AET/PET ratios for BGC units

Hardy

11/20/2020

## Clean IDFxx data

Here is table summarizing the number of years for each station that have sufficient climate data for AET/PET calculation, as per DeLong et al. (2019):

|  |  |  |  |
| --- | --- | --- | --- |
| Station | NumYrs | From | To |
| Cranbrook | 21 | 1969 | 1990 |
| Cranbrook2 | 29 | 1991 | 2019 |
| Wardner | 11 | 1972 | 1990 |
| Wardner2 | 17 | 1992 | 2020 |

## BGC unit ASMR

## IDFxx2 using Cranbrook data

### 1961-1990 period

The following years were randomly selected: 1971, 1972, 1974, 1976, 1978, 1981, 1983, 1985, 1986, 1989. Here is the monthly and annual AET/PET ratio for those 10 years:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Station | BGC | month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| Cranbrook | IDFxx2 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Cranbrook | IDFxx2 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Cranbrook | IDFxx2 | Mar | 0.937 | 1.000 | 1.000 | 1.000 | 1.000 |
| Cranbrook | IDFxx2 | Apr | 0.666 | 0.898 | 1.000 | 1.000 | 1.000 |
| Cranbrook | IDFxx2 | May | 0.506 | 0.720 | 0.925 | 1.000 | 1.000 |
| Cranbrook | IDFxx2 | Jun | 0.487 | 0.547 | 0.603 | 0.919 | 1.000 |
| Cranbrook | IDFxx2 | Jul | 0.331 | 0.379 | 0.403 | 0.526 | 1.000 |
| Cranbrook | IDFxx2 | Aug | 0.335 | 0.383 | 0.393 | 0.435 | 0.988 |
| Cranbrook | IDFxx2 | Sep | 0.388 | 0.406 | 0.406 | 0.406 | 1.000 |
| Cranbrook | IDFxx2 | Oct | 0.373 | 0.416 | 0.416 | 0.416 | 1.000 |
| Cranbrook | IDFxx2 | Nov | 0.846 | 0.847 | 0.847 | 0.847 | 1.000 |
| Cranbrook | IDFxx2 | Dec | 0.992 | 0.995 | 0.995 | 0.995 | 1.000 |
| Cranbrook | IDFxx2 | Annual | 0.655 | 0.716 | 0.749 | 0.795 | 0.999 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFxx2 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Feb | 0.985 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Mar | 0.821 | 0.974 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Apr | 0.549 | 0.736 | 0.961 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | May | 0.499 | 0.634 | 0.777 | 0.990 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jun | 0.455 | 0.529 | 0.570 | 0.788 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jul | 0.285 | 0.316 | 0.338 | 0.395 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Aug | 0.280 | 0.306 | 0.306 | 0.320 | 0.974 |
| IDFxx2 | 2025 | rcp45 | Sep | 0.351 | 0.359 | 0.359 | 0.359 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Oct | 0.364 | 0.400 | 0.400 | 0.400 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Nov | 0.797 | 0.839 | 0.839 | 0.839 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Dec | 0.960 | 0.987 | 0.987 | 0.987 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Annual | 0.612 | 0.673 | 0.711 | 0.756 | 0.998 |
