

General Information

| | | | |
|----------------|----------|-----------------------------------|--------------|
| River Name | Esk | Catchment Area (km ²) | 495 |
| Station Name | Canonbie | SAAR (mm) 61-90 | 1422 |
| Station Number | 77002 | Mean Annual Rain (mm) 62-91 | 1452 |
| Grid Reference | NY397751 | Mean Annual PE (mm) 62-91 | 487 |
| EA Region | SEPA-SW | Observed flow record | 1962 to 2005 |



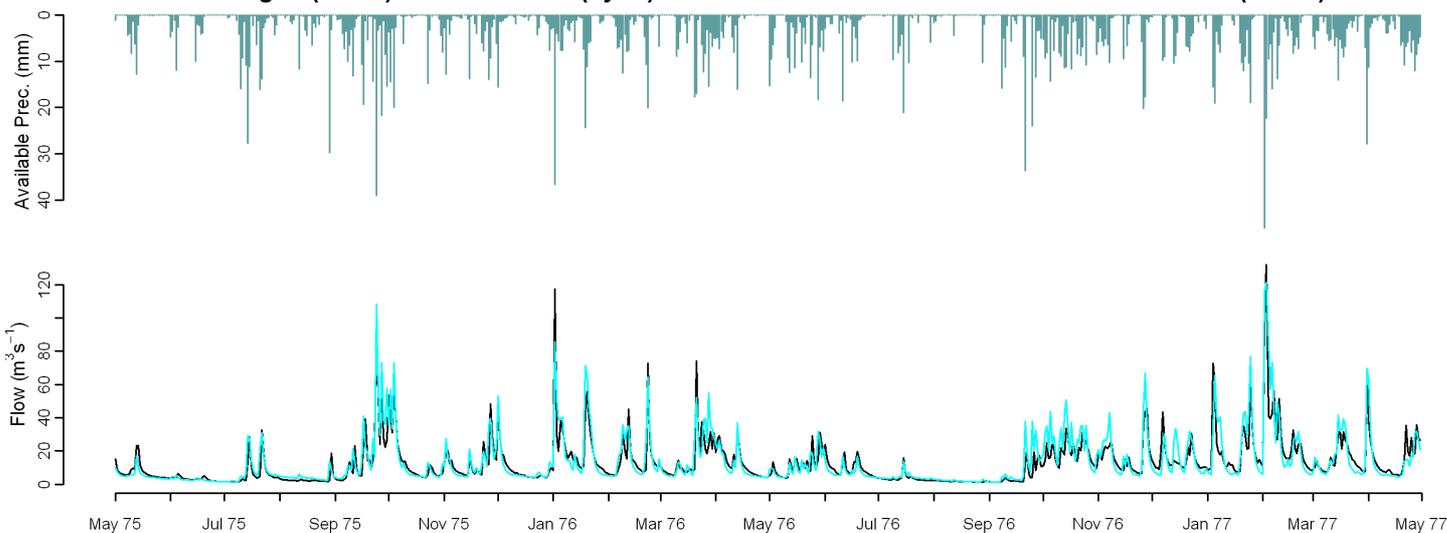
Observed Data

Comparison of gauged and simulated flow

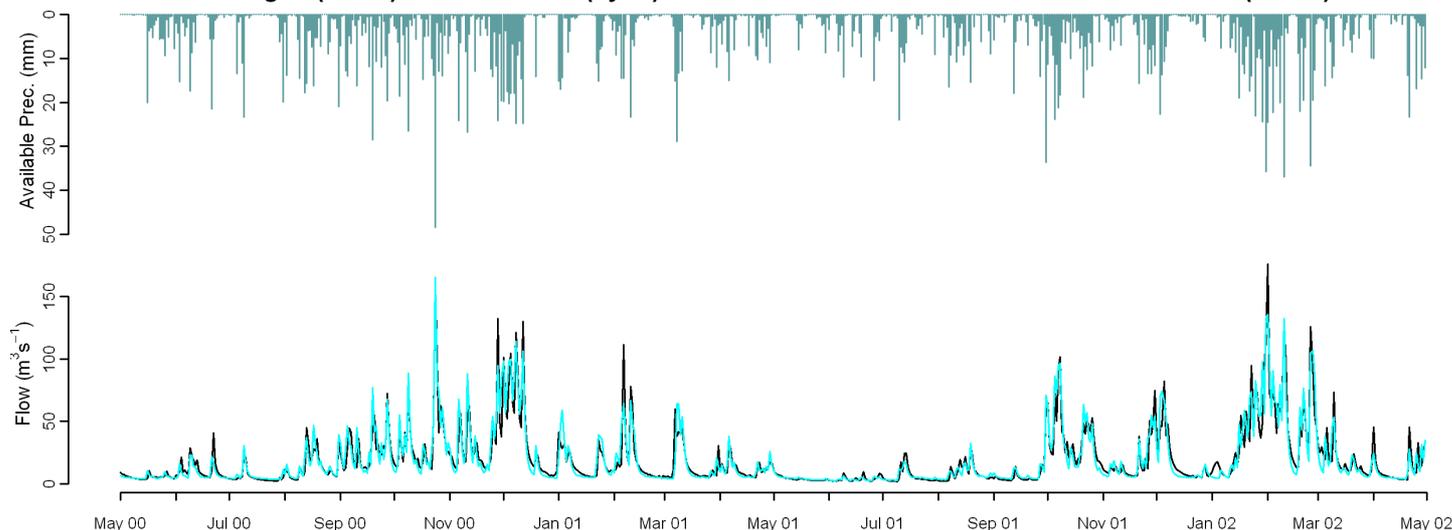
Model used: CERF

| | Mean Annual | J | F | M | A | M | J | J | A | S | O | N | D | Nash Sutcliffe |
|--------------------|-------------|------|-------|------|-------|-------|-------|------|------|------|-----|------|------|----------------|
| MORECS (1971-2005) | -1.8 | -1.8 | -1.8 | -5.7 | -11.2 | -16.2 | -13.6 | -3.7 | 0.1 | 5.5 | 6.3 | 1.7 | -0.1 | 0.80 |
| Performance Band | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| MORECS (1962-1991) | -4.0 | -2.4 | -3.3 | -6.9 | -14.1 | -20.4 | -15.9 | -3.8 | -1.1 | 4.6 | 0.4 | -0.5 | -3.9 | 0.77 |
| | Q90 | Q75 | Q50 | Q25 | Q5 | RP2 | | RP5 | | RP10 | | RP20 | | |
| MORECS (1971-2005) | 15.5 | -1.2 | -23.5 | -5.6 | 9.5 | | | | | | | | | |
| Performance Band | 1 | 1 | 1 | 1 | 1 | | | | | | | | | |
| MORECS (1962-1991) | 10.6 | -5.0 | -24.5 | -6.2 | 5.1 | | | | | | | | | |

Gauged (black) and simulated (cyan) flows from observed climate - Esk at Canonbie (77002)

