

Based on Tables and Photographs

SPEAKER Charles Berenbrock: Manning's n can also be estimated by looking at tables and books. There are some authors who have published values of Manning's n for different conditions. One of the most famous one is the one done by Chow and that is also listed in your book. Chow gives a Manning's n for close conduit, for line channels, for excavated channels, natural streams and also for floodplains. You can go through his list in the table there and find out what it is and match your condition that you have out in the field to the condition in the book to estimate Manning's n .

Manning's n may be also estimated on photographs of channels or floodplains besides having known roughness or computed roughness. In this list is a list of journals or I should say of articles where these folks have computed the Manning's n and have photos of the reaches where they computed the Manning's n . The most famous is Barnes and it's in Water Supply Paper 1849. Especially in Barnes and also in these other photo books of Manning's n , the roughness was computed at the selected sites where a discharge was known, the surface water profiles was defined by the flood marks and also the channel reach was uniform.

In this first picture here, you can see how tranquil the river is and the vegetation along the river. They gave this a value of n of 0.026. In this next slide or photograph, it is picture of the Coeur d'Alene River near Pritchard, Idaho, and you can see the gravels on the bottom and all the vegetation on the side. They gave it a value of 0.032. Now as I will go through some of the other photos and you can see what the picture is and the roughness assign to the photo. For example, in this photo, they assigned the Manning's n of 0.037. You can see how heavily wooded it is on the bank there.

In this photograph of a mountainous stream, they gave it a Manning's n of value of 0.043 and then in this stream, the Manning's n value is 0.045. You can go to Barnes and see a more complete description of each of these photos and of also the assigned Manning's n or the computed Manning's n I should say.

This is of a steep rocky stream and you can see that they gave it a value of 0.050 and then in this one, it's even more--has more boulders in the stream channel and the computed Manning's n is

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0.065. And so forth, you can see in this slide the computed Manning's n is 0.070, quite high. If you're have a stream, let's say in Louisiana or in the Southern U.S., I would recommend that you go to [PH] R. Smith and Snyder. It's in Water Supply Paper 2339 and look at what they have. In this photograph, you can see that they gave a value of or a computed Manning's n of 0.12.

And then in this picture here or photograph, the Manning's n is 0.15 quite high and much different than from the other pictures that we saw. You should select the picture based on the conditions that you have also. And you can see for the final one is 0.20. There's a number of picture books you can do that. There's one by Jeff Phillips for Arizona and others for different parts of the world. There's a New Zealand book too. I suggest that you use these books and try to match up the photo that matches your area and the conditions for your area and then you can use the appropriate values.