Model of Model Input Data Acquiring and Processing and Output

Input Data

Data	Developed by	Resolution	Updated	Download Site
Global Watershed	**WRI**		**Every year**	https://www.wri.org/resources/data-sets/aqueduct-global-maps-30-data
GFMS output (Flood depth above threshold)	**UMD & NASA**	**12km**	**Updated every 3 hours**	http://eagle2.umd.edu/flood/download/
GloFas Output	**EC & ECMWF**		**Updated every day**	
HWRF	**NOAA**	**6km**	**Updated evey 6 hour for the forecasted tropical cyclone**	**https://www.emc.ncep.noaa.gov/gc_wmb/vxt/HWRF/about.php?branch=link**
DFO	**DFO**	**250m**	**Updated every day**	https://floodmap.modaps.eosdis.nasa.gov/index.php
VIIRS	**NOAA**	**375m**	**Updated every day**	**https://www.ssec.wisc.edu/flood-map-demo/ftp-link**

Output: https://js-157-200.jetstream-cloud.org/ModelofModels/

Codes: https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/data

1. **Global Watershed**

a. The global watershed developed by WRI is downloaded manually from https://www.wri.org/resources/data-sets/aqueduct-global-maps-30-data

b. The folder named "Y2019M07D12_Aqueduct30_V01" will be downloaded and the geodatabase the study used is within the subfolder: Y2019M07D12_Aqueduct30_V01\Y2019M07D12_Aqueduct30_V01\baseline\annual\arcmap\y2019m07d12_aqueduct30_v01.gdb

c. The shapefile within this geodatabase is dissolved using attribute "pfaf_id" which will be used to integrate GFMS and GloFas output after projection.

d. Along with pfaf_id, other attributes that are used and joined are :

gid_0 : Three letter country code renamed as ISO
name_0: Country name renamed as ADMIN0
name_1: Major Administrative area name renamed as ADMIN1
rfr_score: Riverine Flood Risk score

cfr_score: Coastal Flood Risk score

e. The final attributes with Field Name: { pfaf_id, ISO, Admin0, Admin1, rfr_score, cfr_score} is saved as "***Attributes.csv***" and uploaded in GitHub. https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/Flood_Severity_Calculation/Attributes.csv

* Features with -9999 pfaf_id is removed. For the features with missing gid_0, name_0 and name_1, the shapefile is overlaid with global boundary map and name is given manually based on where the centroid of the watersheds resides on.

2. GFMS output (Flood depth above threshold) download and processing

Output file: **Flood_by_storm_*yyyymmddhh*.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/gfms/

File contains the GFMS output data integrated with global watershed with fieldname:

pfaf_id: Global Watershed ID

GFMS_TotalArea_km: Area of flooded watershed in square kilometer unit

GFMS_%Area: Percentage of flooded area

GFMS_MeanDepth: mean depth of flood above threshold within the watershed

GFMS_MaxDepth: Max depth of flood above threshold within the watershed

GFMS_Duration: Cumulative Duration in hours if watershed (more than 100 sqkm) is flooded

3. GloFas output download and Processing

Output file: **threspoints_*yyyymmdd*00.csv/geojson/xlsx. at** https://js-169-84.jetstream-cloud.org/ModelofModels/glofas/

File contains the GloFas output data integrated with global watershed with field name:

Point_No: The point no of the station

Station: Station name

Basin: the name of the river basin where station is placed

Country: The name of country wherestation resides

Lat: Latitudinal position of the station

Lon: Longitudinal position of the station

Upstream_area: The upstream area of the basin from station

Forecast_Date: The flood forecasted date and time

max_EPS: ensemble predictions (EPS) of flood event with return period (2/5/20)years

GloFAS_2yr: EPS of 2 year return period

GloFAS_5yr: EPS of 5 year return period

GloFAS_20y: EPS of 20 year return period

Alert_level: Alert level of the flood (1-3)

Days_until_peak:

pfaf_id: Global Watershed ID

Note: Within watershed features (pfaf_id) more than one station may reside.

4. **HWRF ouput download and Processing**
   The python programming for the download of all rainfall data and integration of it to the WRI Watershed is uploaded in GitHub and can be found here: https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/HWRF_Rainfall_Processing.