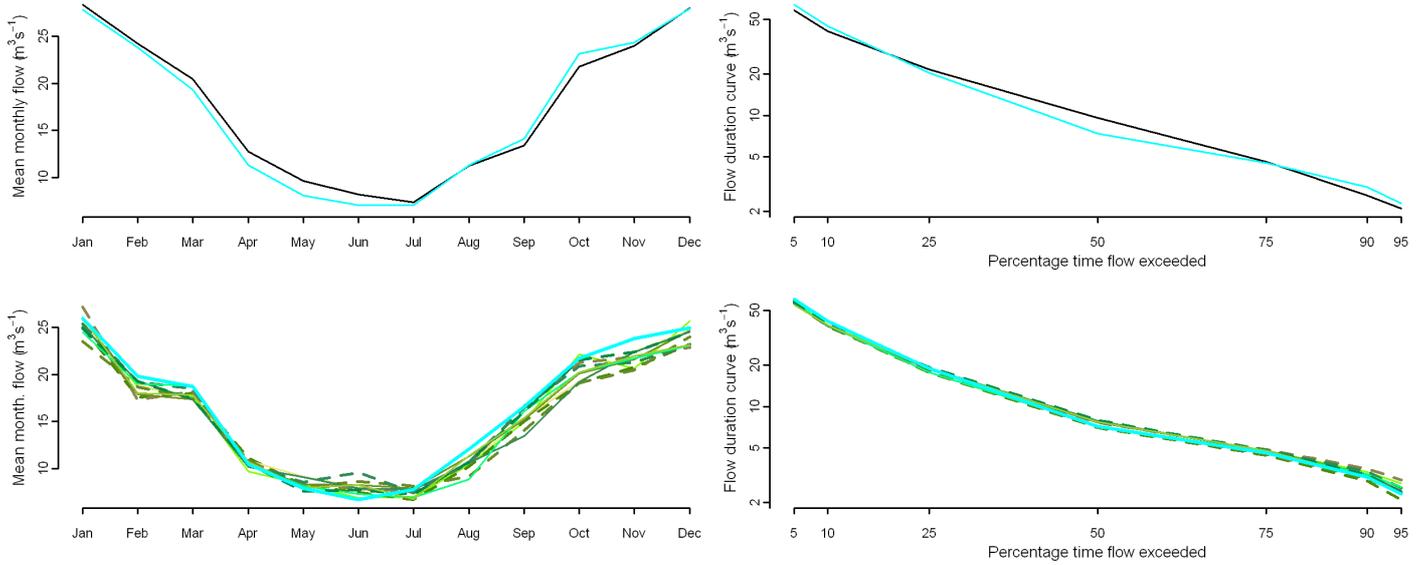


Gauged (black) and simulated (cyan) flows from observed climate - Esk at Canonbie (77002)



Comparison of gauged and simulated flow (observed and modelled climate)

Gauged (black), simulated from obs. (cyan) and mod. (green) climate - Top 1971-2005 bottom 1962-1991 - Esk at Canonbie (77002)



Percentage difference between flow simulated from observed climate and Future Flows Climate

| | afgcx | afixa | afixc | afixh | afixi | afixj | afixk | afixl | afixm | afixo | afixq |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual | -3 | -5 | -2 | 1 | -3 | -5 | -4 | 0 | -4 | -2 | -4 |
| January | 0 | -4 | -1 | 2 | -2 | -5 | -6 | -1 | -6 | -7 | 5 |
| April | -7 | -2 | 4 | 11 | -2 | 3 | -1 | 2 | -4 | 2 | 0 |
| July | -7 | -4 | -6 | 1 | 2 | -2 | 1 | -3 | -10 | -9 | -12 |
| October | 2 | -6 | -15 | 1 | -7 | -10 | -1 | -7 | -5 | 2 | -6 |
| Q90 | 9 | -4 | 2 | 16 | 0 | -3 | -1 | 8 | 4 | 0 | 0 |
| Q75 | 5 | -2 | 3 | 8 | 2 | -2 | 1 | 5 | 1 | 3 | 3 |
| Q50 | 9 | 0 | 7 | 10 | 6 | 1 | 10 | 8 | 2 | 10 | 8 |
| Q25 | 0 | -5 | 0 | 0 | -4 | -5 | 0 | 0 | -6 | 0 | -1 |
| Q5 | -8 | -7 | -9 | -3 | -7 | -6 | -7 | -2 | -6 | -6 | -10 |
| RP2 | -2 | -2 | -2 | 4 | 0 | 0 | -8 | -1 | 5 | 0 | 2 |
| RP10 | -4 | -4 | 1 | -1 | 9 | -2 | -12 | 6 | -2 | 11 | 5 |

Climate change graphs for 2050s

Change between future (2040-2069) and control (1961-1990) simulated flow (green) - Esk at Canonbie (77002)

