AET/PET ratios for BGC units

Hardy

11/20/2020

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 |
| Apex | 11 | 1997 | 2010 |
| Beaverdell | 19 | 1989 | 2020 |
| Bigcreek | 65 | 1905 | 1994 |
| Bmn | 24 | 1993 | 2020 |
| Fording | 27 | 1970 | 2013 |
| Greenstone | 4 | 1989 | 1999 |
| Idabell | 12 | 2004 | 2020 |
| Jellicoe | 22 | 1997 | 2020 |
| Kimberley | 28 | 1988 | 2019 |
| Marysville | 30 | 1973 | 2003 |
| Pennask | 10 | 1998 | 2010 |
| Redlake | 30 | 1986 | 2020 |
| Sparwood | 37 | 1980 | 2020 |
| Wasa | 27 | 1984 | 2017 |

## BGC unit ASMR

For each BGC unit, I chose the station with the best climate data coverage. we can run this again if there’s a better station to use.

## IDFdm1

For this BGC unit, I used marysville station, and randomly selected the following years: 1981, 1982, 1985, 1986, 1988, 1989, 1990, 1994, 2001, 2002. 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 |
| Marysville | IDFdm1 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Marysville | IDFdm1 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Marysville | IDFdm1 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Marysville | IDFdm1 | Apr | 0.831 | 1.000 | 1.000 | 1.000 | 1 |
| Marysville | IDFdm1 | May | 0.575 | 0.828 | 0.954 | 1.000 | 1 |
| Marysville | IDFdm1 | Jun | 0.455 | 0.572 | 0.670 | 0.944 | 1 |
| Marysville | IDFdm1 | Jul | 0.247 | 0.264 | 0.314 | 0.484 | 1 |
| Marysville | IDFdm1 | Aug | 0.238 | 0.247 | 0.256 | 0.301 | 1 |
| Marysville | IDFdm1 | Sep | 0.348 | 0.405 | 0.405 | 0.405 | 1 |
| Marysville | IDFdm1 | Oct | 0.453 | 0.535 | 0.535 | 0.535 | 1 |
| Marysville | IDFdm1 | Nov | 0.872 | 0.890 | 0.890 | 0.890 | 1 |
| Marysville | IDFdm1 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Marysville | IDFdm1 | Annual | 0.668 | 0.728 | 0.752 | 0.797 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFdm1 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Mar | 0.958 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Apr | 0.623 | 0.931 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | May | 0.474 | 0.556 | 0.802 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Jun | 0.432 | 0.533 | 0.574 | 0.804 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Jul | 0.209 | 0.221 | 0.255 | 0.328 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Aug | 0.196 | 0.206 | 0.206 | 0.239 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Sep | 0.323 | 0.352 | 0.352 | 0.352 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Oct | 0.443 | 0.507 | 0.507 | 0.507 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Nov | 0.868 | 0.877 | 0.877 | 0.877 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp45 | Annual | 0.627 | 0.682 | 0.714 | 0.759 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Feb | 0.991 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Mar | 0.869 | 0.995 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Apr | 0.504 | 0.794 | 0.943 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp45 | May | 0.468 | 0.526 | 0.696 | 0.990 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Jun | 0.418 | 0.513 | 0.554 | 0.686 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Jul | 0.182 | 0.189 | 0.213 | 0.290 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Aug | 0.180 | 0.186 | 0.186 | 0.205 | 0.985 |
| IDFdm1 | 2055 | rcp45 | Sep | 0.303 | 0.331 | 0.331 | 0.331 | 0.998 |
| IDFdm1 | 2055 | rcp45 | Oct | 0.421 | 0.479 | 0.480 | 0.480 | 0.997 |
| IDFdm1 | 2055 | rcp45 | Nov | 0.828 | 0.828 | 0.828 | 0.828 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Dec | 0.986 | 0.986 | 0.986 | 0.986 | 1.000 |
| IDFdm1 | 2055 | rcp45 | Annual | 0.596 | 0.652 | 0.685 | 0.733 | 0.998 |
| IDFdm1 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Feb | 0.996 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Mar | 0.911 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Apr | 0.591 | 0.854 | 0.994 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | May | 0.474 | 0.577 | 0.771 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Jun | 0.422 | 0.524 | 0.571 | 0.766 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Jul | 0.206 | 0.216 | 0.242 | 0.323 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Aug | 0.196 | 0.206 | 0.206 | 0.238 | 0.999 |
| IDFdm1 | 2025 | rcp85 | Sep | 0.325 | 0.355 | 0.355 | 0.355 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Oct | 0.437 | 0.502 | 0.502 | 0.502 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Nov | 0.852 | 0.870 | 0.870 | 0.870 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2025 | rcp85 | Annual | 0.618 | 0.675 | 0.709 | 0.754 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Feb | 0.986 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Mar | 0.864 | 0.979 | 1.000 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Apr | 0.476 | 0.797 | 0.953 | 1.000 | 1.000 |
| IDFdm1 | 2055 | rcp85 | May | 0.458 | 0.492 | 0.651 | 0.980 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Jun | 0.391 | 0.483 | 0.526 | 0.617 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Jul | 0.164 | 0.164 | 0.167 | 0.248 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Aug | 0.171 | 0.177 | 0.177 | 0.177 | 0.972 |
| IDFdm1 | 2055 | rcp85 | Sep | 0.277 | 0.312 | 0.312 | 0.312 | 0.993 |
| IDFdm1 | 2055 | rcp85 | Oct | 0.415 | 0.451 | 0.467 | 0.467 | 0.998 |
| IDFdm1 | 2055 | rcp85 | Nov | 0.818 | 0.818 | 0.818 | 0.818 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Dec | 0.974 | 0.974 | 0.974 | 0.974 | 1.000 |
| IDFdm1 | 2055 | rcp85 | Annual | 0.583 | 0.637 | 0.670 | 0.716 | 0.997 |