Output file: 1. **hwrf.*yyyymmddhh*rainfall.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/HWRF/HWRF_summary

2. **hwrf.*yyyymmddhh*rainfall.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/HWRF/HWRF_image/

The csv file contains the attributes with field name:

pfaf_id: Global watershed ID

Rain_TotalArea_km: Area of watershed in square kilometer unit that gets the precipitation

perc_Area: Percentage area of the watershed that gets the precipitation

MeanRain: Mean Rainfall in unit inches within the watershed

MaxRain: MaximumRainfall in unit inches within the watershed

5. **Flood Severity Calculation**

Python File: **Flood_Severity_Calculation.py** uploaded at https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/Flood_Severity_Calculation/Flood_Severity_Calculation.py

i. Read the CSV files from GFMS output (step 2) as ***GFMS_Table.csv***
ii. Assign score and to each flood attribute based on the weightage provided in ***weightage.csv*** and add the score together.
iii. Read the GloFas output (step 3) as ***GloFas_Table.csv***.
iv. Assign score for each flood attribute (GloFAS_2yr, GloFAS_5yr, GloFAS_20y, Alert_level, Days_until_peak) output based on the weightage provided in ***weightage.csv*** and add the score together.

v. The hazard score form GloFas for each watershed (pfaf_id) is the average of the score of all station within same watershed.

vi. Read the CSV file with attributes from Global Watershed i.e. ***Attributes.csv.*** (from Step 1)

vii. Join all three CSV files based on pfaf_id. The total hazard score is summation of hazard score from both model. Double the hazard score from the respective model if any event is missed by any model.

viii. Calculate **Severity** using a Cumulative Distribution Function (CDF) such that the total dynamic hazard score from both models are fitted with a logarithmic value of scaled RFR score or scaled CFR score whichever maximum as mean and unit standard deviation

ix. Use severity to derive **Alert** message as: "Information" when 0% < Severity < 35%; "Advisory" when 35% ≤ Severity < 60%; "Watch" when 60% ≤ Severity < 80% and; "Warning" when Severity ≥ 80%.

x. Write the output ***Final_Attributes_yyyymmdd.csv*** and ***Attributes_clean_yyyymmdd.csv*** file.

xi. Write the output file ***GloFas_error.csv*** if any attributes of station from the GloFas have error in it. That data of that particular station data will be skipped and then, the number, the name of station, associated watershed id and the first encountered error will be listed row wise.

weightage.csv

This is the csv file provided with limit criteria/ initial weightage for attribute from GFMS and GloFas and, minimum and maximum score assigned to calculated the hazard score and is uploaded at https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/Flood_Severity_Calculation/Weightage.csv. The table have following fieldname: { GFMS_Area_wt, GFMS_Area_Min_pt, GFMS_Area_max_pt, GFMS_Meandepth_wt, GFMS_Meandepth_Minpt, GFMS_Meandepth_Maxpt, GFMS_Maxdepth_wt, GFMS_Maxdepth_Minpt, GFMS_Maxdepth_Maxpt, GFMS_Duration_wt, GFMS_Duration_Minpt, GFMS_Duration_Maxpt, EPS_Twoyear_wt, EPS_Fiveyear_wt, EPS_Twtyyear_wt, Alert_score}. The values for these field name is provided based on the Weighting criteria below

Product Description	Initial Weighting
The total area of watershed impacted by flood	1 pt for every 1000sqkm, Max =10
Percentage of watershed area impacted from flood	1 pt for every 5%, Max = 10 (eg. 66% = 10)
The mean depth of flood above the threshold in a watershed in mm	1 pt for every 10 mm, Max = 10 (eg. 56 mm = 5.6)

Max depth of flood above threshold in a watershed in mm	1 pt for every 10 mm, Max =10 (eg. 890 mm = 8.9)
Number of 3-hr intervals a specific area has been flooded (at least 100 square km overlap in each interval)	Continuous days of at least 100 sqkm overlap, 1 per day, Max= 10 (eg. 66 hrs = 2.75)
EPS greater than threshold exceedance for 2, 5 and 20 year return period flood event (%)	10 pt for 100% Max = 10 (eg. 66% = 6.6)
Alert Level 1 2 and 3 with 3 greatest value	1, 2 and 3 = 3, 7 and 10 respectively
Number of days until the peak forecast arrives at an observation point	Weight in days where 1 =10, 2=9, … 10 or greater = 1

