Traversibility Algorithm:

1. How much agricultural runoff is buffered?
   Traversibility algorithm- width of natural buffers

2. How effective are buffers at filtering contaminants?
   Buffer Effectiveness Ratio based on detention time model. Not implemented directly in the code, but 0.7 and 0.9 removal rate considered.

3. Where do the most contaminants enter water bodies?
   Traversibility algorithm- pollution buildup at cells adjacent to water bodies

Datasets Required:

1. D8 flow direction raster: from NHDPlus High Resolution (10m)
2. Land cover raster: C-CAP Land Cover dataset
3. Mask to select the analysis area: set to 200 m in the script

Algorithm:

Walks cell by cell in flow direction, if the terminal point is reached, calculates the following based on the sequence generated during walk:

   a. number of steps taken: length of the sequence list
   b. width of natural buffers:
      width counter is updated by 1 if natural land covers are encountered consecutively. If a bad (agricultural or urban) land cover comes in between, it is reset to zero.
   c. pollution buildup:
      agnum and urbnum are counters for bad land cover encountered. They are updated by 1 if agricultural or urban cell is encountered, respectively. If natural land cover is encountered, the value is reduced to a factor decided by removal rate (forest=0.9, other natural=0.7)

Final Outputs:

1. - `*_hydist.tif` : Steps to stream
2. - `*_buffwid.tif` : Buffer width (natural land)
3. - `*_buildup_ag.tif` : Ag-based nutrient build-up
4. - `*_buildup_urban.tif` : Urban-based build-up
5. - `*_buildup_ag_and_urban.tif` : Total build-up