| IDFxx2 | 2055 | rcp45 | Jan | 0.997 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Feb | 0.949 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Mar | 0.702 | 0.969 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Apr | 0.495 | 0.664 | 0.814 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | May | 0.487 | 0.605 | 0.721 | 0.962 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jun | 0.437 | 0.501 | 0.544 | 0.693 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jul | 0.265 | 0.281 | 0.302 | 0.341 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Aug | 0.257 | 0.269 | 0.269 | 0.269 | 0.968 |
| IDFxx2 | 2055 | rcp45 | Sep | 0.326 | 0.339 | 0.339 | 0.339 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Oct | 0.353 | 0.390 | 0.390 | 0.390 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Nov | 0.741 | 0.773 | 0.773 | 0.773 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Dec | 0.939 | 0.975 | 0.975 | 0.975 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Annual | 0.579 | 0.647 | 0.677 | 0.728 | 0.997 |
| IDFxx2 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Feb | 0.995 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Mar | 0.794 | 0.976 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Apr | 0.535 | 0.699 | 0.927 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | May | 0.497 | 0.646 | 0.765 | 0.983 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jun | 0.446 | 0.511 | 0.560 | 0.768 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jul | 0.286 | 0.304 | 0.327 | 0.380 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Aug | 0.284 | 0.312 | 0.312 | 0.320 | 0.973 |
| IDFxx2 | 2025 | rcp85 | Sep | 0.360 | 0.367 | 0.367 | 0.367 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Oct | 0.360 | 0.399 | 0.399 | 0.399 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Nov | 0.772 | 0.824 | 0.824 | 0.824 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Dec | 0.965 | 0.983 | 0.983 | 0.983 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Annual | 0.608 | 0.668 | 0.705 | 0.752 | 0.998 |
| IDFxx2 | 2055 | rcp85 | Jan | 0.992 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Feb | 0.921 | 0.995 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Mar | 0.666 | 0.892 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Apr | 0.476 | 0.629 | 0.874 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | May | 0.463 | 0.576 | 0.649 | 0.937 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jun | 0.411 | 0.472 | 0.507 | 0.614 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jul | 0.243 | 0.258 | 0.277 | 0.303 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Aug | 0.241 | 0.249 | 0.249 | 0.249 | 0.963 |
| IDFxx2 | 2055 | rcp85 | Sep | 0.297 | 0.311 | 0.311 | 0.311 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Oct | 0.334 | 0.372 | 0.372 | 0.372 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Nov | 0.692 | 0.728 | 0.728 | 0.728 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Dec | 0.906 | 0.952 | 0.952 | 0.952 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Annual | 0.554 | 0.619 | 0.660 | 0.706 | 0.997 |

