

Supplementary material

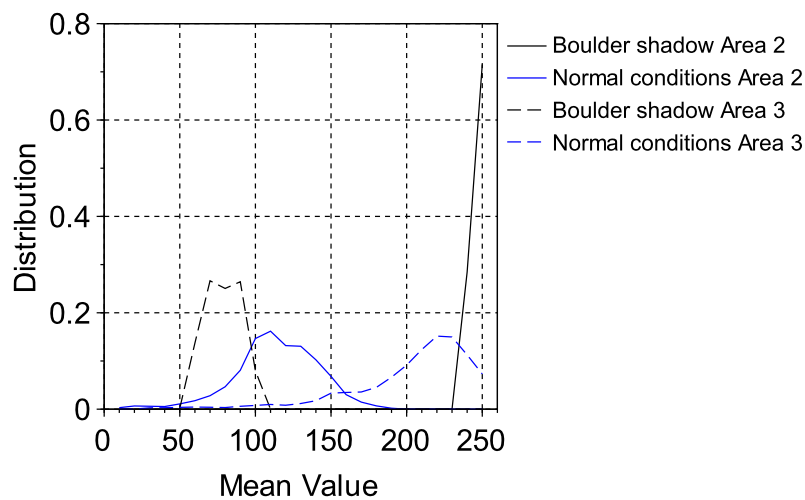


Figure S1. The boulder shadow threshold setting - Test 2. The x axis represents the mean value of the different areas of the picture. When the boulder shadow is on the picture, the mean value of Area 2 is higher than 230 and the mean value of Area 3 is less than 110 (black lines). To avoid a large overlap, we set the thresholds at 235 and 95 respectively.

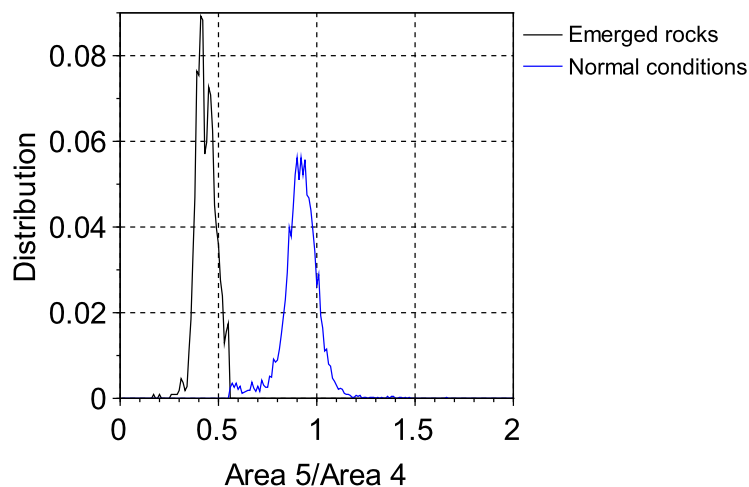


Figure S2. The exposed rocks threshold setting - Test 3. When the rocks are exposed in the stream, the ratio of mean value of Area 5 (black line) and Area 4 is less than 0.5. We set the threshold at 0.5.

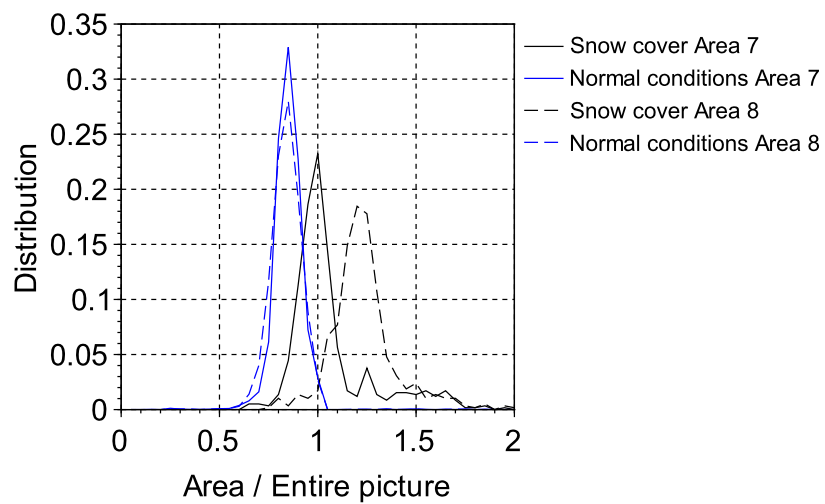


Figure S3. Light snow cover threshold setting - Test 4. When there is no snow cover on the picture, mean values of Area 7 and 8 (blue lines) are less than the mean value of the picture. We set the ratio threshold at 1.