



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE UNITED STATES' BORDER WALL:
A MARITIME PERSPECTIVE**

by

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June 2019

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 2019	3. REPORT TYPE AND DATES COVERED Master's thesis	
4. TITLE AND SUBTITLE THE UNITED STATES' BORDER WALL: A MARITIME PERSPECTIVE			5. FUNDING NUMBERS	
6. AUTHOR(S) Christopher B. Fontana				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) The President of the United States has requested increased security at the southern border, mainly by investing in and building a border wall. Some argue that this will cost too much money, and some argue that it simply will not be effective. Conversely, others would argue that it is a necessary tool within the United States' border security policy. This thesis examines a potential border wall's effectiveness by analyzing illegal immigration apprehensions and drug seizures. Furthermore, this thesis uses the southern border's existing border fencing as an example of how border infrastructure affects the flow of illegal immigrants and drugs. In addition to the land border, this thesis hypothesized that, based on historic border security data, an increase in land border security will result in an increase in illegal immigration and drug smuggling through maritime routes. So, illegal immigration and drug smuggling data from before and after large amounts of border fence mileage were constructed was compared from land and maritime perspectives. This research found that a border wall can be effective at redirecting the flow of people and drugs, but ineffective at the greater goal of stopping it. Also, this thesis discovered changes in maritime border security data that suggest that as security is increased on the land border with border barriers, the maritime domain will experience significantly more drug smuggling and illegal immigration.				
14. SUBJECT TERMS border wall, border fence, border infrastructure, border security, maritime security, illegal immigration, drug smuggling			15. NUMBER OF PAGES 89	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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THE UNITED STATES' BORDER WALL: A MARITIME PERSPECTIVE

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

The President of the United States has requested increased security at the southern border, mainly by investing in and building a border wall. Some argue that this will cost too much money, and some argue that it simply will not be effective. Conversely, others would argue that it is a necessary tool within the United States' border security policy. This thesis examines a potential border wall's effectiveness by analyzing illegal immigration apprehensions and drug seizures. Furthermore, this thesis uses the southern border's existing border fencing as an example of how border infrastructure affects the flow of illegal immigrants and drugs.

In addition to the land border, this thesis hypothesized that, based on historic border security data, an increase in land border security will result in an increase in illegal immigration and drug smuggling through maritime routes. So, illegal immigration and drug smuggling data from before and after large amounts of border fence mileage were constructed was compared from land and maritime perspectives.

This research found that a border wall can be effective at redirecting the flow of people and drugs, but ineffective at the greater goal of stopping it. Also, this thesis discovered changes in maritime border security data that suggest that as security is increased on the land border with border barriers, the maritime domain will experience significantly more drug smuggling and illegal immigration.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBP	Customs and Border Protection
CZ	Contiguous Zone
DEA	Drug Enforcement Agency
DoD	Department of Defense
DHS	Department of Homeland Security
EEZ	Exclusive Economic Zone
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
INS	Immigration and Naturalization Service
IRCA	Immigration Reform and Control Act
FY	Fiscal Year
GAO	Government Accountability Office
NDIC	National Drug Intelligence Center
NOAA	National Oceanic Atmospheric Administration
TCO	Transnational Criminal Organizations
UNCLOS	United Nations Convention of the Law of the Sea
USCG	United States Coast Guard
USBP	United States Border Patrol

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ACKNOWLEDGMENTS

I would like to extend my gratitude to my thesis advisors, Dr. Erik Dahl and Captain Robert Simeral. Your advice and leadership were instrumental in the completion of this thesis. Most of all, I would like to thank my wife, Brittani, and my kids, Gracelyn, Kennedy, and Charlie, for their unrelenting love and support throughout my time at NPS. Brittani, you have always been my number-one supporter, and I genuinely appreciate you for that.

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I. INTRODUCTION

A. PROBLEM STATEMENT

The President of the United States is requesting increased security at the southern border. To do this, a border wall has been chosen as the ideal solution. The notion of having a border wall caused a divisive split within the government and population, especially since the topic had become a major issue in the presidential election campaign. Because of this, two schools of thought emerged: supporters and opposers of the border wall. But the United States has adopted this policy before and already has hundreds of miles of border barriers along the southern border. This raises the question of whether or not the border wall we already have is working. If it is effective, then logically adding more wall would be a benefit. If it is not effective, then we know a new border wall is not the solution. Unfortunately, the answer to this question is not so simple.

With scholars and government officials on both sides of the argument, it is hard to determine what the right answer is. What can be done is to examine the current border wall and its effects and extrapolate those findings to a new and longer border wall that the president is calling for. In addition, a sometimes-forgotten aspect of the border security enterprise is the coastlines. If the southern border is becoming more secure from a border wall, will that affect the nearby waterways? Or will the increased land security eventually just deter people from attempting to cross?

B. RESEARCH QUESTION

With the construction of a border wall on the United States' southern border underway,¹ evaluating its effectiveness has significant political, financial, and national security implications. Supporters argue that a border wall will help protect the United States from terrorism, illegal immigration, and illegal trafficking, but no matter how effective it is on land, the border wall is not designed to protect against maritime threats.

¹ Although a border wall along the entire United States-Mexico border has not been approved, an additional 102 miles of a border wall and planning for more was ordered by President Trump and approved by Congress in the FY18 budget.

This thesis asks first, can a southern United States border wall achieve the objectives it is built to accomplish on land? And second, because the border wall is only protecting the southern land border and there are large coastlines to the East and West of the land border, how will the increased land protection from the border wall affect maritime border security?

C. BACKGROUND AND SIGNIFICANCE

After the terrorist attack on September 11, 2001, the United States' national security posture increased. The U.S. government established the Department of Homeland Security (DHS) through the Homeland Security Act of 2002. This act placed 22 different government agencies under the control of the DHS.² Before 1940, immigration was managed under the Department of Labor, and as a result it was viewed as an employment problem. Then immigration moved under the control of the Department of Justice. There it was managed as a legal issue. Now, under the DHS, it is a security and terrorism issue.³ The change in how border security and immigration has been viewed is clear. As Iowa Senator Chuck Grassley said, "9/11 just awoke everybody to the fact that it was awfully easy to get into the United States."⁴

The first fencing along the U.S.-Mexican border was authorized in 1990 and installed near San Diego, California.⁵ Next, Congress overwhelmingly approved upgrades and additional fencing by passing the Illegal Immigration and Reform and Immigrant Responsibility Act of 1996.⁶ This authorization was later amended by the Secure Fence Act of 2006, which as of May 2015 resulted in the DHS installing "353 miles of primary pedestrian fencing, 300 miles of vehicle fencing (total of 653 miles), 36 miles of secondary

² "History," Department of Homeland Security, June 27, 2012, <https://www.dhs.gov/history>.

³ Mallie Jane Kim, "After 9/11, Immigration Became About Homeland Security," *US News & World Report*, accessed August 20, 2018, <https://www.usnews.com/news/articles/2011/09/08/after-911-immigration-became-about-homeland-security-attacks-shifted-the-conversation-heavily-toward-terrorism-and-enforcement>.

⁴ Kim.

⁵ Carla Argueta, *Border Security: Immigration Enforcement Between Ports of Entry*, CRS Report No. R42138 (Washington, DC: Congressional Research Service, 2016), 14.

⁶ Argueta, 14.

fencing behind the primary fencing, and 14 miles of tertiary pedestrian fencing behind the secondary fence.”⁷ The annual cost of constructing these barriers increased from \$25 million to \$1.5 billion over the ten-year period from 1996 to 2006.⁸ Then in 2018, President Trump signed the fiscal year 2018 Budget, which authorized nearly \$1.6 billion for designing and construction of a more robust 102-mile long border wall.⁹ As of March 2018, construction was planning to start in various areas.¹⁰ Ronald Vitiello, U.S. Customs and Border Protection’s acting deputy commissioner, announced construction projects are scheduled to begin in “El Centro, San Diego, Santa Teresa, and the Rio Grande Valley.”¹¹ This history shows that as the United States’ concern over terrorism and porous borders increased in the post-9/11 era, so did the money appropriated to secure the border.

With the cost of border security increasing and plans for new border fencing along portions of the U.S.-Mexico border proceeding, determining the effectiveness of the wall becomes even more critical. The possibility of a border wall that is effective can change the environment of illegal activity. With immigration and drug smuggling routes cut off or reduced on land by the border wall, a different path through the sea may be chosen as the path of least resistance. This route may offer a greater chance of success due to the vast expanse of open ocean and coastlines, which go mostly unmonitored.

D. LITERATURE REVIEW

1. Introduction

This literature review includes various types of congressional testimonies, government documents, and other scholarly work. The resources are divided into three sections. The first section reviews the arguments of supporters of the United States’ border

⁷ Argueta, 15.

⁸ Argueta, 15–16.

⁹ “DHS FY18 BIB Final,” accessed May 31, 2018, <https://www.dhs.gov/sites/default/files/publications/DHS%20FY18%20BIB%20Final.pdf>, 28.

¹⁰ U.S. Customs and Border Protection, “Border Wall Construction Underway | U.S. Customs and Border Protection,” accessed August 29, 2018, <https://www.cbp.gov/newsroom/spotlights/border-wall-construction-underway>.

¹¹ U.S. Customs and Border Protection.

wall. The second section reviews arguments from opponents of the border wall, who either view it as ineffective or see border walls as not worth the cost. The third section reviews expert opinion of the effectiveness of the United States' maritime border security.

2. Supporters of the U.S. Border Wall

The border wall has had the support from former Secretaries of Homeland Security. In April 2017, then Secretary of Homeland Security John Kelly reported to Congress that strategic building of more border barriers is likely because “physical barriers work.”¹² Also, former Acting Secretary of Homeland Security Elaine Duke proclaimed that “building a wall along our Southern border will save countless innocent lives.”¹³ She continued to defend the border wall by adding, “Border Patrol agents have seen firsthand the success of a border wall in Yuma, Ariz.—which serves as a prime example of how investments in personnel, technology, and a border wall can turn the tide against a flood of illegal immigration and secure our homeland.”¹⁴ She supported this claim by presenting data from law enforcement. Secretary Duke states that “under lax enforcement standards, apprehensions in FY2016 were roughly a 10th of what they were in FY 2005.... crime has significantly decreased in the Yuma area, and smugglers now look for other less difficult areas of the border to cross—often areas without fencing.”¹⁵

Border wall supporters look to other countries as an example to determine whether a border wall would be effective. President Trump has repeatedly pointed to Israel to show that border walls work.¹⁶ Also, Senator Ron Johnson agreed by claiming, according to one

¹² Tal Kopan, “Kelly: No Border Wall ‘from Sea to Shining Sea,’” *CNN*, April 5, 2017, <https://www.cnn.com/2017/04/05/politics/kelly-testimony-senate-homeland-border-security-wall/index.html>

¹³ Elaine Duke, “United States: Acting DHS Secretary Elaine Duke USA Today Editorial: Border Walls Work. Yuma Sector Proves It.,” *USA Today*, 2017, <https://www.usatoday.com/story/opinion/2017/08/22/homeland-security-secretary-border-walls-work-yuma-sector-proves-it-elaine-duke-column/586853001/>.

¹⁴ Duke.

¹⁵ Duke.

¹⁶ Miriam Valverde, “GOP Senator Says Israel Border Fence Cut Illegal Immigration,” @politifact, accessed June 13, 2018, <http://www.politifact.com/truth-o-meter/statements/2017/feb/13/ron-johnson/border-fence-israel-cut-illegal-immigration-99-per/>.

report, “that a border fence in Israel has drastically cut illegal immigration along its southern border.”¹⁷ Senator Johnson added that Israel reduced illegal immigration along Israel’s southern border by 99 percent, from about 18,000 immigrants to 18.¹⁸ Harvard International Review’s Esteban Flores examined Spain’s border wall on the Spain and Morocco border. He states that in 2014, “2,100 immigrants successfully crossed from Morocco into Spain.”¹⁹ Since building a seven-mile-long steel wall separating Morocco, Spain reduced illegal immigration to 100 immigrants throughout 2015.²⁰

Other supporters point out that without border barriers, access to the border is open to anyone who wishes to cross. Avdan and Gelpi add that the “anxiety over clandestine and unauthorized territorial access has magnified the primacy of border control in world politics.”²¹ They go on to state that transnational threats to states can encompass a wide variety of types of people, “from the relatively innocuous—such as refugees and illegal migrants—to the more pernicious—such as organized crime, militants, and terrorists.”²² Supporters of the wall argue that border fences can reduce the flow of terrorists across borders. Moreover, Nazli Avdan and Christopher Gelpi claim “that fences reduce the annual relative risk of a terrorist attack by at least 67 percent,”²³ and therefore make an excellent tool for national security decision-makers.

Border fences act as symbols of safety and security for the nation that is building them. The fear of terrorism, which is inherently psychological, shaped the public and policymaker’s view of border security. Avdan and Gelpi add that “a scared public is also

¹⁷ Valverde.

¹⁸ Valverde.

¹⁹ Esteban Flores, “Rio Grande: Walls of Separation: An Analysis of Three ‘Successful’ Border Walls,” *Harvard International Review* 38, no. 3 (2017) 10–12, https://search-proquest-com.libproxy.nps.edu/docview/1937371999?rfr_id=info%3Axri%2Fsid%3Aprim0.

²⁰ Flores.

²¹ Nazli Avdan and Christopher F. Gelpi, “Do Good Fences Make Good Neighbors? Border Barriers and the Transnational Flow of Terrorist Violence,” *International Studies Quarterly* 61, no. 1 (2016): sqw042, <https://doi.org/10.1093/isq/sqw042>, 14–27.

²² Avdan and Gelpi, 14–27.

²³ Avdan and Gelpi, 14–27.

more likely to accept, and even champion, border closure.”²⁴ As a result, they found that walls aid in easing the anxiety associated with terrorism.²⁵ Therefore, increased border security through physical barriers garners support from the public.

The United States has seen a change at the border following the construction of fencing in the San Diego area. According to the Congressional Research Service, installation of fencing in the 1990s showed successful results.²⁶ In the San Diego sector, the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 authorized fencing with three layers in some areas. This resulted in law enforcement apprehensions to drop from “480,000 in FY1996 to 100,000 in FY2002,”²⁷ and even more success from the three-tier fenced areas resulting in a drop of apprehensions from “321,560 FY1993 to 19,035 in FY2004.”²⁸ Looking at the entire southwest border, the CBP reports this as quantitative evidence that border fencing has a positive effect in reducing illegal border crossings.²⁹

3. Opposers of the U.S. Border Wall

Opponents of the border wall make several different arguments. Some critics see violence as an outcome or cost of the border wall. Throughout the early 2000s, the Mexican drug war and drug trafficking to the United States from Mexico were intensifying.³⁰ From 2008 to 2011, homicides in Mexico but near the border and linked to drug cartels rose from around 500 to over 2000 deaths.³¹ Apart from preventing illegal immigration, preventing drug trafficking that can lead to such violence is a goal of the border barrier created by the

²⁴ Avdan and Gelpi, 14–27.

²⁵ Avdan and Gelpi, 14–27.

²⁶ Blas Nunez-Neto and Michael J Garcia, *Border Security: The San Diego Fence*, CRS Report No. RS22026 (Washington, DC: Congressional Research Service, 2007), <http://www.dtic.mil/dtic/tr/fulltext/u2/a469083.pdf>, 4.

