

The Flash Flood Guidance System for Central America (CAFFG) and very short range forecasting

by Rosario Alfaro

INCIDENTS ATTENDED BY THE CNE

incidente	2002	2003	2004	2005	2006	2007	2008	2009
Inundaciones	10		2	399	59	1	37	5
Derrumbes/deslizamientos	11		7	12	18	5	6	30
Tornados/fuertes ráfagas de viento	1	6	18	14	8	4	83	
Actividad volcánica							4	1
	22	6	27	425	85	10	130	36

What is CAFFG?

- It is a tool to issue warnings and alerts due to flash floods.
- Provides FFG (Flash Flood Guidance) values and the FFT (Flash Flood Threat) index.

CAFFG

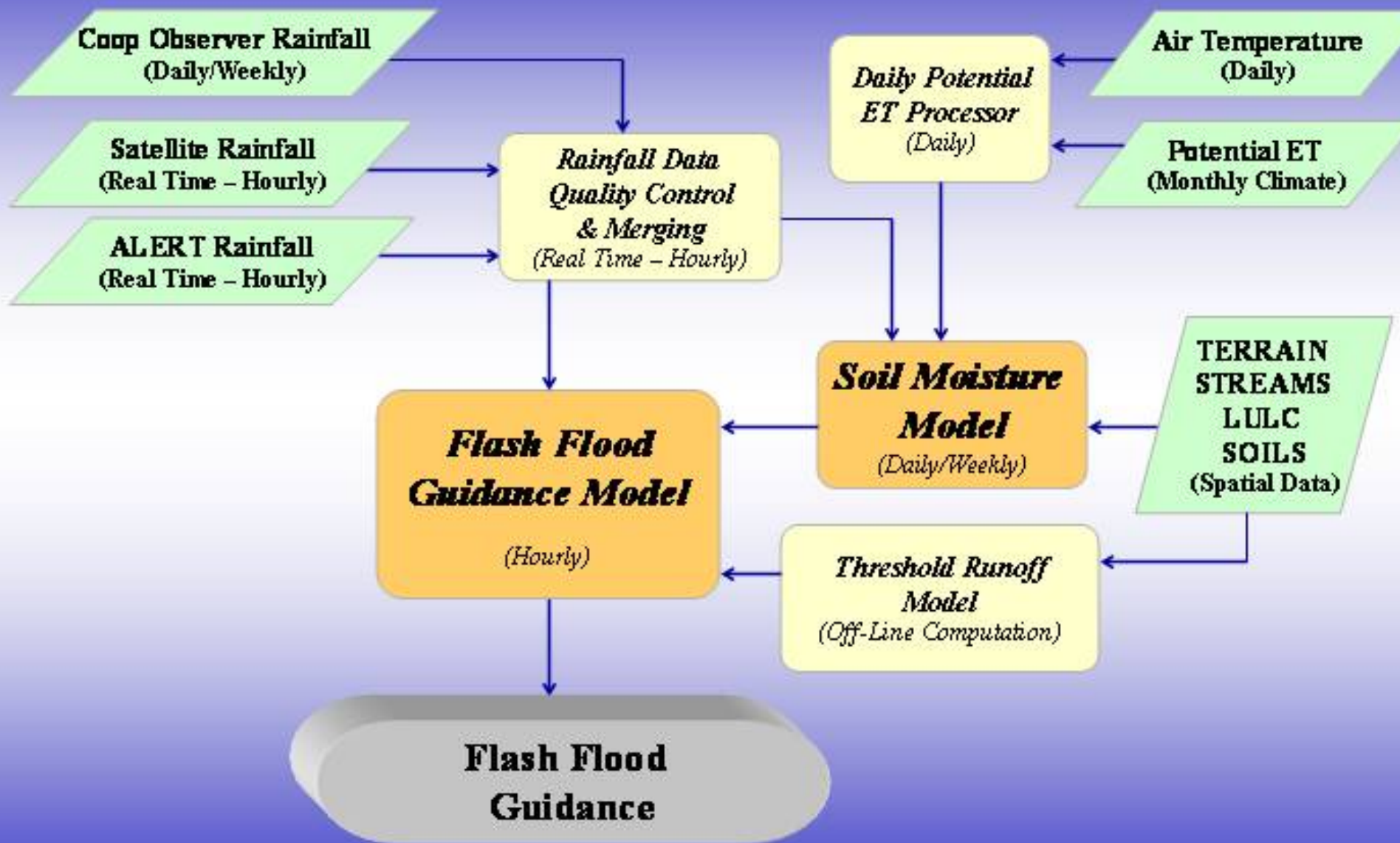
Running in real time in a server of the IMN

Due to: 1. sparse raingauge network
2. lack of any other precipitation data in real time

Input data: precipitation estimates of the HE algorithm (well for convective rain)

Human intervention for the system consists of short range quantitative precipitation forecasts with lead times between 1 and 6 hours.

CAFFFG Program Flow Chart



CAFFG products

- Available by internet to all meteorological and hydrological services of Central America in the following address:

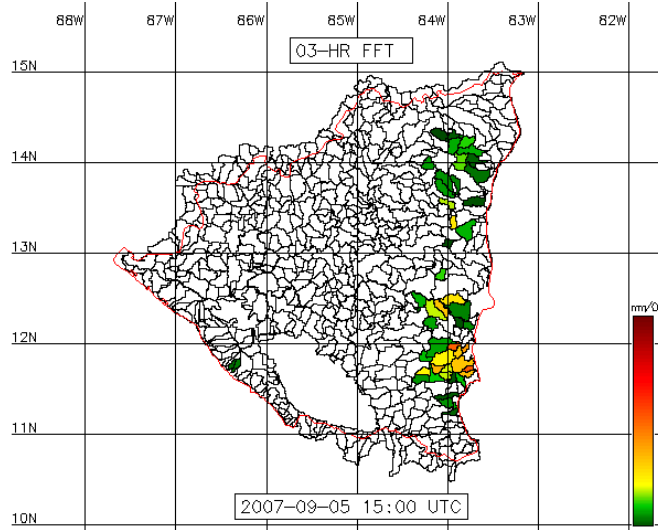
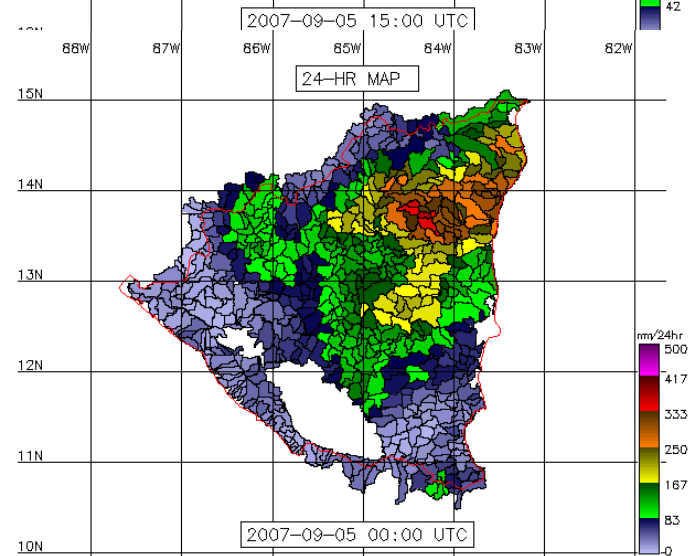
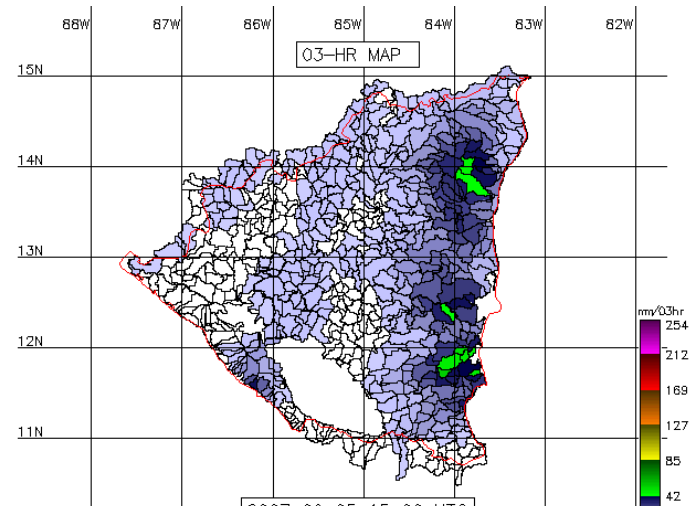
<https://cds.imn.ac.cr>

