Exercise #1

Descriptive Statistics Computation from a Thematic Error Matrix

(an exercise to accompany the AmericaView Video Lessons on Assessing the Accuracy of Remotely Sensed Data)

This exercise accompanies the AmericaView Introductory Accuracy Assessment Lessons prepared by Dr. Russell G. Congalton, University of New Hampshire and Director of NewHampshireView.

Instructions: Given the error matrix as shown below, compute the following descriptive statistics:

1. Overall accuracy
2. Producer's accuracy
3. User's accuracy

These calculations can either be done manually or by typing the matrix into a program such as Excel and automating the process.

Once the answers have been computed, please compare with the answers on the following page and check your work.

Map \ Reference Data	F	W	D	O
F	61	3	4	6
W	5	51	5	3
D	0	8	55	8
O	7	7	3	59

Land Cover Categories

F = Forest

W = Water

D = Developed

O = Other

ANSWER

Map \ Reference Data	F	W	D	O	row total
F	61	3	4	6	74
W	5	51	5	3	64
D	0	8	55	8	71
O	7	7	3	59	76
column total	73	69	67	76	285

Land Cover Categories

F = Forest

W = Water

D = Developed

O = Other

OVERALL ACCURACY = (61+51+55+59)/285 = 226/285 = 79%

PRODUCER'S ACCURACY

F = 61/73 = 84%
W = 51/69 = 74%
D = 55/67 = 82%
O = 59/76 = 78%

USER'S ACCURACY

F = 61/74 = 82%
W = 51/64 = 80%
D = 55/71 = 77%
W = 59/76 = 78%