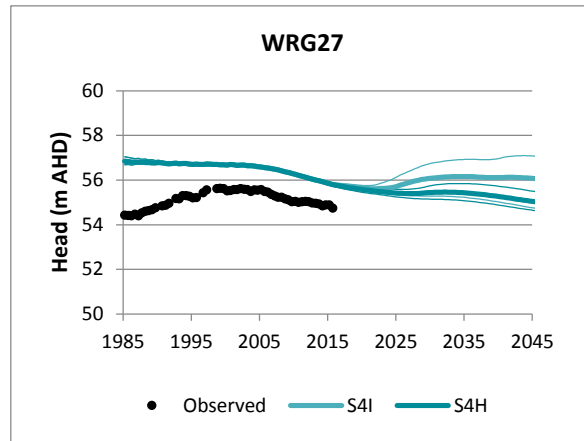
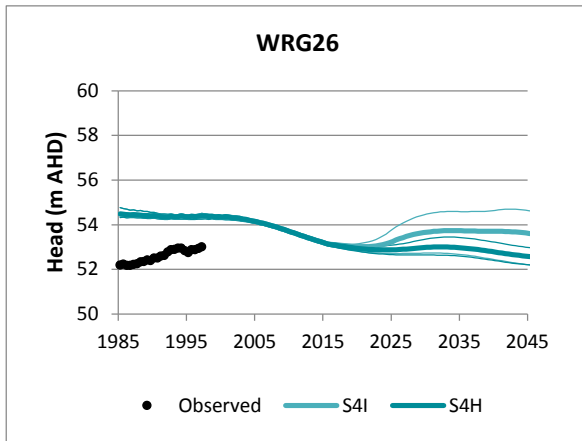


