Utah
Area of Interest Summary Report

San Juan

Report was generated using https://wildfirerisk.utah.gov
Report generated: 7/2/2025

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Introduction

Utah Area of Interest Summary Report

The Area of Interest tool allows users of the Advanced Viewer application to define a specific location to further explore its wildfire risks. This information can then be exported, providing a detailed summary using attributes selected by the Utah Division of Forestry, Fire, and State Land. The data layers for many of these map products were created with publicly available data and information submitted by volunteer fire departments. These map products have been summarized explicitly for the active Area of Interest. To access all data layers as a GIS file, users must "export data as a .zip file" after creating an area of interest.

This report was designed so that information can be copied and pasted into other plans, reports, or documents depending on user needs.

Examples include, but are not limited to, Community Wildfire Protection Plans, Local Fire Plans, Fuels Mitigation Plans, Hazard Mitigation Plans, Homeowner Risk Assessments, and Forest Management or Stewardship Plans.

The Utah Wildfire Risk Assessment provides a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation and prevention planning in Utah.

Results of an assessment can be used to help prioritize areas in the state where mitigation treatments, community interaction, and education or tactical analyses might be necessary to reduce risk from wildfires.

The Utah Wildfire Risk Explorer's map products and descriptions included in this summary report are designed to provide the information needed in support of the following key priorities:

- Identify areas that are most prone to wildfire.
- Plan and prioritize fuel treatment within programs.
- Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries.
- Increase communication with local residents and the public to address community priorities and needs.
- Identify areas where additional tactical planning may be desirable, specifically related to mitigation projects and Community Wildfire Protection Planning.
- Provide the information necessary to support resource, budget, and funding requests.
- Plan for response and wildfire suppression resource needs.

Map Products and Descriptions

Each map product in this Summary Report is accompanied by a general description, table, chart, or map. Please see the table below for a list of data layers available in the Summary Report.

Utah WRAP Layer	Description
Fire History Statistics	Fire history statistics provide insight as to the number of fires, acres burned, and cause of fires, and are useful for fire prevention and mitigation planning.
Wildfire Hazard Potential	The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control.
Risk to Drinking Watersheds and Population	The Risk to Drinking Watersheds and Population layer was created by multiplying wildfire threat (in the form of the Structure Exposure Score) by potential impacts (in a metric incorporating three factors: the Suppression Difficulty Index, estimated surface drinking water importance, and population density).
Burn Probability	This dataset is a 30-m cell size raster representing annual burn probability (BP) across the analysis area.
Damage Potential	Damage Potential (DP) represents the potential consequences of fire to a home at a given location if a fire were to occur and if a home were located there.
Structure Exposure Score	Structure Exposure Score (SES) combines wildfire likelihood (burn probability) and consequence (represented by Damage Potential) assuming a home is present on every pixel.
Conditional Risk to Potential Structures	The conditional risk to potential structures (cRPS) dataset represents the potential consequences of fire to a home at a given location, if a fire occurs there and if a home were located there.
Risk to Potential Structures	The expected risk to potential structures (RPS) dataset represents a measure that integrates wildfire likelihood and intensity with generalized consequences to a home on every pixel.
Probability of Exceeding Manual Control	This dataset represents the probability of heading flame lengths exceeding 4 feet, which is generally considered the threshold for exceeding the possibility of manual control during fire operations.
Probability of Exceeding Mechanical Control	This dataset represents the probability of heading flame lengths exceeding 8 feet, which is generally considered the threshold for exceeding the possibility of mechanical control during fire operations.
Probability of Extreme Fire Behavior	This dataset represents the probability of heading flame lengths exceeding 11 feet, which is generally considered the threshold for extreme fire behavior during fire operations.
Suppression Difficulty Index	Wildfire Suppression Difficulty Index is a quantitative rating of relative difficulty in performing fire control work.
Flame Length	This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel).
Rate of Spread (chains/hr)	This dataset represents the weighted-average rate of spread (ROS) in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate).
Heat per Unit Area	This dataset represents the weighted-average heat per unit area (HPA) in kilojoules per square meter for a given pixel in the fuelscape (including any contribution of crown fuel).

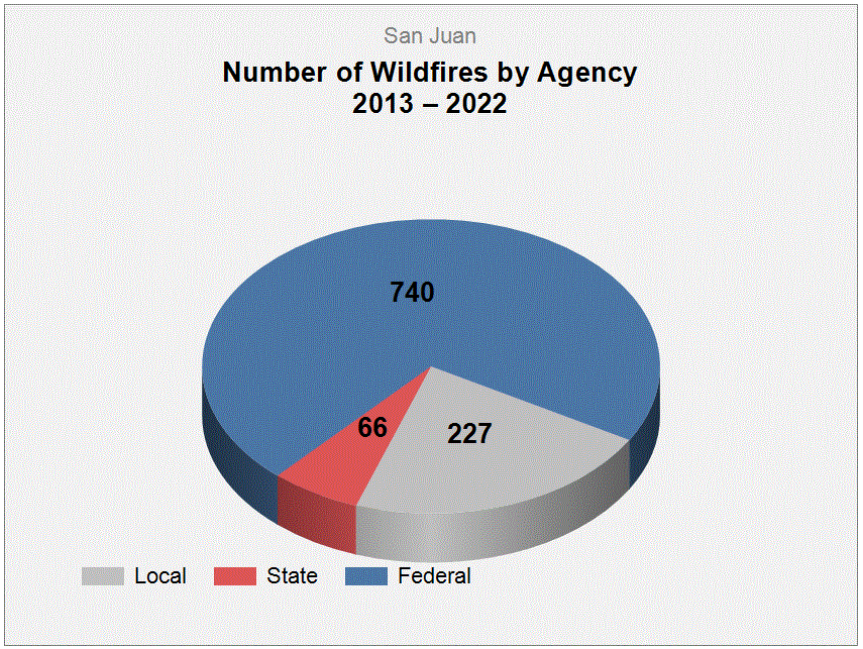
Utah WRAP Layer	Description
Conditional Ember Production	This dataset indicates where embers are originating when fires occur (so they could be targeted for treatment).
Conditional Sources of Ember Load to Buildings	This dataset indicates where embers might land near buildings.
Housing-Unit Density (HUDEN)	This layer displays housing-unit density.

