

Identification_Information:

Citation:

Citation_Information:

Originator: W. Barclay Shoemaker

Publication_Date: 2015

Title: The 2014 update of Geostationary Operational Environmental Satellite (GOES) potential and reference evapotranspiration datasets for Florida

Geospatial_Data_Presentation_Form: Maps and Data

Online_Linkage: <http://fl.water.usgs.gov/et/data/2014/index.html>

Description:

Abstract:

In Florida, potential (PET) and reference (RET) evapotranspiration are used in a number of water-resource planning and management activities including estimating water use for permitting and planning, modeling surface water, groundwater, and wetlands dynamics, and characterizing the transport of pollutants through watersheds and aquifers. Both PET and RET estimates require direct measurements of incoming solar radiation. Because the Florida ground-based solar radiation network is extremely sparse from 1991 to present, this project makes PET and RET estimates using solar radiation obtained from Geostationary Operational Environmental Satellites (GOES). The proposed effort provides solar radiation, potential evapotranspiration, and reference evapotranspiration estimates at a 2 km spatial scale and a daily time scale from 1995 to 2004 for the entire state of Florida. This metadata documents the 2014 update. All supporting datasets are transferred to the U.S. Geological Survey and are publicly available via a USGS web portal (<http://fl.water.usgs.gov/et/>)

Purpose:

This metadata documents the 2014 update of Geostationary Operational Environmental Satellite (GOES) potential and reference evapotranspiration datasets for Florida.

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20140101

Ending_Date: 20141231

Currentness_Reference: ground condition

Status:

Progress: Complete

Maintenance_and_Update_Frequency: Annually

Spatial_Domain:

Description_of_Geographic_Extent: Entire State of Florida

Bounding_Coordinates:

West_Bounding_Coordinate: -87.619

East_Bounding_Coordinate: -80.048

North_Bounding_Coordinate: 30.985

South_Bounding_Coordinate: 24.554

Keywords:

Theme:

Theme_Keyword_Thesaurus: none

Theme_Keyword: Evapotranspiration

Theme_Keyword: Potential Evapotranspiration

Theme_Keyword: Reference Evapotranspiration

Theme_Keyword: Solar radiation

Theme_Keyword: Water Budget

Access_Constraints: None

Use_Constraints: None

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: W. Barclay Shoemaker

Contact_Organization: USGS Caribbean-Florida Water Science Center

Contact_Address:

Address_Type: mailing

Address: 7500 SW 36 St

City: Davie

State_or_Province: FL

Postal_Code: 33314

Country: USA

Contact_Voice_Telephone: 954-377-5956

Contact_Electronic_Mail_Address: bshoemak@usgs.gov

Data_Set_Credit:

Northwest Florida Water Management District, Suwannee River Water Management District, St. Johns River Water Management District, Southwest Florida Water Management District, South Florida Water Management District

Cross_Reference:

Citation_Information:

Originator: John R. Mecikalski, David M. Sumner, Jennifer M. Jacobs, Chandra S. Pathak, Simon J. Paech, and Ellen M. Douglas

Publication_Date: 2011

Title: Use of Visible Geostationary Operational Meteorological Satellite Imagery in Mapping Reference and Potential Evapotranspiration over Florida.

Source_Citation: Evapotranspiration, Chapter 10, pgs. 229-254.

Larger_Work_Citation:

Citation Information:

Originator: Labeledzki, Leszek, editor

Title: Evapotranspiration

Other_Citation_Details: ISBN 978-953-307-251-7, 458 pages, Publisher:

InTech, DOI:10.5772/585

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Nineteen pyranometer stations were used for calibrating incoming solar radiation: 13 for calibration of the satellite-estimated product and 6 for verification of model performance. Only high-quality pyranometer data were selected, these came from two State of Florida Water Management District (WMD) networks: South Florida (SF) and St. Johns River (SJRWMD). Additionally, data from the University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) Florida Automated Weather Network (FAWN) were used.

Minimum and maximum air temperature, relative humidity and mean daily wind speed from the DBHYDRO, FAWN and NOAA databases were screened for outliers using scatterplots. Maximum daily relative humidity values greater than 100% were culled from the analysis. Furthermore, mean wind speed at 2 meters altitude above land surface was computed, as required by the RET equation.

