Supplementary Material

**Table 1**. Summer scenario runs.

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| --- | --- | --- |
| Run | Minho | Douro |
| River flow | Ocean elevation | River flow | Ocean elevation |
| (m3/s) | (m) | (m3/s) | (m) |
| SS1 | 42 | 1.389 | 49 | 0.781 |
| SS2 | 42 | -1.296 | 49 | -0.7602 |
| SS3 | 103 | 1.389 | 250 | 0.781 |
| SS4 | 103 | -1.296 | 250 | -0.7602 |
| SS5 | 0 | 1.389 | 0 | 0.781 |
| SS6 | 0 | -1.296 | 0 | -0.7602 |
| SS7 | 42 | 1.84 | 49 | 1.86 |
| SS8 | 42 | -2.20 | 49 | -2.21 |
| SS9 | 103 | 1.84 | 250 | 1.86 |
| SS10 | 103 | -2.20 | 250 | -2.21 |
| SS11 | 0 | 1.84 | 0 | 1.86 |
| SS12 | 0 | -2.20 | 0 | -2.21 |
| SS13 | 42 | 1.47 | 49 | 1.48 |
| SS14 | 42 | -2.53 | 49 | -2.52 |
| SS15 | 103 | 1.47 | 250 | 1.48 |
| SS16 | 103 | -2.53 | 250 | -2.52 |
| SS17 | 0 | 1.47 | 0 | 1.48 |
| SS18 | 0 | -2.53 | 0 | -2.52 |
| SS19 | 42 | 0.66 | 49 | 0.66 |
| SS20 | 42 | -1.33 | 49 | -1.35 |
| SS21 | 103 | 0.66 | 250 | 0.66 |
| SS22 | 103 | -1.33 | 250 | -1.35 |
| SS23 | 0 | 0.66 | 0 | 0.66 |
| SS24 | 0 | -1.33 | 0 | -1.35 |

**Table 2**. Winter scenario runs.

|  |  |  |
| --- | --- | --- |
| Run | Minho | Douro |
| River flow | Ocean elevation | River flow | Ocean elevation |
| (m3/s) | (m) | (m3/s) | (m) |
| SW1 | 495 | 0.7925 | 1205 | 1.057 |
| SW2 | 495 | -0.6397 | 1205 | -1.048 |
| SW3 | 1023 | 0.7925 | 2184 | 1.057 |
| SW4 | 1023 | -0.6397 | 2184 | -1.048 |
| SW5 | 0 | 0.7925 | 226 | 1.057 |
| SW6 | 0 | -0.6397 | 226 | -1.048 |
| SW7 | 495 | 1.84 | 1205 | 1.86 |
| SW8 | 495 | -2.20 | 1205 | -2.21 |
| SW9 | 1023 | 1.84 | 2184 | 1.86 |
| SW10 | 1023 | -2.20 | 2184 | -2.21 |
| SW11 | 0 | 1.84 | 226 | 1.86 |
| SW12 | 0 | -2.20 | 226 | -2.21 |
| SW13 | 495 | 1.47 | 1205 | 1.48 |
| SW14 | 495 | -2.53 | 1205 | -2.52 |
| SW15 | 1023 | 1.47 | 2184 | 1.48 |
| SW16 | 1023 | -2.53 | 2184 | -2.52 |
| SW17 | 0 | 1.47 | 226 | 1.48 |
| SW18 | 0 | -2.53 | 226 | -2.52 |
| SW19 | 495 | 0.66 | 1205 | 0.66 |
| SW20 | 495 | -1.33 | 1205 | -1.35 |
| SW21 | 1023 | 0.66 | 2184 | 0.66 |
| SW22 | 1023 | -1.33 | 2184 | -1.35 |
| SW23 | 0 | 0.66 | 226 | 0.66 |
| SW24 | 0 | -1.33 | 226 | -1.35 |

**Table 3**. Extreme event scenario runs.

|  |  |  |
| --- | --- | --- |
| Run | Minho | Douro |
| River flow | Ocean elevation | River flow | Ocean elevation |
| (m3/s) | (m) | (m3/s) | (m) |
| SE1 | 2476 | 1.321 | 7795 | 1.2 |
| SE2 | 2476 | -1.178 | 7795 | -1.068 |
| SE3 | 2476 | 2.421 | 7795 | 2.30 |
| SE4 | 2476 | -0.078 | 7795 | 0.032 |
| SE5 | 2476 | 1.84 | 7795 | 1.86 |
| SE6 | 2476 | -2.20 | 7795 | -2.21 |
| SE7 | 2476 | 2.94 | 7795 | 2.96 |
| SE8 | 2476 | -1.1 | 7795 | -1.11 |
| SE9 | 2476 | 1.47 | 7795 | 1.48 |
| SE10 | 2476 | -2.53 | 7795 | -2.52 |
| SE11 | 2476 | 2.57 | 7795 | 2.58 |
| SE12 | 2476 | -1.43 | 7795 | -1.42 |
| SE13 | 2476 | 0.66 | 7795 | 0.66 |
| SE14 | 2476 | -1.33 | 7795 | -1.35 |
| SE15 | 2476 | 1.76 | 7795 | 1.76 |
| SE16 | 2476 | -0.23 | 7795 | -0.25 |