Fire History Statistics

Description

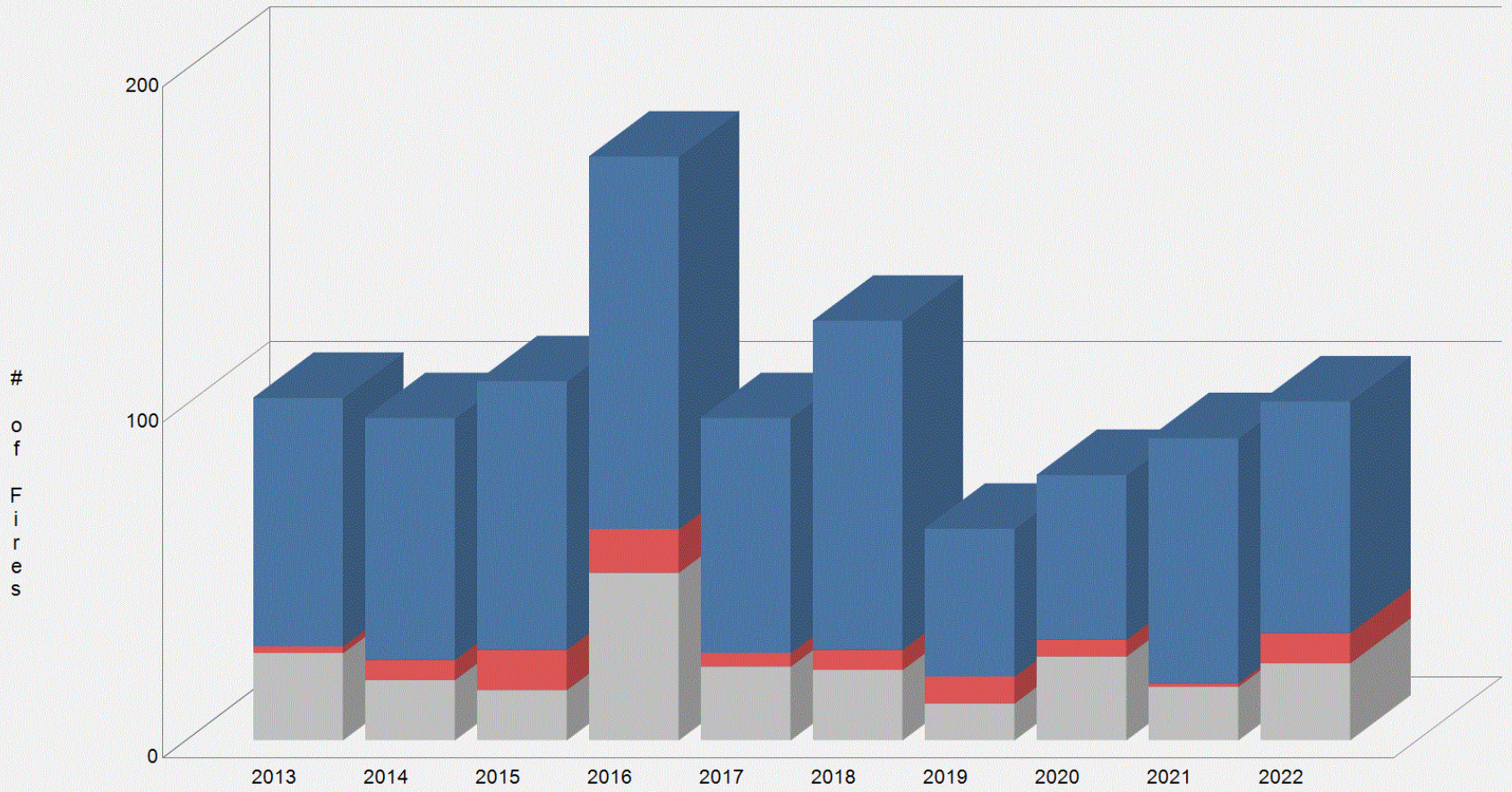
Fire history statistics provide insight into data related to reported wildfires in Utah. These statistics are useful for fire prevention and mitigation planning. They can be used to quantify the level of fire business, determine the time of year most fires typically occur and develop a fire prevention program aimed at reducing the fire occurrence rate based on specific fire cause information.

Ten years of historic fire report data where fires had a specific defined location were used to create the fire occurrence summary charts. Wildfire Ignition data was compiled from federal and state sources for the years 2013 through 2022.



San Juan

Number of Wildfires Reported by Agency
2013 – 2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Local	26	18	15	50	22	21	11	25	16	23
State	2	6	12	13	4	6	8	5	1	9
Federal	74	72	80	111	70	98	44	49	73	69