## IDFdm2

For this BGC unit, I used beaverdell station, and randomly selected the following years: 1989, 1999, 2002, 2003, 2005, 2007, 2015, 2017, 2018, 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 |
| Beaverdell | IDFdm2 | Jan | 0.988 | 0.988 | 0.988 | 0.988 | 0.994 |
| Beaverdell | IDFdm2 | Feb | 0.945 | 1.000 | 1.000 | 1.000 | 1.000 |
| Beaverdell | IDFdm2 | Mar | 0.795 | 0.987 | 1.000 | 1.000 | 1.000 |
| Beaverdell | IDFdm2 | Apr | 0.584 | 0.800 | 0.987 | 1.000 | 1.000 |
| Beaverdell | IDFdm2 | May | 0.503 | 0.592 | 0.697 | 1.000 | 1.000 |
| Beaverdell | IDFdm2 | Jun | 0.440 | 0.481 | 0.545 | 0.873 | 1.000 |
| Beaverdell | IDFdm2 | Jul | 0.208 | 0.250 | 0.250 | 0.355 | 0.975 |
| Beaverdell | IDFdm2 | Aug | 0.139 | 0.157 | 0.157 | 0.157 | 0.903 |
| Beaverdell | IDFdm2 | Sep | 0.276 | 0.279 | 0.279 | 0.279 | 0.944 |
| Beaverdell | IDFdm2 | Oct | 0.468 | 0.507 | 0.507 | 0.507 | 1.000 |
| Beaverdell | IDFdm2 | Nov | 0.777 | 0.796 | 0.796 | 0.796 | 1.000 |
| Beaverdell | IDFdm2 | Dec | 0.877 | 0.904 | 0.904 | 0.904 | 0.979 |
| Beaverdell | IDFdm2 | Annual | 0.583 | 0.645 | 0.676 | 0.738 | 0.983 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFdm2 | 2025 | rcp45 | Jan | 0.961 | 0.966 | 0.966 | 0.966 | 0.994 |
| IDFdm2 | 2025 | rcp45 | Feb | 0.911 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm2 | 2025 | rcp45 | Mar | 0.723 | 0.930 | 1.000 | 1.000 | 1.000 |
| IDFdm2 | 2025 | rcp45 | Apr | 0.519 | 0.720 | 0.895 | 0.941 | 1.000 |
| IDFdm2 | 2025 | rcp45 | May | 0.491 | 0.578 | 0.676 | 0.846 | 1.000 |
| IDFdm2 | 2025 | rcp45 | Jun | 0.413 | 0.458 | 0.524 | 0.616 | 1.000 |
| IDFdm2 | 2025 | rcp45 | Jul | 0.177 | 0.206 | 0.206 | 0.234 | 0.964 |
| IDFdm2 | 2025 | rcp45 | Aug | 0.115 | 0.125 | 0.125 | 0.125 | 0.868 |
| IDFdm2 | 2025 | rcp45 | Sep | 0.242 | 0.250 | 0.250 | 0.250 | 0.928 |
| IDFdm2 | 2025 | rcp45 | Oct | 0.446 | 0.482 | 0.482 | 0.482 | 1.000 |
| IDFdm2 | 2025 | rcp45 | Nov | 0.750 | 0.765 | 0.765 | 0.765 | 0.998 |
| IDFdm2 | 2025 | rcp45 | Dec | 0.824 | 0.858 | 0.858 | 0.858 | 0.913 |
| IDFdm2 | 2025 | rcp45 | Annual | 0.548 | 0.612 | 0.646 | 0.674 | 0.972 |
| IDFdm2 | 2055 | rcp45 | Jan | 0.936 | 0.955 | 0.955 | 0.955 | 0.990 |
| IDFdm2 | 2055 | rcp45 | Feb | 0.848 | 0.954 | 0.954 | 0.954 | 1.000 |
| IDFdm2 | 2055 | rcp45 | Mar | 0.643 | 0.817 | 0.884 | 0.884 | 1.000 |
| IDFdm2 | 2055 | rcp45 | Apr | 0.510 | 0.594 | 0.730 | 0.778 | 1.000 |
| IDFdm2 | 2055 | rcp45 | May | 0.483 | 0.577 | 0.586 | 0.651 | 1.000 |