6. Flood Severity Calculation including HWRF and GFMS and GloFas

Python File: MoM+HWRF_severity.ipynb at https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/MOM_and_HWRF_Integration_and_Flood_Severity

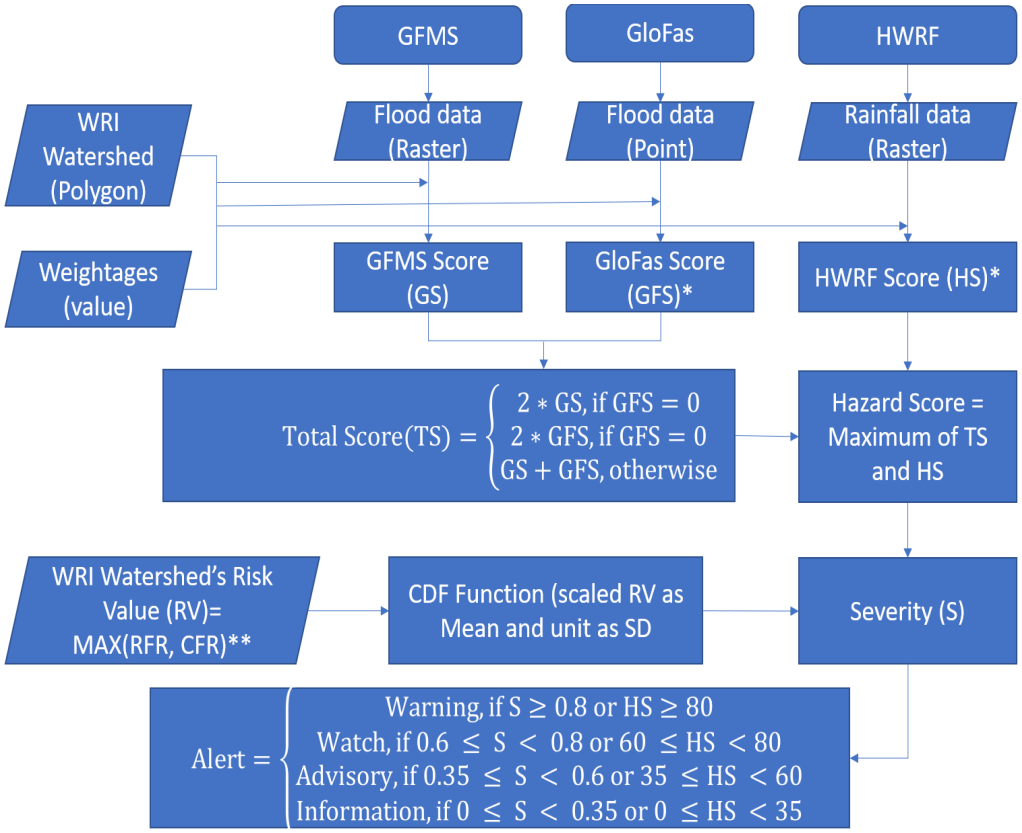
i. Repeat all the steps from Flood Severity Calculation from (i) to (vii) and (xi). The hazard Score is replace by the name **MOM_Score**.
ii. Read the CSV files from HWRF output (step 4) as ***HWRF_Table.csv***
iii. Assign score and to each rainfall attribute based on the weightage provided in HRRF_***Weightage.csv*** and add the score together and name the field as "**HWRFTot_Score**"
iv. Join this HWRF_table with score to the csv file from step i.
v. Compare the **MOM_Score** and **HWRFTot_Score** and assign the field "**Hazard_Score**" with maximum among them.
vi. If the **HWRFTot_Score > MOM_Score** assign the field "**Flag**"=1.
vii. Calculate **Severity** using a Cumulative Distribution Function (CDF) such that the Hazard_Score are fitted with a logarithmic value of scaled RFR score or scaled CFR score whichever maximum as mean and unit standard deviation
viii. Use severity to derive **Alert** message as: "Information" when 0% < Severity < 35%; "Advisory" when 35% ≤ Severity < 60%; "Watch" when 60% ≤ Severity < 80% and; "Warning" when Severity ≥ 80%.
ix. Write the output ***Final_Attributes_yyyymmddhhHWRFUpdated.csv*** and ***Attributes_clean_yyyymmddhhHWRFUpdated.csv*** file.