²⁷ Nunez-Neto and Garcia, 4.

²⁸ Nunez-Neto and Garcia, 4.

²⁹ Nunez-Neto and Garcia, 4.

³⁰ Benjamin Laughlin, “Border Fences and the Mexican Drug War,” (unpublished working paper, last modified March 2019), http://www.benjamin-laughlin.com/border_wall.pdf, 3.

³¹ Laughlin, 3.

Secure Fence Act of 2006. Benjamin Laughlin, a postdoctoral fellow at the University of Pennsylvania, argues that the rise in violence was linked to the border fence and drug trafficking. By building a border fence, the United States essentially reduced the options for illegal drugs to cross the border. Laughlin asserts that “constructing a border wall changes the relative value of territory near the border for drug cartels, which upsets the equilibrium of territorial control.”³² The cost of smuggling is increased by reducing the available drug routes into the United States.³³ He goes on to state that “areas near the new fence become less valuable to cartels and other areas with alternative smuggling routes become relatively more valuable. This shock to the value of territory controlled by drug cartels may cause cartels to fight over merely more valuable territory.”³⁴ The violence caused by the drug war can expand into the United States near the border.

Besides the secondary cost of violence, opponents of the border wall point out the direct financial cost of the wall. The CBP appreciated the \$1.6 billion investment into the planning, design, and construction of the border wall, but their acting Deputy Commissioner viewed it as just a down payment.³⁵ With no agreed upon price of the entire wall, supporters and opponents are left to estimate. The Senate Committee on Homeland Security and Governmental Affairs is responsible for the oversight of the DHS and its border wall plans. The Democratic staff of the committee has investigated the estimated cost of the border wall, and it issued a report that raises several concerns. First, “there is no reliable estimate of the cost of construction of the full border wall, but extrapolated estimates place the construction cost of the wall and associated technology and infrastructure at nearly \$70 billion.”³⁶ This estimated cost does not include the cost of land purchase and maintenance. The report asserts that there is no estimate of how much it will cost for the government to buy the land from private owners but refers to the past as an

³² Laughlin, 4.

³³ Laughlin, 4.

³⁴ Laughlin, 5.

³⁵ U.S. Customs and Border Protection, “Border Wall Construction Underway.”

³⁶ “Southern Border Wall—HSGAC Minority Report,” accessed June 7, 2018, <https://www.hsgac.senate.gov/imo/media/doc/Southern%20Border%20Wall%20-%20HSGAC%20Minority%20Report.pdf>, 1.

example.³⁷ It cost the government \$78 million to purchase the land for the fencing that was installed under the Secure Fence Act.³⁸ Also, the maintenance associated with the wall in the long term is estimated at \$150 million per year.³⁹

Non-supporters of the wall see this as too high of a cost for the American people to bear. Over the last two years, price estimates have varied with initial estimates from President Trump at \$10 billion, a leaked report from the DHS estimating the cost at \$21.6 billion, and a Senate committee estimation at \$70 billion.⁴⁰ Some political leaders wonder what the United States could purchase with that money instead of a border wall. The Navy's newest, most expensive, and highly advanced aircraft carrier has cost \$12.9 billion.⁴¹ U.S. Representative Scott Peters announced this would put the cost of the border wall equal to over one and a half Ford-Class aircraft carriers.⁴²

Opponents of the border wall also argue that regardless of the statistics that the CBP reports about the effectiveness of border fences, they are not viewing the problem with a big enough scope. Apprehensions near the current fence lines may have dropped following the construction, but critics question whether that accurately indicates progress in combating the immigration problem. Illegal aliens or undocumented workers may have never crossed the southern border illegally, but they overstay their visiting visa and thus are not counted when the focus is solely on border apprehensions. Robert Warren and Donald Kerwin reveal that about two-thirds of the undocumented population arrived on a visiting visa and overstayed the allotted time associated with their visa.⁴³ They add, in fact,

³⁷ "Southern Border Wall—HSGAC Minority Report, 1."

³⁸ "Southern Border Wall—HSGAC Minority Report, 1."

³⁹ "Southern Border Wall—HSGAC Minority Report, 1."

⁴⁰ Chris Nichols, "Trump's Border Wall Would Cost Same as 1.5 Aircraft Carriers," @politifact, accessed May 31, 2018, <http://www.politifact.com/california/statements/2017/apr/28/scott-peters/would-trumps-border-wall-cost-same-one-and-half-us/>.

⁴¹ Ronald O'Rourke, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, CRS Report No. RS20643 (Washington DC: Congressional Research Service, 2017) <https://crsreports.congress.gov/product/pdf/RS/RS20643>, 88.

⁴² Nichols, "Trump's Border Wall Would Cost Same as 1.5 Aircraft Carriers,"

⁴³ Robert Warren and Donald Kerwin, "The 2,000 Mile Wall in Search of a Purpose: Since 2007 Visa Overstays Have Outnumbered Undocumented Border Crossers by a Half Million," *Journal on Migration and Human Security* 5, no. 1 (2017): 124–36.

“overstays have exceeded EWIs [immigrants who crossed the border illegally] every year since 2007.”⁴⁴

Border wall opponents point out that border walls have apparent vulnerabilities. As argued by Scott Savitz from the RAND Corporation, “In general, fences and walls do not prevent people from crossing boundaries; they merely slow them down.”⁴⁵ He adds that the terrain along the border, like rivers and deserts, already creates a natural and difficult barrier to cross and a wall would only add a minor additional obstacle.⁴⁶ Savitz claims that underground tunnels will no doubt undermine a border wall.⁴⁷ His evidence for this is particularly strong, because as he explains, “it is already happening.”⁴⁸ Law enforcement has discovered numerous tunnels connecting houses and warehouses in Mexico to other buildings in the United States. Cartels are evolving to the tactics used by the CBP and creating sophisticated tunnel systems including the use of lighting, ventilation, and railways.⁴⁹

Border walls are proven to be vulnerable underground, but new technology breeds new vulnerabilities for border walls. The Washington Times reported the U.S. Border Patrol arrested a man on the receiving end of a drone delivery from Mexico that flew over fence lines in San Diego.⁵⁰ The drone was carrying 13 pounds of methamphetamine worth around \$46,000 if sold on the streets.⁵¹ This is a growing concern. According to the Washington Times, “Border Patrol agents are increasingly worried about the threat from

⁴⁴ Warren and Kerwin, 124–136.

⁴⁵ Scott Savitz, “Would a Border Wall Be Effective?,” September 26, 2016, <https://www.rand.org/blog/2016/09/why-a-border-wall-would-do-little-besides-waste-money.html>.

⁴⁶ Savitz.

⁴⁷ Savitz.

⁴⁸ Savitz.

⁴⁹ Jean Guerrero, “US-Mexico Drug Tunnels Evolving Amid Increased Border Security,” KPBS Public Media, accessed June 11, 2018, <http://www.kpbs.org/news/2017/jun/21/us-mexico-drug-tunnels-change-amid-increased-borde/>.

⁵⁰ Stephen Dinan, “Drones Become Latest Tool Drug Cartels Use to Smuggle Drugs into U.S.,” *The Washington Times*, accessed June 11, 2018, <https://www.washingtontimes.com/news/2017/aug/20/mexican-drug-cartels-using-drones-to-smuggle-heroi/>.

⁵¹ Dinan.

drug-cartel-flown drones after agents spotted 13 drones suspected of carrying drugs across one section of the U.S.-Mexico border in just one four-day period in November.”⁵²

Critics of the border wall add to their argument that, in respect to drug trafficking, transnational criminal organizations (TCO) have innovated their way underneath and over the border fence, but most of the drugs are smuggled through ports of entry. The Drug Enforcement Agency (DEA) recognizes that Mexican TCOs have the greatest impact on illegal drugs entering the United States.⁵³ In the 2017 National Drug Threat Assessment, the DEA states that “Mexican TCOs transport the majority of illicit drugs into the United States across the Southwest border using a wide array of smuggling techniques. The most common method employed by these TCOs involves transporting illicit drugs through U.S. ports of entry in passenger vehicles with concealed compartments or commingled with legitimate goods on tractor trailers.”⁵⁴ Also, Mexican TCOs transport drugs to the United States hidden in commercial cargo trains and passenger buses. Colombian TCOs use a different strategy. Using Puerto Rico as a staging area, they undertake a “variety of maritime and aerial means to include speedboats, fishing vessels, private aircraft, semisubmersibles, and commercial air and sea cargo”⁵⁵ to transport illegal drugs to the United States.

Opponents of the border wall question why the United States would spend so much money on a wall if most of the drugs are transported through ports of entry. Border wall opponents conclude that all transnational criminal organizations share a common strategy. Whether it is underground, through the air, in the water, or in a vehicle, all these strategies avoid or overcome a border wall.

⁵² Stephen Dinan, “13 Drones in Four Days: How Drug Smugglers Are Using Technology to Beat Border Patrol,” *The Washington Times*, accessed June 11, 2018, <https://www.washingtontimes.com/news/2018/jan/2/drones-fly-drugs-us-no-border-patrol-detection-tec/>.

⁵³ Drug Enforcement Agency, “2017 National Drug Threat Assessment,” October 2017, https://www.dea.gov/docs/DIR-040-17_2017-NDTA.pdf, 1.

⁵⁴ Drug Enforcement Agency, 6.

⁵⁵ Drug Enforcement Agency, 9.

4. Maritime Border Security

Compared to the length of the United States' land border, at 1933 miles, its maritime border is much larger, at 12,479 miles long.⁵⁶ Senator Ron Johnson, Chairman of the Senate Committee on Homeland Security and Governmental Affairs, reported at a Senate hearing about securing the United States' maritime borders:

Across these coastlines, migrants from Cuba, the Dominican Republic, and Haiti seek to illegally enter the U.S., often forced into overcrowded boats with unsafe and unsanitary conditions. Transnational criminal organizations also transport drugs—marijuana on the west coast and cocaine on the east coast—into the U.S. via the maritime border.⁵⁷

In addition to illegal immigration and drug trafficking threats, Senator Johnson adds that terrorism is still a threat to the United States' maritime borders.⁵⁸ Terrorists can enter the country by transiting through waterways in small vessels and blend in with normal maritime traffic.⁵⁹ Senator Johnson points out that as opposed to the southwest land border, “the U.S. has very little domain awareness across our maritime border.”⁶⁰ The U.S. Coast Guard (USCG), one of the agencies tasked with maritime border security, only has the ability to respond to about 30 percent of threats they are made aware.⁶¹

Senator Thomas R. Carper identified the relationship between land and maritime border security. He said, “as we have tightened up security on our southern land border, for example, traffickers and smugglers are seeking out other paths in the Caribbean or the Pacific coast. As we continue to ‘squeeze the balloon’ along our land borders, it’s important that there is close coordination among agencies.”⁶² USCG Rear Admiral Peter J. Brown,

⁵⁶ Janice Cheryl Beaver, *U.S. International Borders: Brief Facts*, Report No. RS21729 (Washington, DC: Congressional Research Service, 2006), 5.

⁵⁷ *Securing the Border: Understanding Threats and Strategies for the Maritime Border*: Hearing before the Committee on Homeland Security and Governmental Affairs, Senate, 114th Cong., 1st sess., (2015), <https://www.hsgac.senate.gov/hearings/securing-the-border-understanding-threats-and-strategies-for-the-maritime-border>.

⁵⁸ S., *Securing the Border*.

⁵⁹ S., *Securing the Border*.

⁶⁰ S., *Securing the Border*.

⁶¹ S., *Securing the Border*.

⁶² S., *Securing the Border*.

Assistant Commandant for Response Policy, testified to the United States Senate Committee On Homeland Security And Governmental Affairs on the USCG commitment to layered border security and reported that “between October 1, 2014, and June 30, 2015, the Coast Guard interdicted 2,259 illegal migrants attempting to enter the United States.”⁶³ Also, cocaine seizures at sea annually are three times higher than at the land border.⁶⁴ Although seizures at sea are resulting in tons of pounds of drugs due to successful intelligence, the vast maritime domain overwhelms the USCG. Rear Admiral Brown stated that “90 percent of the Coast Guard’s interdictions in 2014 were cued by intelligence. However, current surface and aviation fleet capacity only allow the Coast Guard to respond to approximately one-third of actionable intelligence.”⁶⁵

In 2005, the Department of Defense (DoD) and the DHS, including the USCG, issued the National Strategy for Maritime Security. The National Strategy’s perspective on maritime security states that “although the global economy continues to increase the value of the oceans’ role as highways for commerce and providers of resources, technology and the forces of globalization have lessened their role as barriers. Thus, this continuous domain serves as a vast, ready, and largely unsecured medium for an array of threats by nations, terrorists, and criminals.”⁶⁶ With the maritime domain open to commercial traffic, it is also available to illegal imports and exports. Additionally, large amounts of money generated from drug trafficking have funded transnational criminal organizations and even terrorist organizations.⁶⁷

The DoD and the DHS view illegal seaborne immigration as a key factor for regional stability, which will be one of the top influences of maritime security into the

⁶³ *Securing the Border: Understanding Threats and Strategies for the Maritime Border*: Testimony before the Committee on Homeland Security and Governmental Affairs, Senate, 114th Cong., 1st sess., (2015), (statement of Peter J. Brown, United States Coast Guard Assistant Commandant for Response Policy)

⁶⁴ Brown, testimony on Securing the Border.

⁶⁵ Brown, testimony on Securing the Border.

⁶⁶ Department of Defense and Department of Homeland Security, “The National Strategy for Maritime Security,” September 2005, 2.

⁶⁷ Department of Defense and Department of Homeland Security, 5.

future.⁶⁸ Social unrest, political instability, and economic inequality will continue to drive migration to the United States.⁶⁹ Also, illegal maritime immigration techniques can be taken advantage of by terrorists.⁷⁰ As a result, the National Strategy for Maritime Security proclaims “As security in our ports of entry, at land-border crossings, and at airports continues to tighten, criminals and terrorists will likely consider our relatively undefended coastlines to be less risky alternatives for unlawful entry into the United States.”⁷¹ Government officials seem to agree that maritime border security is crucially important, but the United States is not able to maintain a significant enough security presence in the maritime domain. Although experts have argued since the 9/11 attacks that the nation’s maritime borders are insecure, there continues to be much more attention paid to land border security than maritime security.

E. HYPOTHESIS

This literature review and background suggest that the border wall will not be effective at stopping immigrants or drugs from entering the country, mostly because of increasingly sophisticated smuggling techniques used by transnational criminal organizations. Although the wall may have some success in certain individual border sectors, it will not stop illegal immigration and drug smuggling completely. This thesis hypothesizes that the border will instead be effective at diverting flows of people and drugs into other areas and will result in a rise of illegal immigration and drug smuggling through the water to the East and West of the border wall.

F. RESEARCH DESIGN

The research for this thesis is directed toward border security on land and at sea. Illegal immigration and illegal drug smuggling data was analyzed and was used as indicators of effectiveness for the border wall and border security as a whole. Also, the

⁶⁸ Department of Defense and Department of Homeland Security, 6.

⁶⁹ Department of Defense and Department of Homeland Security, 6.

⁷⁰ Department of Defense and Department of Homeland Security, 6.

