

WHERE ON THE U.S. SOUTHERN BORDER COULD MIGRANTS MORE EASILY CROSS?

THE PATH OF LEAST RESISTANCE ACROSS THE U.S. - MEXICO BORDER



Insecure border section:
1) vehicle-barrier fencing
2) low-grade slope



Insecure border section:
1) significant gap in the border wall
2) high migrant activity per sq. mi



Insecure border section:
1) low-grade slope
2) few Border Patrol agents per sq. mi.
3) major break in the border wall

LESS SECURE AREA

- Determined by a combination of:**
- 1) 0 Border Patrol agents per sq. mi.
 - 2) High migrant activity (+ 0.19 migrant apprehensions per sq. mi.)
 - 3) 0-3 miles from vehicle barrier
 - 4) 0-3 miles from no border fence
 - 5) 0 - 10% slope grade

MORE SECURE AREA

- Determined by a combination of:**
- 1) zero - 0.2 agents per sq. mi.
 - 2) Migrant activity (0.13 - 0.19 migrant apprehensions per sq. mi.)
 - 3) 3-5 miles from vehicle barrier
 - 4) 3-5 miles from no border fence
 - 5) 10 - 15% slope grade

A New Border Wall: The 17th Century Solution to a 21st Century Challenge

Despite the security gaps that exist, the vulnerability of a few areas across the frontier does not warrant the building of wall that spans the entire border. This endeavor will cost taxpayers upwards of \$15 billion dollars, not including annual maintenance costs of roughly \$750 million.

Building a fifteenth century structure to contend with a 21st century challenge panders to politics and not to the current realities of a nuanced immigration crisis.

The current administration should instead invest in smart and scalable solutions that amplify border security tactically. Fortifying electronic surveillance along the border using drones and other technologies would bolster security while yielding cost savings.

Another potential solution could entail enlisting academic institutions and the private sector in competitions to design and scale novel border security measures that utilize existing Border Patrol resources.

Unless the political winds change course, a border wall as a solution to the current immigration crisis will fail to adequately address the acute immigration crisis.

How were security areas calculated?

The agents/sq. mile and apprehensions/sq. mi. datasets were collected from Customs and Border Patrol. Border fencing data was gathered from Reveal, the Center for Investigative Reporting.

These layers were imported into ArcGIS, along with an elevation model. Buffers were then created around each border wall type, including areas where there is no border, using various criteria (see legend).

Each layer, including the border wall buffers, were then converted to raster data. The 'Raster Calculator' tool was then used to sum the raster scores.

These raster data were then reclassified from the calculated 10-22 point scale using a qualitative security assessment. This data was then reclassified again to isolate areas of least security. The reclassified areas of a score of zero were removed from view, leaving a raster of only areas of low or medium security.

The 'Extract to Mask' tool was used to clip study areas to within 50 miles of the border. The orange and red study areas were then added by creating a new shapefile and inserting polygons around interest areas.



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SPRING 2018

Despite heavy security along the border, gaps remain

The dense and rugged terrain across the border amplifies its security. Border Patrol maintains a robust presence in each of the nine border sectors, with some variation. There do not exist many areas that considerably lack security.

Security gaps do exist, however. Across the 1,933 mile frontier, low security areas are distributed as follows:

Security Classification	Area, Square Miles
Less Secure	33
More Secure	849

Data Sources
Apprehensions | Customs and Border Protection, 2017
Border Patrol agents | Customs and Border Protection, 2017
Border Wall Location, Type | Reveal, the Center for Investigative Reporting
Slope layer | SRTM Elevation (West), ESRI DataMaps 93
Aerial Imagery | ESRI World Imagery
Ground Imagery | Anthony Schultz
Projection | NAD 1983 Contiguous USA Albers