

LAB 11 REPORT

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Question 1: Think about the Euclidean distance raster vis a vis what we learned about distance in lecture. Is it an accurate representation of path length? If not, what other layer would help us accurately represent path length when included with the Euclidean distance?

No, Euclidean distance, or the shortest distance between two points, is not an accurate representation of true length. Additional layers from this lab like vegetation and streams would increase impedance and help represent what true paths would look like.

Question 2: Why are we using Maximum? What was the default value for Mosaic Operator?

We are using 'Maximum' so that we can indicate that streams are very difficult to cross and have a high friction value. The default value was 'Last'.

Question 3: Is SheepCost an isotropic surface or an anisotropic surface?

SheepCost is an anisotropic surface because friction is depicted, and the paths vary depending on direction.

Question 4: Have we created an isotropic surface in this lab, if so, which one?

Yes, the Euclidean distance raster, SheepEuc, was an isotropic surface.

Question 5: Open the attribute table for SheepPaths. Excluding any 0s, what is the min and max path costs?

The min path cost is 3,006.40 and the max path cost is 139,633.10.

Question 6: How many observer locations did you have and how many paths do you have?

I had 17 observer locations and 19 paths.

Question 7: In response to Q6: If they are not the same number, explain why the GIS does it this way. (To help you answer this question, highlight the paths and think critically about their decisions.)

The first of the two extra paths doesn't lead anywhere at all; it simply rests on the starting point, and as such, represents a zero-cost path. The second extra path follows several different paths out from the starting point up until each of those several paths splits into multiple successor paths. It seems to indicate paths that have equal cost up until those splitting points.

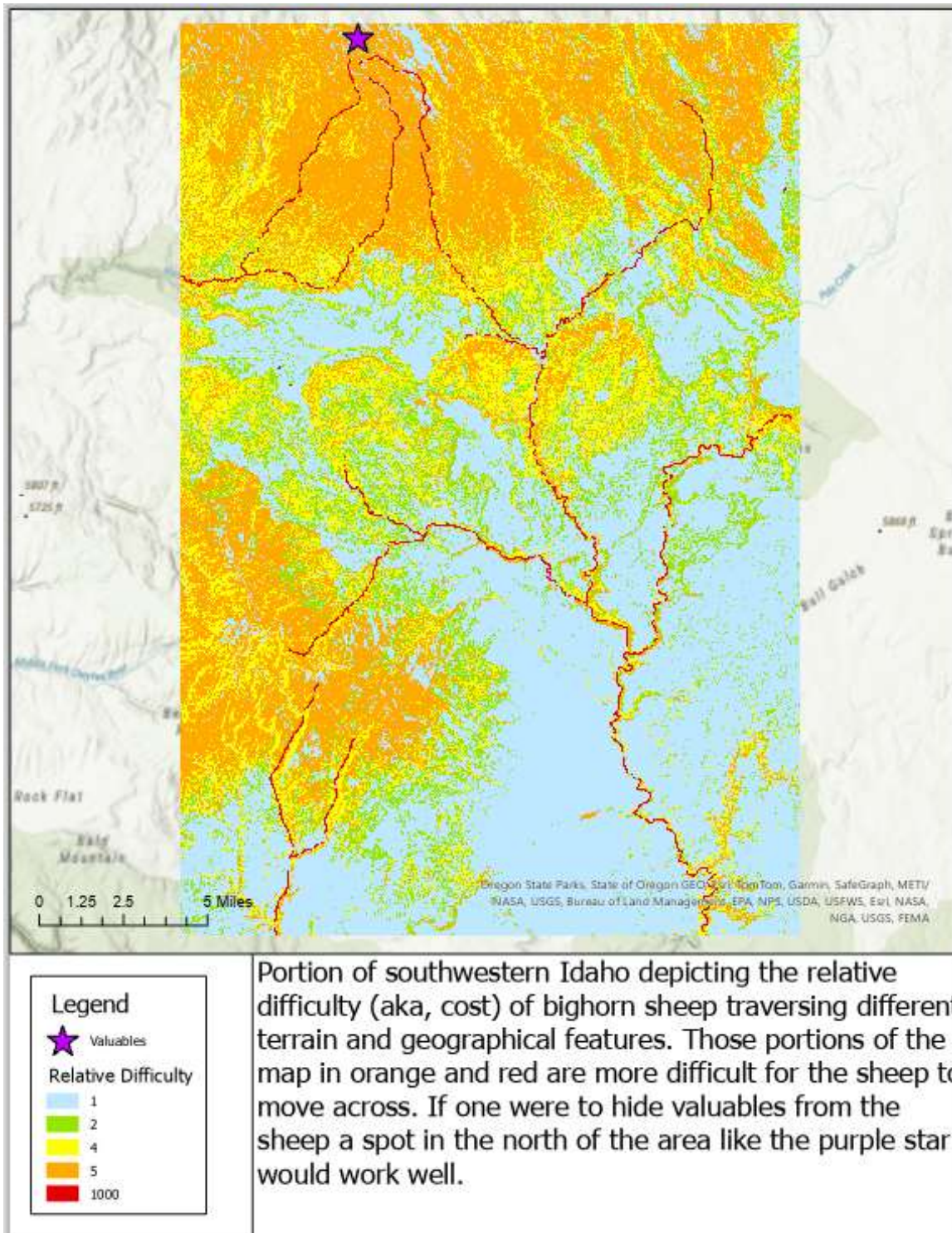
Question 8: To the best location, what is value of the PathCost and what is the value of the distance Shape_Length (round and use units!)? Why are they different? What units could PathCost be in?