⁷¹ Department of Defense and Department of Homeland Security, 6.

thesis examined the relationship between land and sea border security by analyzing illegal immigration and drug smuggling data before and after the United States constructed border barriers as a part of its border security strategy. Specifically, data was compared from the 1980s to 2006, the year the United States created the Secure Fence Act and significantly shifted its border security policy and constructed just under 750 miles of fencing in four years, then from 2009 to the present. The immigration and drug smuggling data from the southern land border was primarily found in CBP records. The immigration and drug smuggling data from the maritime borders was derived from USCG and CBP records. Background and amplifying information were collected from government reports, news articles, and journal articles. If the hypothesis is correct, this research should find that although illegal immigration and drug smuggling have decreased along the land border, they have increased on our maritime borders.

This thesis considers physical structures, like fences or walls, to be the same. Therefore, they will be used interchangeably and will be included in the definition of a border barrier or border infrastructure. Lastly, the border wall and more generally, border security, is a current topic of debate within the United States. Therefore, information, statistics, and facts about border security continue to evolve so research within this thesis may not contain updated information after January 2019.

II. U.S. BORDER SECURITY

A. INTRODUCTION

This chapter introduces the policy, environment, and threats surrounding the United States' land and maritime borders. It explores the United States' border security policy, with a focus on border infrastructure in between ports of entry, starting in the 1980s and into the Trump Administration. Also, the characteristics of both border domains, including natural and man-made features, are surveyed to better set the stage for analyzing the relationship between land and maritime border security. Next, the threats and weaknesses of each domain are presented to understand the possible limitations associated with each domain. Lastly, this chapter reviews the budget and manning trends over time for land and maritime border security, focusing on the United States Border Patrol (USBP) and the United States Coast Guard (USCG). Following where the money and personnel go aids in understanding what is important or a priority to the DHS and therefore the president.

B. BORDER SECURITY POLICY

Border security in the United States is vital to ensure the country's overall national security. In a letter to Congress, President Trump asserted that "a nation that fails to control its borders cannot fulfill its most basic obligations to its citizens—physical safety, economic security, essential public services, and the uniform protection of our laws."⁷² This exemplifies the importance placed on border security within the government. This sentiment is echoed by many American citizens who are concerned about immigration, drug smuggling, and border security, but many others believe the concern about border security is overblown. The division in opinion about how to address various border issues resonates with individual citizens and is reflected in large political debates and efforts to present a border security solution. In fact, President Trump based a large part of his presidential election campaign effort on the need for a border wall as a solution to the country's illegal immigration and drug smuggling problems. Immediately following

⁷² "President Trump Sends a Letter on Border Security to Congress," The White House, January 4, 2019, <https://www.whitehouse.gov/articles/president-trump-sends-letter-border-security/>.

President Trump's announcement to run for president, his promises of building a wall along the southern border began, and they continued well past winning the presidential election.⁷³

President Trump's border wall policy is not a new idea. Increased border security initiatives have been well documented and supported through several presidencies. In 1986, President Reagan signed the Immigration Reform and Control Act (IRCA). In doing so, Reagan gave "amnesty to illegal immigrants, under certain circumstances, who have been residing in the United States since 1982."⁷⁴ Along with granting amnesty, the IRCA initiated penalties for employing undocumented workers and increased the budget and manpower for the predecessor of CBP, the Immigration and Naturalization Service (INS).⁷⁵ In the early 1990s, the Clinton Administration authorized 14 miles of continuous fencing beginning in the Pacific Ocean and Eastward into the San Diego sector.⁷⁶ Later in 1996, President Clinton signed the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) into law. This law authorized secondary and tertiary fencing behind the primary fence in the San Diego sector to further defend against the high number of illegal crossings.⁷⁷ The IIRIRA also increased the number of border patrol agents by at least 1,000 agents each year for the following five years.⁷⁸

Following the terrorist attacks on September 11, 2001, the Bush Administration pushed counterterrorism and national security to the forefront. Part of this effort involved linking the problem of illegal immigration to the threat of terrorism; this effort has triggered a series of decisions that changed how we address border security. In 2002, the Department of Homeland Security (DHS) was established as a cabinet-level department. Twenty-two

⁷³ "A History of Trump's Border Wall," accessed April 4, 2019, <https://www.countable.us/articles/418-history-trump-s-border-wall>.

⁷⁴ Reed Karaim, "America's Border Fence," *CQ Researcher* 18, no. 32 (September 19, 2008), <http://library.cqpress.com/cqresearcher/document.php?id=cqresre2008091904>.

⁷⁵ Muzaffar Chishti, Doris Meissner, and Claire Bergeron, "At Its 25th Anniversary, IRCA's Legacy Lives On," migrationpolicy.org, November 16, 2011, <https://www.migrationpolicy.org/article/its-25th-anniversary-ircas-legacy-lives>.

⁷⁶ Nuñez-Neto and Garcia, *Border Security: The San Diego Fence*.

⁷⁷ Illegal Immigration Reform and Immigrant Responsibility Act of 1996, H. Res. 828, 104th Cong., 2nd sess., (1996), <https://www.congress.gov/104/crpt/hrpt828/CRPT-104hrpt828.pdf>.

⁷⁸ Illegal Immigration Reform and Immigrant Responsibility act of 1996.

different agencies were reorganized under the DHS's control. This reorganization would move the CBP, USBP, and the USCG to the DHS. Preventing terrorism is the primary mission of the DHS, as delineated by The Homeland Security Act of 2002, and therefore this was the first step of linking illegal immigration to terrorism.⁷⁹ Next, President Bush signed the Secure Fence Act of 2006 to amend the IIRIRA. The Secure Fence Act directs the DHS to:

take appropriate actions to achieve operational control over U.S. international land and maritime borders, including: (1) systematic border surveillance through more effective use of personnel and technology, such as unmanned aerial vehicles, ground-based sensors, satellites, radar coverage, and cameras; and (2) physical infrastructure enhancements to prevent unlawful border entry and facilitate border access by U.S. Customs and Border Protection, such as additional checkpoints, all weather access roads, and vehicle barriers.⁸⁰

Within this law, operational control of the border is defined as “prevention of all unlawful U.S. entries, including entries by terrorists, other unlawful aliens, instruments of terrorism, narcotics, and other contraband.”⁸¹ Again border security and terrorism were linked together, and this has shaped the way the United States views border security. Along with broad requirements, the Secure Fence Act authorized about 850 miles of fencing in various areas along the border considered to be high risk for illegal border crossings.⁸² Two years later, the Secure Fence Act was amended by the Consolidated Appropriations Act which lowered the fencing requirements. It allowed the Secretary of DHS to decide the type of fence and appropriate locations but now called for no less than 700 miles of border fencing.⁸³

⁷⁹ Homeland Security Act of 2002, Pub. L. No. 107–296, § 6, 116 Stat. 2135 (2002) https://www.dhs.gov/sites/default/files/publications/hr_5005_enr.pdf, 8.

⁸⁰ Secure Fence Act, U.S.C. § 6061 (2006).

⁸¹ Secure Fence Act.

⁸² Chad Haddal, Yule Kim, and Michael John Garcia, *Border Security: Barriers Along the U.S. International Border*, CRS Report No. RL33659 (Washington, DC: Congressional Research Service, 2009) <https://fas.org/sgp/crs/homesec/RL33659.pdf>, 9.

⁸³ Haddal, Kim, and Garcia, 9.

Most recently President Trump has attempted to keep his campaign promises about building a border wall. On January 25, 2017, He issued Executive Order: Border Security and Immigration Enforcement Improvements, also known as Executive Order 13767. This order called for the “immediate construction of a physical wall on the southern border, monitored and supported by adequate personnel so as to prevent illegal immigration, drug and human trafficking, and acts of terrorism.”⁸⁴ The executive order also directed CBP to hire 5,000 more border patrol agents.⁸⁵ To date, construction for replacement of portions of current fencing has taken place, but new mileage of fencing has not been completed due to lack of funding from Congress. In fact, in early 2019, the government was forced to partially shut down nonessential operations for 35 days due to budget complications over funding for the border wall.⁸⁶

C. LAND BORDER

1. Geography and Characteristics

The international border between the United States and Mexico is 1,933 miles long.⁸⁷ Most of the border is within the state of Texas, which contains 1,241 miles or about 64 percent of the entire border. The rest of the border is located within Arizona, New Mexico, and California, which contain 372, 179, and 140 miles of the border, respectively.⁸⁸ From East to West, the border begins in the Gulf of Mexico and ends in the Pacific Ocean and contains border cities, deserts, mountain ranges, wildlife preservations, Native American territory, and rivers.

⁸⁴ The White House, “Executive Order: Border Security and Immigration Enforcement Improvements,” The White House, accessed April 14, 2019, <https://www.whitehouse.gov/presidential-actions/executive-order-border-security-immigration-enforcement-improvements/>.

⁸⁵ The White House.

⁸⁶ Nick Miroff, “Shutdown Worsens Strain on U.S. Immigration System,” *Washington Post*, accessed April 24, 2019, https://www.washingtonpost.com/world/national-security/shutdown-worsens-strain-on-us-immigration-system/2019/01/02/97dd0ef6-0ebe-11e9-84fc-d58c33d6c8c7_story.html.

⁸⁷ Janice Cheryl Beaver, *U.S. International Borders: Brief Facts*, Report No. RS21729 (Washington, DC: Congressional Research Service, 2006), 2.

⁸⁸ Beaver, 2.

In California, the 140-mile-long border travels near border cities like San Ysidro, CA and Tijuana, Mexico. Then it travels through mountainous and desert terrain. As of 2017, the U.S. Border Patrol reports that 131.5 miles of the California border have border fencing. Furthermore, 101 miles of the border fence is pedestrian fencing, and as illustrated in Figure 1, 15.5 miles is vehicle fencing.⁸⁹ In addition, the border wall near San Diego is reinforced by 14 miles of secondary pedestrian fencing and 2 miles of tertiary pedestrian fencing.⁹⁰ With large population areas on both sides of the border and nearly the whole state protected by pedestrian fencing, the border patrol has a clear pedestrian crossing threat and a strategy to overcome it.



Figure 1. California's Border Fencing⁹¹

⁸⁹ U.S. Customs and Border Protection, "U.S. Border Patrol Mileage of Pedestrian and Vehicle Fencing by State," September 22, 2017, <https://www.cbp.gov/document/stats/us-border-patrol-mileage-pedestrian-and-vehicle-fencing-state>.

⁹⁰ U.S. Customs and Border Protection.

⁹¹ Source: Michelle Mark, Skye Gould, and Andy Kiersz, Business Insider.

Arizona has a southern border length of 372 miles.⁹² Similar to California, Arizona's border barriers encompass nearly the entire border, which amounts to 325 noncontinuous miles of border walls. Pedestrian fencing consists of 124 miles, and vehicle fencing extends 183 miles.⁹³ In certain areas, The DHS has constructed 10 miles of secondary pedestrian fencing and 8 miles of tertiary pedestrian fencing to support the primary fencing in that area.⁹⁴ Arizona has one major border town, Calexico on the United States side and Mexicali on the Mexico side. The border and fencing divide what would be one large community. The state's terrain has extreme desert conditions along with some mountainous areas. The Sonoran Desert stretches throughout most of the Arizona-Mexico Border and mostly only uses vehicle barriers for border security. The extreme conditions, which often reach 117 degrees Fahrenheit, have claimed the lives of many people trying to migrate across.⁹⁵ Figure 2 illustrates the layout of border fencing in Arizona.

⁹² Beaver, *U.S. International Borders: Brief Facts*, 2.

⁹³ U.S. Customs and Border Protection, "U.S. Border Patrol Mileage of Pedestrian and Vehicle Fencing by State."

⁹⁴ U.S. Customs and Border Protection

⁹⁵ Michelle Mark, Skye Gould, and Andy Kiersz, "As the Government Shutdown over Trump's Border Wall Rages, a Journey along the Entire 1,933-Mile US-Mexico Border Shows the Monumental Task of Securing It," *Business Insider*, accessed April 7, 2019, <https://www.businessinsider.com/us-mexico-border-wall-photos-maps-2018-5>.

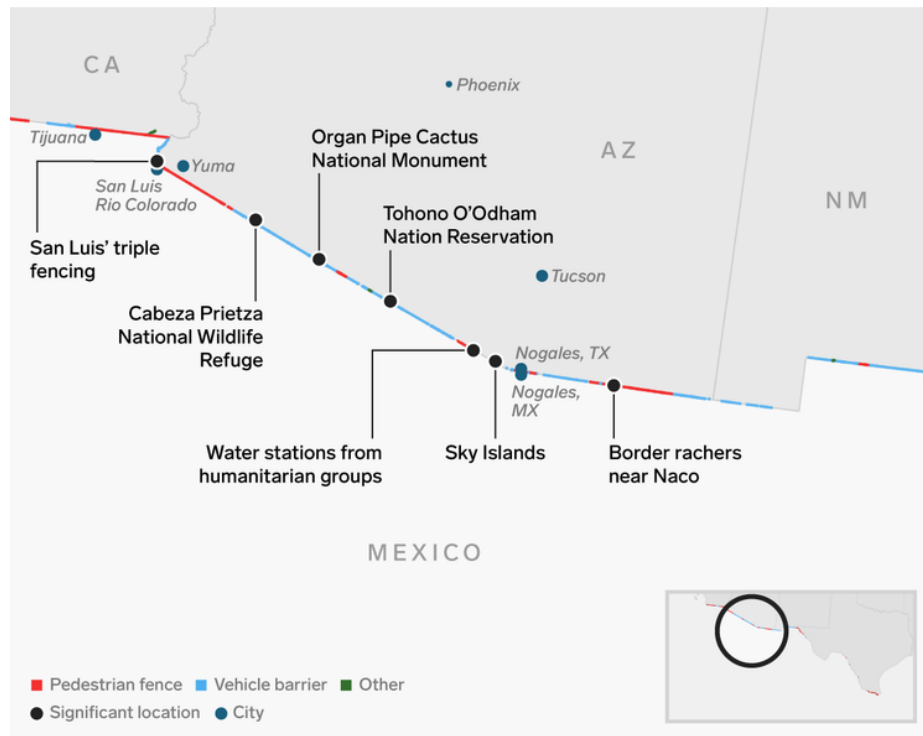


Figure 2. Arizona's Border Fencing⁹⁶

New Mexico's international border is about 180 miles long, consisting mostly of desert terrain.⁹⁷ The Chihuahuan desert, the largest desert in North America, lies mostly within Mexico but covers almost all of the southern region of New Mexico.⁹⁸ This region exhibits high temperatures along with little precipitation. The border is protected mostly by vehicle fences and very little pedestrian fences. In total, as of 2017, 116 miles of border barriers have been constructed in New Mexico, which is the least among all the border states. More specifically, the DHS has installed 101 miles of vehicle barriers and only 14 miles pedestrian fencing.⁹⁹ Figure 3 illustrates the layout of border barriers in New Mexico.

⁹⁶ Source: Michelle Mark, Skye Gould, and Andy Kiersz, Business Insider.

⁹⁷ Beaver, *U.S. International Borders: Brief Facts*, 2.

⁹⁸ DesertUSA, "Chihuahuan Desert," accessed April 8, 2019, <https://www.desertusa.com/chihuahuan-desert.html>.

⁹⁹ U.S. Customs and Border Protection, "U.S. Border Patrol Mileage of Pedestrian and Vehicle Fencing by State."