Wildfire Hazard Potential

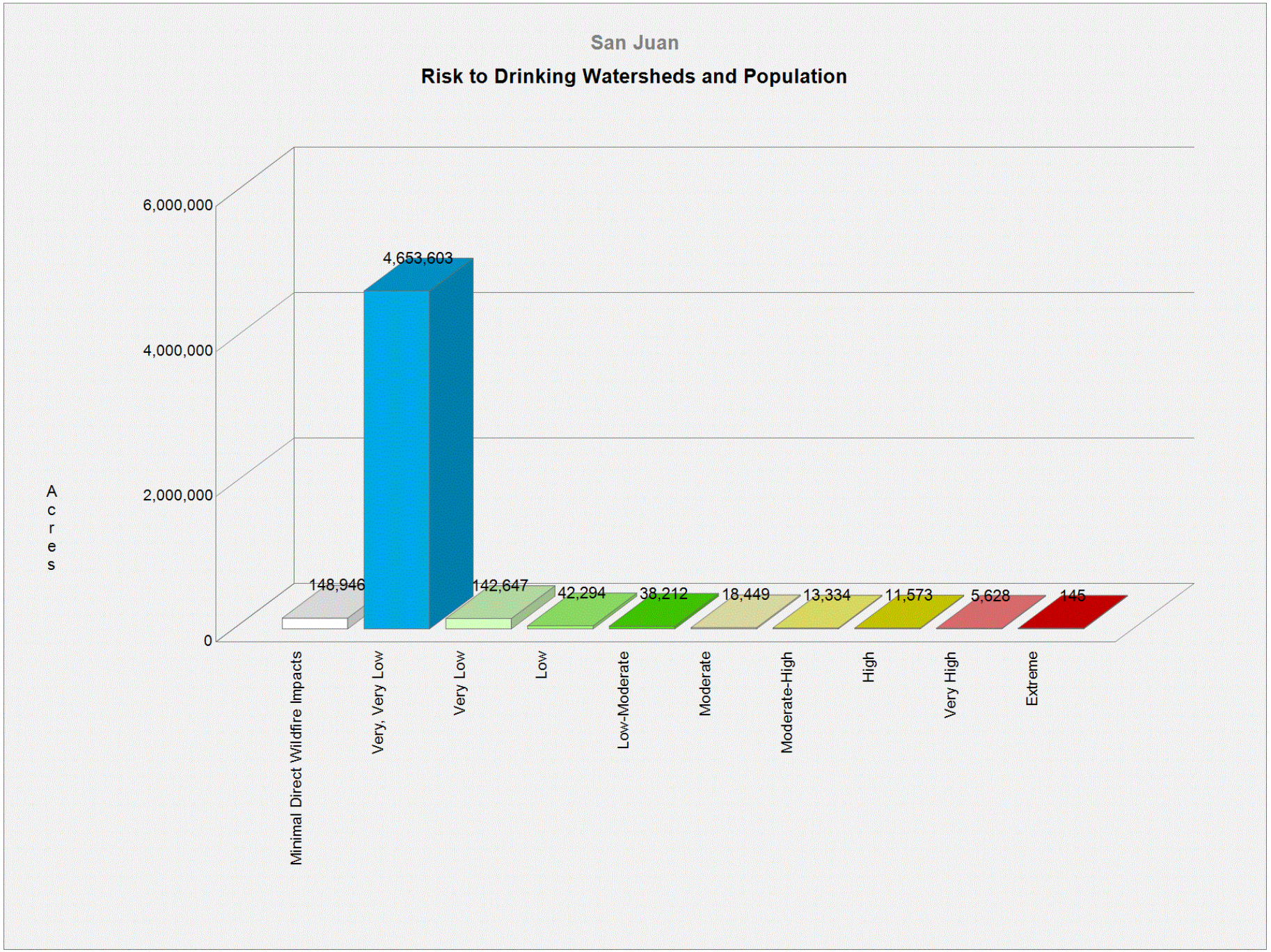
The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control. WHP can be used as a measure to help prioritize where fuel treatments may be needed.

	Wildfire Hazard Potential Category	Acres	Percent
	Minimal Direct Wildfire Impacts	1,031,027	20 %
	Very Low	1,052,654	21 %
	Low	713,110	14 %
	Moderate	938,677	18 %
	High	1,226,284	24 %
	Very High	113,082	2 %
	Total	**5,074,833**	**100 %**

Risk to Drinking Watersheds and Population

The Risk to Drinking Watersheds and Population layer was created by multiplying wildfire threat (in the form of the Structure Exposure Score) by potential impacts (in a metric incorporating three factors: the Suppression Difficulty Index, estimated surface drinking water importance, and population density).

	Risk to Drinking Watersheds and Population Category	Acres	Percent
	Minimal Direct Wildfire Impacts	148,946	3 %
	Very, Very Low	4,653,603	92 %
	Very Low	142,647	3 %
	Low	42,294	1 %
	Low-Moderate	38,213	1 %
	Moderate	18,449	0 %
	Moderate-High	13,334	0 %
	High	11,573	0 %
	Very High	5,628	0 %
	Extreme	145	0 %
	Total	**5,074,833**	**100 %**