The access is restricted

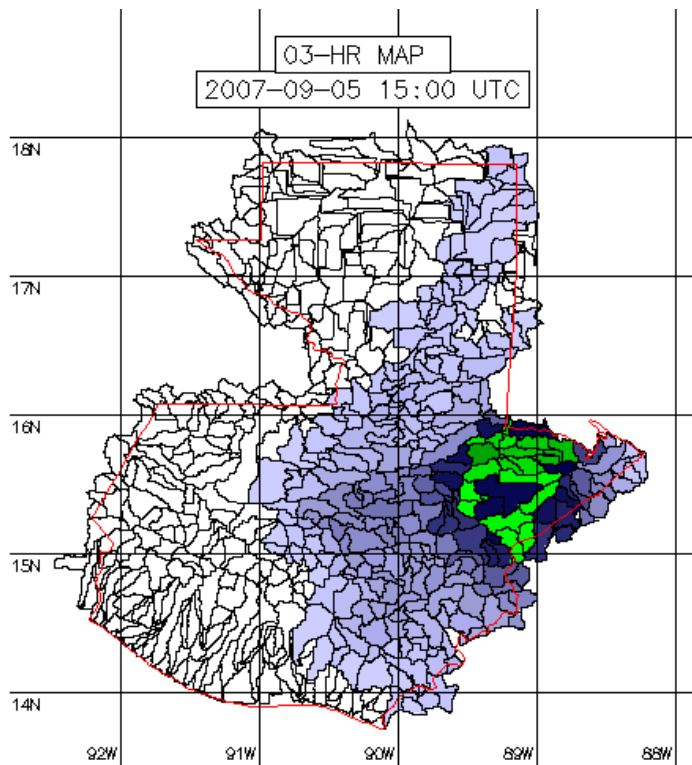


Hurricane 5 – Felix

31 Aug – 5 Set, 2007

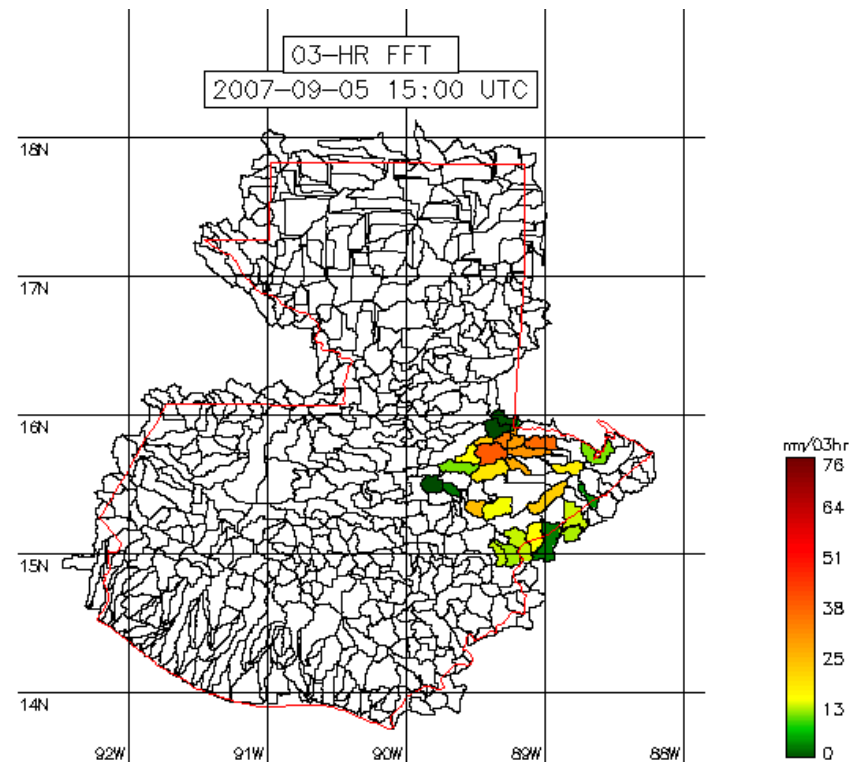


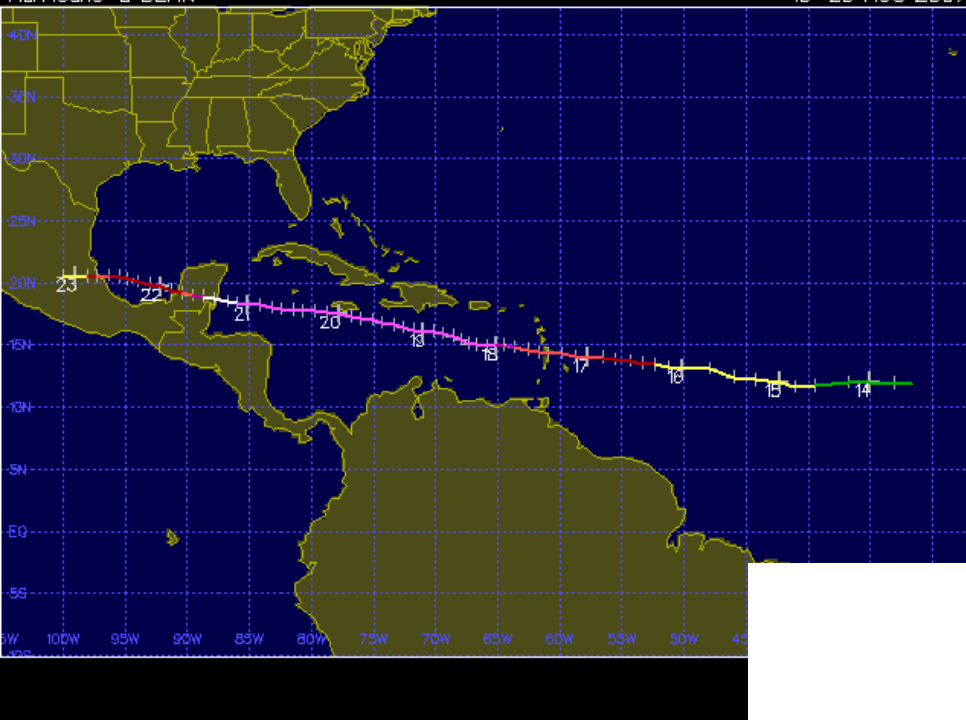
Products over Nicaragua



Hurricane 5 – Felix 31 Aug – 5 Set, 2007

Products over Guatemala

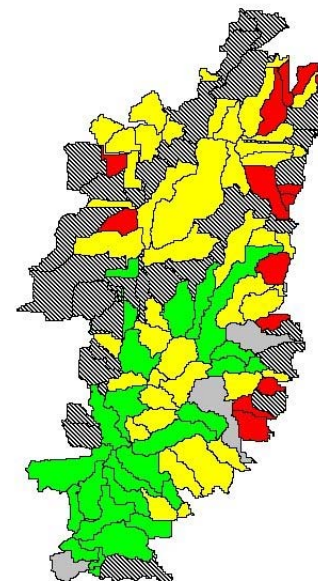




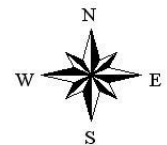
Hurricane 5- Dean 13-23 August, 2007

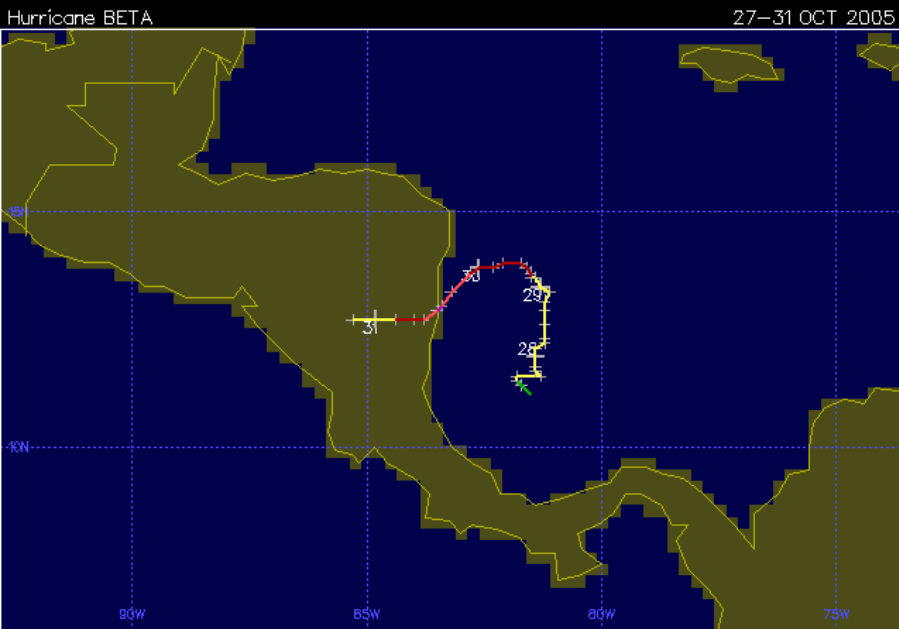
Riesgo de Inundación durante
la tarde del 20 de agosto, 2007

Risk of flooding on August 20th, 2007 over Belize



- Bz_basin_delineation_dd.shp
- No hay dato
 - No hay riesgo de inundación
 - Riesgo de inundación bajo
 - Posible inundación
 - Inundación o inundación inminente