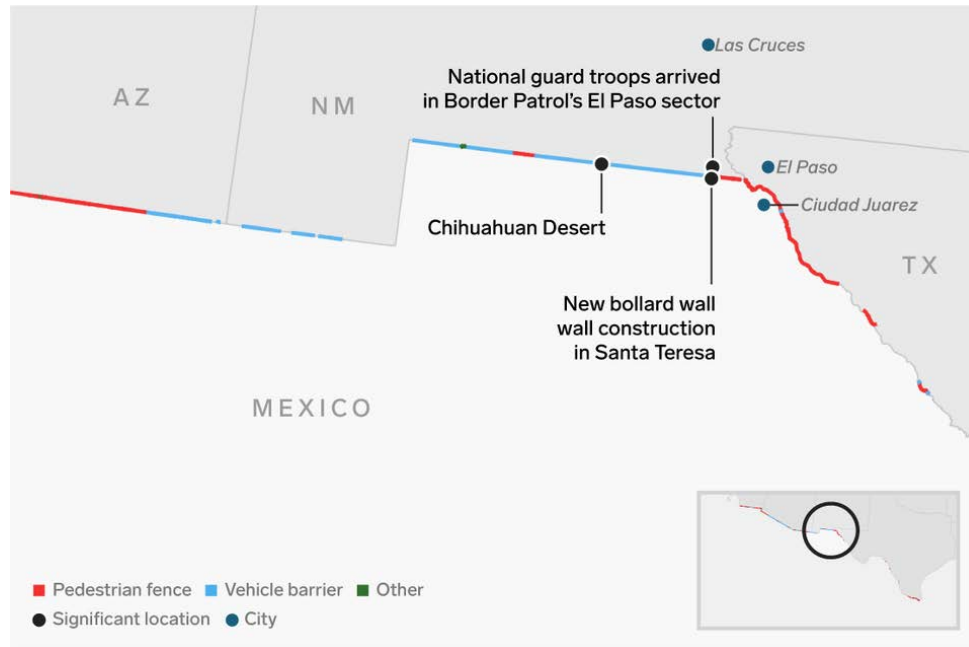


Figure 3. New Mexico's Border Fencing¹⁰⁰

Texas is the largest state along the border. It also shares the longest state border with Mexico, extending for 1,241 miles.¹⁰¹ Although it has the longest border, Texas has relatively fewer miles of a border wall. The U.S. Border Patrol reports 132.5 miles of fencing have been constructed. Texas has 115 miles of pedestrian fencing, mostly in the El Paso area and the Rio Grande Valley region.¹⁰² El Paso is a large city near the border and a historically common crossing point for pedestrians. Eastward from El Paso, the Texan border is the Rio Grande river, which flows in a serpentine or winding fashion. This creates difficulties for patrolling and constructing border barriers that follow the actual border. In addition, the 1970 treaty between the United States and Mexico limits the construction of barriers in the flood plain of the Rio Grande river without permission from an outside

¹⁰⁰ Source: Michelle Mark, Skye Gould, and Andy Kiersz, Business Insider.

¹⁰¹ Beaver, *U.S. International Borders: Brief Facts*, 2.

¹⁰² U.S. Customs and Border Protection, "U.S. Border Patrol Mileage of Pedestrian and Vehicle Fencing by State."

commission.¹⁰³ As a result, Texas is almost entirely unprotected by barriers along the river. Exceptions to this are the highly populated areas of El Paso and the Rio Grande Valley and the smaller towns of Del Rio, Eagle Pass, and Laredo, which have short sections of pedestrian fencing. Figure 4 and Figure 5 illustrate the distribution of border barriers of East and West Texas, respectively.



Figure 4. Western Texas' Border Fencing¹⁰⁴

¹⁰³ Department of State, "Treaty to Resolve Pending Boundary Differences and Maintain the Rio Grande and Colorado River as the International Boundary," November 23, 1970, <https://www.state.gov/documents/organization/125390.pdf>.

¹⁰⁴ Source: Michelle Mark, Skye Gould, and Andy Kiersz, Business Insider.



Figure 5. Eastern Texas' Border Fencing¹⁰⁵

2. Threats and Vulnerabilities

The CBP has a good awareness of the threats it faces on a daily basis, but that does not make those threats any easier to overcome. The first and maybe the most obvious vulnerability of the land border is the volume of people and goods that request entry into the United States. In a Congressional Research Service report, Jerome P. Bjelopera and Kristin M. Finklea present data that shows “tens of millions of cargo containers and hundreds of millions of lawful travelers enter the country each year.”¹⁰⁶ At the same time, thousands of pounds of illegal drugs are smuggled into the United States, and over hundreds of thousands of pedestrians attempt to avoid law enforcement and illegally cross the border.¹⁰⁷ The large numbers of legal and illegal entries of people and goods put a strain

¹⁰⁵ Source: Michelle Mark, Skye Gould and Andy Kiersz, Business Insider.

¹⁰⁶ Jerome P. Bjelopera and Kristin M. Finklea, *Border Security: Understanding Threats at U.S. Borders*, CRS Report R42969 (Washington, DC: Congressional Research Service, 2013), <https://crsreports.congress.gov/product/pdf/R/R42969>, 1.

¹⁰⁷ Bjelopera and Finklea, 1.

on the CBP, forcing long wait times to enter the country or lower inspection standards, or both.

There are several other vulnerabilities along the land border. First, border barriers can only work if they are the correct type of fencing and in the correct location. For example, New Mexico has 14 miles of pedestrian fencing and 101 miles of vehicle fencing. Yet, CBP's El Paso sector in New Mexico had over 25,000 pedestrians apprehended at the border in 2017. This could be strong evidence that vehicle fencing may not be the best type of infrastructure. Second, there are several areas along the border that are simply unprotected by a border wall. In some circumstances, there are gaps where there is fencing as shown in Figure 6. Third, border fences or walls are vulnerable to a dynamic adversary. In other words, fences are a static solution to a dynamic problem. Therefore, the adversary can adapt to the border barrier and find a path around it or through it.

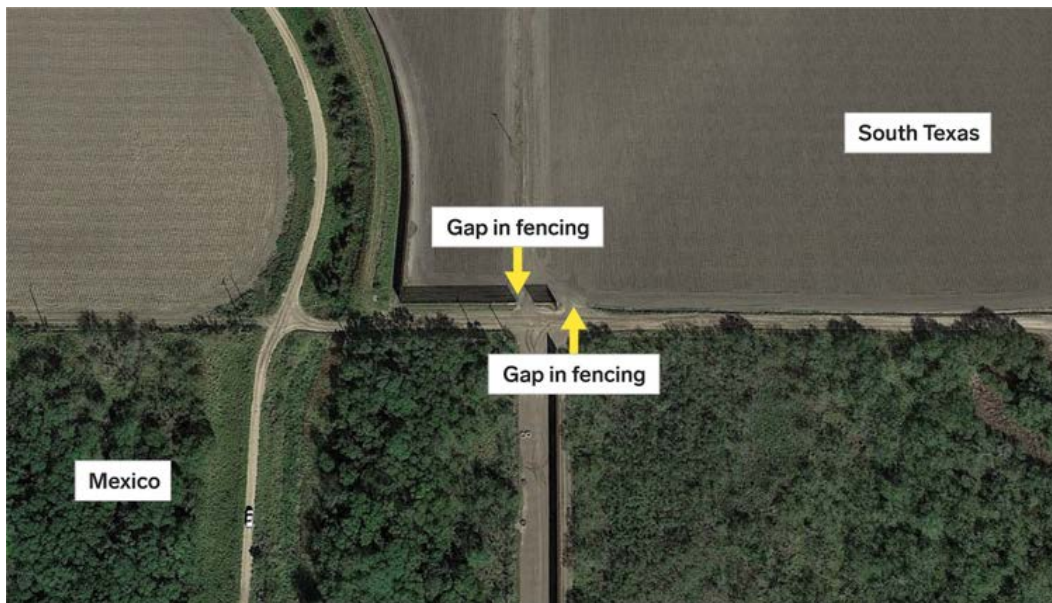


Figure 6. Border Fence Gaps in Texas¹⁰⁸

¹⁰⁸ Source: Michelle Mark, Skye Gould, and Andy Kiersz, Business Insider.

Besides the basic fact that someone can use bolt cutters and cut a hole in a fence and transit through it, people have been known to go over and under the border fence. This is summed up in the common saying “show me a 10-foot wall, and I will show you an 11-foot ladder.” The innovation from transnational criminal organizations (TCO) is much more advanced. In a CNN report of the infamous Joaquin “El Chapo” Guzman trial, a former Sinaloa cartel leader Jesus Zambada Garcia testified that “in the late 1980s to early 1990s, 95 percent of cocaine was brought into the United States by a tunnel under Arizona’s border.”¹⁰⁹ He added that tunnels were the safest and easiest until law enforcement began to discover and shut down the tunnel systems.¹¹⁰ As a result, the TCOs adapted and started to focus on ports of entry as their entry point for drugs into the United States. The statistics back up Garcia’s claim too. Over the last three decades, 197 tunnels have been discovered by the CBP.¹¹¹ Presumably, there are many active tunnels that have gone undiscovered. In addition to going under the border wall, TCOs have shifted to using ports of entry to smuggle drug through. The border wall is vulnerable to this because not only do border walls not protect ports of entry, but they may be in fact funneling people and goods to ports of entry and not stopping them at all.

From a border security perspective, actors and goods are two groups that encompass most threats to border security.¹¹² Threat actors can include terrorists, transnational criminals, and unauthorized migrants. Terrorists generally have a motivation to inflict harm once inside the country, while transnational criminals are more profit driven. Conversely, unauthorized migrants generally are incentivized by economic or employment opportunities.¹¹³ Goods are threats on their own but are often connected to threat actors.

¹⁰⁹ Sonia Moghe and Maria Santana, “Traffickers at the El Chapo Trial Say Drugs Aren’t Smuggled through Open Parts of the Border,” CNN, accessed April 14, 2019, <https://www.cnn.com/2019/01/12/us/drug-traffickers-el-chapo-trial-drugs-across-border/index.html>.

¹¹⁰ Moghe and Santana.

¹¹¹ Guerrero, “US-Mexico Drug Tunnels Evolving Amid Increased Border Security.”

¹¹² Bjelopera and Finklea, *Border Security: Understanding Threats at U.S. Borders*, 5.

¹¹³ Bjelopera and Finklea, 6–8.

Goods that are illegal or prohibited in the United States are standard threats. Examples of prohibited goods are drugs, firearms, and nuclear, chemical, and biological weapons. Goods that are not prohibited but still smuggled into the country can have an economic impact. Generally, to avoid taxes, cigarettes, alcohol, and counterfeit items can be smuggled across the border.¹¹⁴

3. Border Security Budget and Personnel

The budget given to the United States Border Patrol (USBP) has changed dramatically over time. In fact, since 1990, when border security started to shift to more focused border enforcement strategy, the USBP budget has increased by a factor of 14.¹¹⁵ As shown in Figure 7, in 1990 their budget was \$263 million, and in 2016 they received \$3.8 billion in funding. Throughout the 1990s, the budget slowly and steadily increased year after year. In 2002, USBP received about a 20 percent increase in budget from \$1.1 billion to \$1.4 billion.¹¹⁶ This is most likely in response to a peak of over 1.6 million apprehensions along the Southwest border in 2000.¹¹⁷ The next significant increase came in 2006, the same year The Secure Fence Act of 2006 was released. After a 28 percent budget increase in 2006, the USBP's funding continues to grow over time.

¹¹⁴ Bjelopera and Finklea, 10–11.

¹¹⁵ “The Cost of Immigration Enforcement and Border Security,” American Immigration Council, September 23, 2013, <https://americanimmigrationcouncil.org/research/the-cost-of-immigration-enforcement-and-border-security>.

¹¹⁶ U.S. Customs and Border Protection, “U.S. Border Patrol Fiscal Year Budget Statistics (FY 1990–FY2015),” January 12, 2006, <https://www.cbp.gov/newsroom/media-resources/stats>.

¹¹⁷ United States Border Patrol, “Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year,” 2018, <https://www.cbp.gov/sites/default/files/assets/documents/2019-Mar/bp-southwest-border-sector-apps-fy1960-fy2018.pdf>.

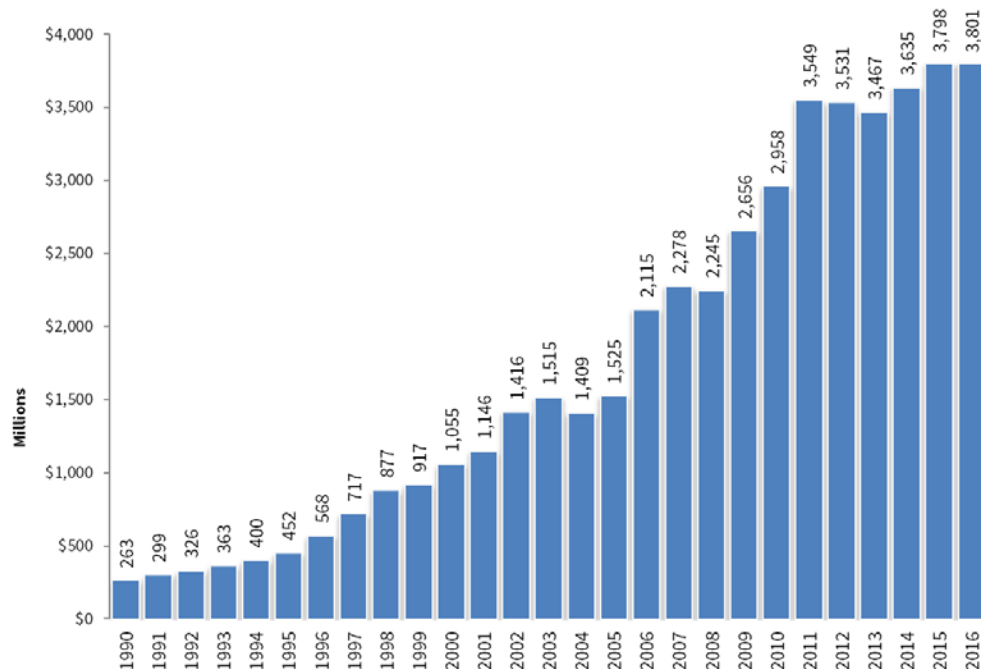


Figure 7. U.S. Border Patrol Budget (FY1990–2016)¹¹⁸

USBP personnel staffing along the Southwest border follows a similar trend as the budget. Staffing levels for the USBP rise almost every year from 1992 to 2018, as illustrated in Table 1.¹¹⁹ Exceptions to this are from 2015 to 2018, where the USBP personnel numbers drop slightly. Similar to the USBP budget and resulting from a Secure Fence Act of 2006 initiative, the most substantial period of personnel increases began in 2006 and ended in 2014. Overall the personnel levels have increased by nearly a factor of five from 1992 to 2018. Also, there is a justifiable difference between border patrol manning on the Southwest border compared to the Northern and coastal border. The USBP reports their 2018 personnel levels in the Southwest border, Northern border, and coastal borders to be 16,608, 2,097, and 248, respectively.¹²⁰ In other words, the Southwest border

¹¹⁸ Source: U.S. Customs and Border Protection, “U.S. Border Patrol Fiscal Year Budget Statistics (FY 1990-FY 2015),” January 12, 2016.

¹¹⁹ United States Border Patrol, “Border Patrol Agent Staffing by Fiscal Year,” 2018, <https://www.cbp.gov/sites/default/files/assets/documents/2019-Mar/Staffing%20FY1992-FY2018.pdf>.