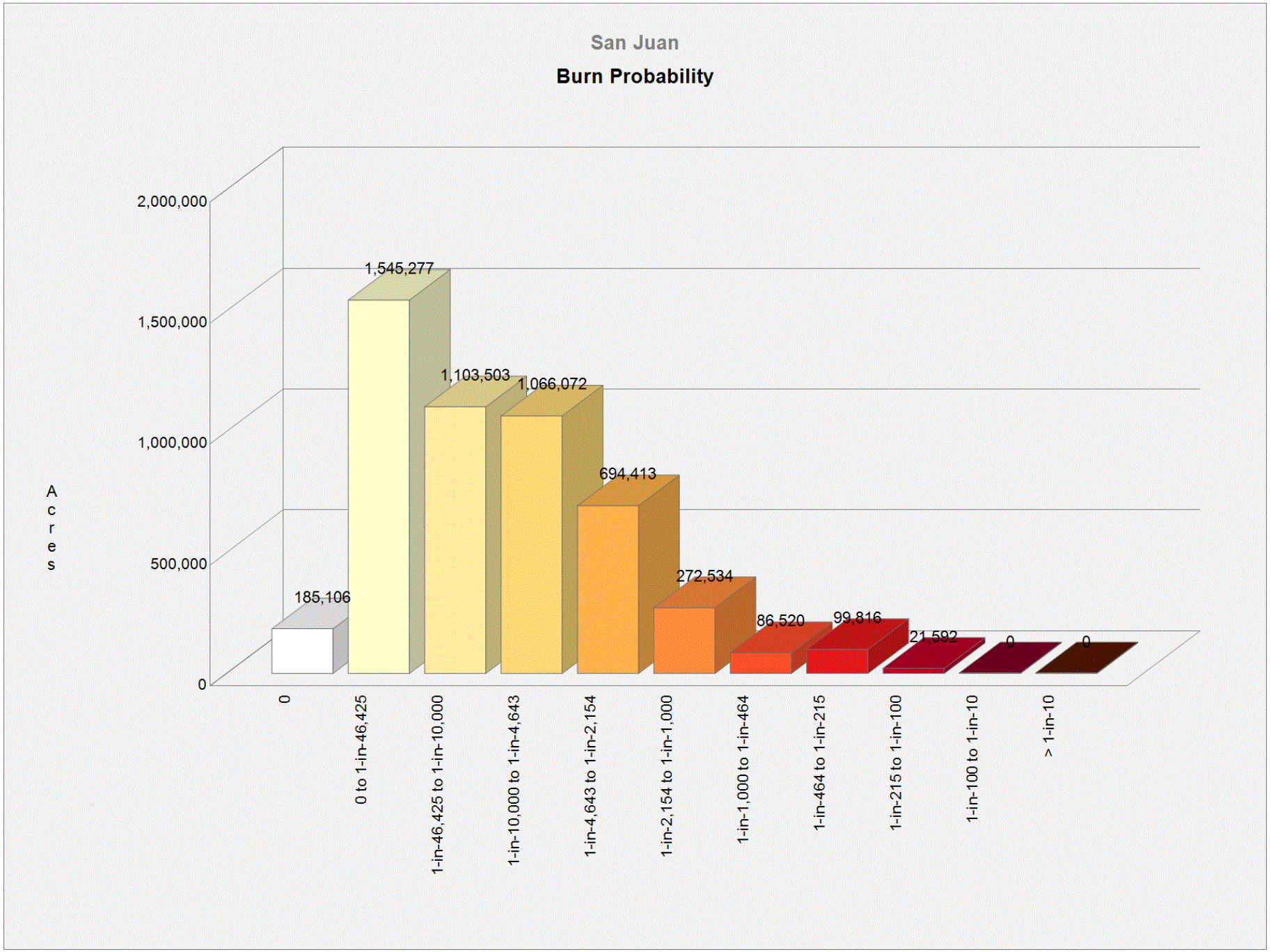

San Juan
Risk to Drinking Watersheds and Population
Acres
6,000,000
4,000,000
2,000,000
0
148,946
4,653,603
142,647
42,294
38,212
18,449
13,334
11,573
5,628
145
Minimal Direct Wildfire Impacts
Very, Very Low
Very Low
Low
Low-Moderate
Moderate
Moderate-High
High
Very High
Extreme

Burn Probability

Burn probability is the annual probability of wildfire burning in a specific location. At the community level, burn probability or wildfire likelihood is averaged where housing units occur. Burn Probability is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather, topography, and ignitions are varied based on patterns derived from observations in recent decades.

Burn Probability is not predictive and does not reflect any currently forecasted weather or fire danger conditions. Burn Probability is simply a probability that any specific location (pixel) may experience wildfire in any given year. It does not say anything about the intensity of fire if it occurs.

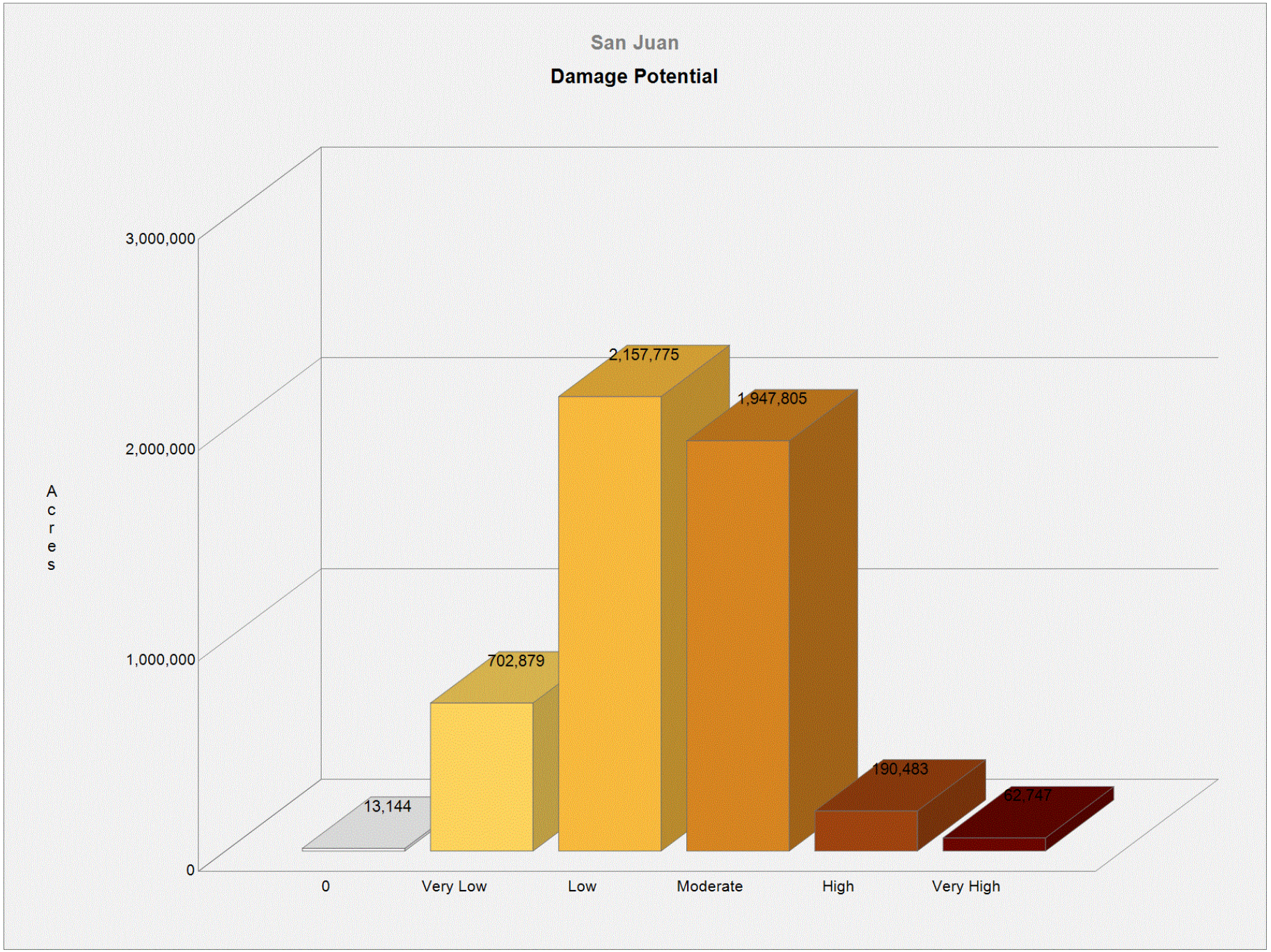
	Burn Probability Category	Acres	Percent
	Minimal Direct Wildfire Impacts	185,106	4 %
	0 to 1-in-46,425	1,545,277	30 %
	1-in-46,425 to 1-in-10,000	1,103,503	22 %
	1-in-10,000 to 1-in-4,643	1,066,072	21 %
	1-in-4,643 to 1-in-2,154	694,413	14 %
	1-in-2,154 to 1-in-1,000	272,534	5 %
	1-in-1,000 to 1-in-464	86,520	2 %
	1-in-464 to 1-in-215	99,816	2 %
	1-in-215 to 1-in-100	21,592	0 %
	1-in-100 to 1-in-10	0	0 %
	> 1-in-10	0	0 %
	Total	**5,074,833**	**100 %**


San Juan
Burn Probability
Acres
2,000,000
1,500,000
1,000,000
500,000
0
185,106
1,545,277
1,103,503
1,066,072
694,413
272,534
86,520
99,816
21,592
0
0
0
0 to 1-in-46,425
1-in-46,425 to 1-in-10,000
1-in-10,000 to 1-in-4,643
1-in-4,643 to 1-in-2,154
1-in-2,154 to 1-in-1,000
1-in-1,000 to 1-in-464
1-in-464 to 1-in-215
1-in-215 to 1-in-100
1-in-100 to 1-in-10
> 1-in-10

Damage Potential

Damage Potential (DP) represents the potential consequences of fire to a home at a given location if a fire were to occur and if a home were located there. DP incorporates ember load and conditional risk to potential structures as a generalized measure of potential loss to homes.