### 1991-2020 period

The following years were randomly selected: 1992, 1993, 1997, 1999, 2001, 2005, 2009, 2011, 2015, 2018. Here is the monthly and annual AET/PET ratio for those 10 years:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Station | BGC | month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| Cranbrook2 | IDFxx2 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Cranbrook2 | IDFxx2 | Feb | 0.951 | 1.000 | 1.000 | 1.000 | 1.000 |
| Cranbrook2 | IDFxx2 | Mar | 0.831 | 0.969 | 1.000 | 1.000 | 1.000 |
| Cranbrook2 | IDFxx2 | Apr | 0.555 | 0.774 | 0.930 | 1.000 | 1.000 |
| Cranbrook2 | IDFxx2 | May | 0.420 | 0.567 | 0.718 | 0.982 | 1.000 |
| Cranbrook2 | IDFxx2 | Jun | 0.552 | 0.640 | 0.681 | 0.845 | 1.000 |
| Cranbrook2 | IDFxx2 | Jul | 0.386 | 0.468 | 0.498 | 0.617 | 1.000 |
| Cranbrook2 | IDFxx2 | Aug | 0.241 | 0.289 | 0.311 | 0.313 | 0.949 |
| Cranbrook2 | IDFxx2 | Sep | 0.297 | 0.334 | 0.334 | 0.334 | 1.000 |
| Cranbrook2 | IDFxx2 | Oct | 0.430 | 0.474 | 0.474 | 0.474 | 1.000 |
| Cranbrook2 | IDFxx2 | Nov | 0.758 | 0.779 | 0.779 | 0.779 | 1.000 |
| Cranbrook2 | IDFxx2 | Dec | 0.997 | 0.997 | 0.997 | 0.997 | 1.000 |
| Cranbrook2 | IDFxx2 | Annual | 0.618 | 0.691 | 0.727 | 0.778 | 0.996 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFxx2 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Feb | 0.896 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Mar | 0.742 | 0.907 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Apr | 0.480 | 0.694 | 0.853 | 0.949 | 1.000 |
| IDFxx2 | 2025 | rcp45 | May | 0.376 | 0.458 | 0.592 | 0.883 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jun | 0.529 | 0.609 | 0.629 | 0.736 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jul | 0.351 | 0.414 | 0.433 | 0.488 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Aug | 0.201 | 0.230 | 0.230 | 0.230 | 0.936 |
| IDFxx2 | 2025 | rcp45 | Sep | 0.271 | 0.302 | 0.302 | 0.302 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Oct | 0.416 | 0.456 | 0.456 | 0.456 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Nov | 0.728 | 0.748 | 0.748 | 0.748 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Dec | 0.973 | 0.991 | 0.991 | 0.991 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Annual | 0.580 | 0.651 | 0.686 | 0.732 | 0.995 |
| IDFxx2 | 2055 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Feb | 0.858 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Mar | 0.700 | 0.849 | 0.957 | 0.957 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Apr | 0.452 | 0.583 | 0.775 | 0.940 | 1.000 |
| IDFxx2 | 2055 | rcp45 | May | 0.361 | 0.452 | 0.525 | 0.829 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jun | 0.511 | 0.594 | 0.599 | 0.695 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jul | 0.315 | 0.382 | 0.401 | 0.431 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Aug | 0.184 | 0.191 | 0.191 | 0.191 | 0.926 |
| IDFxx2 | 2055 | rcp45 | Sep | 0.255 | 0.287 | 0.287 | 0.287 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Oct | 0.405 | 0.440 | 0.440 | 0.440 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Nov | 0.649 | 0.681 | 0.681 | 0.681 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Dec | 0.959 | 0.980 | 0.980 | 0.980 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Annual | 0.554 | 0.620 | 0.653 | 0.703 | 0.994 |
| IDFxx2 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Feb | 0.880 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Mar | 0.729 | 0.935 | 0.990 | 0.990 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Apr | 0.477 | 0.599 | 0.811 | 0.940 | 1.000 |
| IDFxx2 | 2025 | rcp85 | May | 0.379 | 0.452 | 0.547 | 0.872 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jun | 0.519 | 0.601 | 0.615 | 0.723 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jul | 0.341 | 0.402 | 0.421 | 0.472 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Aug | 0.206 | 0.229 | 0.229 | 0.229 | 0.935 |
| IDFxx2 | 2025 | rcp85 | Sep | 0.277 | 0.308 | 0.308 | 0.308 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Oct | 0.411 | 0.453 | 0.453 | 0.453 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Nov | 0.671 | 0.692 | 0.692 | 0.692 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Dec | 0.961 | 0.986 | 0.986 | 0.986 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Annual | 0.571 | 0.638 | 0.671 | 0.722 | 0.995 |
| IDFxx2 | 2055 | rcp85 | Jan | 0.992 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Feb | 0.816 | 0.964 | 0.964 | 0.964 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Mar | 0.677 | 0.848 | 0.915 | 0.915 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Apr | 0.434 | 0.616 | 0.750 | 0.937 | 1.000 |
| IDFxx2 | 2055 | rcp85 | May | 0.352 | 0.408 | 0.524 | 0.797 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jun | 0.483 | 0.565 | 0.569 | 0.656 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jul | 0.296 | 0.350 | 0.382 | 0.382 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Aug | 0.173 | 0.173 | 0.173 | 0.173 | 0.917 |
| IDFxx2 | 2055 | rcp85 | Sep | 0.227 | 0.258 | 0.258 | 0.258 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Oct | 0.391 | 0.419 | 0.419 | 0.419 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Nov | 0.613 | 0.648 | 0.648 | 0.648 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Dec | 0.936 | 0.965 | 0.965 | 0.965 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Annual | 0.532 | 0.601 | 0.631 | 0.676 | 0.993 |

