AET/PET ratios for BGC units

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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 |

## 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 |

## 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 |

## 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 |

## 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 |

## 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 |

## 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 |

## 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.