HWRF_Weightage.csv

This is the csv file provided with limit criteria/ initial weightage for attribute from HWRF and, minimum and maximum score assigned to calculated the h **HWRFTot_Score** and is uploaded at https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/MOM_and_HWRF_Integration_and_Flood_Severity/HWRF_Weightage.csv. The table have following fieldname: { HWRF_Area_wt, HWRF_Area_Min_pt, HWRF_Area_max_pt, HWRF_percArea_wt, HWRF_percArea_Min_pt, HWRF_percArea_max_pt, HWRF_MeanRain_minwt, HWRF_MeanRain_increment, HWRF_MeanRain_Minpt, HWRF_MeanRain_Maxpt, HWRF_MaxRain_minwt, HWRF_MaxRain_increment, HWRF_MaxRain_Minpt, HWRF_MaxRain_Maxpt }. The values for these field name is provided based on the Weighting criteria below.

Product Description	Weighting and Score
The total area of watershed impacted by the rain (Rain_TotalArea_km)	1 pt for every 1000 sqkm, Max=10
Percentage of watershed area impacted by rain (perc_Area)	1 pt for 5% are aflooded, Max=10
The mean rainfall in a watershed, inches (MeanRain)	1pt for 2 in rain and add 1 pt for every 0.5 inch rain increment, Max=10 (e.g. 4.5in =6)
The maximum rainfall in a watershed, inches (MaxRain)	1pt for 4 in rain and add 1 pt for every 1 inch rain increment, Max=10 (e.g. 4.5in =1.5)

The GFMS GloFAS and HWRF Integration approach is also shown in the flowchart below.



7. **DFO Data download and processing**

The python programming for the download of global flood observed data and integration of it to the WRI Watershed is uploaded in GitHub and can be found here: https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/DFO_Processing.

Output file: 1. **DFO_*yyyymmdd*.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/DFO/DFO_summary

2. **DFO_*yyyymmdd*.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/DFO/DFO_image

The csv file contains the attributes with field name:

pfaf_id: Global watershed ID

1-Day_TotalArea_km2: Area of watershed in square kilometer unit that is flooded based on one day observed data

1-Day_perc_Area: Percentage area of the watershed that gets flooded based on one day observed data

1-Day_CS_TotalArea_km2: Area of watershed in square kilometer unit that is flooded based on one day observed data with cloud shadow masking applied

1-Day_CS_perc_Area: Percentage area of the watershed that gets flooded based on one day observed data with cloud shadow masking applied

2-Day_TotalArea_km2: Area of watershed in square kilometer unit that is flooded based on two day observed data and cloud shadow masking is also applied

2-Day_perc_Area: Percentage area of the watershed that gets flooded based on two day observed data and cloud shadow masking is also applied

3-Day_TotalArea_km2: Area of watershed in square kilometer unit that is flooded based on three day observed data and cloud shadow masking is also applied

3-Day_perc_Area: Percentage area of the watershed that gets flooded based on three day observed data and cloud shadow masking is also applied

8. **Flood Severity Calculation including MOM output (HWRF, GFMS, and GloFas) and DFO**

Python File: MoM+DFO.ipynb at:

https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/DFO_Integration_with_MOM