| IDFdm2 | 2055 | rcp45 | Jun | 0.398 | 0.429 | 0.486 | 0.577 | 1.000 |
| IDFdm2 | 2055 | rcp45 | Jul | 0.163 | 0.185 | 0.185 | 0.191 | 0.953 |
| IDFdm2 | 2055 | rcp45 | Aug | 0.105 | 0.110 | 0.110 | 0.110 | 0.851 |
| IDFdm2 | 2055 | rcp45 | Sep | 0.230 | 0.239 | 0.239 | 0.239 | 0.911 |
| IDFdm2 | 2055 | rcp45 | Oct | 0.429 | 0.460 | 0.460 | 0.460 | 1.000 |
| IDFdm2 | 2055 | rcp45 | Nov | 0.730 | 0.753 | 0.753 | 0.753 | 0.963 |
| IDFdm2 | 2055 | rcp45 | Dec | 0.788 | 0.813 | 0.813 | 0.813 | 0.910 |
| IDFdm2 | 2055 | rcp45 | Annual | 0.522 | 0.574 | 0.596 | 0.614 | 0.965 |
| IDFdm2 | 2025 | rcp85 | Jan | 0.955 | 0.958 | 0.958 | 0.958 | 0.990 |
| IDFdm2 | 2025 | rcp85 | Feb | 0.896 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdm2 | 2025 | rcp85 | Mar | 0.690 | 0.938 | 0.963 | 0.963 | 1.000 |
| IDFdm2 | 2025 | rcp85 | Apr | 0.518 | 0.667 | 0.810 | 0.843 | 1.000 |
| IDFdm2 | 2025 | rcp85 | May | 0.492 | 0.566 | 0.636 | 0.696 | 1.000 |
| IDFdm2 | 2025 | rcp85 | Jun | 0.412 | 0.437 | 0.502 | 0.608 | 1.000 |
| IDFdm2 | 2025 | rcp85 | Jul | 0.171 | 0.199 | 0.199 | 0.224 | 0.963 |
| IDFdm2 | 2025 | rcp85 | Aug | 0.117 | 0.128 | 0.128 | 0.128 | 0.866 |
| IDFdm2 | 2025 | rcp85 | Sep | 0.248 | 0.255 | 0.255 | 0.255 | 0.926 |
| IDFdm2 | 2025 | rcp85 | Oct | 0.442 | 0.481 | 0.481 | 0.481 | 1.000 |
| IDFdm2 | 2025 | rcp85 | Nov | 0.736 | 0.757 | 0.757 | 0.757 | 0.990 |
| IDFdm2 | 2025 | rcp85 | Dec | 0.807 | 0.834 | 0.834 | 0.834 | 0.913 |
| IDFdm2 | 2025 | rcp85 | Annual | 0.540 | 0.602 | 0.627 | 0.646 | 0.971 |
| IDFdm2 | 2055 | rcp85 | Jan | 0.914 | 0.947 | 0.947 | 0.947 | 0.987 |
| IDFdm2 | 2055 | rcp85 | Feb | 0.837 | 0.931 | 0.931 | 0.931 | 1.000 |
| IDFdm2 | 2055 | rcp85 | Mar | 0.608 | 0.831 | 0.870 | 0.870 | 1.000 |
| IDFdm2 | 2055 | rcp85 | Apr | 0.507 | 0.586 | 0.671 | 0.687 | 1.000 |
| IDFdm2 | 2055 | rcp85 | May | 0.467 | 0.527 | 0.586 | 0.629 | 1.000 |
| IDFdm2 | 2055 | rcp85 | Jun | 0.387 | 0.399 | 0.455 | 0.521 | 1.000 |
| IDFdm2 | 2055 | rcp85 | Jul | 0.148 | 0.169 | 0.169 | 0.169 | 0.944 |
| IDFdm2 | 2055 | rcp85 | Aug | 0.099 | 0.104 | 0.104 | 0.104 | 0.839 |
| IDFdm2 | 2055 | rcp85 | Sep | 0.213 | 0.213 | 0.213 | 0.213 | 0.894 |
| IDFdm2 | 2055 | rcp85 | Oct | 0.414 | 0.428 | 0.428 | 0.428 | 0.996 |
| IDFdm2 | 2055 | rcp85 | Nov | 0.696 | 0.725 | 0.725 | 0.725 | 0.939 |
| IDFdm2 | 2055 | rcp85 | Dec | 0.731 | 0.754 | 0.754 | 0.754 | 0.906 |
| IDFdm2 | 2055 | rcp85 | Annual | 0.502 | 0.551 | 0.571 | 0.582 | 0.959 |