## IDFxx2 using Wardner data

### 1961-1990 period

The following years were randomly selected: 1972, 1973, 1975, 1976, 1978, 1979, 1982, 1987, 1988, 1990. Here is the monthly and annual AET/PET ratio for those 10 years:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Station | BGC | month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| Wardner | IDFxx2 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Wardner | IDFxx2 | Feb | 0.996 | 1.000 | 1.000 | 1.000 | 1 |
| Wardner | IDFxx2 | Mar | 0.883 | 1.000 | 1.000 | 1.000 | 1 |
| Wardner | IDFxx2 | Apr | 0.581 | 0.829 | 0.991 | 1.000 | 1 |
| Wardner | IDFxx2 | May | 0.547 | 0.621 | 0.817 | 0.993 | 1 |
| Wardner | IDFxx2 | Jun | 0.407 | 0.515 | 0.608 | 0.817 | 1 |
| Wardner | IDFxx2 | Jul | 0.322 | 0.359 | 0.389 | 0.542 | 1 |
| Wardner | IDFxx2 | Aug | 0.283 | 0.309 | 0.309 | 0.314 | 1 |
| Wardner | IDFxx2 | Sep | 0.358 | 0.384 | 0.384 | 0.384 | 1 |
| Wardner | IDFxx2 | Oct | 0.395 | 0.395 | 0.395 | 0.395 | 1 |
| Wardner | IDFxx2 | Nov | 0.723 | 0.723 | 0.723 | 0.723 | 1 |
| Wardner | IDFxx2 | Dec | 0.997 | 0.999 | 0.999 | 0.999 | 1 |
| Wardner | IDFxx2 | Annual | 0.624 | 0.678 | 0.718 | 0.764 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFxx2 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Feb | 0.964 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Mar | 0.753 | 0.986 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Apr | 0.482 | 0.717 | 0.873 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | May | 0.468 | 0.532 | 0.675 | 0.941 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jun | 0.380 | 0.433 | 0.489 | 0.693 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jul | 0.275 | 0.302 | 0.320 | 0.371 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Aug | 0.234 | 0.247 | 0.247 | 0.247 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Sep | 0.321 | 0.335 | 0.335 | 0.335 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Oct | 0.373 | 0.373 | 0.373 | 0.373 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Nov | 0.661 | 0.677 | 0.677 | 0.677 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Dec | 0.979 | 0.979 | 0.979 | 0.979 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Annual | 0.574 | 0.632 | 0.664 | 0.718 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jan | 0.999 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Feb | 0.930 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Mar | 0.645 | 0.906 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Apr | 0.458 | 0.629 | 0.807 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | May | 0.462 | 0.496 | 0.625 | 0.874 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jun | 0.363 | 0.418 | 0.439 | 0.628 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jul | 0.249 | 0.268 | 0.268 | 0.299 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Aug | 0.215 | 0.220 | 0.220 | 0.220 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Sep | 0.305 | 0.312 | 0.312 | 0.312 | 0.990 |
| IDFxx2 | 2055 | rcp45 | Oct | 0.357 | 0.357 | 0.357 | 0.357 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Nov | 0.633 | 0.634 | 0.634 | 0.634 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Dec | 0.973 | 0.973 | 0.973 | 0.973 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Annual | 0.549 | 0.601 | 0.636 | 0.691 | 0.999 |
| IDFxx2 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Feb | 0.954 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Mar | 0.720 | 0.972 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Apr | 0.472 | 0.681 | 0.868 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | May | 0.466 | 0.532 | 0.673 | 0.932 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jun | 0.371 | 0.426 | 0.461 | 0.676 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jul | 0.267 | 0.292 | 0.292 | 0.354 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Aug | 0.239 | 0.252 | 0.252 | 0.252 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Sep | 0.329 | 0.343 | 0.343 | 0.343 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Oct | 0.369 | 0.369 | 0.369 | 0.369 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Nov | 0.653 | 0.653 | 0.653 | 0.653 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Dec | 0.976 | 0.976 | 0.976 | 0.976 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Annual | 0.568 | 0.625 | 0.657 | 0.713 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jan | 0.991 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Feb | 0.910 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Mar | 0.614 | 0.921 | 0.986 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Apr | 0.448 | 0.541 | 0.805 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | May | 0.452 | 0.472 | 0.607 | 0.839 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jun | 0.345 | 0.404 | 0.422 | 0.573 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jul | 0.236 | 0.245 | 0.252 | 0.259 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Aug | 0.202 | 0.207 | 0.207 | 0.207 | 0.991 |
| IDFxx2 | 2055 | rcp85 | Sep | 0.271 | 0.278 | 0.278 | 0.278 | 0.980 |
| IDFxx2 | 2055 | rcp85 | Oct | 0.337 | 0.337 | 0.337 | 0.337 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Nov | 0.597 | 0.604 | 0.604 | 0.604 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Dec | 0.966 | 0.966 | 0.966 | 0.966 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Annual | 0.531 | 0.581 | 0.622 | 0.672 | 0.998 |