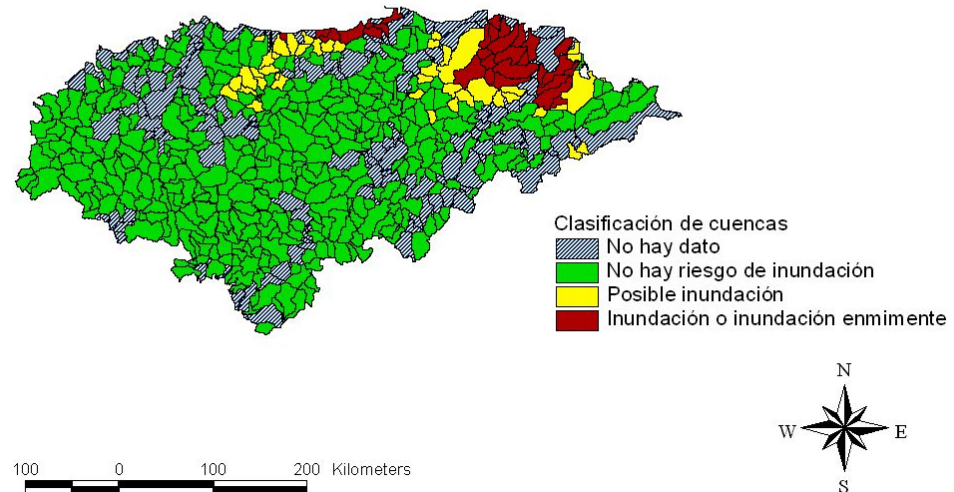


Hurricane 1 – Beta

27 – 31 August, 2005

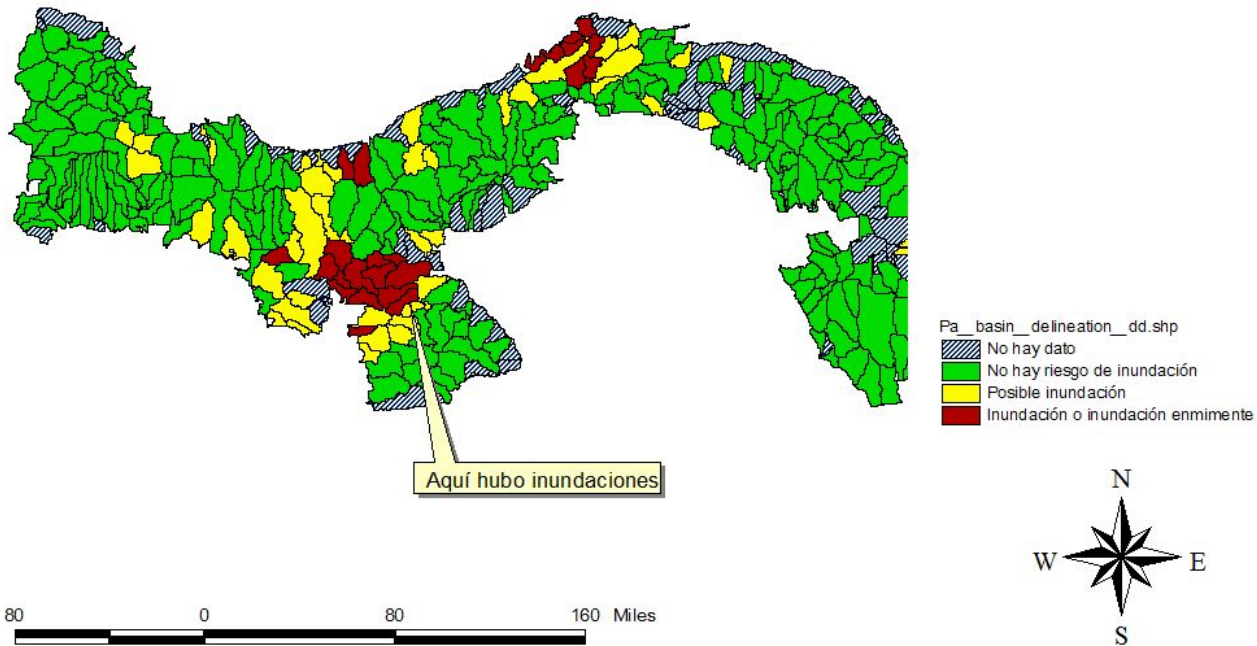
Risk of flooding on October 30th, 2005 over Honduras

Evaluación del riesgo de inundación para el 30/10/05, válido a las 18Z, usando la lluvia del satélite de las 12 a las 18Z