¹²⁰ United States Border Patrol.

employs about 85 percent of all border patrol agents. With overwhelming apprehension rates along the Southwest border, the lopsided employment of personnel makes sense.

Table 1. Border Patrol Agent Staffing at Southwest Border by Fiscal Year¹²¹

Fiscal Year	Southwest Border Sectors	Fiscal Year	Southwest Border Sectors
1992	3,555	2006	11,032
1993	3,444	2007	13,297
1994	3,747	2008	15,442
1995	4,388	2009	17,408
1996	5,333	2010	17,535
1997	6,315	2011	18,506
1998	7,357	2012	18,546
1999	7,706	2013	18,611
2000	8,580	2014	18,156
2001	9,147	2015	17,522
2002	9,239	2016	17,026
2003	9,840	2017	16,605
2004	9,606	2018	16,608
2005	9,891		

D. MARITIME BORDER

1. Geography and Characteristics

The United States coastline could be considered its maritime border, but the maritime domain is more complicated than that. The National Oceanic and Atmospheric Administration (NOAA) conducts surveys to determine the size and length of the United States' coastlines and surrounding waters. They have determined that the length of the United States' coastline is 95,471 miles.¹²² This measurement does include the Great Lakes, Alaska, and Hawaii; although they may have their own immigration and drug smuggling issues, they are outside the scope of this thesis. So, narrowing this measurement

¹²¹ Source: United States Border Patrol, "Border Patrol Agent Staffing by Fiscal Year."

¹²² National Oceanic and Atmospheric Administration U.S. Department of Commerce, "How Long Is the U.S. Shoreline?," accessed April 9, 2019, <https://oceanservice.noaa.gov/facts/shorelength.html>.

down to southern states that commonly deal with illegal immigration and drug smuggling allows for better comparison to the land border. The states of California, Texas, Louisiana, Mississippi, Alabama, and Florida together have 3,051 miles of coastline.

The United Nations Convention on Law of the Sea (UNCLOS) states that a country's sovereign territory extends 12 nautical miles (NM) from their baseline, or generally speaking their coastline. In addition, a 24 NM contiguous zone (CZ) and 200 Exclusive Economic Zone (EEZ) is established which allows for various custom, environmental, and economic laws to be enforced. Therefore, the maritime border is often referred to as a domain and includes the length of the maritime border and includes square miles of ocean as a descriptor of size. From the perspective of the United States Coast Guard (USCG), the leading agency for maritime security, this large size means the Coast Guard is responsible for patrolling a vast area. In a statement to the House of Representatives Subcommittee on Border and Maritime Security, Rear Admiral William D. Lee, Deputy for Operations Policy and Capabilities, USCG, reported that the challenging maritime domain requires the USCG to patrol "over 95,000 miles of coastline while exercising jurisdiction over 4.2 million square miles of ocean."¹²³

2. Threats and Vulnerabilities

The maritime border experiences threats of drug smuggling and illegal immigration just as the land border does. In addition to that, the maritime border's unique characteristics add more threats and vulnerabilities. The National Strategy for Maritime Security identifies terrorists, other nations, transnational criminals, pirates, environmental destruction, and illegal seaborne immigration as threats to maritime security.¹²⁴ Of note, transnational criminals are active in drug smuggling and trafficking of people. To do this, they sometimes hide in plain sight and blend in with regular maritime traffic. In testimony to the Senate Committee on Homeland Security and Governmental Affairs, Randolph Alles, Assistant Commissioner of the Office of Air and Marine within the CBP, said that maritime

¹²³ *What Does A Secure Maritime Border Look Like?: Subcommittee on Border and Maritime Security of the Committee on Homeland Security, H.R., 113th Cong., 1st sess., November 19, 2013.*

¹²⁴ Department of Defense and Department of Homeland Security, "The National Strategy for Maritime Security, 3–6."

domain awareness is hard to achieve because “small vessels inbound to the United States are generally not required to announce their arrivals in advance, nor are they required to make their initial landing at a designated port of entry. Additionally, small vessels have no requirement to continually broadcast their position via transponder.”¹²⁵

TCOs have used various means to travel at sea and avoid detection from law enforcement which therefore poses a threat to maritime border security. Drug smugglers have been known to use “go-fast” boats to transport drugs. These boats, as the name would suggest, are powerful and fast surface vessels that are usually greater than 25 feet and less than 45 feet.¹²⁶ They travel at night in an effort to travel undetected. “Go-fast” boats can transport, depending on the size, up to 2 tons of cocaine.¹²⁷ Another method smugglers use is panga boats. According to a GAO report, “panga boats are open-hulled, flat-bottomed fishing vessels designed to arrive and depart directly from a beach. These vessels are between 20 and 60 feet long and are fitted with one or more outboard motors.” Panga boats can come in different sizes and forms and have been used for smuggling drugs and people. A GAO report found that in March of 2015, the USCG seized “5,700 pounds of marijuana from one panga boat.”¹²⁸ A popular style of a panga boat is pictured in Figure 8.¹²⁹ Panga boats offer the ability to travel hundreds of miles and avoid major ports where law enforcement congregates.¹³⁰

¹²⁵ S., *Securing the Border*.

¹²⁶ Adam Elkus, “The Rise of the Narco Navy,” *USNI News*, June 15, 2012, <https://news.usni.org/2012/06/15/rise-narco-navy>.

¹²⁷ Elkus.

¹²⁸ Rebecca Gambler, *Border Security: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling*, GAO-17-474 (Washington, DC: Government Accountability Office, 2017), 2.

¹²⁹ Michael McCullough, “Boats for Whale Watching”, Flickr Creative Commons, last modified March 1, 2009, https://www.flickr.com/photos/ex_magician/3340756887/.

¹³⁰ Rebecca Gambler, *Border Security: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling*, 23.



Figure 8. Panga Boats¹³¹

Another smuggling technique is using subsurface vessels or semi-subsurface vessels, also known as semisubmersibles. These vessels are tough to detect by radar due to their minimal radar cross-section. Semisubmersibles have a unique buoyancy that allows them to float mostly under water with only the top portion of the vessel at wave height. They can carry multiple crew members and many tons of cocaine while traveling far distances completely undetected.¹³²

3. Border Security Budget and Personnel

The maritime border is protected by multiple agencies each with its own source of funding. The USCG is the lead law enforcement agency in the maritime domain. It monitors the seas from the coastline to the United States' 200 EEZ and in certain circumstances out further to the continental shelf, which could be up to 350 miles. The

¹³¹ Source: Michael McCullough, Flickr Creative Commons.

¹³² Elkus, "The Rise of the Narco Navy."

USCG has over 40,000 active duty members, but that number may be misleading.¹³³ They operate all over the country in almost every state, so not all units will contribute to maritime security near the southern border. Their organization is split up into two groups, Pacific and Atlantic. Then, they are further divided into districts which will have one or more states as an area of responsibility. For maritime security, they operate many assets. As of April 2019, the USCG operates 159 cutters¹³⁴ of various types and sizes and 600 other smaller motor vessels.¹³⁵ In addition to surface assets, there are 146 helicopters and 55 fixed-winged aircraft under the USCG control.¹³⁶

To support this large organization and its assets, the USCG receives its budget from the DHS. The USCG's fiscal year 2018 budget was \$10.67 billion.¹³⁷ As shown in Table 2, the USCG's funding has increased by almost one billion over the last five years. Although their funding has trended upwards, Coast Guard leaders often argue that the service is in need of more money. In a 2017 CBS News interview, Adm. Paul Zukunft, the Commandant of the U.S. Coast Guard, believed that some of the Coast Guard fleet is past the age it was designed to operate. As a result, maintenance costs needed to compensate for an aging fleet would be \$1.5 billion.¹³⁸ He went on to say that "There were over 500 events that literally eluded us [last year], We knew they were out there. This really came down to we didn't have enough planes[;] we didn't have enough ships."¹³⁹

¹³³ "U.S. Military Force Numbers, by Service Branch and Reserve Component 2017," Statista, accessed April 15, 2019, <https://www.statista.com/statistics/232330/us-military-force-numbers-by-service-branch-and-reserve-component/>.

¹³⁴ Coast Guard Cutters are any surface vessel 65 feet or longer.

¹³⁵ United States Coast Guard, "Operational Assets," accessed February 15, 2019, <https://www.work.uscg.mil/Assets/>.

¹³⁶ United States Coast Guard.

¹³⁷ "USCG Budget Archive," United State Coast Guard, accessed April 15, 2019, <https://www.uscg.mil/Budget/Archive/>.

¹³⁸ "Coast Guard Lacks Funds to Chase Drugs, Maintain Fleet, Commandant Says," *CBS News*, accessed April 24, 2019, <https://www.cbsnews.com/news/coast-guard-lacks-funds-to-chase-drugs-maintain-fleet-commandant-says/>.

¹³⁹ "Coast Guard Lacks Funds to Chase Drugs, Maintain Fleet, Commandant Says."

Table 2. United States Coast Guard Budget
by Fiscal Year¹⁴⁰

Fiscal Year	Budget in Billions
2014	9.79
2015	9.8
2016	9.96
2017	10.32
2018	10.67

E. CONCLUSION

When the CBP was absorbed underneath the DHS umbrella, a change in thinking about border security occurred. Border security was viewed through a national security lens and because of terrorist attacks fresh in the country's mind, border security became more of a terrorism than a law enforcement issue. This was backed up by continuous increases in personnel and funding to the CBP along with policies that ordered physical infrastructure. The Southern border, in a way, became militarized. While the border security focus is on the southern border, the Coast Guard fleet has aged beyond its intended lifespan and struggles to keep up with its homeland security missions.

Massive infrastructure projects along the Southwest border has produced mixed reviews. Chapter III will present border security statistics related to the current border fencing and related to the maritime domain. Studying these statistics over time can illustrate the effects of the border wall; how it affects the land border and the maritime border. Armed with this knowledge, the United States can use it to understand the effects of a new and longer border wall.

¹⁴⁰ Adapted From: United States Coast Guard Budget Archive.

III. BORDER APPREHENSIONS AND DRUG SEIZURES

A. INTRODUCTION

Because there is a big debate on whether or not the United States should adopt a border wall that extends the full length of the U.S.-Mexico border, and with billions of dollars on the line, it is essential to understand the effectiveness of a potential border wall. First, determining the effectiveness will require data from the CBP to be analyzed for land border security. According to the CBP, their mission statement is “to safeguard America's borders thereby protecting the public from dangerous people and materials while enhancing the Nation's global economic competitiveness by enabling legitimate trade and travel.”¹⁴¹

Secondly, data from the USCG will offer insight into maritime border security and how it is related to the land border. The USCG manages multiple missions considered to be either homeland security-related or not homeland security-related as delineated by the Homeland Security Act of 2002.¹⁴² Of interest to this thesis is their homeland security missions. The USCG reports that two of the homeland security-related missions are to secure and manage our borders and enforce our immigration laws, both through maritime law enforcement.¹⁴³

To further refine this, it seems as if the two main concerns are people and goods coming into the United States illegally. So, in this chapter, the data for the land and maritime border will be presented in the form of illegal border crossing apprehensions and illegal drug seizures, arguably one of the more dangerous and prevalent illegal good to be smuggled into the United States. Using the same border security indicators for both land and maritime borders will allow for justifiable comparison. Also, it will be a way to analyze how the two borders’ statistics relate to each other or react to changes in the other.

¹⁴¹ U.S. Customs and Border Protection, “About CBP,” accessed April 23, 2019, <https://www.cbp.gov/about>.

¹⁴² United States Coast Guard, “Our Organization and Missions,” accessed April 23, 2019, <https://www.work.uscg.mil/Missions/>.

¹⁴³ United States Coast Guard.

Before presenting the border security data, there are some assumptions that will be made in this research that must be highlighted. In a RAND Corporation report, Andrew Morral, Henry Willis, and Peter Brownell studied different ways to measure illegal border crossing between ports of entry. They found that reporting illegal border crossing apprehensions as a means to estimate border security effectiveness may be inadequate due to the fundamental problem with the process.¹⁴⁴ More specifically, as Morral et al. state, “fundamental to the question of border control effectiveness is the proportion of illicit border crossings that are prevented either through deterrence or apprehension.”¹⁴⁵ Therefore, the ideal measure of border security effectiveness would be to determine what percentage of illegal border crossings have been prevented either through apprehension or deterrence. But, we only know the total number of apprehensions—we do not know how many crossers were deterred, and we do not know how many people crossed undetected. If you know that quantity, a percentage of the total flow of people crossing the border illegally can be quantified, and therefore outputting a metric of effectiveness for border security.

Unfortunately, in attacker-defender problems, the adversary always has a say in how the situation unfolds. In the case of illegal border crossings, the migrant will choose to avoid detection if possible. So, when attempting to calculate border apprehensions as a percentage of total illegal crossings, the simple math equation of apprehensions (numerator) divided by total crossings (denominator) is flawed. There is a “denominator problem” when the USBP does an excellent job of recording and retaining apprehension statistics, the numerator, but does not know for sure the total illegal crossings, the denominator. The total border crossings are almost impossible to calculate because the CBP simply can not count the people crossing the border if they were not detected. Additionally, the same logic can be applied to drug smuggling across both the land border.

¹⁴⁴ Andrew Morral, Henry Willis, and Peter Brownell, *Measuring Illegal Border Crossing Between Ports of Entry: An Assessment of Four Promising Methods*, OP-328-OSD (Santa Monica, CA: RAND Corporation, 2011), https://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP328.pdf#page=13, vii.

¹⁴⁵ Morral, Willis, and Brownell, vii.

Although other ideas of how to measure the total crossings exist, the CBP still uses apprehension rates as its primary statistic. Other methods include stratified sampling equations, surveys, respondent-driven sampling, and other advanced analytical models. These methods' effectiveness is, however, outside the scope of this research. Since the CBP and the USCG's most readily available statistic for border security is border crossing apprehensions and drug seizures, the analysis associated with this thesis will make assumptions based on these statistics. Indications of falling or lower apprehensions or seizures in a particular area will be understood to mean there is less flow of people or drugs attempting to cross the border in that area. Since the manning, technology, and infrastructure has only increased over the years, it is unlikely that the ability to control the border has been reduced. Therefore, those intending to cross the border have either been apprehended, redirected to another area, or have innovated a way around border security undetected in the same area. If the statistics indicate a rise in border apprehensions or drug seizures, then my analysis will assume more people or drugs are attempting to cross the border in that area or a significant increase in border security in that area has increased their ability to control the border.

This chapter assesses the nation's land border security and maritime border security by examining illegal immigration and drug smuggling across each border. For both borders, the data is divided into two time periods: before and after the period 2006-2009, when the majority of border fencing was constructed. The data is organized in this manner simply to see the effects the border barriers have had on illegal immigration and drug smuggling.

Border fence construction has been a result of various policy decisions. In total, these policies have resulted in the construction of 705 miles of border fencing along the Southwest border. Some of this is secondary or tertiary layered fencing, so linearly there are 654 miles of primary fencing, which included 374 miles of pedestrian fencing and 280 miles of vehicle fencing.¹⁴⁶ As shown in Figure 9, spikes in border wall construction

¹⁴⁶ U.S. Customs and Border Protection, "U.S. Border Patrol Mileage of Pedestrian and Vehicle Fencing by State."

happened in 1992, 1998, and 2006–2009. The overwhelming amount of construction took place during the time period of 2006 to 2009, amounting to 592 miles or about 84 percent of total border fencing.¹⁴⁷ This time period will be considered the “border barrier construction period” and will be used to separate the two time periods of data: before fencing and after fencing.