### 1991-2020 period

The following years were randomly selected: 1993, 1994, 1997, 1999, 2001, 2002, 2003, 2007, 2015, 2019. Here is the monthly and annual AET/PET ratio for those 10 years:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Station | BGC | month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| Wardner2 | IDFxx2 | Jan | 0.973 | 1.000 | 1.000 | 1.000 | 1.000 |
| Wardner2 | IDFxx2 | Feb | 0.986 | 1.000 | 1.000 | 1.000 | 1.000 |
| Wardner2 | IDFxx2 | Mar | 0.850 | 1.000 | 1.000 | 1.000 | 1.000 |
| Wardner2 | IDFxx2 | Apr | 0.502 | 0.777 | 0.991 | 1.000 | 1.000 |
| Wardner2 | IDFxx2 | May | 0.449 | 0.531 | 0.722 | 1.000 | 1.000 |
| Wardner2 | IDFxx2 | Jun | 0.508 | 0.606 | 0.648 | 0.850 | 1.000 |
| Wardner2 | IDFxx2 | Jul | 0.275 | 0.306 | 0.307 | 0.374 | 0.986 |
| Wardner2 | IDFxx2 | Aug | 0.161 | 0.184 | 0.207 | 0.226 | 0.906 |
| Wardner2 | IDFxx2 | Sep | 0.249 | 0.259 | 0.259 | 0.298 | 0.968 |
| Wardner2 | IDFxx2 | Oct | 0.346 | 0.346 | 0.346 | 0.350 | 1.000 |
| Wardner2 | IDFxx2 | Nov | 0.730 | 0.730 | 0.730 | 0.730 | 1.000 |
| Wardner2 | IDFxx2 | Dec | 0.973 | 0.982 | 0.982 | 0.982 | 1.000 |
| Wardner2 | IDFxx2 | Annual | 0.584 | 0.643 | 0.683 | 0.734 | 0.988 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFxx2 | 2025 | rcp45 | Jan | 0.957 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Feb | 0.964 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Mar | 0.754 | 0.964 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Apr | 0.429 | 0.641 | 0.882 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp45 | May | 0.440 | 0.460 | 0.599 | 0.948 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jun | 0.473 | 0.582 | 0.613 | 0.711 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Jul | 0.235 | 0.273 | 0.273 | 0.301 | 0.973 |
| IDFxx2 | 2025 | rcp45 | Aug | 0.130 | 0.147 | 0.170 | 0.186 | 0.875 |
| IDFxx2 | 2025 | rcp45 | Sep | 0.217 | 0.226 | 0.226 | 0.226 | 0.948 |
| IDFxx2 | 2025 | rcp45 | Oct | 0.340 | 0.340 | 0.340 | 0.340 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Nov | 0.692 | 0.692 | 0.692 | 0.692 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Dec | 0.938 | 0.957 | 0.957 | 0.957 | 1.000 |
| IDFxx2 | 2025 | rcp45 | Annual | 0.547 | 0.607 | 0.646 | 0.697 | 0.983 |
| IDFxx2 | 2055 | rcp45 | Jan | 0.950 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Feb | 0.903 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Mar | 0.668 | 0.933 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Apr | 0.398 | 0.567 | 0.816 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp45 | May | 0.422 | 0.444 | 0.509 | 0.889 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jun | 0.462 | 0.564 | 0.584 | 0.650 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Jul | 0.218 | 0.254 | 0.254 | 0.273 | 0.958 |
