

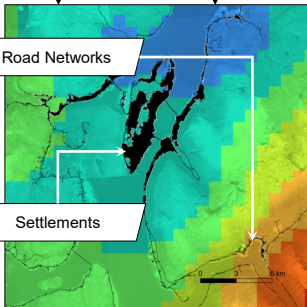
Preprocessing

Specify County Mask

Susceptibility Map

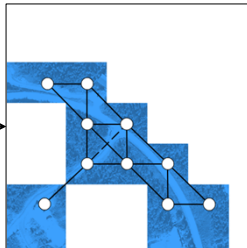
Road Networks

Settlements

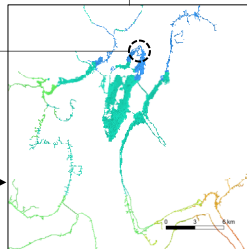


Reduce the resolution to 50m
from 1km (of susceptibility map)

Initial Graph of Grid Points



Construct a simplicial network



Derived Graph of Settlements

Extract any random point
within the settlement vicinity

Settlement Node

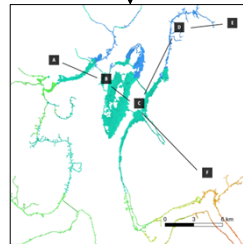
Extract the shortest path
between any two settlements

Shortest Path

Extract maximum susceptibility
along the shortest path

Edge Weight

Construct a new adjacency matrix with settlement as nodes



Increase cutoff value
from 0 to 1

Transform into
weighted unnormalized
Laplacian matrix

Perform iterative
K-means clustering

Inter- and Intra- Settlement
Exposure Probability