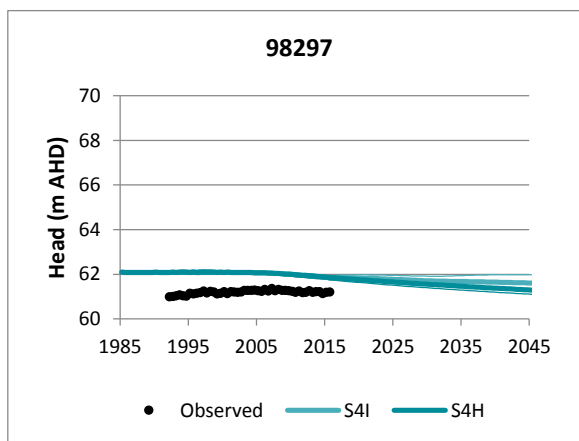
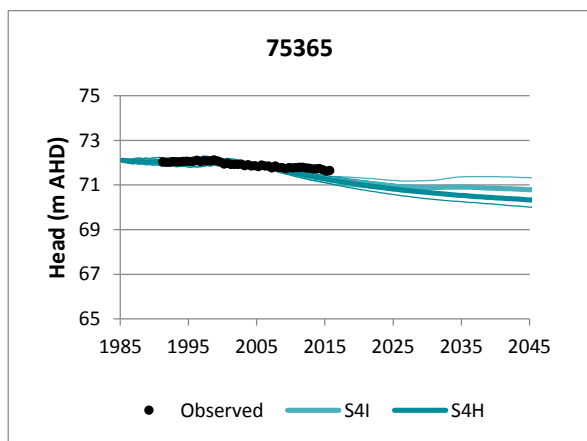
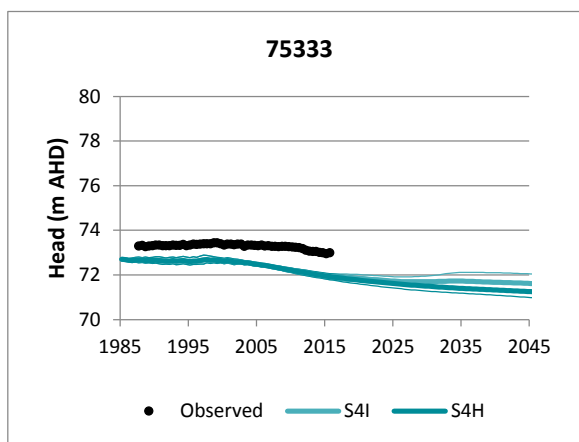
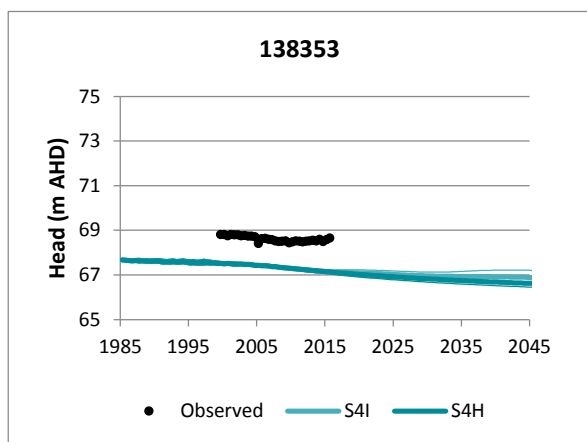
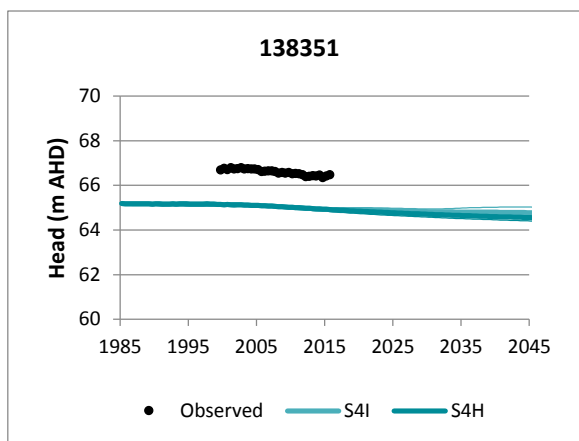
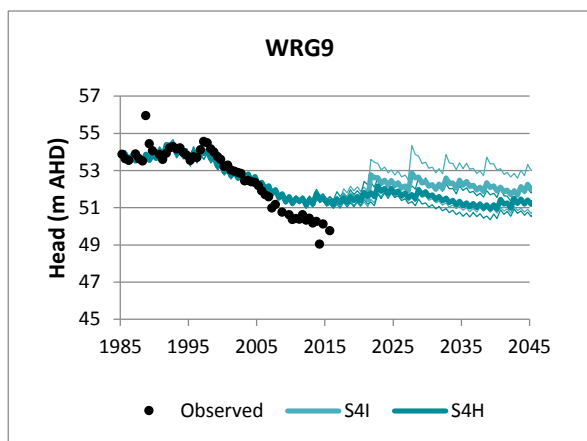
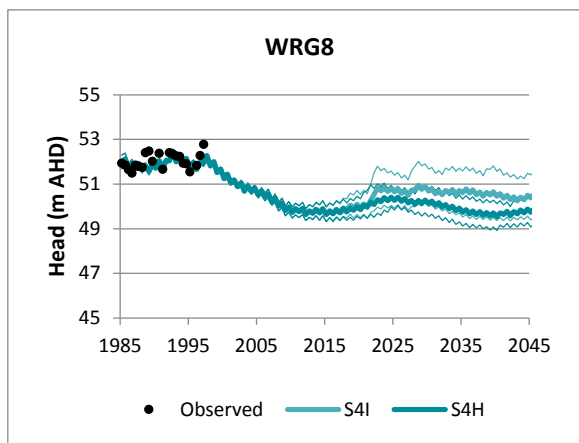
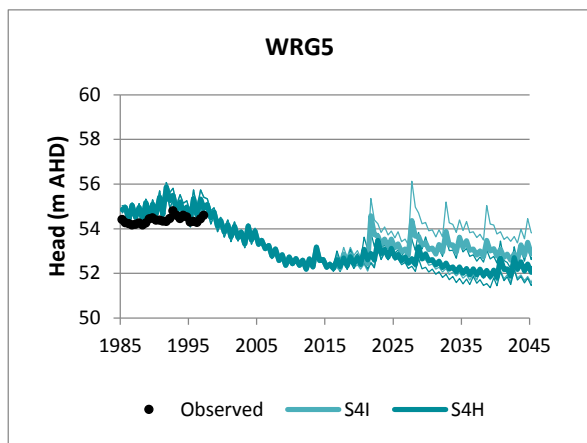












H. Average hydrograph projections for all extraction scenarios with both intermediate and high carbon emission climates

The following section shows the average (thick line) projected groundwater levels for each of the extraction scenarios with both intermediate and high carbon emission climate projections.