i. Read ***Final_Attributes_yyyymmddhhHWRFUpdated.csv*** **as MOM File** and **DFO_*yyyymmdd*.csv as DFO File**.
ii. On the DFO file assign score to each DFO attribute (excluding 1-Day_TotalArea_km2 and 1-Day_perc_Area) based on the weightage provided in **DFO_*Weightage.csv*** and add the score together and name the field as "**DFOTotal_Score**"
iii. Join this DFO file with score to the MOM file via pfaf_id.
iv. Compare the **DFOTotal_Score** and **Hazard_Score** and update the field "**Hazard_Score**" with maximum among them.
v. If the **DFOTotal_Score > Hazard_Score** update the field "**Flag**"=2.
vi. Calculate **Severity** using a Cumulative Distribution Function (CDF) such that the Hazard_Score are fitted with a logarithmic value of scaled RFR score or scaled CFR score whichever maximum as mean and unit standard deviation
vii. Use severity to derive **Alert** message as: "Information" when 0% < Severity < 35%; "Advisory" when 35% ≤ Severity < 60%; "Watch" when 60% ≤ Severity < 80% and; "Warning" when Severity ≥ 80%.
viii. Write the output ***Final_Attributes_yyyymmddhhMOM+DFOUpdated.csv*** and ***Attributes_clean_yyyymmddhhMOM+DFOUpdated.csv*** file.

Weightage_DFO.csv

This is the csv file provided with limit criteria/ initial weightage for attribute from DFO and, minimum and maximum score assigned to calculate the **DFOTotal_Score** and is uploaded at:

https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/DFO_Integration_with_MOM/Weightage_DFO.csv.

The table have following fieldname: { DFO_Area_wt, DFO_Area_Min_pt, DFO_Area_max_pt, DFO_percArea_wt, DFO_percArea_Minpt, DFO_percArea_Maxpt, one_Day_Multiplier, two_Day_Multiplier, three_Day_Multiplier}. The values for these field name is provided based on the Weighting criteria below.

Product Description	Weighting and Score
1-Day_CS_TotalArea_km2	1 pt for every 100 sqkm, Max=10
1-Day_CS_perc_Area	1 pt for 1% area flooded, Max=10
2-Day_TotalArea_km2	1.5 pt for every 100 sqkm, Max=15
2-Day_perc_Area	1.5 pt for every 1% area, Max=15
3-Day_TotalArea_km2	2.5 pt for every 100 sqkm, Max=25
3-Day_perc_Area	2.5 pt for every 1% area, Max=25

9. **VIIRS Data download and processing**
   The python programming for the download of global flood observed data and integration of it to the WRI Watershed is uploaded in GitHub and can be found here: https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/VIIRS_Processing.

Output file: 1. **VIIRS_Flood_*yyyymmdd*.csv at** https://js-169-84.jetstream-cloud.org/ModelofModels/VIIRS/VIIRS_summary

2. **VIIRS_1day_composite*yyyymmdd_flood*.tiff at** https://js-169-84.jetstream-cloud.org/ModelofModels/VIIRS/VIIRS_image

3. **VIIRS_5day_composite*yyyymmdd_flood*.tiff at** https://js-169-84.jetstream-cloud.org/ModelofModels/VIIRS/VIIRS_image

The csv file contains the attributes with field name:

pfaf_id: Global watershed ID

onedayFlood_Area_km: Area of watershed in square kilometer unit that is flooded based on one day observed data

onedayperc_Area: Percentage area of the watershed that gets flooded based on one day observed data

fivedayFlood_Area_km: Area of watershed in square kilometer unit that is flooded based on five day composite observed data with cloud shadow masking applied

fivedayperc_Area: Percentage area of the watershed that gets flooded based on five day composite observed data with cloud shadow masking applied

10. Flood Severity Calculation including MOM output (HWRF, GFMS, and GloFas), DFO and VIIRS

Python File: MoM+VIIRS.ipynb at:

https://github.com/Global-Flood-Assessment/ModelOfModels/blob/master/VIIRS+MOM

i. Read ***Final_Attributes_yyyymmddhh_MOM+DFOUpdated.csv*** **as MOM+DFO File** and **VIIRS_Flood*_yyyymmdd*.csv as VIIRS File**.
ii. On the VIIRS file assign score to each VIIRS attribute based on the weightage provided in **VIIRS_*Weightage.csv*** and add the score together and name the field as "**VIIRSTotal_Score**"
iii. Join thisVIIRS file with score to the MOM+DFO file via pfaf_id.
iv. Compare the **VIIRSTotal_Score** and **Hazard_Score** and update the field "**Hazard_Score**" with maximum among them.
v. If the **VIIRSTotal_Score > Hazard_Score** update the field "**Flag**"=3.
vi. Calculate **Severity** using a Cumulative Distribution Function (CDF) such that the Hazard_Score are fitted with a logarithmic value of scaled RFR score or scaled CFR score whichever maximum as mean and unit standard deviation
vii. Use severity to derive **Alert** message as: "Information" when 0% < Severity < 35%; "Advisory" when 35% ≤ Severity < 60%; "Watch" when 60% ≤ Severity < 80% and; "Warning" when Severity ≥ 80%.
viii. Write the output ***Final_Attributes_yyyymmddhhMOM+DFO+VIIRSUpdated.csv*** and ***Attributes_clean_yyyymmddhhMOM+DFO+VIIRSUpdated.csv*** file.

VIIRS_Weightage.csv

This is the csv file provided with limit criteria/ initial weightage for attribute from VIIRS Flood and, minimum and maximum score assigned to calculate the **VIIRSTotal_Score** and is uploaded at:

https://github.com/Global-Flood-Assessment/ModelOfModels/tree/master/VIIRS%2BMOM/VIIRS_Weightages.csv.

The table have following fieldname: { VIIRS_Area_wt, VIIRS_Area_Min_pt, VIIRS_Area_max_pt, VIIRS_percArea_wt, VIIRS_percArea_Minpt, VIIRS_percArea_Maxpt, one_Day_Multiplier, five_Day_Multiplier}. The values for these field names are provided based on the Weighting criteria below.

Product Description	Weighting and Score
onedayFlood_Area_km	1.5 pt for every 100 sqkm, Max=15
onedayperc_Area	1.5 pt for 1% area flooded, Max=15
fivedayFlood_Area_km	3.5 pt for every 100 sqkm, Max=35
fivedayperc_Area	3.5 pt for every 1% area, Max=35

The summary of field name and description that are present in the "***Final_Attributes_yyyymmddhhMOM+DFO+VIIRSUpdated.csv"***

Field Name	Description
pfaf_id	Global Watershed ID
FID	ID generated by GIS
area_km2	Area of the watershed in sqkm
ISO	Three letter country code
Admin0	Name of the country where the centroid of the watershed lies
Admin1	Name of the major administration boundary of the country
rfr_score	Riverine Flood risk of the watershed
cfr_score	Coastal Flood risk of the watershed
Resilience_Index	Lack of Resilience Index of the country from PDC
NormalizedLackofResilience	Normalized value of Resilience Index
Alert_level	Alert level of the observing points from GloFas
Days_until_peak	Days until peak of the flood reach to the observing point from GloFas
GloFAS_2yr	Probability that flood of return period 2 year will reach from GloFas
GloFAS_5yr	Probability that flood of return period 5 year will reach from GloFas
GloFAS_20yr	Probability that flood of return period 20 year will reach from GloFas
Alert_Score	Score for the Alert_level from GloFas
PeakArrivalScore	Score for the Days_until_peak from GloFas
TwoYScore	Score for the GloFAS_2yr flood probability
FiveYScore	Score for the GloFAS_5yr flood probability
TwtyYScore	Score for the GloFAS_20yr flood probability
Sum_Score_x	Summation of all scores from the GloFAs*
GFMS_TotalArea_km	Area of flooded watershed in square kilometer unit due to flood depth above threshold from GFMS
GFMS_perc_Area	Percentage area of the flooded watershed due to flood depth above threshold from GFMS
GFMS_MeanDepth	Mean Depth of flood above threshold from GFMS within the watershed
GFMS_MaxDepth	Max Depth of flood above threshold from GFMS within the watershed
GFMS_Duration	Cumulative Duration in hours if watershed (more than 100 sqkm) is flooded from flood above threshold from GFMS
GFMS_area_score	Score for the GFMS_TotalArea_km
GFMS_perc_area_score	Score for the GFMS_perc_Area
MeanD_Score	Score for the GFMS_MeanDepth
MaxD_Score	Score for the GFMS_MaxDepth
Duration_Score	Score for the GFMS_Duration