## MSdm1 and MSdm2

For this BGC unit, I used Sparwood station, and randomly selected the following years: 1981, 1982, 1985, 1986, 1988, 1989, 1990, 1994, 2003, 2004. 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 |
| Sparwood | MSdm1 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | Mar | 0.999 | 1.000 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | Apr | 0.820 | 1.000 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | May | 0.769 | 0.914 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | Jun | 0.678 | 0.822 | 0.908 | 1.000 | 1 |
| Sparwood | MSdm1 | Jul | 0.405 | 0.447 | 0.514 | 0.874 | 1 |
| Sparwood | MSdm1 | Aug | 0.360 | 0.411 | 0.447 | 0.517 | 1 |
| Sparwood | MSdm1 | Sep | 0.527 | 0.560 | 0.560 | 0.606 | 1 |
| Sparwood | MSdm1 | Oct | 0.758 | 0.847 | 0.847 | 0.847 | 1 |
| Sparwood | MSdm1 | Nov | 0.954 | 0.965 | 0.965 | 0.965 | 1 |
| Sparwood | MSdm1 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Sparwood | MSdm1 | Annual | 0.773 | 0.831 | 0.853 | 0.901 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| MSdm1 | 2025 | rcp45 | Jan | 0.993 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Mar | 0.963 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Apr | 0.744 | 0.925 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | May | 0.645 | 0.793 | 0.955 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Jun | 0.624 | 0.716 | 0.817 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Jul | 0.338 | 0.369 | 0.392 | 0.630 | 1.000 |
| MSdm1 | 2025 | rcp45 | Aug | 0.291 | 0.316 | 0.350 | 0.402 | 0.996 |
| MSdm1 | 2025 | rcp45 | Sep | 0.474 | 0.504 | 0.504 | 0.504 | 1.000 |
| MSdm1 | 2025 | rcp45 | Oct | 0.739 | 0.786 | 0.786 | 0.786 | 1.000 |
| MSdm1 | 2025 | rcp45 | Nov | 0.953 | 0.965 | 0.965 | 0.965 | 1.000 |
| MSdm1 | 2025 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp45 | Annual | 0.730 | 0.781 | 0.814 | 0.857 | 1.000 |
| MSdm1 | 2055 | rcp45 | Jan | 0.971 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | Feb | 0.982 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | Mar | 0.929 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | Apr | 0.687 | 0.878 | 0.997 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | May | 0.614 | 0.780 | 0.916 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | Jun | 0.592 | 0.667 | 0.760 | 0.984 | 1.000 |
| MSdm1 | 2055 | rcp45 | Jul | 0.307 | 0.323 | 0.353 | 0.507 | 1.000 |
| MSdm1 | 2055 | rcp45 | Aug | 0.270 | 0.277 | 0.291 | 0.333 | 0.988 |
| MSdm1 | 2055 | rcp45 | Sep | 0.451 | 0.471 | 0.471 | 0.471 | 1.000 |
| MSdm1 | 2055 | rcp45 | Oct | 0.714 | 0.766 | 0.766 | 0.766 | 1.000 |
| MSdm1 | 2055 | rcp45 | Nov | 0.953 | 0.965 | 0.965 | 0.965 | 1.000 |
| MSdm1 | 2055 | rcp45 | Dec | 0.996 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp45 | Annual | 0.706 | 0.761 | 0.793 | 0.836 | 0.999 |
| MSdm1 | 2025 | rcp85 | Jan | 0.967 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Feb | 0.999 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Mar | 0.960 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Apr | 0.731 | 0.901 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | May | 0.643 | 0.799 | 0.959 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Jun | 0.611 | 0.697 | 0.797 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Jul | 0.334 | 0.361 | 0.396 | 0.605 | 1.000 |
| MSdm1 | 2025 | rcp85 | Aug | 0.292 | 0.315 | 0.346 | 0.396 | 0.995 |
| MSdm1 | 2025 | rcp85 | Sep | 0.469 | 0.508 | 0.508 | 0.508 | 1.000 |
| MSdm1 | 2025 | rcp85 | Oct | 0.733 | 0.785 | 0.785 | 0.785 | 1.000 |
| MSdm1 | 2025 | rcp85 | Nov | 0.953 | 0.965 | 0.965 | 0.965 | 1.000 |
| MSdm1 | 2025 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2025 | rcp85 | Annual | 0.724 | 0.778 | 0.813 | 0.855 | 1.000 |
| MSdm1 | 2055 | rcp85 | Jan | 0.941 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | Feb | 0.979 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | Mar | 0.905 | 0.990 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | Apr | 0.666 | 0.855 | 0.993 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | May | 0.601 | 0.724 | 0.877 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | Jun | 0.554 | 0.631 | 0.708 | 0.947 | 1.000 |
| MSdm1 | 2055 | rcp85 | Jul | 0.277 | 0.288 | 0.319 | 0.424 | 1.000 |
| MSdm1 | 2055 | rcp85 | Aug | 0.259 | 0.266 | 0.272 | 0.307 | 0.984 |
| MSdm1 | 2055 | rcp85 | Sep | 0.430 | 0.440 | 0.440 | 0.440 | 1.000 |
| MSdm1 | 2055 | rcp85 | Oct | 0.704 | 0.750 | 0.750 | 0.750 | 1.000 |
| MSdm1 | 2055 | rcp85 | Nov | 0.949 | 0.965 | 0.965 | 0.965 | 1.000 |
| MSdm1 | 2055 | rcp85 | Dec | 0.995 | 1.000 | 1.000 | 1.000 | 1.000 |
| MSdm1 | 2055 | rcp85 | Annual | 0.688 | 0.742 | 0.777 | 0.819 | 0.999 |

