**Supplementary materials**

Table S1 | Equations for the probability distribution functions used in this study

|  |  |
| --- | --- |
| Gumbel: (Fisher & Tippett 1928; Embrechts *et al*. 1997) |  |
| GEV: (Fisher & Tippett 1928; Embrechts *et al*. 1997) |  |
| Gamma: (Weisstein 2016) |  |
| Pearson III: (US Water Resources Council 1982) |  |
| Generalized logistic: (Hosking & Wallis 1997) |  |

Table S2 | Equations for the probability density functions used in this study

|  |  |
| --- | --- |
| Gumbel: (Fisher & Tippett 1928; Embrechts *et al*. 1997) |  |
| GEV: (Fisher & Tippett 1928; Embrechts *et al*. 1997) |  |
| Gamma: (Weisstein 2016) |  |
| Pearson type III: (US Water Resources Council 1982) |  |
| Generalized logistic: (Hosking & Wallis 1997) |  |

Table S3 | Equations for the quantile functions used in this study

|  |  |
| --- | --- |
| Gumbel |  |
| GEV |  |
| Gamma | No explicit form, solved numerically (see Best & Roberts 1975) |
| Pearson type III | No explicit form, given in tables (US Water Resources Council 1982) |
| Generalized logistic |  |

**Table S4** | The ordinary moment estimates for selected distributions (see, e.g., Bezak *et al*. 2014)

|  |  |  |
| --- | --- | --- |
|  | **Moments** | **Parameters** |
| Gumbel: (Stedinger *et al*. 1993) |  |  |
| GEV: (Stedinger *et al*. 1993) |  |  |
| Gamma: (Weisstein 2016) |  |  |
| Pearson type III: (Basak & Balakrishnan 2012) |  |  |
| Generalized logistic: (Shin *et al*. 2009) |  |  |

\*, Г() is the gamma function and *gr* existst only if *β* < 1/r.

**Table S5** | The linear moment estimates for selected distributions (see, e.g., Bezak *et al*. 2014)

|  |  |  |
| --- | --- | --- |
|  | **L-moments** | **Parameters** |
| Gumbel: (Hosking & Wallis 1997) |  |  |
| GEV: (Hosking & Wallis 1997) |  |  |
| Gamma: (Hosking 1990) |  |  |
| Pearson type III: (Hosking 1990) |  |  |
| Generalized logistic |  |  |

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