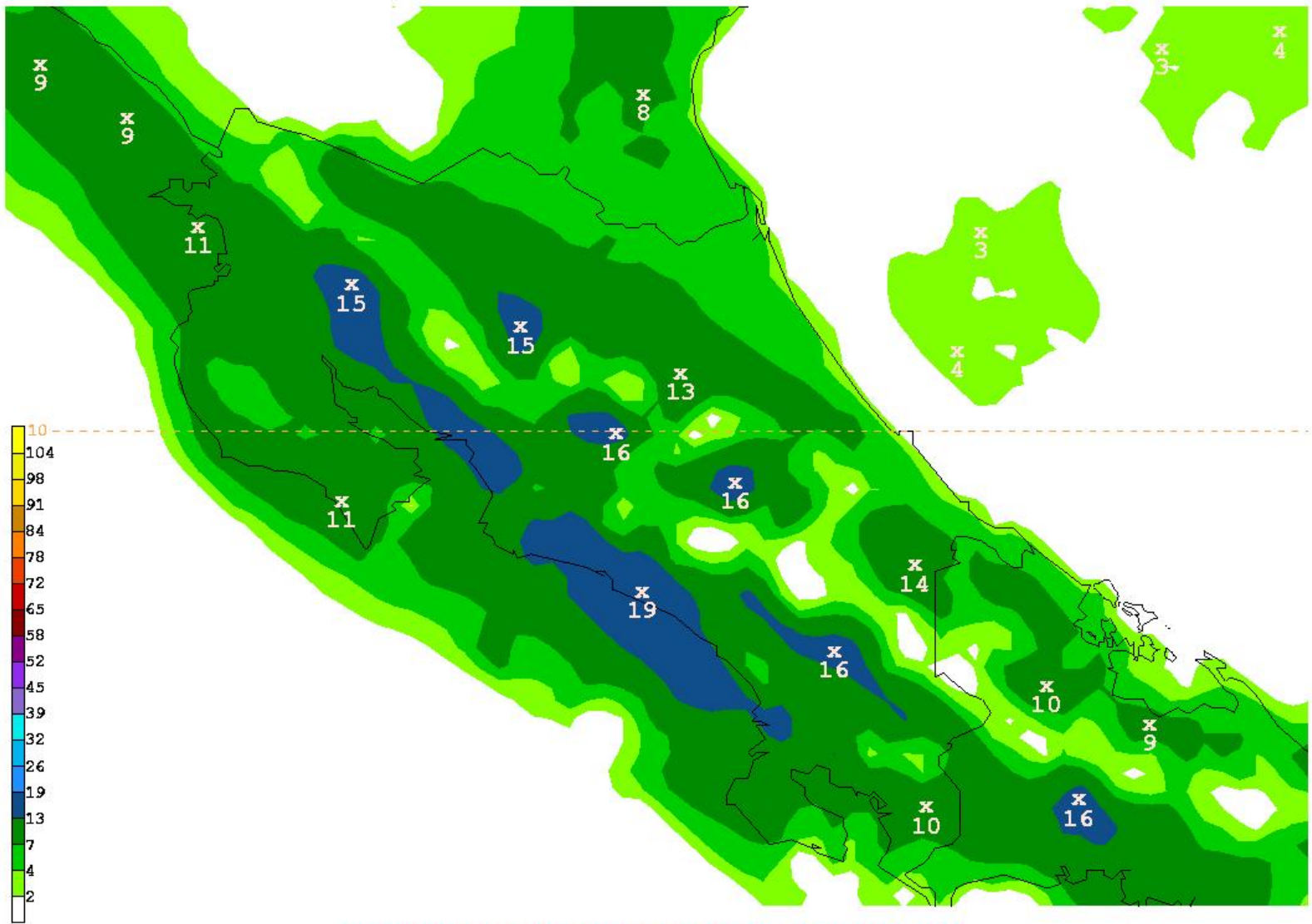


Flooding in Panama on Sept 2, 2008 at 21Z

FFT de 3h para el 020908 a las 21z



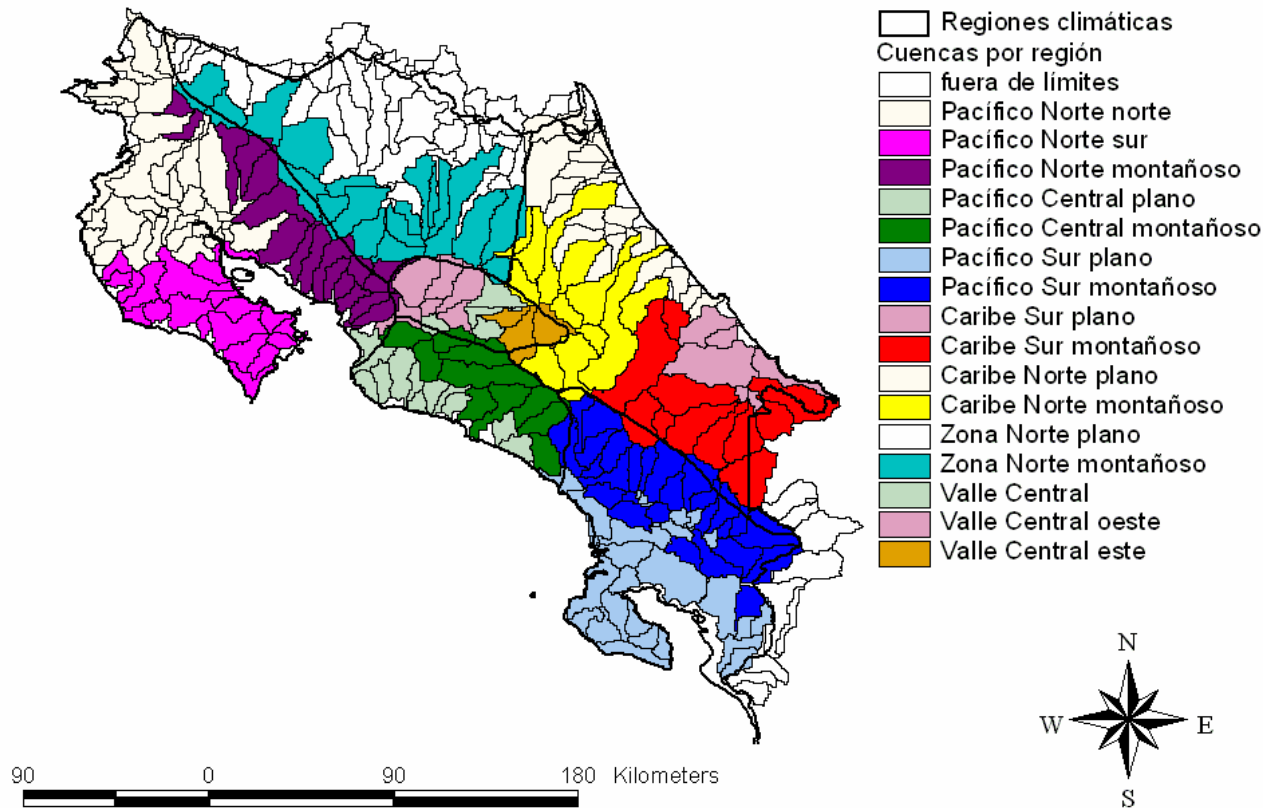
6h Precipitation Forecast by the Eta model for 100205 at 00Z



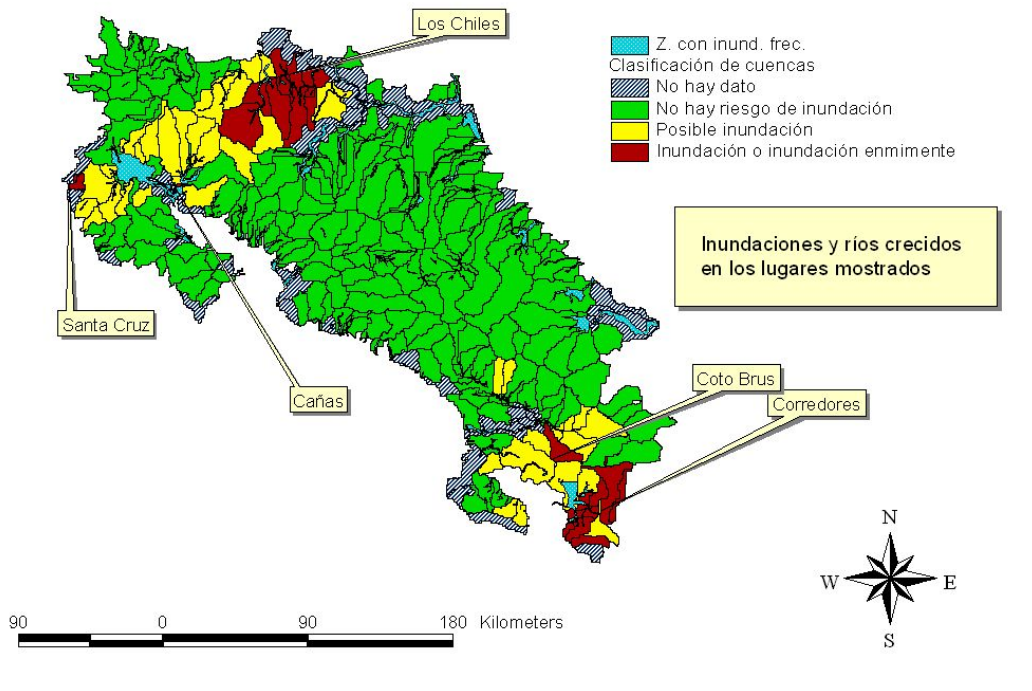
WSETA 051002/0000V048 PRECIPITACION ACUMULADA EN 6 HORAS (MM)