## MSxk1

For this BGC unit, I used Apex station, and randomly selected the following years: 1997, 1998, 2001, 2003, 2004, 2005, 2006, 2007, 2008, 2009. 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 |
| Apex | MSxk1 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | May | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Jun | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Jul | 0.811 | 0.917 | 0.992 | 1.000 | 1 |
| Apex | MSxk1 | Aug | 0.601 | 0.709 | 0.794 | 0.971 | 1 |
| Apex | MSxk1 | Sep | 0.656 | 0.769 | 0.859 | 0.927 | 1 |
| Apex | MSxk1 | Oct | 0.921 | 0.946 | 0.951 | 0.962 | 1 |
| Apex | MSxk1 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Apex | MSxk1 | Annual | 0.916 | 0.945 | 0.966 | 0.988 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| MSxk1 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | May | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Jun | 0.930 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Jul | 0.591 | 0.762 | 0.866 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Aug | 0.431 | 0.527 | 0.622 | 0.805 | 1 |
| MSxk1 | 2025 | rcp45 | Sep | 0.595 | 0.614 | 0.661 | 0.798 | 1 |
| MSxk1 | 2025 | rcp45 | Oct | 0.916 | 0.932 | 0.932 | 0.938 | 1 |
| MSxk1 | 2025 | rcp45 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp45 | Annual | 0.872 | 0.903 | 0.923 | 0.962 | 1 |
| MSxk1 | 2055 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Apr | 0.973 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | May | 0.983 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Jun | 0.886 | 0.978 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Jul | 0.425 | 0.588 | 0.736 | 0.995 | 1 |
| MSxk1 | 2055 | rcp45 | Aug | 0.392 | 0.430 | 0.496 | 0.669 | 1 |
| MSxk1 | 2055 | rcp45 | Sep | 0.559 | 0.574 | 0.574 | 0.671 | 1 |
| MSxk1 | 2055 | rcp45 | Oct | 0.906 | 0.918 | 0.918 | 0.918 | 1 |
| MSxk1 | 2055 | rcp45 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp45 | Annual | 0.844 | 0.874 | 0.894 | 0.938 | 1 |
| MSxk1 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Apr | 0.997 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | May | 0.988 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Jun | 0.910 | 0.992 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Jul | 0.567 | 0.699 | 0.885 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Aug | 0.429 | 0.509 | 0.628 | 0.789 | 1 |
| MSxk1 | 2025 | rcp85 | Sep | 0.593 | 0.620 | 0.641 | 0.792 | 1 |
| MSxk1 | 2025 | rcp85 | Oct | 0.914 | 0.932 | 0.932 | 0.934 | 1 |
| MSxk1 | 2025 | rcp85 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2025 | rcp85 | Annual | 0.866 | 0.896 | 0.924 | 0.960 | 1 |
| MSxk1 | 2055 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Mar | 0.996 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Apr | 0.980 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | May | 0.952 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Jun | 0.833 | 0.949 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Jul | 0.381 | 0.514 | 0.658 | 0.953 | 1 |
| MSxk1 | 2055 | rcp85 | Aug | 0.375 | 0.408 | 0.444 | 0.591 | 1 |
| MSxk1 | 2055 | rcp85 | Sep | 0.513 | 0.534 | 0.534 | 0.590 | 1 |
| MSxk1 | 2055 | rcp85 | Oct | 0.907 | 0.913 | 0.913 | 0.913 | 1 |
| MSxk1 | 2055 | rcp85 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| MSxk1 | 2055 | rcp85 | Annual | 0.828 | 0.860 | 0.879 | 0.921 | 1 |