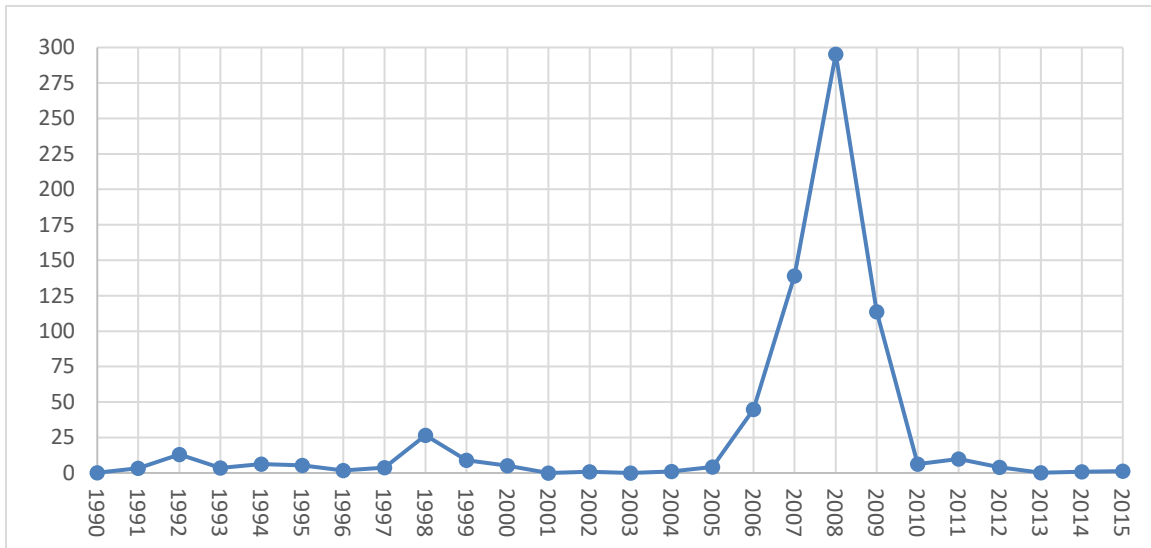


Figure 9. Mileage of Border Fencing Constructed per Year (1990–2015)¹⁴⁸

B. LAND BORDER SECURITY

This section reviews America’s southwest land border security measured in terms of illegal immigration and drug smuggling. For each measure, data will be analyzed first before the major border barrier construction period beginning in 2006, and then after that construction finished in 2009.

¹⁴⁷ Jean Guerrero and Leo Castaneda, “America’s Wall,” KPBS Public Media, November 13, 2017, <http://www.kpbs.org/news/2017/nov/13/americas-wall/>.

¹⁴⁸ “Adapted from: Jean Guerrero and Leo Castaneda, KPBS Public Media.

1. Illegal Immigration before Border Barriers

Prior to the construction of hundreds of miles of border fencing from 2006 to 2009, the USBP apprehended millions of people attempting to cross the southern border illegally. Apprehensions between ports of entry have steadily increased from 690,554 in 1980 to 1,171,396 in 2005, as displayed in Table 3.¹⁴⁹ Of note, within these 25 years of border security, apprehensions peaked in 2000 with 1,643,679 apprehensions. This is this highest number of apprehensions on record from 1960 until today.¹⁵⁰

Table 3. Southwest Border Apprehensions (1980–2005)¹⁵¹

Fiscal Year	Border Apprehensions	Fiscal Year	Border Apprehensions
1980	690,554	1993	1,212,886
1981	749,808	1994	979,101
1982	745,820	1995	1,272,390
1983	1,033,974	1996	1,507,020
1984	1,058,276	1997	1,368,707
1985	1,183,351	1998	1,516,680
1986	1,615,844	1999	1,537,000
1987	1,122,067	2000	1,643,679
1988	942,561	2001	1,235,718
1989	852,506	2002	929,809
1990	1,049,321	2003	905,065
1991	1,077,876	2004	1,139,282
1992	1,145,574	2005	1,171,396

Note: The full list of yearly apprehensions in each sector is located in the Appendix.

The number of apprehensions can be further refined by sector. The USBP uses geographic sectors to divide the border for organizational purposes.¹⁵² These sectors do not always follow state lines and can be attributed to cities for their naming. Figure 10

¹⁴⁹ United States Border Patrol, “Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year.”

¹⁵⁰ United States Border Patrol.

¹⁵¹ Adapted From: United States Border Patrol.

¹⁵² Rebecca Gambler, *Border Patrol: Actions Needed to Improve Oversight of Post-Apprehension Consequences*, GAO-17-66 (Washington, DC: Government Accountability Office, 2017), 10.

illustrates the arrangement of CBP's border sectors. Apprehension statistics are recorded within each sector and can give a more detailed view of where migrants are attempting to cross. For example, in 1986, the San Diego sector recorded 629,656 apprehensions while the EL Centro sector, the next sector to the East of San Diego sector, only recorded 95,186 apprehensions. In fact, the San Diego sector documented the highest number of apprehensions from 1980 to 1997. During this time, the San Diego sector had substantially higher apprehensions than all other sectors. As a result, activity in that sector, at times, doubled, tripled, and quadrupled other sectors. This is a clear reason why San Diego was the first sector to construct a border barrier.

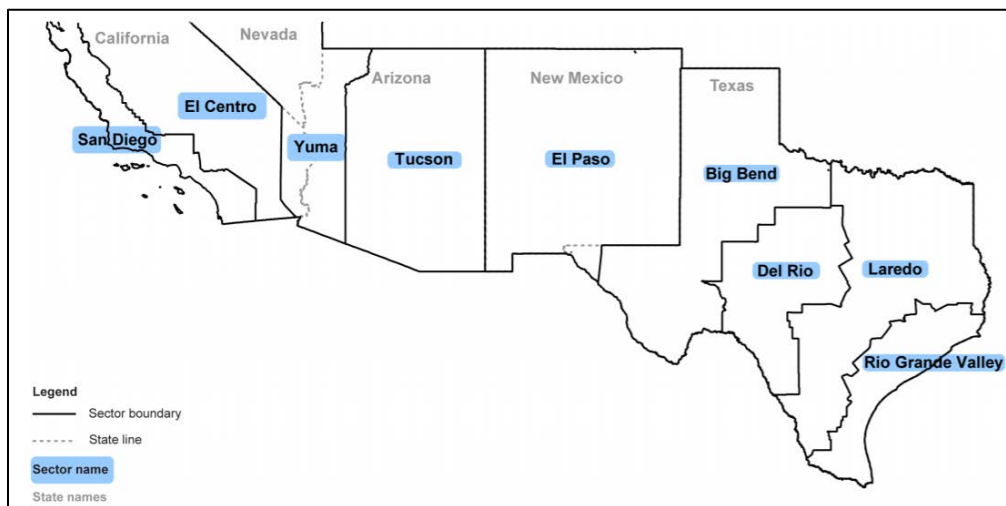


Figure 10. CBP's Southwest Border Sectors¹⁵³

President Clinton's administration, in 1993, initiated Operation Gatekeeper which focused on increasing the difficulty to cross the border in California, specifically the San Diego sector. This spurred about 24 miles of border fencing to be built throughout the 1990s.¹⁵⁴ Operation Gatekeeper was viewed as a success because apprehensions in the San Diego sector dropped from 540,347 in 1991 to 151,681 in 2000. In other words, the San Diego sector recorded 50 percent of the total apprehension along the border in 1991, and

¹⁵³ Adapted From: Rebecca Gambler.

¹⁵⁴ Guerrero and Castaneda, "America's Wall."

in 2000, it recorded only 9 percent of the total apprehensions.¹⁵⁵ As the San Diego sector's apprehension numbers dropped, border sectors to the East began to see a rise in their apprehensions. In the El Centro sector, the number of apprehensions more than tripled from 1996 to 2000.¹⁵⁶ Moreover, as the San Diego sector's apprehensions fell in the late 1990s, people were clearly choosing to transit Eastward into the desert to attempt entry into the United States. Beginning in 1998, the Tucson sector's apprehensions surpassed the San Diego sector as the leading sector for apprehensions, ultimately reaching 616,346 apprehensions in 2000.¹⁵⁷ The Tucson sector, at this time, had minimal border fencing covering its 262 miles of the border.¹⁵⁸ Although this area is dangerous due to its desert qualities, it became a path of least resistance in regard to border security.

2. Illegal Immigration after Border Barriers

The Secure Fence Act of 2006 initiated a construction boom that resulted in 592 miles of border fencing from 2006 to 2009. These new barriers were mostly located in the El Paso, Tucson, and Yuma border sectors and were built in response to the eastward shift of illegal migration. Across the whole border, apprehensions totals after 2006 began to decline. As shown in Table 4, apprehensions in 2006 were 1,071,972 and thereafter continued to mostly reduce throughout the next decade. Although apprehension decline overall, these facts suggest that the border fencing directly impacts where the flow of people are choosing to cross the border. Consequently, at the sector level, this could mean the border wall is effective. It also indicates the pitfalls of constructing a fence line with many gaps and extensive areas with no barriers at all. This data demonstrates a trend that when border barriers are utilized in one area, the flow of people is not stopped altogether. Rather, people are just redirected to an area that offers the least amount of resistance. This trend is similar to what was seen in the San Diego, El Centro, and Tucson sectors in the

¹⁵⁵ United States Border Patrol, "Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year."

¹⁵⁶ United States Border Patrol.

¹⁵⁷ United States Border Patrol.

¹⁵⁸ U.S. Customs and Border Protection, "Tucson Sector Arizona," accessed April 26, 2019, <https://www.cbp.gov/border-security/along-us-borders/border-patrol-sectors/tucson-sector-arizona>.

late 1990s.¹⁵⁹ From 2006 to 2018, border apprehensions dropped about 63 percent. In 2011, apprehensions reached a low of 327,577, a level not seen since the 1970s.¹⁶⁰

Table 4. Southwest Border Apprehensions (2006–2018)¹⁶¹

Fiscal Year	Border Apprehensions	Fiscal Year	Border Apprehensions
2006	1,071,972	2013	414,397
2007	858,638	2014	479,371
2008	705,005	2015	331,333
2009	540,865	2016	408,870
2010	447,731	2017	303,916
2011	327,577	2018	396,579
2012	356,873		

At the sector level, border apprehensions shifted again following the new border barriers. As the migrants attempting to cross the border adapted to the new border barriers, apprehensions in the Tucson sector dropped while apprehensions in the Rio Grande Valley sector began to rise. In 2013, the Rio Grande Valley sector became the leading sector for apprehensions, and that remains through 2018.¹⁶² In 2014, The Rio Grande Valley apprehended 53 percent of all border apprehensions. Although apprehension decline overall, these facts suggest that the border fencing directly impacts where the flow of people are choosing to cross the border. Consequently, at the sector level, this could mean the border wall is effective. It also indicates the pitfalls of constructing a fence line with many gaps and extensive areas with no barriers at all. This data demonstrates a trend that when border barriers are utilized in one area, the flow of people is not stopped altogether. Rather, people are just redirected to an area that offers the least amount of resistance. This trend is similar to what was seen in the San Diego, El Centro, and Tucson sectors in the late 1990s.

¹⁵⁹ United States Border Patrol, “Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year.”

¹⁶⁰ United States Border Patrol.

¹⁶¹ Adapted From: United States Border Patrol.

¹⁶² United States Border Patrol.

3. Drug Smuggling before Border Barriers

Drug smuggling statistics are less available, and in certain aspects, offer limited details as compared to apprehension statistics. In 2005, the National Drug Intelligence Center (NDIC) reported that drugs seizures amounted to 2,337,133 lbs., as indicated in Table 5.¹⁶³ Cocaine is a popular drug of choice in the United States and is often used as an indicator of overall drug trends. From 1991 to 2000, cocaine seizures at the Southwest border increased.¹⁶⁴ Figure 11 demonstrates an upward trend of cocaine seizures with the exception of 1998.

Table 5. Pounds of Illegal Drug Seizures
at the Southwest Border¹⁶⁵

Drug Type	2005
Cocaine	49,950
Heroin	503
Marijuana	2,280,195
MDMA	51
Methamphetamine	6,434
Total	2,337,133

Note: Weights are rounded to the nearest pound

¹⁶³ National Drug Intelligence Center, "Drug Movement Into and Within the United States—National Drug Threat Assessment 2010," February 2010, <https://www.justice.gov/archive/ndic/pubs38/38661/movement.htm>.

¹⁶⁴ Mary Layne, Patrick Johnston, and William Rhodes, *Estimation of Cocaine Availability 1996–2000*, Report No. NCJ 192335 (Washington, DC: Office of National Drug Control Policy, 2002), 23.

¹⁶⁵ Adapted From: National Drug Intelligence Center, "Drug Movement Into and Within the United States."

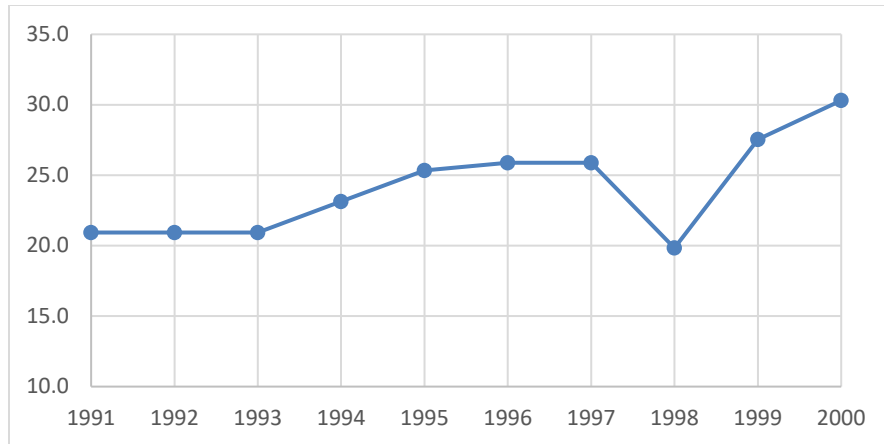


Figure 11. Weight (tons) of Cocaine Seizures at the Southwest Border (1991–2000)¹⁶⁶

4. Drug Smuggling after Border Barriers

Illegal drug seizures following the construction of border barriers remained high. As Table 6 indicates, marijuana seizures exceed all other drugs by far but do show a decline from 2012 to 2018.¹⁶⁷ A drop from over two million pounds in 2012 to 461,030 pounds in 2018 may be a result of the legalization of marijuana in many states. When all drug types are combined, drug seizures are also declining. From 2012 to 2018, total drug seizures fall about 482 percent, from 2,316,170 lbs. to 479,850 lbs. This is a drastic change in drug seizure levels, which raises the question: did the drug seizure level drop because the supply was reduced, or were illegal drugs smuggled through a different mode, like ports of entry or maritime routes?

¹⁶⁶ Adapted From: Layne, Johnston, and Rhodes, “Estimation of Cocaine Availability 1996–2000.”

¹⁶⁷ U.S. Customs and Border Protection, “CBP Enforcement Statistics FY2018,” accessed April 28, 2019, <https://www.cbp.gov/newsroom/stats/cbp-enforcement-statistics-fy2018>.