Basin classification used with the forecasts

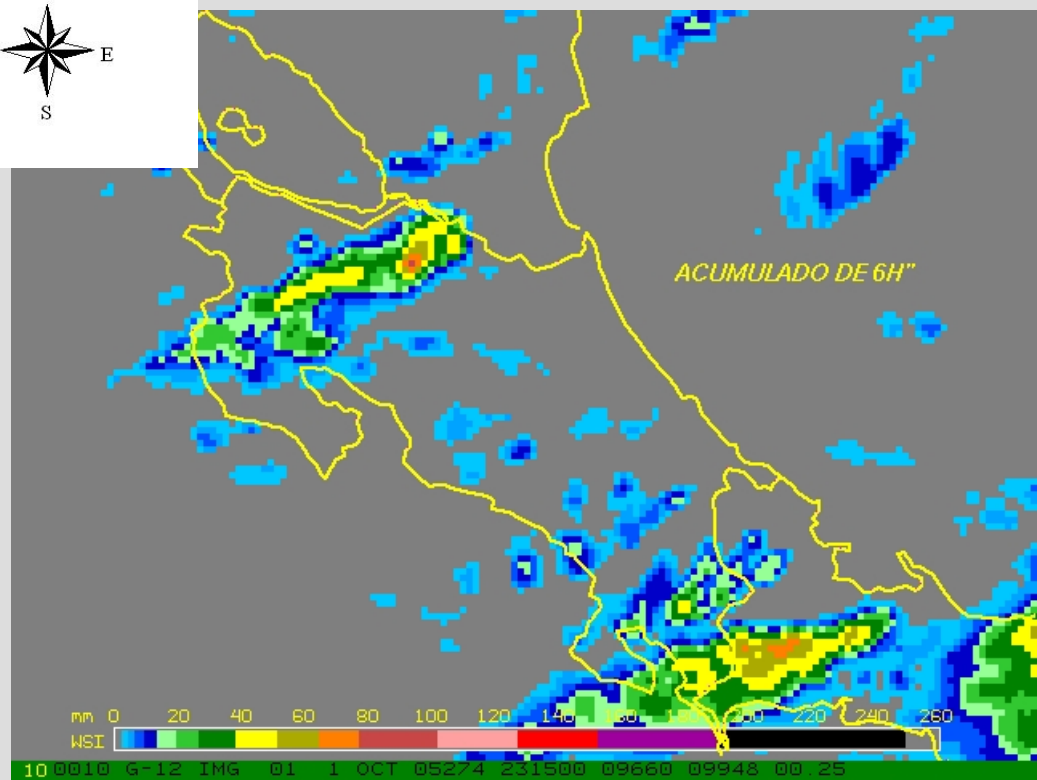
Clasificación de cuencas por región



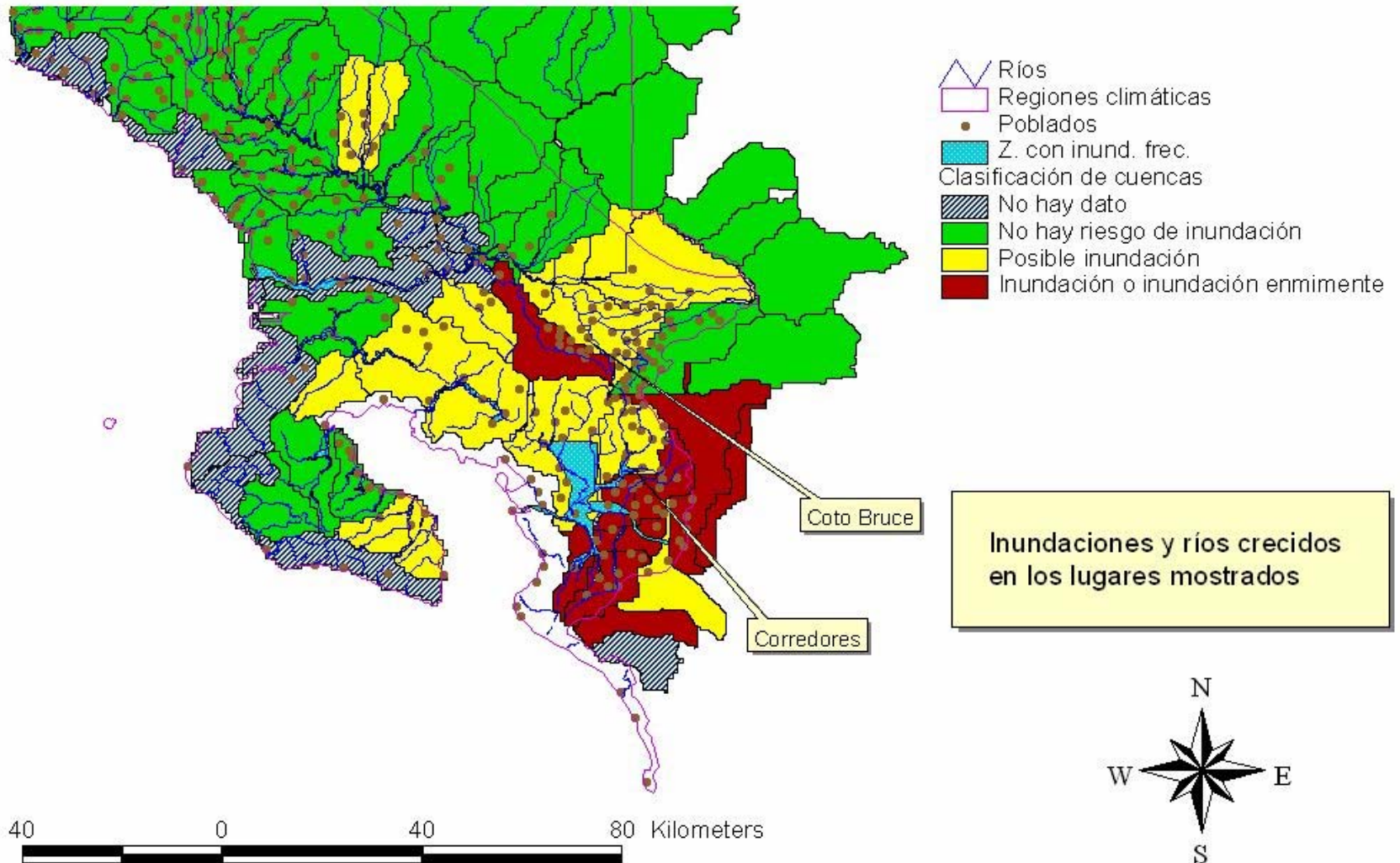
Evaluación del riesgo de inundación para el 021005 a las 00 Z,
usando las lluvias estimadas con los datos del satélite.