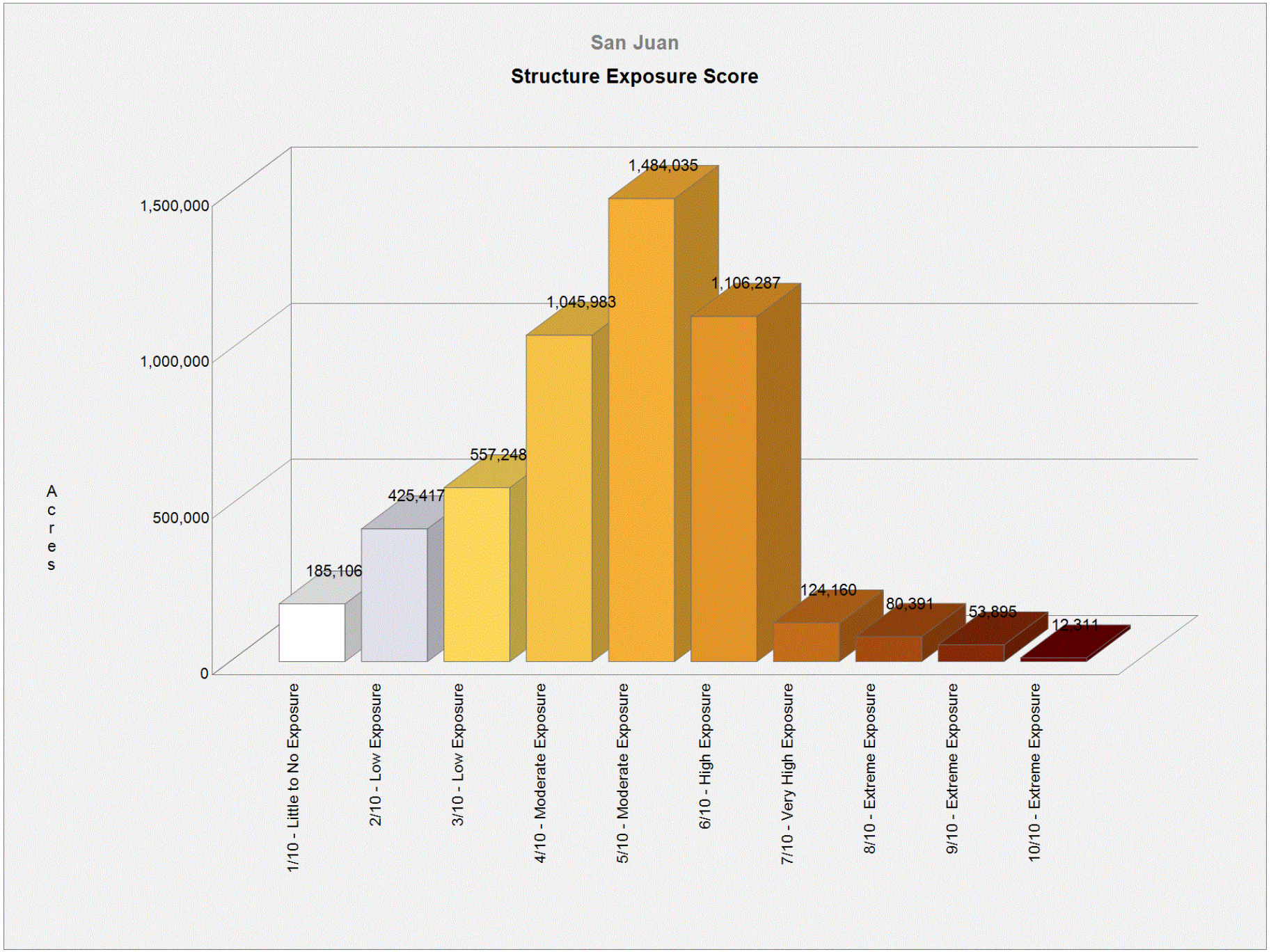
	Damage Potential Category	Acres	Percent
	Minimal Direct Wildfire Impacts	13,144	0 %
	Very Low	702,879	14 %
	Low	2,157,775	43 %
	Moderate	1,947,805	38 %
	High	190,483	4 %
	Very High	62,747	1 %
	Total	**5,074,833**	**100 %**


San Juan
Damage Potential
Acres
3,000,000
2,000,000
1,000,000
0
13,144
702,879
2,157,775
1,947,805
190,483
62,747
0
Very Low
Low
Moderate
High
Very High

Structure Exposure Score

Structure Exposure Score (SES) combines wildfire likelihood (burn probability) and consequence (represented by Damage Potential) assuming a home is present on every pixel. SES is analogous to the Risk to Potential Structures dataset but includes ember load.

