

NWS Form E-5
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(PRES. BY NWS Instruction 10-924)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

HYDROLOGIC SERVICE AREA (HSA)
San Juan, Puerto Rico

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

REPORT FOR:
MONTH YEAR
December 2007

TO: Hydrologic Information Center, W/OS31
NOAA's National Weather Service
1325 East West Highway
Silver Spring, MD 20910-3283

SIGNATURE
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Service Hydrologist
DATE
01/24/2008

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

An X inside this box indicates that no flooding occurred within this hydrologic service area.

Summary: The San Juan ASOS reported 7.95 inches of rain for the month of December ... 3.38 inches more than the normal of 4.57 inches. The ASOS rainfall report at Truman Field in St. Thomas reported 3.02 inches of rain for the month of December ... 0.28 inches more than the normal of 2.74 inches.

For graphics of December rainfall for Puerto Rico:

http://www.srh.noaa.gov/alr/monthly/pr_2007_dec.htm

The big story for the month of December was Subtropical Storm Olga. The following is an excerpt from the synopsis of the event:

On December 10, 2007, a persistent area of low pressure just north St Thomas, U.S. Virgin Islands, rapidly developed into [Subtropical](#) storm Olga. Olga was the 10th tropical cyclone to develop during the month of December in roughly 150 years of records. Additionally, it is only the 4th December tropical storm on record to hit land. Due to the rapid intensification of this system in close proximity to major population centers, decision making was critical in the hours leading up to the event. In the 48-hour period in which Olga affected the island of Puerto Rico, [radar estimates showed over 15" inches of rain](#) had fallen across some of the higher elevations of the islands, while observations showed approximately 10" had fallen. [Generally, island-wide totals ranged from 4-8"](#). One death indirectly related to the storm's impact was blamed on a landslide caused by heavy rainfall, which occurred at Barrio Dajaos, along Highway 167 from Bayamon to Naranjito. Additionally, several rivers reached "major flood stage" through densely populated areas. Subtropical Storm Olga eventually intensified into Tropical Storm Olga as it hit the Dominican Republic one day later causing 33 deaths, displacing 61,000 people, and causing several millions of dollars of major flood damage. (Here's a picture of the water pouring over the spillway at [Lago Dos Bocas](#) near Utuado, Puerto Rico).

To read the detailed write-up of Subtropical Storm Olga and its impacts ... follow the following link: <http://www.srh.noaa.gov/sju/OlgaWeb/SubtropicalStormOlgaPaper.php>

In addition to landslides and the widespread small stream and urban flooding, approximately 30 USGS gaged locations also exceeded their established flood stage. Ten of the National Weather Service's forecast points exceeded flood stage during this period with moderate to major flooding reported along the Rio Grande de Manati and the Rio Grande de Arecibo (non-forecast point). The fact that many locations were above flood stage for over 24 hours is unique for the island of Puerto Rico where flooding is usually intense but short lived. Some of the points that stayed above flood stage for a

relatively long period of time were in the Rio Grande de Manati, Rio Grande de Arecibo and the Rio De La Plata basins.

For some of the longer rivers, the flooding began at their downstream points which are along the north coast of Puerto Rico in response to the first wave of heavy rain. The flooding continued as the rainfall eventually moved inland creating tremendous runoff in the headwaters of these major rivers. The flow from the headwaters eventually moved downstream combining with the already high downstream flows ... further exacerbating the flooding along the north coast of the island of Puerto Rico. This phenomenon was also evident in the hydrograph curves where many locations showed a double peak during this event.

P.S. The accompanying E3 product depicts the highest recorded stage during the event ... double crests were not included.

Please note the following drought related graphic:
http://www.drought.unl.edu/dm/DM_state.htm?PR

Table 1 - Hydrologic Products Issued

Non-Routine Hydrologic Products Issued:	Approximate number of Products for the month
Hydrologic Outlooks (SJUESFSJU)	0
Flood Watches (SJUFFASJU)	7
Flood Warnings (SJUFLWSJU)	12
Flash Flood Warnings (SJUFFWSJU)	32
Flash Flood Statements (SJUFFSSJU)	15
Urban/Small Stream Flood Advisories (SJUFLSSJU)	25