## IDFdk1

For this BGC unit, I used Redlake station, and randomly selected the following years: 1987, 1988, 1990, 1992, 1994, 1996, 2000, 2002, 2003, 2004. 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 |
| Redlake | IDFdk1 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | Mar | 0.962 | 1.000 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | Apr | 0.913 | 0.984 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | May | 0.806 | 0.955 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | Jun | 0.610 | 0.784 | 0.869 | 1.000 | 1 |
| Redlake | IDFdk1 | Jul | 0.388 | 0.514 | 0.633 | 0.878 | 1 |
| Redlake | IDFdk1 | Aug | 0.362 | 0.383 | 0.407 | 0.574 | 1 |
| Redlake | IDFdk1 | Sep | 0.531 | 0.580 | 0.580 | 0.600 | 1 |
| Redlake | IDFdk1 | Oct | 0.609 | 0.690 | 0.704 | 0.717 | 1 |
| Redlake | IDFdk1 | Nov | 0.946 | 0.957 | 0.957 | 0.957 | 1 |
| Redlake | IDFdk1 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Redlake | IDFdk1 | Annual | 0.761 | 0.821 | 0.846 | 0.894 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFdk1 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Mar | 0.919 | 0.998 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Apr | 0.771 | 0.926 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp45 | May | 0.738 | 0.886 | 0.986 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Jun | 0.535 | 0.660 | 0.813 | 0.960 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Jul | 0.343 | 0.419 | 0.509 | 0.734 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Aug | 0.312 | 0.317 | 0.317 | 0.416 | 0.995 |
| IDFdk1 | 2025 | rcp45 | Sep | 0.488 | 0.525 | 0.525 | 0.525 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Oct | 0.597 | 0.649 | 0.665 | 0.665 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Nov | 0.914 | 0.938 | 0.938 | 0.938 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Dec | 0.994 | 0.994 | 0.994 | 0.994 | 1.000 |
| IDFdk1 | 2025 | rcp45 | Annual | 0.718 | 0.776 | 0.812 | 0.853 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Jan | 0.974 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Feb | 0.961 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Mar | 0.895 | 0.981 | 0.998 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Apr | 0.676 | 0.900 | 0.962 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp45 | May | 0.708 | 0.865 | 0.948 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Jun | 0.524 | 0.614 | 0.759 | 0.925 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Jul | 0.316 | 0.367 | 0.408 | 0.649 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Aug | 0.276 | 0.281 | 0.281 | 0.338 | 0.987 |
| IDFdk1 | 2055 | rcp45 | Sep | 0.470 | 0.511 | 0.511 | 0.511 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Oct | 0.573 | 0.606 | 0.637 | 0.637 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Nov | 0.878 | 0.889 | 0.889 | 0.889 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Dec | 0.993 | 0.993 | 0.993 | 0.993 | 1.000 |
| IDFdk1 | 2055 | rcp45 | Annual | 0.687 | 0.751 | 0.782 | 0.828 | 0.999 |
| IDFdk1 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Feb | 0.996 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Mar | 0.934 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Apr | 0.765 | 0.954 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp85 | May | 0.736 | 0.886 | 0.984 | 1.000 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Jun | 0.538 | 0.678 | 0.816 | 0.957 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Jul | 0.341 | 0.433 | 0.494 | 0.725 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Aug | 0.312 | 0.317 | 0.323 | 0.409 | 0.994 |
| IDFdk1 | 2025 | rcp85 | Sep | 0.495 | 0.530 | 0.530 | 0.530 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Oct | 0.585 | 0.645 | 0.658 | 0.658 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Nov | 0.899 | 0.926 | 0.926 | 0.926 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Dec | 0.994 | 0.994 | 0.994 | 0.994 | 1.000 |
| IDFdk1 | 2025 | rcp85 | Annual | 0.716 | 0.780 | 0.810 | 0.850 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Jan | 0.952 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Feb | 0.950 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Mar | 0.850 | 0.956 | 1.000 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Apr | 0.632 | 0.864 | 0.982 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp85 | May | 0.685 | 0.839 | 0.938 | 1.000 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Jun | 0.509 | 0.598 | 0.678 | 0.897 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Jul | 0.294 | 0.348 | 0.368 | 0.564 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Aug | 0.267 | 0.271 | 0.271 | 0.301 | 0.982 |
| IDFdk1 | 2055 | rcp85 | Sep | 0.445 | 0.486 | 0.491 | 0.491 | 0.996 |
| IDFdk1 | 2055 | rcp85 | Oct | 0.571 | 0.588 | 0.613 | 0.613 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Nov | 0.850 | 0.880 | 0.880 | 0.880 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Dec | 0.984 | 0.987 | 0.987 | 0.987 | 1.000 |
| IDFdk1 | 2055 | rcp85 | Annual | 0.666 | 0.735 | 0.767 | 0.811 | 0.998 |