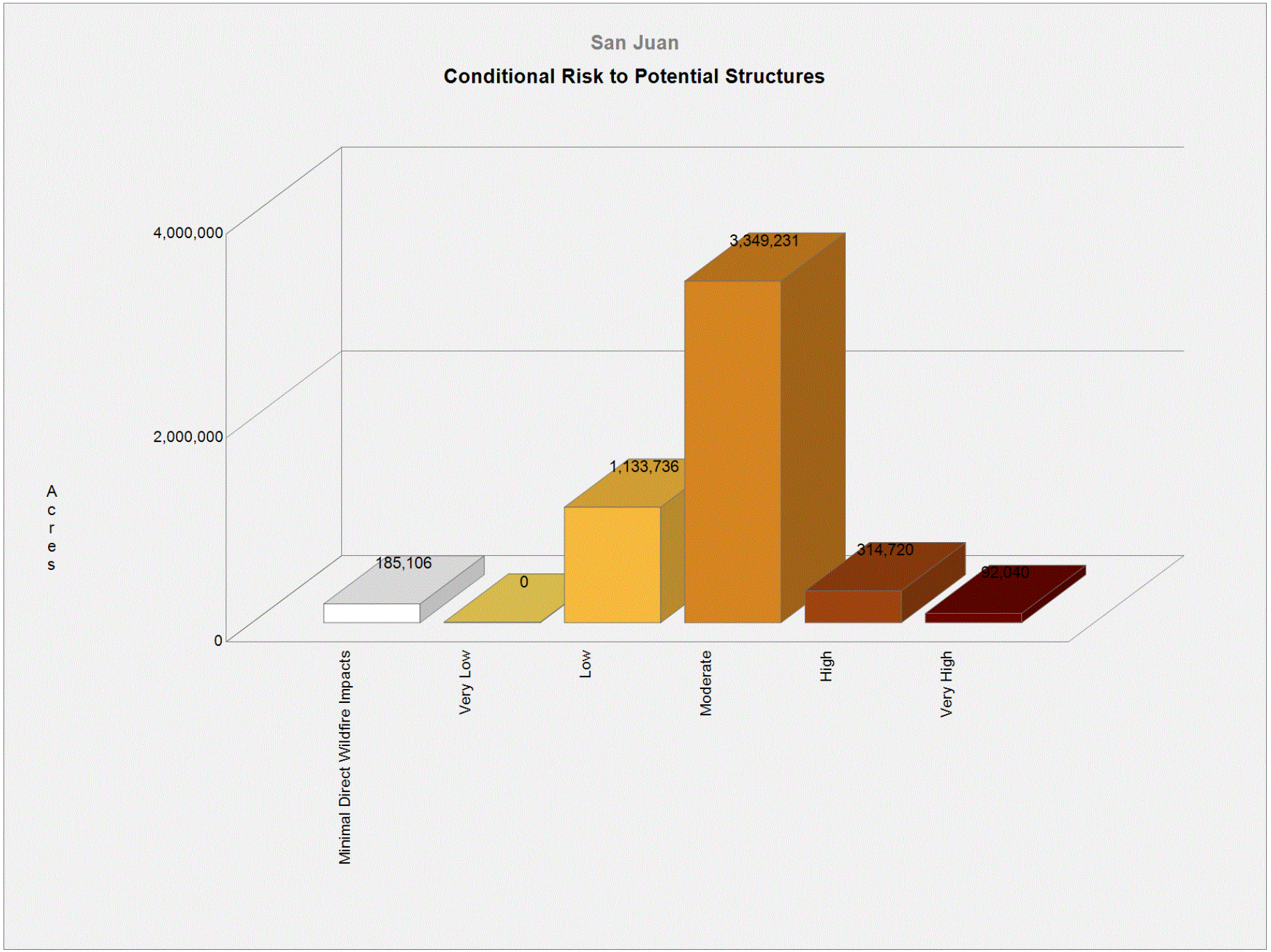
	Structure Exposure Score Category	Acres	Percent
	1/10 - Little to No Exposure	185,106	4 %
	2/10 - Low Exposure	425,417	8 %
	3/10 - Low Exposure	557,248	11 %
	4/10 - Moderate Exposure	1,045,983	21 %
	5/10 - Moderate Exposure	1,484,035	29 %
	6/10 - High Exposure	1,106,287	22 %
	7/10 - Very High Exposure	124,160	2 %
	8/10 - Extreme Exposure	80,391	2 %
	9/10 - Extreme Exposure	53,896	1 %
	10/10 - Extreme Exposure	12,311	0 %
	Total	**5,074,833**	**100 %**


San Juan
Structure Exposure Score
Acres
1,500,000
1,000,000
500,000
0
185,106
425,417
557,248
1,045,983
1,484,035
1,106,287
124,160
80,391
53,895
12,311
1/10 - Little to No Exposure
2/10 - Low Exposure
3/10 - Low Exposure
4/10 - Moderate Exposure
5/10 - Moderate Exposure
6/10 - High Exposure
7/10 - Very High Exposure
8/10 - Extreme Exposure
9/10 - Extreme Exposure
10/10 - Extreme Exposure

Conditional Risk to Potential Structures

The conditional risk to potential structures (cRPS) dataset or “Risk to Homes” represents the potential consequences of fire to a home at a given location, if a fire occurs there and if a home were located there. It is a measure that integrates wildfire intensity with generalized consequences to a home on every pixel, but does not account for the actual probability of fire occurrence.

