

MEMORANDUM

TO: ESHMC

FROM: Stacey Taylor

DATE: November 18, 2009

SUBJECT: Precipitation data – New method vs. Old method

The memo was created in response to the ESHMC meeting on November 17, 2009. A question arose concerning the amount of change between the ESPAM 1 method of using precipitation data and the ESPAM2 method. Please refer to Bryce’s memo summarizing the meeting discussion.

Table 1 shows the change in precipitation from the GIS data formatted for the Recharge-tool method (OLD version) to the hand-calculated nearest-neighbor values (NEW version). In order to show the change, the column titled “Ratio” is the NEW precipitation value (sum of precipitation depths by model cell, across the active study area) divided by the OLD precipitation value. A few stress periods were randomly chosen to make this comparison. In addition, October 2006 was selected because its “old” value was based on preliminary PRISM data and its “new” value was based on final PRISM data. In the stress periods chosen, the ratio was very close to 1.

Table 1. Comparing the ESPAM 1.1 method to the ESPAM 2 method of assigning precipitation.

Stress Period	Actual Month-Year	OLD version - SUM of Stress Period (precip in ft)	NEW version - SUM of Stress Period (precip in ft)	Ratio (New/Old)
SP001	May-80	3080.7	3050.3	0.990
SP051	Jul-84	1701.1	1682.1	0.989
SP101	Oct-88	212.2	212.7	1.002
SP151	Nov-92	792.7	782.2	0.987
SP201	Jan-97	1803.3	1843.3	1.022
SP257	Sep-01	506.1	505.0	0.998
SP301	May-05	3064.6	3064.0	1.000
SP318	Oct-06	1225.0	1223.4	0.999
SP329	Sep-07	853.6	853.5	1.000

The following figure shows one area of the model where there is some change in spatial representation of precipitation based on the Recharge-tool method (Figure 1) and the hand-calculated method (Figure 2).

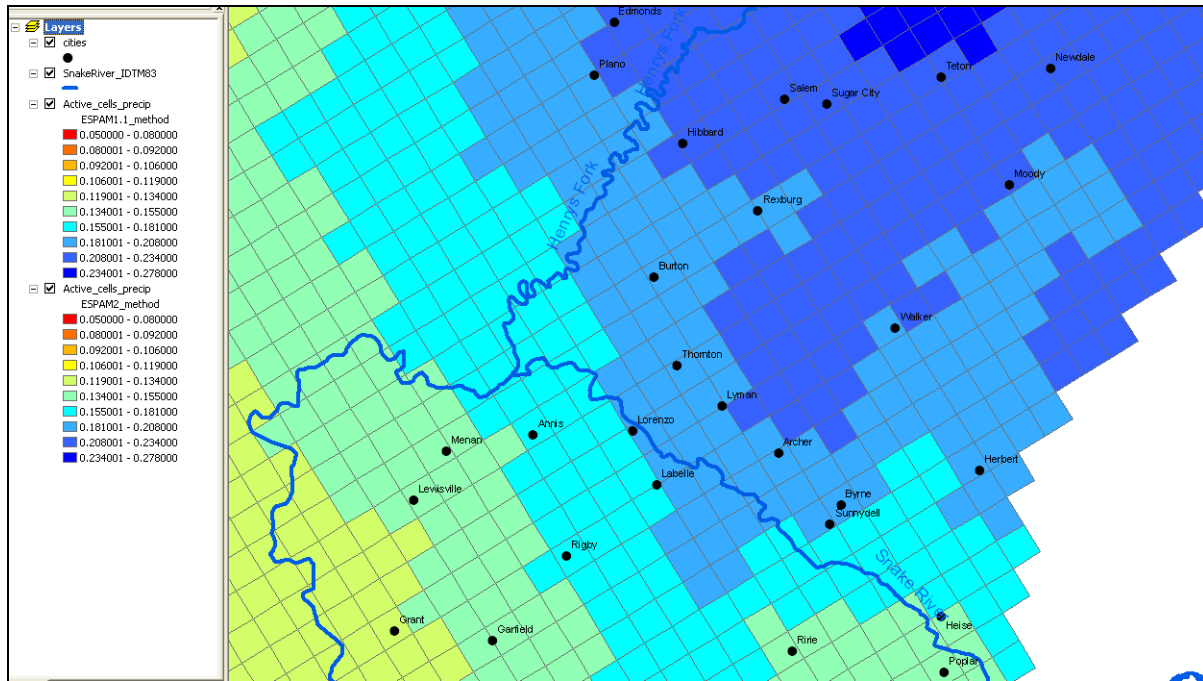


Figure 1. ESPAM1.1 method of assigning precipitation

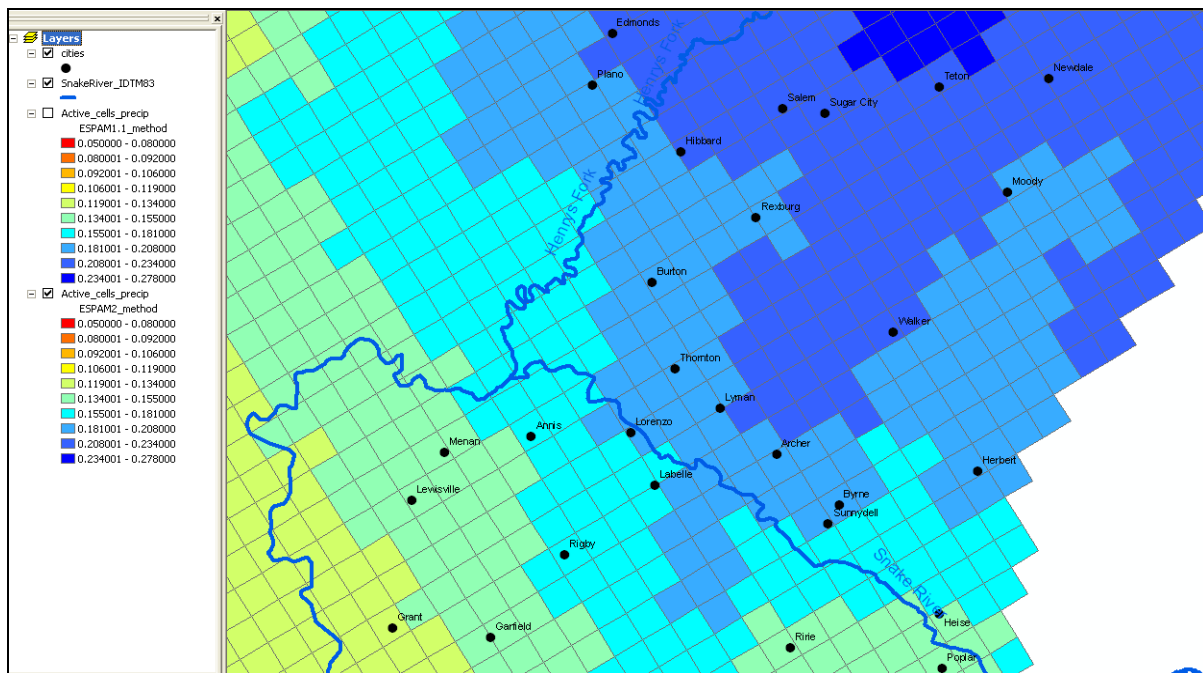


Figure 2. ESPAM 2 method of assigning precipitation