## IDFdk2

For this BGC unit, I used Jellicoe station, and randomly selected the following years: 1997, 1998, 1999, 2001, 2002, 2004, 2005, 2007, 2014, 2016. 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 |
| Jellicoe | IDFdk2 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Jellicoe | IDFdk2 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| Jellicoe | IDFdk2 | Mar | 0.988 | 1.000 | 1.000 | 1.000 | 1 |
| Jellicoe | IDFdk2 | Apr | 0.790 | 0.945 | 1.000 | 1.000 | 1 |
| Jellicoe | IDFdk2 | May | 0.583 | 0.708 | 0.884 | 1.000 | 1 |
| Jellicoe | IDFdk2 | Jun | 0.578 | 0.713 | 0.811 | 0.974 | 1 |
| Jellicoe | IDFdk2 | Jul | 0.316 | 0.374 | 0.396 | 0.696 | 1 |
| Jellicoe | IDFdk2 | Aug | 0.226 | 0.235 | 0.235 | 0.251 | 1 |
| Jellicoe | IDFdk2 | Sep | 0.390 | 0.399 | 0.399 | 0.399 | 1 |
| Jellicoe | IDFdk2 | Oct | 0.582 | 0.582 | 0.582 | 0.582 | 1 |
| Jellicoe | IDFdk2 | Nov | 0.855 | 0.855 | 0.855 | 0.855 | 1 |
| Jellicoe | IDFdk2 | Dec | 0.971 | 0.971 | 0.971 | 0.971 | 1 |
| Jellicoe | IDFdk2 | Annual | 0.690 | 0.732 | 0.761 | 0.811 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| IDFdk2 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Mar | 0.883 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Apr | 0.577 | 0.818 | 0.987 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp45 | May | 0.418 | 0.538 | 0.696 | 0.985 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Jun | 0.529 | 0.595 | 0.638 | 0.855 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Jul | 0.276 | 0.293 | 0.293 | 0.368 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Aug | 0.181 | 0.181 | 0.181 | 0.181 | 0.999 |
| IDFdk2 | 2025 | rcp45 | Sep | 0.351 | 0.359 | 0.359 | 0.359 | 0.998 |
| IDFdk2 | 2025 | rcp45 | Oct | 0.563 | 0.563 | 0.563 | 0.563 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Nov | 0.828 | 0.834 | 0.834 | 0.834 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Dec | 0.937 | 0.937 | 0.937 | 0.937 | 1.000 |
| IDFdk2 | 2025 | rcp45 | Annual | 0.629 | 0.676 | 0.707 | 0.757 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Feb | 0.993 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Mar | 0.749 | 0.968 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Apr | 0.464 | 0.717 | 0.908 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp45 | May | 0.412 | 0.441 | 0.585 | 0.915 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Jun | 0.504 | 0.569 | 0.569 | 0.763 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Jul | 0.245 | 0.258 | 0.258 | 0.281 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Aug | 0.154 | 0.154 | 0.154 | 0.154 | 0.994 |
| IDFdk2 | 2055 | rcp45 | Sep | 0.335 | 0.343 | 0.343 | 0.343 | 0.989 |
| IDFdk2 | 2055 | rcp45 | Oct | 0.538 | 0.538 | 0.538 | 0.538 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Nov | 0.819 | 0.819 | 0.819 | 0.819 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Dec | 0.936 | 0.936 | 0.936 | 0.936 | 1.000 |
| IDFdk2 | 2055 | rcp45 | Annual | 0.596 | 0.645 | 0.676 | 0.729 | 0.999 |
| IDFdk2 | 2025 | rcp85 | Jan | 0.997 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Mar | 0.857 | 0.998 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Apr | 0.567 | 0.782 | 0.949 | 1.000 | 1.000 |
| IDFdk2 | 2025 | rcp85 | May | 0.416 | 0.525 | 0.693 | 0.978 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Jun | 0.520 | 0.585 | 0.630 | 0.840 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Jul | 0.275 | 0.292 | 0.292 | 0.353 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Aug | 0.181 | 0.181 | 0.181 | 0.181 | 0.999 |
| IDFdk2 | 2025 | rcp85 | Sep | 0.356 | 0.365 | 0.365 | 0.365 | 0.999 |
| IDFdk2 | 2025 | rcp85 | Oct | 0.555 | 0.555 | 0.555 | 0.555 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Nov | 0.824 | 0.824 | 0.824 | 0.824 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Dec | 0.937 | 0.937 | 0.937 | 0.937 | 1.000 |
| IDFdk2 | 2025 | rcp85 | Annual | 0.624 | 0.670 | 0.702 | 0.753 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Jan | 0.973 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Feb | 0.962 | 1.000 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Mar | 0.731 | 0.928 | 1.000 | 1.000 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Apr | 0.416 | 0.624 | 0.809 | 0.994 | 1.000 |
| IDFdk2 | 2055 | rcp85 | May | 0.400 | 0.427 | 0.518 | 0.819 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Jun | 0.473 | 0.528 | 0.528 | 0.691 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Jul | 0.229 | 0.235 | 0.235 | 0.238 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Aug | 0.148 | 0.148 | 0.148 | 0.148 | 0.990 |
| IDFdk2 | 2055 | rcp85 | Sep | 0.317 | 0.317 | 0.317 | 0.317 | 0.977 |
| IDFdk2 | 2055 | rcp85 | Oct | 0.539 | 0.539 | 0.539 | 0.539 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Nov | 0.807 | 0.807 | 0.807 | 0.807 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Dec | 0.930 | 0.933 | 0.933 | 0.933 | 1.000 |
| IDFdk2 | 2055 | rcp85 | Annual | 0.577 | 0.624 | 0.653 | 0.707 | 0.997 |