Logical_Consistency_Report: None

Completeness_Report: None

Lineage:

Methodology:

Methodology_Type: Field

Methodology_Description:

Source_Information:

Source_Citation:

Citation_Information:

Originator: South Florida Water Management District

Publication_Date: 2014

Title: Meteorological data

Geospatial_Data_Presentation_Form: Maps and Data

Online_Linkage: www.sfwmd.gov/dbhydro

Type_of_Source_Media: Time Series

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20140101

Ending_Date: 20141231

Source_Currentness_Reference: ground condition

Source_Citation_Abbreviation: SFWMD DBHYDRO database

Source_Contribution:

Daily minimum and maximum air temperature and relative humidity from the following stations (DBKEY):

TA613	TA617	TA619	TA625	TA629
TA633	TA635	TA637	TA646	TA649
TA653	TA657	TA661	TA665	TA667
TA671	TA677	TA681	TA685	TA689
TA694	TA698	TA701	TA708	TA710
TA714	TA719	TA728	TA730	TA734
TA739	TA744	TA748	UO763	UO771
UO779	UO787	WN351		

Mean daily wind speed from the following stations (DBKEY): 12476, 12500, 12510, 12520, 12694, 12732, 13076, 15069, 15081, 15104, 15359, 15466, 15476, 15487, 15498, 15509, 15691, 15716, 15852, 15879, 16023, 16253, DO524, DU558, F9559, FF837, FI264, FZ589, G0850, GE345, GG621, LA364, LJ291, M5263, MX250, SM768, TA876, UA572, UO769, UO777, UO785, UO793, V2470, VM878, VW760, WN356

Process_Step:

Process_Description:

Go to DBHYDRO website and select Browser Menu. Click on Meteorological Data, then on Get Data. Select Data Type as Search Parameter. Select Air Temperature as Query Criteria. Click on "Show Active Time Series Only" (leave other items at defaults) and Submit. Select each DBKey individually, selecting AIRT (MIN & MAX). Click on Get Data, and choose Start and End Dates, 1 value per row, and Comma delimited output (leave others at defaults, including Run Mode = online) and Submit. Do the same process outline above for: Relative Humidity, and Wind Speed (Scalar). Look for HUMI(MIN & MAX) and WNDS(MEAN).

Process_Date: 2014

Source_Citation_Abbreviation: FAWN database (<http://fawn.ifas.ufl.edu/>)

Source_Contribution:

Mean daily wind speed, daily minimum and maximum air temperature and relative humidity from the following stations: Alachua, Apopka, Arcadia,

Avalon, Balm, Belle Glade, Bronson, Brooksville, Carrabelle, Citra, Clewiston, Dade City, Defuniak Springs, Dover, Fort Lauderdale, Frostproof, Fort Pierce, Hastings, Homestead, Immokalee, Indian River, Jay, Joshua, Kenansville, Lake Alfred, Lecanto, Live Oak, Macclenny, Marianna, Mayo, Monticello, North Port, Ocklawaha, Okeechobee, Okahumpka, Ona, Palmdale, Pierson, Putnam Hall, Quincy, Sebring, St. Lucie, Umatilla, Wellington

Process_Step:

Process_Description:

Browse to the FAWN database (<http://fawn.ifas.ufl.edu/>). Click on Data Access, FTP: Yearly CSV data, then on 15_minute_obs. Look for 2014_15mins.zip.

Process_Date: 2014

Source_Citation_Abbreviation: NOAA database (<http://www.ncdc.noaa.gov>)

Source_Contribution:

Mean daily wind speed, daily minimum and maximum air temperature and relative humidity from the following stations:

700	701	702	703	704	705	706	707	708	709	710
711	712	713	714	715	716	717	718	719	720	721
722	723	724	725	726	727	728	729	730	731	732
733	734	735	736	737	738	739	740	741	742	743
744	745	746	747	748	749	750	751	752	753	754
755	756	757	758	759	760	761	762	763	764	765
766	767	768	769	770	771	772	773	774	775	776
777	778	779	780	781	782	783	784	785	786	787
788	789	790	791	792	793	794	795	796	797	798
799	800	801	802	803	804	805	806	807	808	809
810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831
832	833	834	835	836	837	838	839	840	841	842
843	844	845	846	847	848	849	850	851	852	853
854	855	856	857	858	859	860	861	862	863	864
865	866	867	868	869	870	871	872	873	874	875
876	877									

Process_Step:

Process_Description:

Go to <http://www.ncdc.noaa.gov>; Click on “Data Access”, “Quick Links”, “Global Historical Climatology Network-Daily (GHCN-Daily)”, “GHCN-Daily”. Toggle to Daily Summaries, Date Range, Search for States – Florida. Click “add to cart”, CSV option. Choose air temperature and wind as data types of custom output; enter email address.