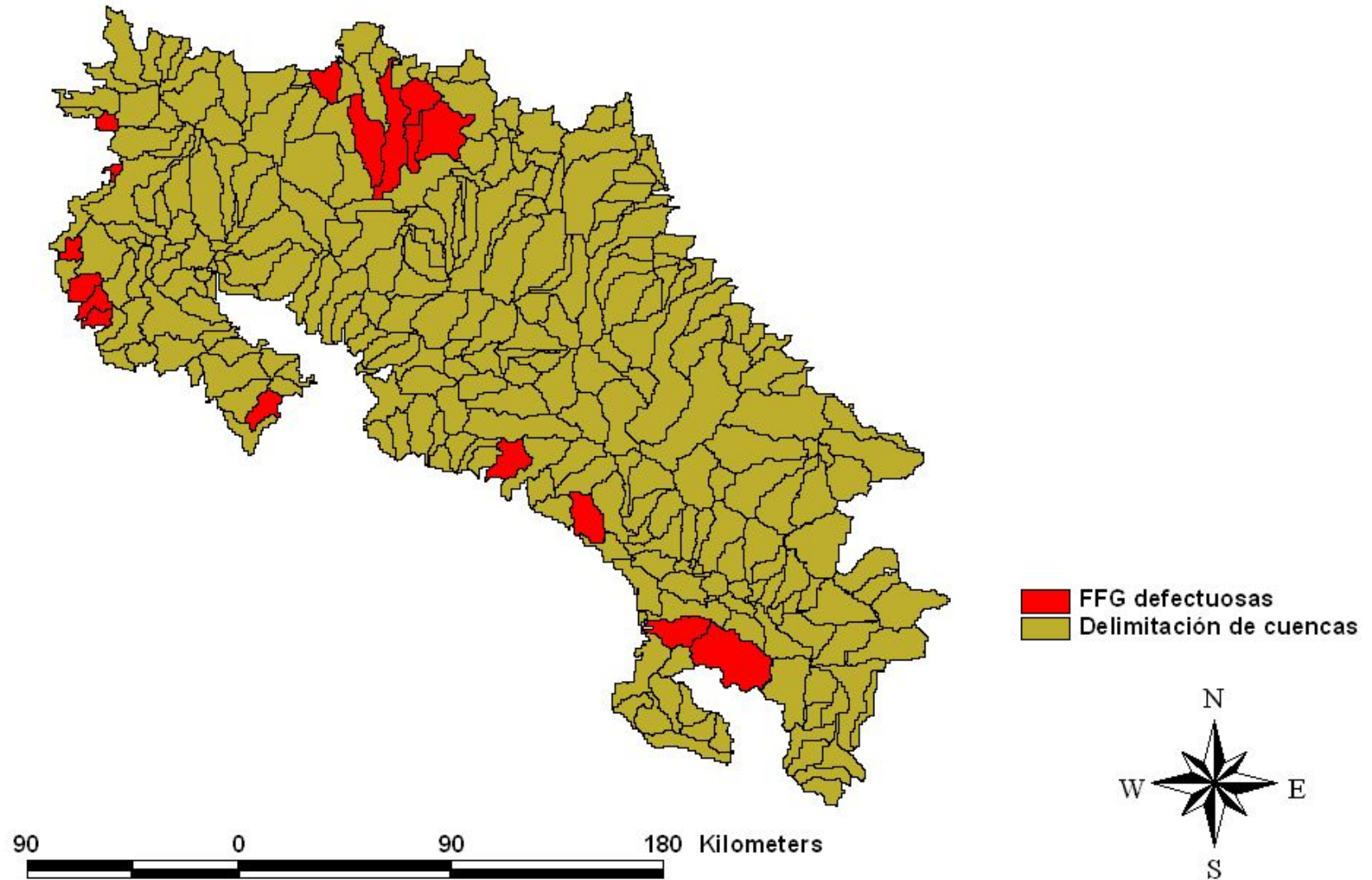
Evaluation using HE precipitation estimates for 021005 at 00 Z



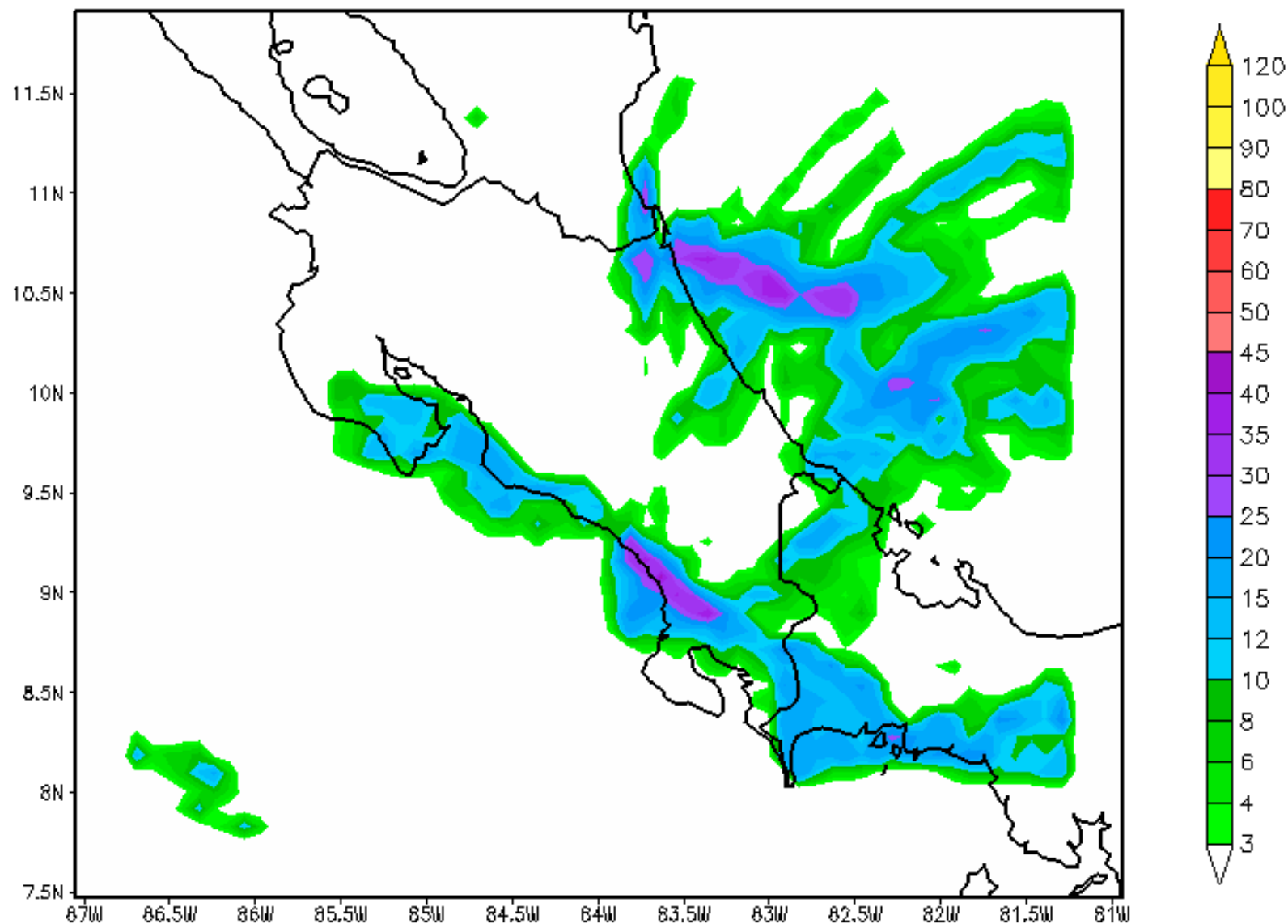
Evaluación del riesgo de inundación para el 021005 a las 00 Z, usando las lluvias estimadas con los datos del satélite.