Sum_Score_y	Summation of all the scores from GFMS*
MOM_Score	Summation of Sum_Score_x and Sum_Score_y
Hazard_Score	Maximum of MOM_Score, HWRFTot_Score, DFOTotal_Score or VIIRSTotal_Score
Rain_TotalArea_km	Area of the watershed impacted by the rainfall from HWRF
perc_Area	Percantage of the area of the watershed impacted by the rainfall from HWRF
MeanRain	Mean Rainfall within the watershed in inches
MaxRain	Maximum Rainfall within the watershed in inches
HWRF_area_score	Score for the Rain_TotalArea_km from HWRF
HWRF_percarea_score	Score for the perc_Area from HWRF
MeanRain_Score	Score for the MeanRain from HWRF
MaxRain_Score	Score for the MaxRain from HWRF
HWRFTot_Score	Summation of all the scores from HWRF
Flag	Tag (1, 2 and 3) for the updated hazard score due to HWRF, DFO and VIIRS respectively
1-Day_TotalArea_km2	Area of watershed in square kilometer unit that is flooded based on one day observed data
1-Day_perc_Area	Percentage area of watershed that is flooded based on one day observed data from DFO
1-Day_CS_TotalArea_km2	Area of watershed in square kilometer unit that is flooded based on one day observed data with cloud shadow masking applied from DFO
1-Day_CS_perc_Area	Percentage area of watershed that is flooded based on one day observed data with cloud shadow masking applied from DFO
2-Day_TotalArea_km2	Area of watershed in square kilometer unit that is flooded based on two day observed data and cloud shadow masking is applied from DFO
2-Day_perc_Area	Percentage area of watershed that is flooded based on two day observed data and cloud shadow masking is applied from DFO
3-Day_TotalArea_km2	Area of watershed in square kilometer unit that is flooded based on three day observed data and cloud shadow masking is applied from DFO
3-Day_perc_Area	Percentage area of watershed that is flooded based on two day observed data and cloud shadow masking is applied from DFO
DFO_area_1day_score	Score for 1-Day_CS_TotalArea_km2 from DFO
DFO_percarea_1day_score	Score for 1-Day_CS_perc_Area from DFO
DFO_area_2day_score	Score for 2-Day_TotalArea_km2 from DFO
DFO_percarea_2day_score	Score for 2-Day_perc Area_from DFO
DFO_area_3day_score	Score for 3-Day_TotalArea_km2 from DFO
DFO_percarea_3day_score	Score for 3-Day_perc Area_from DFO
DFOTotal_Score	Summation of the scores from DFO

onedayFlood_Area_km	Area of watershed in square kilometer unit that is flooded based on one day observed data of VIIRS
onedayperc_Area	Percentage area of watershed that is flooded based on one day observed data of VIIRS
fivedayFlood_Area_km	Area of watershed in square kilometer unit that is flooded based on five day composite observed data of VIIRS
fivedayperc_Area	Percentage area of watershed that is flooded based on five day composite observed data of VIIRS
VIIRS_area_1day_score	Score for onedayFlood_Area_km from VIIRS
VIIRS_percarea_1day_score	Score for onedayperc_Area from VIIRS
VIIRS_area_5day_score	Score for fivedayFlood_Area_km from VIIRS
VIIRS_percarea_5day_score	Score for fivedayperc_Area from VIIRS
VIIRSTotal_Score	Summation of all the scores from VIIRS
Scaled_Riverine_Risk	Scaled rfr_score
Scaled_Coastal_Risk	Scaled cfr_score
Severity	Severity value of the watershed based on Hazard_Score, and maximum of Scaled_Riverine_Risk and Scaled_Coastal_Risk
Alert	Flood alert generated for the watershed based on the Severity

Github Repos:

MoM development at IU: https://github.com/Global-Flood-Assessment/ModelOfModels

MoM Production at PDC: https://github.com/Global-Flood-Assessment/MoMProduction

Notes:

In IU server: MoM runs with two different watershed shape files

- GloFAS, GFMS, GFO: wastershed_prj_latlon.shp – 2020-04-23
- HWRF, VIIRS: Watershed_pfaf_id.shp – 2021-02-18

In PDC server: MoM runs with Watershed_pfaf_id.shp for all the procedures

We are currently working on updating the IU server,
https://github.com/Global-Flood-Assessment/ModelOfModels/issues/23