Process_Date: 2014

Entity_and_Attribute_Information:

Detailed_Description: Text files of data for each County in Florida

Entity_Type: ASCII text files

Entity_Type_Label: County_2014.zip

Entity_Type_Definition: zipped files of date, latitude, longitude, pixel, PET, RET, solar, RH max, RHmin, Tmax, Tmin, Wind for each County in Florida.

Entity_Type_Definition_Source: fl.water.usgs.gov/et/data/2014/index.html

*Attribute:*Column 1

Attribute_Label: Date

Attribute_Definition: Day of year

Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>

*Attribute_Domain_Values:*20140101 to 20141231

Unrepresentable_Domain:

Attribute: Column 2

Attribute_Label: latitude

Attribute_Definition: latitude of pixel value

Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>

Attribute_Domain_Values: 24.554 to 30.985

Unrepresentable_Domain:

Attribute: Column 3

Attribute_Label: longitude

Attribute_Definition: longitude of pixel value

Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>

Attribute_Domain_Values: -87.619 to -80.048

Unrepresentable_Domain:

*Attribute:*Column 4

Attribute_Label: pixel

Attribute_Definition: pixel ID number

Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>

Attribute_Domain_Values: 8390 to 177930 in State of Florida

Unrepresentable_Domain:

*Attribute:*Column 5

Attribute_Label: PET

Attribute_Definition: Potential ET (mm/d)

Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 0.027 to 8.128 mm/d
Unrepresentable_Domain:

Attribute: Column 6
Attribute_Label: RET
Attribute_Definition: Reference ET (mm/d)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 0.024 to 7.469 , then mm/d
Unrepresentable_Domain:

Attribute: Column 7
Attribute_Label: solar
Attribute_Definition: Solar Radiation - Daily Insolation (MegaJoules/sq meter/day)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 0.200 to 28.740
Unrepresentable_Domain:

Attribute: Column 8
Attribute_Label: RHmax
Attribute_Definition: Maximum Relative Humidity for day (%)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 48.259 to 99.999%
Unrepresentable_Domain:

Attribute: Column 9
Attribute_Label: RHmin
Attribute_Definition: Minimum Relative Humidity for day (%)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 14.131 to 99.998%
Unrepresentable_Domain:

Attribute: Column 10
Attribute_Label: Tmax
Attribute_Definition: Maximum Temperature for day (C)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: -9.89 to 39.390
Unrepresentable_Domain:

Attribute: Column 11

Attribute_Label: Tmin
Attribute_Definition: Minimum Temperature for day (C)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: -15.508 to 30.575
Unrepresentable_Domain:

*Attribute:*Column 12
Attribute_Label: Wind
Attribute_Definition: Wind Speed (meters/second)
Attribute_Definition_Source: <http://fl.water.usgs.gov/et/data/2014/index.html>
Attribute_Domain_Values: 0.203 to 8.362
Unrepresentable_Domain:

Distribution_Information:

Distributor: U.S. Geological Survey
Contact_Information:
Contact_Person_Primary:
Contact_Person: W. Barclay Shoemaker
Contact_Organization: U.S. Geological Survey
Contact_Address:
Address_Type: mailing and physical
Address: 7500 SW 36th Street
City: Davie
State_or_Province: FL
Postal_Code: 33314
Country: USA
Contact_Voice_Telephone: 954-377-5956
Contact_Facsimile_Telephone:
Contact_Electronic_Mail_Address: bshoemak@usgs.gov
Distribution_Liability: The data have no explicit or implied guarantees

Metadata_Reference_Information:

Metadata_Date: 20150630
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: W. Barclay Shoemaker
Contact_Organization: U.S. Geological Survey
Contact_Address:
Address_Type: mailing and physical

Address: 7500 SW 36th Street

City: Davie

State_or_Province: FL

Postal_Code: 33314

Country: USA

Contact_Voice_Telephone: 954-377-5956

Contact_Facsimile_Telephone:

Contact_Electronic_Mail_Address:

Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Access_Constraints: none

Metadata_Use_Constraints: none
