

# Calculating Shade

These calculations refer to 1 field method – **TransectWithDensimeter**

**TransectName** (i.e. A0, B0,C0,D0,E0,F0,G0,H0,I0,J0, or K0)

**ChannelNum** (0) The shade method will be limited to ChannelNum = 0 (main channel)

**DirectionObserved** (Left Bank = LB or Right Bank = RB)

**DensimeterValue** ( a numerical code ranging from 1 to 17)

- 1) Determine **NumberOfDensimetersBank** - Count the number of points where Direction Observed = LB or RB. This will normally be 22.
- 2) Determine the **NumberOfDensimetersCenter** - Count the number of points where Direction Observed = CU or CR or CD, or CL. This will normally be 44.
- 3) Convert **DensimeterValues** (1-17) into **PercentShade** according to this table.

<b>DensimeterValues</b>	<b>PercentShade =(DensimeterValue/17) x 100</b>
0	0
1	5.9
2	11.8
3	17.6
4	23.5
5	29.4
6	35.3
7	41.2
8	47.1
9	52.9
10	58.8
11	64.7
12	70.6
13	76.5
14	82.4
15	88.2
16	94.1
17	100.0

4. Calculate **AveragePercentShadeBank**  
 Sum PercentShade where **DirectionObserved** = LB or RB  
 Divide by **NumberOfDensiometersBank**
5. Calculate **AveragePercentShadeCenter**  
 Sum PercentShade where **DirectionObserved** = CU, CR, CD, or CL  
 Divide by **NumberOfDensiometersCenter**

Metric	SourceFile	Operation
NumberOfDensiometersBank	TransectWithDensiometer	Count densiometer measurements on the left bank or right bank of the main channel.
AveragePercentShadeBank	TransectWithDensiometer	Convert densiometer values to percent shade and average all percent shade measures from banks readings in the main channel.
NumberOfDensiometersCenter	TransectWithDensiometer	Count densiometer measurements from the center (facing up, right, down, or left) of the main channel.
AveragePercentShadeCenter	TransectWithDensiometer	Convert densiometer values to percent shade and average all percent shade measures from mid-channel readings in the main channel.