Table 6. Illegal Drug Seizures in between Ports of Entry (2012–2018)¹⁶⁸

Drug Type	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Cocaine	12,161	4,696	4,554	11,220	5,473	9,346	6,550
Heroin	430	576	606	518	566	953	568
Marijuana	2,299,864	2,430,123	1,922,545	1,538,307	1,294,052	861,231	461,030
Methamphetamine	3,715	3,580	3,930	6,443	8,224	10,328	11,314
Fentanyl	n/a	n/a	n/a	n/a	n/a	181	388
Total	2,316,170	2,438,975	1,931,635	1,556,488	1,308,315	882,039	479,850

Note: Weights are displayed in pounds.

¹⁶⁸ Adapted From: CBP Enforcement Statistics FY2018.

A more in-depth look at cocaine smuggling routes shows shifts in common transportation routes. According to the NDIC, “In 2007, a decline in the amount of cocaine seized along the Southwest Border in the South Texas region—the predominant cocaine smuggling route at the time—resulted in a sharp decline in the amount of cocaine seized overall.”¹⁶⁹ Interestingly, seizure amounts for California ports of entry began to increase as Texas decline occurred. Eventually, California seizures surpassed those of Texas.¹⁷⁰

C. MARITIME BORDER SECURITY

The maritime border security section is also organized by outcome measure and by time period. First, migrant apprehensions at sea will be used as a measure of illegal maritime immigration. This data was derived from the USCG’s records. Second, drug seizure data from the USCG’s records will be used as a measure of drug smuggling through maritime methods. Both of these measures will be separated by the “border barrier construction period,” and therefore will be labeled as before or after border infrastructure was built.

The maritime domain creates a different dynamic for border security. First, it is important to know that the USCG conducts operations under two different categories. All of the USCG missions can be considered homeland security related or non-homeland security related. This is important to know because when analyzing the USCG’s drug seizure rates, only a portion of the USCG assets are available or used for homeland security related missions. The USCG reports in 2005, “57 percent of resource hours [were] used for homeland security missions.”¹⁷¹ This is fairly evenly split compared to 2000, where only

¹⁶⁹ National Drug Intelligence Center, “Drug Movement into and Within the United States.”

¹⁷⁰ National Drug Intelligence Center.

¹⁷¹ Office of Inspector General, *Annual Review of the United States Coast Guard’s Mission Performance (FY2010)*, Report No. OIG-11-111 (Washington DC: Department of Homeland Security, 2011), https://www.oig.dhs.gov/assets/Mgmt/OIG_11-111_Sep11.pdf, 4.

38 percent of missions were homeland security related.¹⁷² More recently in 2013, the Coast Guard missions were split evenly at 50 percent.¹⁷³

1. Illegal Immigration before Border Barriers

Migrants attempting to reach the United States through maritime means has been on the decline. The USCG reported 9,900 apprehensions in the fiscal year 2009.¹⁷⁴ That is less than half of the levels seen in 2005, which were 21,200 apprehensions. Fiscal years 2006, 2007, 2008 continued the trend of decline with apprehensions of 17,400, 14,600, 10,900, respectively.¹⁷⁵ In 2009, the USCG estimated its apprehension rate at about 84 percent. That is an improvement from the previous two year's apprehension rates of 65 and 62 percent.¹⁷⁶

2. Illegal Immigration after Border Barriers

Illegal immigration through maritime means is less prevalent than through the land border. Although the apprehension levels represent only a small fraction of CBP's apprehensions on land, there is a trend that is important to acknowledge. From 2012 to 2016, Table 7 shows that maritime apprehensions increased almost every year.¹⁷⁷ Also of importance, the USCG's apprehension rate is relatively stable in the 68 percent to 83 percent range.

¹⁷² Office of Inspector General, 4.

¹⁷³ Office of Inspector General, *Annual Review of the United States Coast Guard's Mission Performance (FY 2013)*, Report No. OIG-14-140 (Washington DC: Department of Homeland Security, 2014), https://www.oig.dhs.gov/sites/default/files/assets/Mgmt/2014/OIG_14-140_Sep14.pdf.

¹⁷⁴ United States Coast Guard, "Fiscal Year 2009 Performance Report," February 2010, https://www.uscg.mil/Portals/0/documents/budget/CG_FY2009_Performance_Report.pdf, 24.

¹⁷⁵ United States Coast Guard, 24.

¹⁷⁶ United States Coast Guard, 24.

¹⁷⁷ United States Coast Guard, *Annual Performance Report Fiscal Year 2017*, 2018, <https://www.uscg.mil/Portals/0/documents/budget/FY17%20APR%2015%20May%2018%20-%20Final%20-%20POSTED.pdf>, 11–12.

Table 7. USCG Migrant Apprehensions (2012–2017)¹⁷⁸

Year	2012	2013	2014	2015	2016	2017
Apprehended	4,086	5,262	7,747	6,028	8,165	3,952
Total Attempts	5,600	7,631	10,629	8,057	10,319	4,760
Apprehension Rate	73.0%	68.9%	72.8%	74.8%	79.3%	83.0%

Most of the apprehensions conducted by the USCG are located around the Florida area. It is more likely that migrants in this area are from countries in the region like Cuba, Haiti, and other islands in the Caribbean. On the other hand, migrants found on the West coast are more likely from Central and South America.¹⁷⁹ This is an important distinction to make because it may be unlikely that a migrant from Cuba travels to Mexico or the West coast to attempt to cross the border. Therefore, changes in the West coast apprehensions would likely be more linked to land border security. With that in mind, trends can be found in West coast apprehensions. The Washington Post reports that “the U.S. Coast Guard saw a nearly fivefold increase in the number of migrants it intercepted off the coast of Southern California in 2018,”¹⁸⁰ Fiscal years 2016, 2017, and 2018 recorded apprehension numbers of 142, 213, and 1,022, respectively.¹⁸¹ This is a small sample size, but with total maritime apprehensions declining to 1,668, yet increasing on the West coast, there could be a change in maritime migration beginning.¹⁸²

3. Drug Smuggling before Border Barriers

As indicated by the DHS Inspector General’s annual review of the USCG’s drug interdiction performance, the goal of this program is to use maritime law enforcement

¹⁷⁸ Adapted From: United States Coast Guard, *Annual Performance Report Fiscal Year 2017*.

¹⁷⁹ Dan Lamothe, “Coast Guard, Working without Pay in a Government Shutdown, Sees a Surge in West Coast Migrant Intercepts,” The Washington Post, January 14, 2019, https://www.washingtonpost.com/national-security/2019/01/14/coast-guard-working-without-pay-government-shutdown-sees-surge-west-coast-migrant-intercepts/?utm_term=.c813bf7cfff7.

¹⁸⁰ Lamothe.

¹⁸¹ Lamothe.

¹⁸² Lamothe.

assets to seize illegal drugs and therefore reduce the amount entering the United States.¹⁸³ In addition, the Inspector General uses specific criteria to evaluate their performance. The annual review states “The Coast Guard’s drug interdiction performance is best summarized by the lead outcome measure of the program.”¹⁸⁴ That lead outcome measure is their cocaine, the most common illegal drug seized as sea, and their cocaine removal rate. Therefore, most available sources only report cocaine seizures or percent removed as their indicator for success.¹⁸⁵ Analysis of this sort of data began in 2004 after the USCG was moved into the DHS.

In 2004, the USCG removed an estimated 30.7 percent of the maritime flow of cocaine coming to the United States. To the advantage of the USCG, drug interdictions do not only take place near the United States’ shores. The mobility that a ship offers is used to interdict drug smuggling as close to the source as possible. The source of cocaine is well known too. Colombia, Peru, and Bolivia cultivate nearly all of the cocaine in the world.¹⁸⁶ Since the source is known, the USCG has identified what they call the “transit zone,” which is the path needed to reach the United States through the seas. The Transit zone includes “the Caribbean Sea, the Gulf of Mexico, and the Eastern Pacific Ocean.”¹⁸⁷ Knowing the source of the drug and the transportation path to the United States, the USCG is able to solve the denominator problem that the CBP experiences. The USCG uses intelligence-based data from the Interagency Assessment of Cocaine Movement which is prepared for the Office of National Drug Control Policy by the Defense Intelligence Agency.¹⁸⁸ With the total cocaine flow estimated, the USCG can evaluate its effectiveness. In 2005, the

¹⁸³ Office of Inspector General, *Independent Review of the United States Coast Guard’s Reporting of FY 2007 Drug Control Performance Summary*. Report No. OIG-08-43 (Washington, DC: Department of Homeland Security, 2008), https://www.oig.dhs.gov/sites/default/files/assets/Mgmt/OIG_08-43_Apr08.pdf, 4.

¹⁸⁴ Office of Inspector General, 4.

¹⁸⁵ Foundation for a Drug-Free World, “The Truth About Cocaine,” accessed April 29, 2019, <https://www.drugfreeworld.org/drugfacts/cocaine/a-short-history.html>.

¹⁸⁶ Drug Enforcement Agency Museum, “Coca: Production & Distribution,” accessed April 29, 2019, <https://www.deamuseum.org/ccp/coca/production-distribution.html>.

¹⁸⁷ Office of Inspector General, *Independent Review of the United States Coast Guard’s Reporting of FY 2007 Drug Control Performance Summary*, 4.

¹⁸⁸ Office of Inspector General, 6.

USCG calculated a 27.3 percent removal rate for cocaine. In other words, more than two-thirds of cocaine headed for the United States enters without law enforcement interference.

In the early 1990s, marijuana smuggling through maritime means was more prevalent. According to the Department of Transportation, the USCG's former cabinet-level department, marijuana seizures in 1992 accounted for over twice as many seizures than cocaine, as illustrated in Figure 12.¹⁸⁹ In the late 1990s, cocaine seizure levels increased dramatically to more than double the levels recorded earlier in the decade. Notably, 1997 marijuana and cocaine seizures increased from about 30,000 lbs. each to over 100,000 lbs. each.

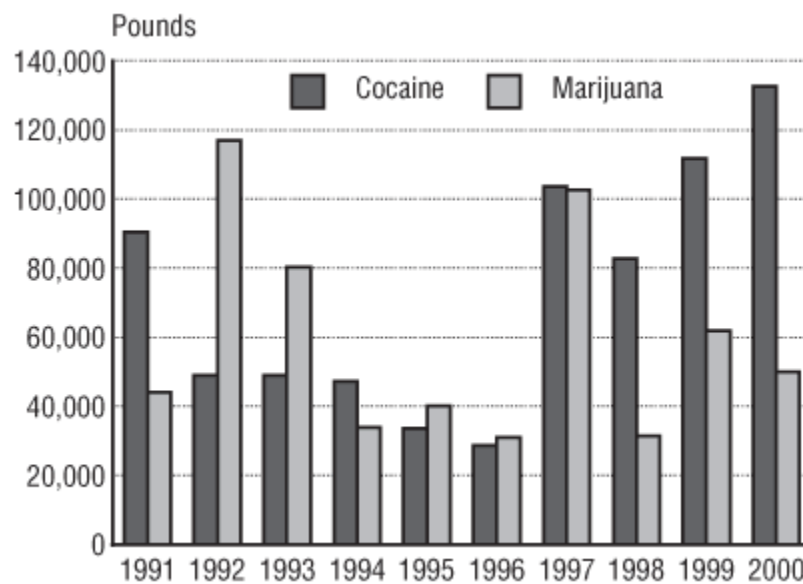


Figure 12. USCG Cocaine and Marijuana Seizures (1991–2000)¹⁹⁰

¹⁸⁹ Bureau of Transportation Statistics, “U.S. Coast Guard Drug Seizures: Fiscal Years 1991–2000,” accessed April 29, 2019, https://www.bts.gov/archive/publications/transportation_statistics_annual_report/2001/chapter_05_figure_02_128.

¹⁹⁰ Source: Bureau of Transportation Statistics.

4. Drug Smuggling after Border Barriers

After the border barrier construction period, the maritime domain experienced a significant increase in the flow of cocaine. Not only that, their drug seizures followed the same pattern. As displayed in Table 8, from 2010 to 2017, the estimated amount of cocaine being transported to the United States increased by 401 percent.¹⁹¹ Unfortunately, the amount of cocaine seized did not reach those levels. The USCG recorded an increase in cocaine removed of 243 percent.¹⁹² It appears the USCG is receiving diminishing returns with the assets available. The USCG has set its drug interdiction goal relatively low at below 19 percent for over a decade. In 2017, the target cocaine removal rate was 11.5 percent, and the actual removal rate was 8.2 percent. In the period 2010 to 2017, the USCG only met its goal one of the years.¹⁹³

Table 8. USCG Cocaine Interdiction by Weight (Tons)¹⁹⁴

Year	2010	2011	2012	2013	2014	2015	2016	2017
Estimated Flow	682	652	796	577	945	1254	2834	2738
Tons Removed	91.8	75.5	107	88.4	91	144.8	201.3	223.8
Target Removal Rate	18.5%	15.5%	16.5%	14.1%	13.9%	13.8%	11.5%	11.5%
Actual Removal Rate	13.5%	11.6%	13.4%	15.3%	9.6%	11.5%	7.1%	8.2%

¹⁹¹ Office of Inspector General, *Review of U.S. Coast Guard's FY 2014 Drug Control Performance Summary Report*, Report No. OIG-15-27 (Washington, DC: Department of Homeland Security, 2015), https://www.oig.dhs.gov/assets/Mgmt/2015/OIG_15-27_Jan15.pdf, 3.

¹⁹² Office of Inspector General, 3.

¹⁹³ Office of Inspector General, 3.

¹⁹⁴ Adapted From: Office of Inspector General, *Review of U.S. Coast Guard's FY 2014 Drug Control Performance Summary Report*.

D. CONCLUSION

Examining the land and maritime border security statistics has established a baseline of border security knowledge. In terms of illegal immigration and drug smuggling, they both paint a different picture of land and maritime domains. Overall, the land domain has experienced an abundance of pedestrian border crossings and drug trafficking, far more than the maritime domain. But increased land border security may have forced these statistics to decline. What stands out is the trends and patterns that can be found even if the overall amount of illegal immigration and drug smuggling is declining.

Chapter IV will take the information from this chapter and identify significant trends and correlations for each domain. These trends will support the argument that there is a relationship between the land border infrastructure and maritime border security. As security increases on the land border, this analysis will be important in predicting changes and outcomes within the less secure maritime domain.

IV. BORDER SECURITY ANALYSIS

A. INTRODUCTION

Presented with decades worth of data about border security results can seem overwhelming. It can also lead readers to believe that illegal immigration and drug smuggling enterprises are overcoming the United States' border security efforts. While this may be partially true, the data available offers interesting trends about where people or drugs are entering the country and how this changes based on how the DHS secures the country's borders.

B. BALLOON EFFECT

Based on the data in Chapter III, a concept known within law enforcement and security stands out as particularly significant for border security in the United States. This concept is called the balloon effect. The balloon effect is basically a metaphor for how enforcement or security efforts displace the thing it was enforcing. Simply put, when a balloon filled with air is squeezed on one side, the balloon does not necessarily pop. Instead, it forces the air to bulge out to the other side.¹⁹⁵ This metaphor can be applied to border security quite well. The action of squeezing the balloon represents more or stricter security in a given area. In respect to this research, it would represent border infrastructure along the border with the personnel and technological support. The air inside the balloon represents the thing being enforced or the undesired action.