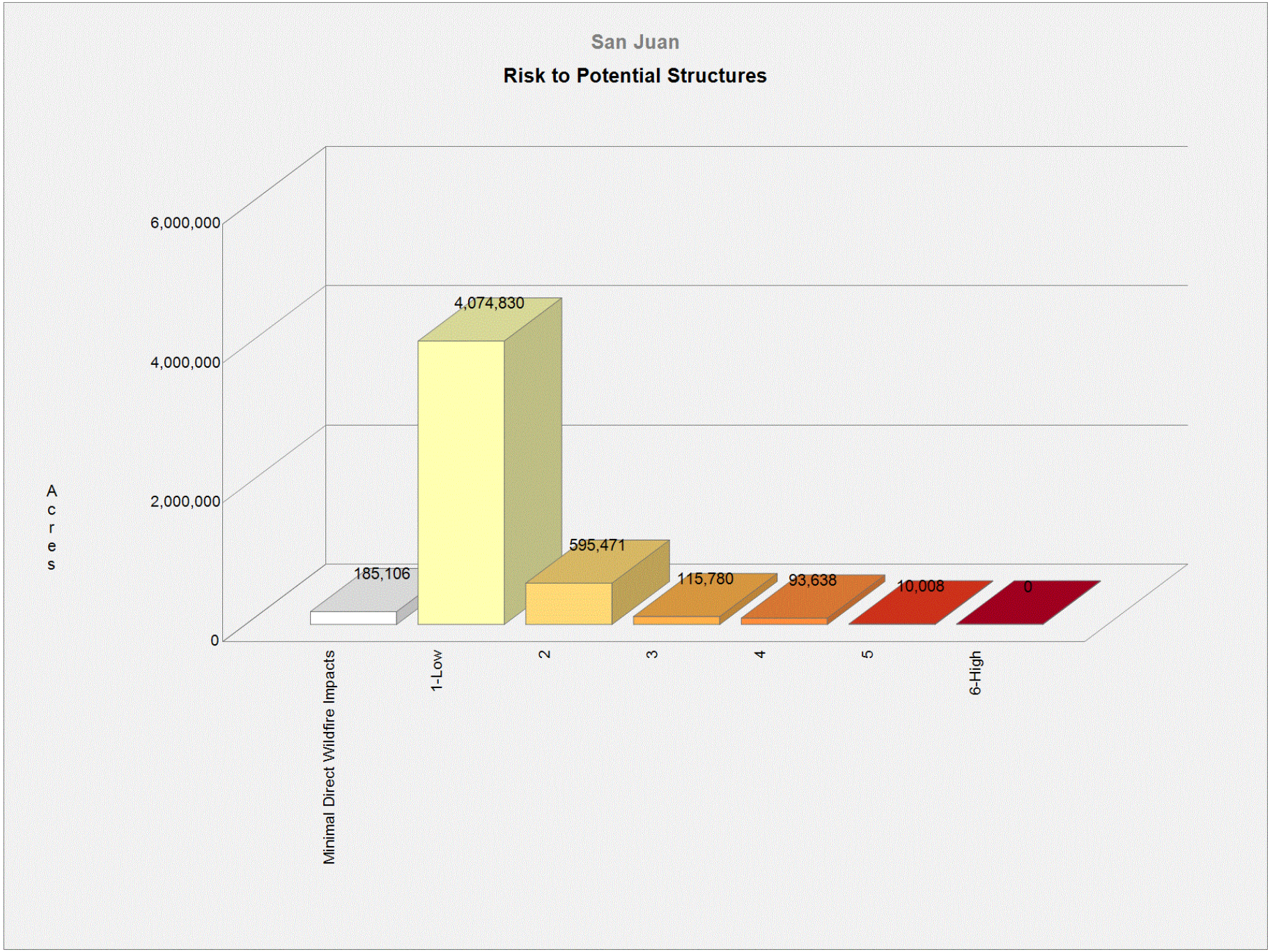
	Conditional Risk to Potential Structures Category	Acres	Percent
	Minimal Direct Wildfire Impacts	185,106	4 %
	Very Low	0	0 %
	Low	1,133,736	22 %
	Moderate	3,349,231	66 %
	High	314,720	6 %
	Very High	92,040	2 %
	Total	**5,074,833**	**100 %**


San Juan
Conditional Risk to Potential Structures
Acres
4,000,000
2,000,000
0
185,106
0
1,133,736
3,349,231
314,720
92,040
Minimal Direct Wildfire Impacts
Very Low
Low
Moderate
High
Very High

Risk to Potential Structures

The expected risk to potential structures (RPS) dataset represents a measure that integrates wildfire likelihood and intensity with generalized consequences to a home on every pixel. For every place on the landscape, it poses the hypothetical question, "What would be the relative risk to a house if one existed here?" This allows comparison of wildfire risk in places where homes already exist to places where new construction may be proposed.

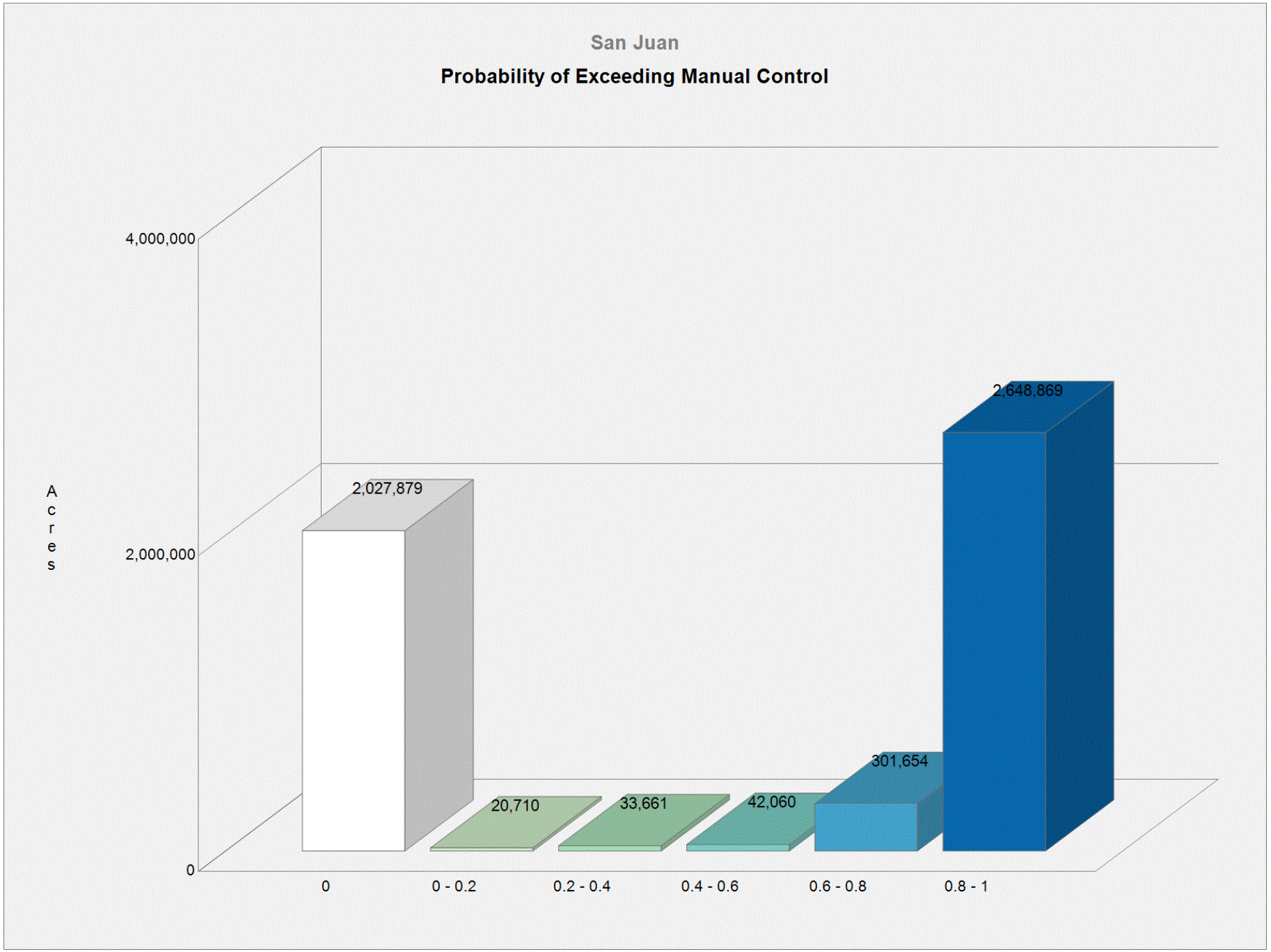
	Risk to Potential Structures Category	Acres	Percent
	Minimal Direct Wildfire Impacts	185,106	4 %
	1-Low	4,074,830	80 %
	2	595,471	12 %
	3	115,780	2 %
	4	93,638	2 %
	5	10,008	0 %
	6-High	0	0 %
	Total	**5,074,833**	**100 %**