| IDFxx2 | 2055 | rcp45 | Aug | 0.116 | 0.120 | 0.138 | 0.138 | 0.856 |
| IDFxx2 | 2055 | rcp45 | Sep | 0.212 | 0.212 | 0.212 | 0.212 | 0.937 |
| IDFxx2 | 2055 | rcp45 | Oct | 0.326 | 0.326 | 0.326 | 0.326 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Nov | 0.660 | 0.660 | 0.660 | 0.660 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Dec | 0.911 | 0.944 | 0.944 | 0.944 | 1.000 |
| IDFxx2 | 2055 | rcp45 | Annual | 0.520 | 0.585 | 0.620 | 0.674 | 0.979 |
| IDFxx2 | 2025 | rcp85 | Jan | 0.947 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Feb | 0.954 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Mar | 0.742 | 0.946 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Apr | 0.413 | 0.623 | 0.877 | 1.000 | 1.000 |
| IDFxx2 | 2025 | rcp85 | May | 0.437 | 0.461 | 0.613 | 0.940 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jun | 0.470 | 0.573 | 0.605 | 0.695 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Jul | 0.234 | 0.267 | 0.267 | 0.293 | 0.972 |
| IDFxx2 | 2025 | rcp85 | Aug | 0.134 | 0.148 | 0.167 | 0.175 | 0.872 |
| IDFxx2 | 2025 | rcp85 | Sep | 0.223 | 0.232 | 0.232 | 0.232 | 0.948 |
| IDFxx2 | 2025 | rcp85 | Oct | 0.330 | 0.330 | 0.330 | 0.330 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Nov | 0.659 | 0.659 | 0.659 | 0.659 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Dec | 0.922 | 0.954 | 0.954 | 0.954 | 1.000 |
| IDFxx2 | 2025 | rcp85 | Annual | 0.539 | 0.599 | 0.642 | 0.690 | 0.983 |
| IDFxx2 | 2055 | rcp85 | Jan | 0.940 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Feb | 0.899 | 0.989 | 1.000 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Mar | 0.637 | 0.884 | 0.994 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Apr | 0.393 | 0.522 | 0.787 | 1.000 | 1.000 |
| IDFxx2 | 2055 | rcp85 | May | 0.411 | 0.434 | 0.523 | 0.826 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jun | 0.438 | 0.535 | 0.556 | 0.616 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Jul | 0.203 | 0.240 | 0.240 | 0.250 | 0.943 |
| IDFxx2 | 2055 | rcp85 | Aug | 0.109 | 0.118 | 0.118 | 0.118 | 0.844 |
| IDFxx2 | 2055 | rcp85 | Sep | 0.186 | 0.186 | 0.186 | 0.186 | 0.928 |
| IDFxx2 | 2055 | rcp85 | Oct | 0.315 | 0.315 | 0.315 | 0.315 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Nov | 0.634 | 0.635 | 0.635 | 0.635 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Dec | 0.890 | 0.939 | 0.939 | 0.939 | 1.000 |
| IDFxx2 | 2055 | rcp85 | Annual | 0.505 | 0.566 | 0.608 | 0.657 | 0.976 |