Evidence from Chapter III supports this border security balloon effect. In the 1990s, the southern border experiences an eastward shift in the flow of people trying to cross the border illegally following the border walls constructed in the San Diego sector. In California, the San Diego sector's percent of total apprehensions changed from 50 percent to 9 percent within 9 years. Simultaneously, the Tucson sector in Arizona saw dramatic

¹⁹⁵ Kenneth D. Madsen, "Local Impacts of the Balloon Effect of Border Law Enforcement," *Geopolitics* 12, no. 2 (May 1, 2007): 282–283, <https://doi.org/10.1080/14650040601168990>.

increases in apprehensions and surpassed the San Diego sector by the end of the 1990s.¹⁹⁶ After 2009 and the completion of extensive amounts of border barriers, the balloon effect is evident again. Most of the fencing was built on the Western and central sectors, leaving Texas vulnerable. As a result, apprehensions surge in Texas and in 2013 the border patrol in the Rio Grande Valley sector is responsible for over half of all apprehensions.¹⁹⁷ This is direct evidence that supports the balloon effect.

The same concept is supported by illegal drug smuggling efforts. Before most of the border infrastructure was built, the border patrol was seizing over two million pounds of illegal drugs in between ports of entry. In addition, drug seizures, since the 1990s, generally showed an upward trend. Then, border barriers entered the equation, and as a result, from 2012 to 2018, drug seizure levels dropped by almost 500 percent.¹⁹⁸ So, there was definitely a shift in smuggling routes. The difference here, as compared to pedestrian apprehensions, is drugs can be concealed in many more ways than people can. Therefore, because of the balloon effect, illegal drugs shifted to ports of entry, underground tunnels, and maritime routes. Recently, drug seizures at ports of entry have estimated to represent about 90 percent of all land drug seizures.¹⁹⁹

An important aspect of the balloon effect to comprehend is not so much how it works, but why is it happening? Kenneth Madsen's explains this well. The issue with stopping illegal immigrants and drugs is how the problem is viewed. He explains that,

The problem is seen as the source, not the demand, and this logically leads to the conclusion that the tap needs to be shut off. The only place to stop undocumented labour and drugs from entering the United States without operating outside the country's borders is at the border itself.... When the balloon is constrained or pushed back in one place, it develops enough pressure to bulge out somewhere else with increased intensity. Without taking the air out of the balloon by addressing the fundamental capitalist fuel of supply and demand for illegal cross-border traffic (whether people,

¹⁹⁶ United States Border Patrol, "Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year."

¹⁹⁷ United States Border Patrol.

¹⁹⁸ U.S. Customs and Border Protection, "CBP Enforcement Statistics FY2018."

¹⁹⁹ Gustavo Solis, "Drug Smuggling, and the Endless Battle to Stop It," *USA Today*, accessed May 15, 2019, <https://www.usatoday.com/border-wall/drug-trafficking-smuggling-cartels/559814001/>.

drugs, or hatred), border law enforcement simply shifts such activity to other locations where it then has a disproportionate impact.²⁰⁰

So, this suggests that the reason border security seems like an endless cycle is that the border security policies, infrastructure, and technology do not address the overarching reason for crossing the border. With that in mind, the border wall can still be used as a tool to secure the border. In fact, the balloon effect caused by increased border security can be used as part of the plan. In other words, barriers in specific areas can potentially redirect pedestrians and drugs where the CBP has more of an advantage. For example, a shift in drug trafficking to ports of entry is already taking place, and maybe this is better. USA Today highlighted the fact that at ports of entry, “agents have the advantage of lights, drug-sniffing canine patrols, X-ray machines and other high-tech equipment.”²⁰¹ By taking advantage of a predicted shift in the flow of drugs, they can execute their mission closer to resources and support, as opposed to border patrol agents traveling far into rural areas.²⁰²

C. THE U.S. BORDER WALL’S EFFECTIVENESS

The pedestrian apprehension and drug seizure statistics over the years supports the balloon effect idea; Increased security in one location causes a shift of illegal activity to another location if the underlying cause or demand is not addressed. So, if this is true at the southwest border, can the border wall be considered effective? Well, in order to truly determine the effectiveness of the border wall, a well-defined goal or purpose of the wall needs to be identified. It is also necessary to view the border wall as a tactic within border security and not a strategy.²⁰³ It is a tool that can be used to give the CBP an advantage in controlling the flow of people and drugs across the border.

The border wall will not be able to stop migrants or drugs from crossing the border entirely. This is supported by the various shifts of people and drugs and methods to cross

²⁰⁰ Madsen, “Local Impacts of the Balloon Effect of Border Law Enforcement, 281.”

²⁰¹ Solis, “Drug Smuggling, and the Endless Battle to Stop It.”

²⁰² Solis.

²⁰³ Raphael S. Cohen, “What Border Walls Can and Cannot Accomplish,” January 8, 2019, <https://www.rand.org/blog/2019/01/what-border-walls-can-and-cannot-accomplish.html>.

the border. Whether it is through ports of entry, overstaying visas, tunnels, or by sea, the border wall can be overcome. This may lead some to identify the border wall as ineffective. Alternatively, this research has found that the border wall is effective. It can be considered effective because it excels at its primary tasks. The border barriers physically stop people or drugs from crossing the border, specifically where the barriers are located. The significant part of this is that they only stop the flow at the location of the fence. The border fences are not meant to stop tunnels from being built and used; they are not meant to stop drugs from being smuggled in ports of entry; border barriers are certainly not meant to stop people from overstaying past their visa limits.

With that in mind, the scope of the border wall's purpose can be refined. The purpose of the border wall now can be considered to be to reduce the adversary's ability to cross the border in between ports of entry with the support of technology by giving border security personnel the advantage of time and space along the border. With this goal, the current border fencing is effective. The moment border fencing caused the flow of people or drugs to shift to another area, that border security tactic is effective. Most importantly, this is supported by data described in Chapter III.

D. THE BORDER WALL'S MARITIME RELATIONSHIP

If President Trump's border security initiative of adding more miles of border walls eventually becomes a reality, then an assumption can be made based on conclusions in this thesis. One can assume that as border security is increased on the southwest border from more miles of border walls, then the adversary will continue to shift their tactics. More specifically, the maritime domain will continue to become a more viable option as the "balloon" is squeezed on the land border. Also, there is evidence to suggest that this has already begun to happen.

On land, drug seizures begin to decline after border infrastructure was implemented. More specifically in 2012, cocaine seizure totaled just over 12,000 pounds, and in 2018, they totaled only about 6,500 pounds.²⁰⁴ During the same time period,

²⁰⁴ U.S. Customs and Border Protection, "CBP Enforcement Statistics FY2018."

maritime cocaine seizures were on the rise. In 2010, the USCG seized 91 tons of cocaine and then seized 223 tons in 2017.²⁰⁵ This suggests that there is a correlation between a decline in drug movement on land and an increase through the sea. Unfortunately, the most alarming aspect of this is the USCG's inability to enforce the law at an effective rate in such a vast area. While the USCG's cocaine seizures increased in the last decade, the total flow of cocaine based on intelligence estimations increased significantly more than the amount they seized. In 2017, it was believed that the total flow of cocaine to the United States through maritime routes was 2,738.²⁰⁶ That means the USCG only seized 8.2 percent of the cocaine being smuggled by sea. In addition, the USCG has reduced its target seizure rate over the last decade, thereby acknowledging their inability to keep up with the increase of drug traffic. This is a weakness of the United States' border security and the adversary, based on illegal drug movements, has already identified this.

A similar trend exists in illegal maritime immigration. While focusing on the Eastern Pacific Ocean apprehensions, the most likely area affected by a change in land border security, a new and small change has taken place. With the understanding that migrant apprehensions in the Eastern Pacific Ocean are still comparatively extremely low, a trend has presented itself. From 2016 to 2018, migrant apprehensions on the west coast have increased from 142 to 1,022, or about 86 percent.²⁰⁷ Since the numbers of apprehensions are still drastically lower than on land, it is hard to view this as a significant issue. Even so, the low numbers can be indicative of the beginning of a shift in the movement of people and given the USCG's struggling ability to stop drugs through the sea; this may be an area of opportunity for people trying to enter the United States illegally in the future.

Overall, it appears that the maritime domain has a connection to the land domain. Changes in security measures on the land have demonstrated a correlation to changes in

²⁰⁵ Office of Inspector General, "Review of U.S. Coast Guard's FY 2014 Drug Control Performance Summary Report.", 3.

²⁰⁶ Office of Inspector General, 3.

²⁰⁷ Dan Lamothe, "Coast Guard, Working without Pay in a Government Shutdown, Sees a Surge in West Coast Migrant Intercepts."

the maritime domain. Now, with prior knowledge of this relationship, it can be used to the advantage of the United States.

E. CONCLUSION

Although this thesis is researching just the outcomes of border security, specific trends or correlations can be found. Through the CBP and USCG's migrant apprehension and drug seizure data, the shift of movement of people or drugs, as described as the balloon effect, can be proven to have a strong correlation with increased border security, namely the border wall. With this knowledge, predictions can be made about where the next shift will be if the border receives more miles of infrastructure. Judging based on the USCG's struggling efforts to secure the maritime border from current drug flows and a growing occurrence of illegal immigration on the west coast, I conclude that the maritime domain is not only the greatest border control weakness of the United States, but will increasingly continue to be targeted as the path of least resistance to illegally enter the United States, for drugs or people, because of the security measures in place on the southwest border.

V. CONCLUSIONS AND RECOMMENDATIONS

The United States is at a border security policy crossroads. Should the border be further secured with more walls? Or, should we accept the current level of border infrastructure and focus monetary efforts in other areas of border security? After studying the effects of the border barriers the United States currently has, it appears that border walls can be an effective tool for border security agents. Border infrastructure should be considered in specific areas where it is determined that border barriers would be useful. This should be done with the forethought that when security is changed in an area on land, there will be consequential effects in other less secure border areas on land and at the more vulnerable maritime domain.

Throughout the research for this thesis, certain areas out of the scope of this project stood out as areas in need of further research. First, the USCG is dealing with an aging fleet of ships, budgetary constraints, and half of its maritime assets conducting non-homeland security missions. These factors, along with others, contribute to a low level of success of maritime drug and immigration interdictions. Further research is needed to explore these factors and make recommendations to improve this valuable military and law enforcement service. Second, in this thesis, the effectiveness of border fences was studied using pedestrian apprehensions and drug seizures as a measure of success. Further research is needed to understand how increased personnel and technology has aided the border barriers and if further investment in these areas is necessary.

Lastly, ports of entry appear to be a common smuggling path for illegal drugs. These checkpoints entail a concentrated amount of personnel and technology but are still being overwhelmed by the amount of traffic crossing the border, leading to high quantities of drugs entering the United States unnoticed. More research is needed to understand the strengths and weaknesses of security at ports of entry and to make recommendations to increase illegal drug detection.

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APPENDIX. PEDESTRIAN APPREHENSIONS IN BORDER SECTORS²⁰⁸

Fiscal Year	Big Bend	Del Rio	El Centro	El Paso	Laredo	Rio Grande Valley	San Diego	Tucson	Yuma	Southwest Border Total
2018	8,045	15,833	29,230	31,561	32,641	162,262	38,591	52,172	26,244	396,579
2017	6,002	13,476	18,633	25,193	25,460	137,562	26,086	38,657	12,847	303,916
2016	6,366	23,078	19,448	25,634	36,562	186,830	31,891	64,891	14,170	408,870
2015	5,031	19,013	12,820	14,495	35,888	147,257	26,290	63,397	7,142	331,333
2014	4,096	24,255	14,511	12,339	44,049	256,393	29,911	87,915	5,902	479,371
2013	3,684	23,510	16,306	11,154	50,749	154,453	27,496	120,939	6,106	414,397
2012	3,964	21,720	23,916	9,678	44,872	97,762	28,461	120,000	6,500	356,873
2011	4,036	16,144	30,191	10,345	36,053	59,243	42,447	123,285	5,833	327,577
2010	5,288	14,694	32,562	12,251	35,287	59,766	68,565	212,202	7,116	447,731
2009	6,360	17,082	33,521	14,999	40,569	60,989	118,721	241,673	6,951	540,865
2008	5,391	20,761	40,961	30,312	43,658	75,473	162,390	317,696	8,363	705,005
2007	5,536	22,920	55,883	75,464	56,714	73,430	152,460	378,239	37,992	858,638
2006	7,520	42,636	61,465	122,256	74,840	110,528	142,104	392,074	118,549	1,071,972
2005	10,536	68,506	55,722	122,679	75,346	134,186	126,904	439,079	138,438	1,171,396
2004	10,530	53,794	74,467	104,399	74,706	92,947	138,608	491,771	98,060	1,139,282
2003	10,319	50,145	92,099	88,816	70,521	77,749	111,515	347,263	56,638	905,065
2002	11,392	66,985	108,273	94,154	82,095	89,927	100,681	333,648	42,654	929,809
2001	12,087	104,875	172,852	112,857	87,068	107,844	110,075	449,675	78,385	1,235,718
2000	13,689	157,178	238,126	115,696	108,973	133,243	151,681	616,346	108,747	1,643,679
1999	14,952	156,653	225,279	110,857	114,004	169,151	182,267	470,449	93,388	1,537,000
1998	14,509	131,058	226,695	125,035	103,433	204,257	248,092	387,406	76,195	1,516,680
1997	12,692	113,280	146,210	124,376	141,893	243,793	283,889	272,397	30,177	1,368,707
1996	13,214	121,137	66,873	145,929	131,841	210,553	483,815	305,348	28,310	1,507,020
1995	11,552	76,490	37,317	110,971	93,305	169,101	524,231	227,529	20,894	1,272,390
1994	13,494	50,036	27,654	79,688	73,142	124,251	450,152	139,473	21,211	979,101
1993	15,486	42,289	30,069	285,781	82,348	109,048	531,689	92,639	23,548	1,212,886
1992	13,819	33,414	29,852	248,642	72,449	85,889	565,581	71,036	24,892	1,145,574
1991	8,764	38,554	30,450	211,775	72,293	87,319	540,347	59,728	28,646	1,077,876
1990	7,180	41,373	28,708	223,219	89,052	97,018	473,323	53,061	36,387	1,049,321
1989	5,560	46,786	27,524	168,105	75,292	79,650	366,757	51,445	31,387	852,506
1988	6,209	59,403	41,179	182,566	69,912	60,294	431,592	48,683	42,723	942,561
1987	9,586	64,934	55,291	231,994	74,139	71,038	500,327	47,481	67,277	1,122,067
1986	23,796	123,952	95,186	312,892	143,685	121,783	629,656	71,675	93,219	1,615,844
1985	23,667	99,280	71,519	240,350	114,931	82,826	427,772	55,269	67,737	1,183,351
1984	22,196	87,058	68,563	212,652	87,059	66,860	407,828	46,283	59,777	1,058,276
1983	20,829	83,733	71,897	205,944	65,279	57,706	429,121	35,870	63,595	1,033,974
1982	20,268	48,753	55,440	152,882	40,385	32,533	314,979	32,344	48,236	745,820
1981	17,584	50,455	59,774	146,872	36,910	32,809	326,836	33,085	45,483	749,808
1980	15,602	50,762	57,009	127,488	39,167	35,012	285,984	33,668	45,862	690,554

²⁰⁸ Adapted From: United States Border Patrol, “Southwest Border Sectors Total Illegal Alien Apprehensions by Fiscal Year.”

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