## ESSFdc2

For this BGC unit, I used Pennask station, and randomly selected the following years: 1998, 2001, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010. 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 |
| Pennask | ESSFdc2 | Jan | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Feb | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Mar | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Apr | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | May | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Jun | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Jul | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Aug | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Sep | 0.953 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Oct | 0.994 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Nov | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Dec | 1.000 | 1 | 1 | 1 | 1 |
| Pennask | ESSFdc2 | Annual | 0.996 | 1 | 1 | 1 | 1 |

Future data are summarized in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BGC | Period | Scenario | Month | S1.ASMR | S2.ASMR | S3.ASMR | S4.ASMR | S5.ASMR |
| ESSFdc2 | 2025 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | May | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Jun | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Jul | 0.918 | 0.982 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Aug | 0.768 | 0.832 | 0.885 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Sep | 0.827 | 0.889 | 0.915 | 0.953 | 1 |
| ESSFdc2 | 2025 | rcp45 | Oct | 0.986 | 0.999 | 0.999 | 0.999 | 1 |
| ESSFdc2 | 2025 | rcp45 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp45 | Annual | 0.958 | 0.975 | 0.983 | 0.996 | 1 |
| ESSFdc2 | 2055 | rcp45 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | May | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Jun | 0.993 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Jul | 0.730 | 0.888 | 0.970 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Aug | 0.562 | 0.619 | 0.698 | 0.933 | 1 |
| ESSFdc2 | 2055 | rcp45 | Sep | 0.771 | 0.779 | 0.835 | 0.888 | 1 |
| ESSFdc2 | 2055 | rcp45 | Oct | 0.963 | 0.994 | 0.994 | 0.998 | 1 |
| ESSFdc2 | 2055 | rcp45 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp45 | Annual | 0.918 | 0.940 | 0.958 | 0.985 | 1 |
| ESSFdc2 | 2025 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | May | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Jun | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Jul | 0.908 | 0.962 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Aug | 0.737 | 0.803 | 0.886 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Sep | 0.818 | 0.892 | 0.904 | 0.928 | 1 |
| ESSFdc2 | 2025 | rcp85 | Oct | 0.984 | 0.999 | 0.999 | 0.999 | 1 |
| ESSFdc2 | 2025 | rcp85 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2025 | rcp85 | Annual | 0.954 | 0.971 | 0.982 | 0.994 | 1 |
| ESSFdc2 | 2055 | rcp85 | Jan | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Feb | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Mar | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Apr | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | May | 0.999 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Jun | 0.954 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Jul | 0.635 | 0.757 | 0.908 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Aug | 0.531 | 0.610 | 0.664 | 0.843 | 1 |
| ESSFdc2 | 2055 | rcp85 | Sep | 0.711 | 0.748 | 0.773 | 0.860 | 1 |
| ESSFdc2 | 2055 | rcp85 | Oct | 0.944 | 0.991 | 0.991 | 0.995 | 1 |
| ESSFdc2 | 2055 | rcp85 | Nov | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Dec | 1.000 | 1.000 | 1.000 | 1.000 | 1 |
| ESSFdc2 | 2055 | rcp85 | Annual | 0.898 | 0.926 | 0.945 | 0.975 | 1 |

## ESSFxc2

Greenstone Hub is one of the stations, but only has 4 years of cleaned data. Is there another station to use? The spreadsheet says “Mission Creek” but I didn’t see the data there.