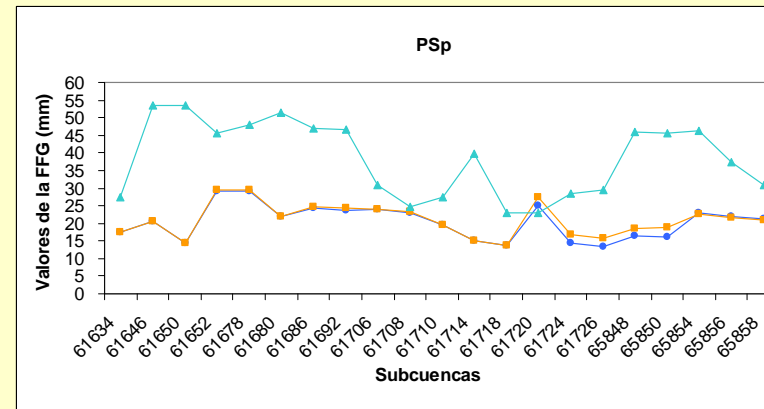
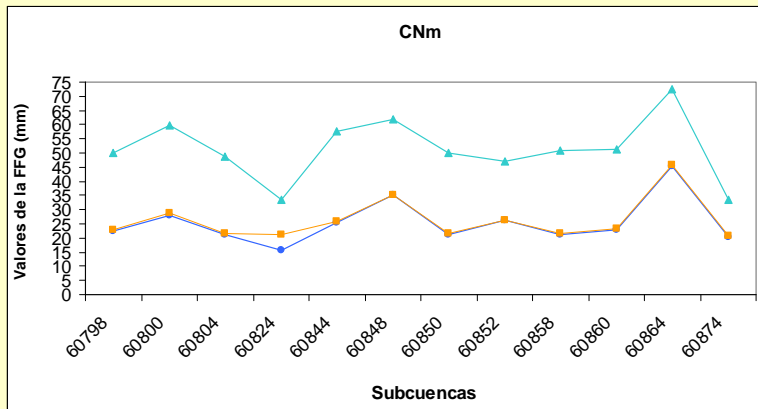
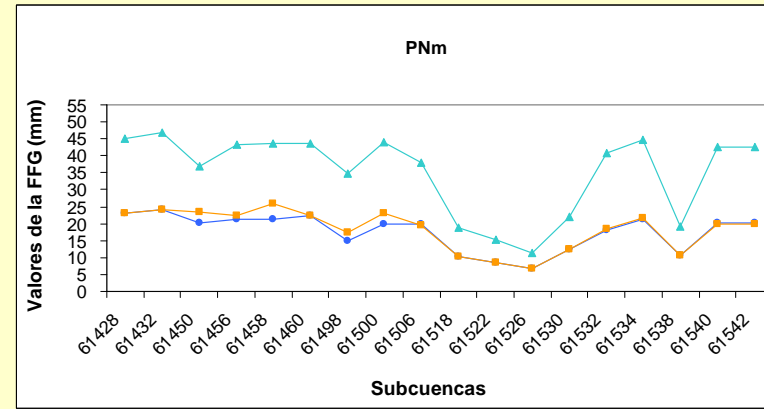
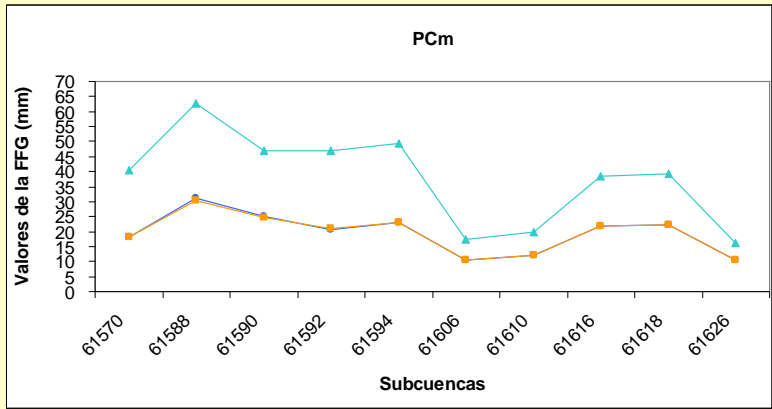
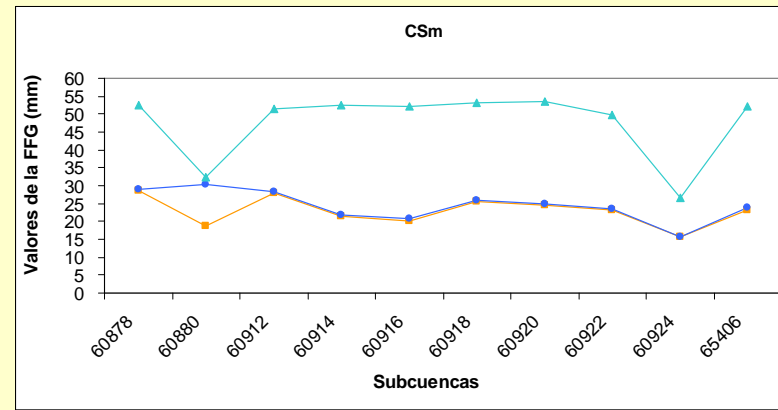
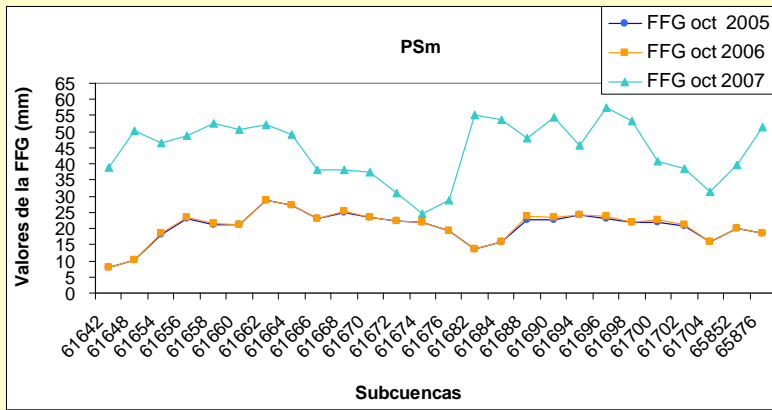


FFG defectuosas



IMN/WRF Precipitacion Acumulada durante 6 horas (mm) 2009-04-30 00Z





Changes in MAP, Soil Moisture and FFG values since 2005

Recent and future events

- Training for the Central American countries in Sept – Oct 2008
- Virtual training just beginning for more users in the area
- Checking results closely in each country

Needs

- More precipitation and hydrological measurements in real time
- Replace the old server to update the satellite reception system and the precipitation algorithm being used so far
- More active participation of the rest of Central American countries.

Fin End

Preguntas, questions,
comentarios, comments
sugerencias, suggestions?

**MUCHAS GRACIAS
THANK YOU**