The value of the PathCost is 43,524, and the distance is 23 km. The PathCost measures relative difficulty and perceived strenuousness. Its units could be called perceived difficulty or perhaps perceived meters travelled.

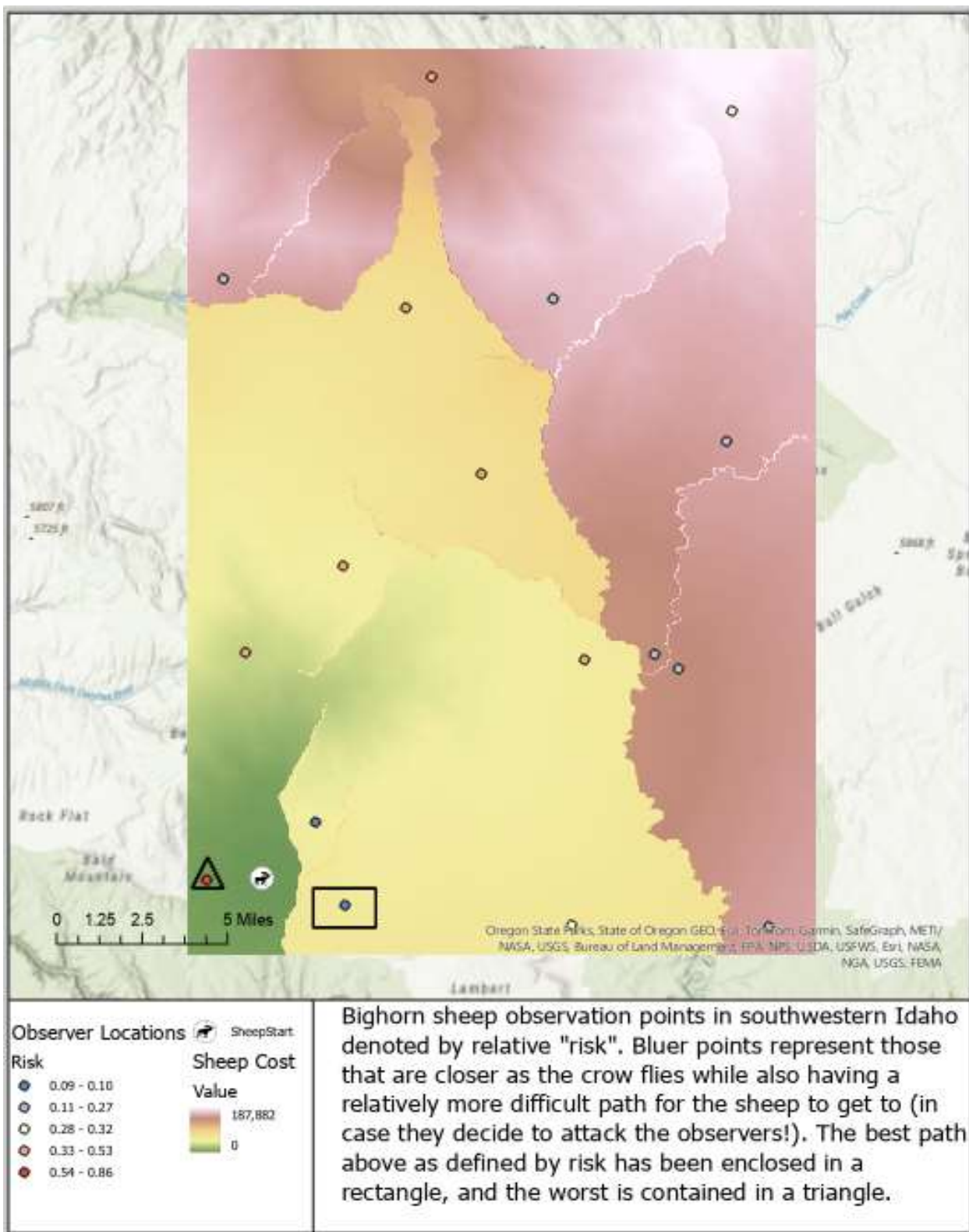
Question 9: (Regarding your screencap (graphic 3)) What is the Euclidean path length and the cost length? How much longer is the cost length? Round nicely, measure things in KM, and remember your units.

The Euclidean path length is 31 km, and the Euclidean cost is, of course, the exact same 31.

GRAPHIC 1. Make a nice map of your friction surface where the value colors resemble strenuousness. Include a legend. If you want to hide your valuables at a point on the map, which one would you choose? Point it out and in the caption, say what your valuables are!)



GRAPHIC 2. Make a nice map of the output grid SheepCost with the observer locations symbolized by "Risk" ratio with a legend (from Step 3). Use a stretched color ramp instead of patches. Point out the single BEST and single WORST location to watch the sheep in your map. Note: remember that your points need to be colored by "Risk"!



GRAPHIC 3: Include your screenshot.