San Juan
Risk to Potential Structures
Acres
6,000,000
4,000,000
2,000,000
0
185,106
4,074,830
595,471
115,780
93,638
10,008
0
Minimal Direct Wildfire Impacts
1-Low
2
3
4
5
6-High

Probability of Exceeding Manual Control

This dataset represents the probability of heading flame lengths exceeding 4 feet, which is generally considered the threshold for exceeding the possibility of manual control during fire operations.

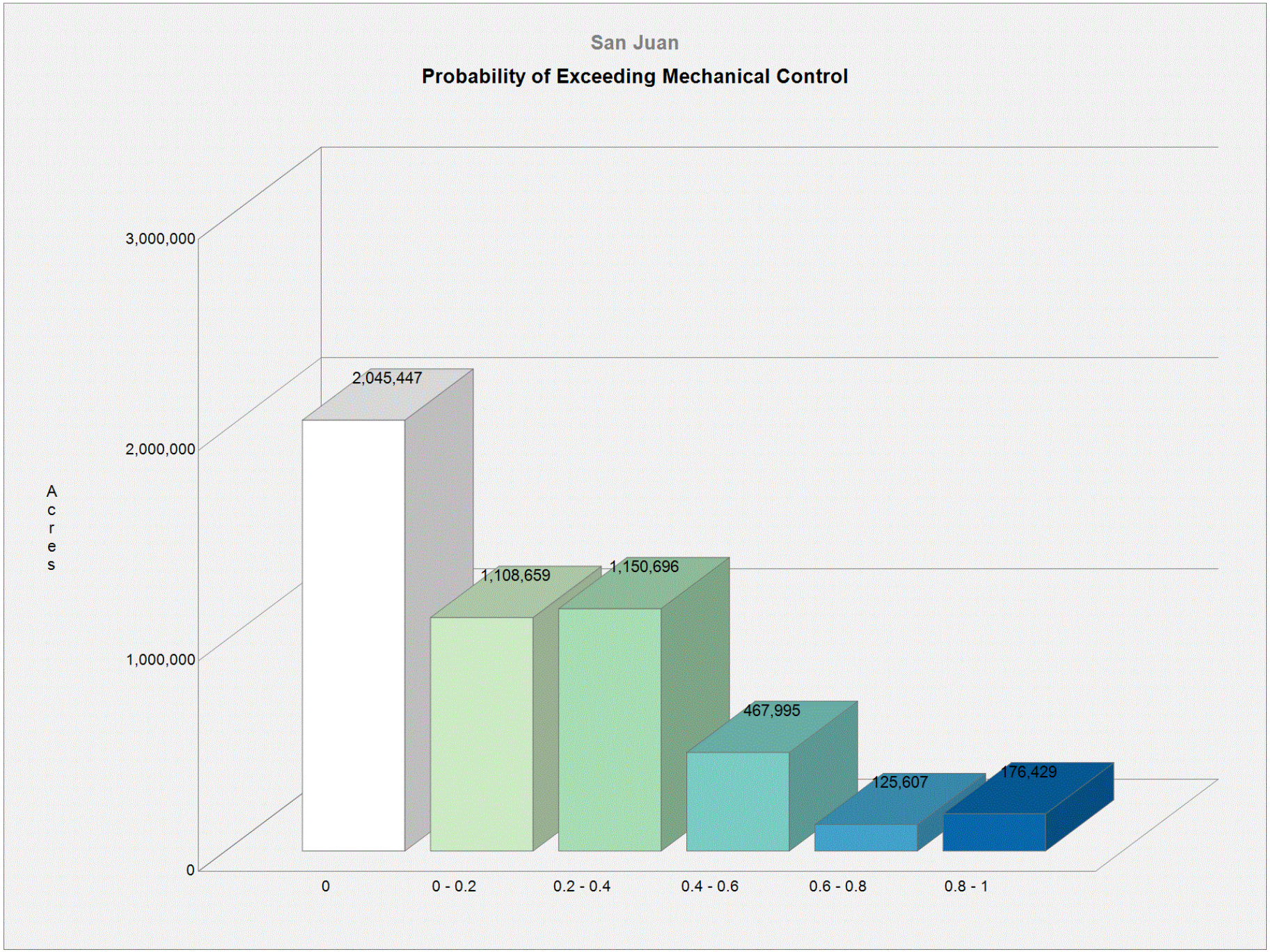
	Probability of Exceeding Manual Control Category	Acres	Percent
	0	2,027,879	40 %
	0 - 0.2	20,710	0 %
	0.2 - 0.4	33,661	1 %
	0.4 - 0.6	42,060	1 %
	0.6 - 0.8	301,654	6 %
	0.8 - 1	2,648,869	52 %
	Total	**5,074,833**	**100 %**


San Juan
Probability of Exceeding Manual Control
Acres
4,000,000
2,000,000
0
2,027,879
20,710
33,661
42,060
301,654
2,648,869
0
0 - 0.2
0.2 - 0.4
0.4 - 0.6
0.6 - 0.8
0.8 - 1

Probability of Exceeding Mechanical Control

This dataset represents the probability of heading flame lengths exceeding 8 feet, which is generally considered the threshold for exceeding the possibility of mechanical control during fire operations.

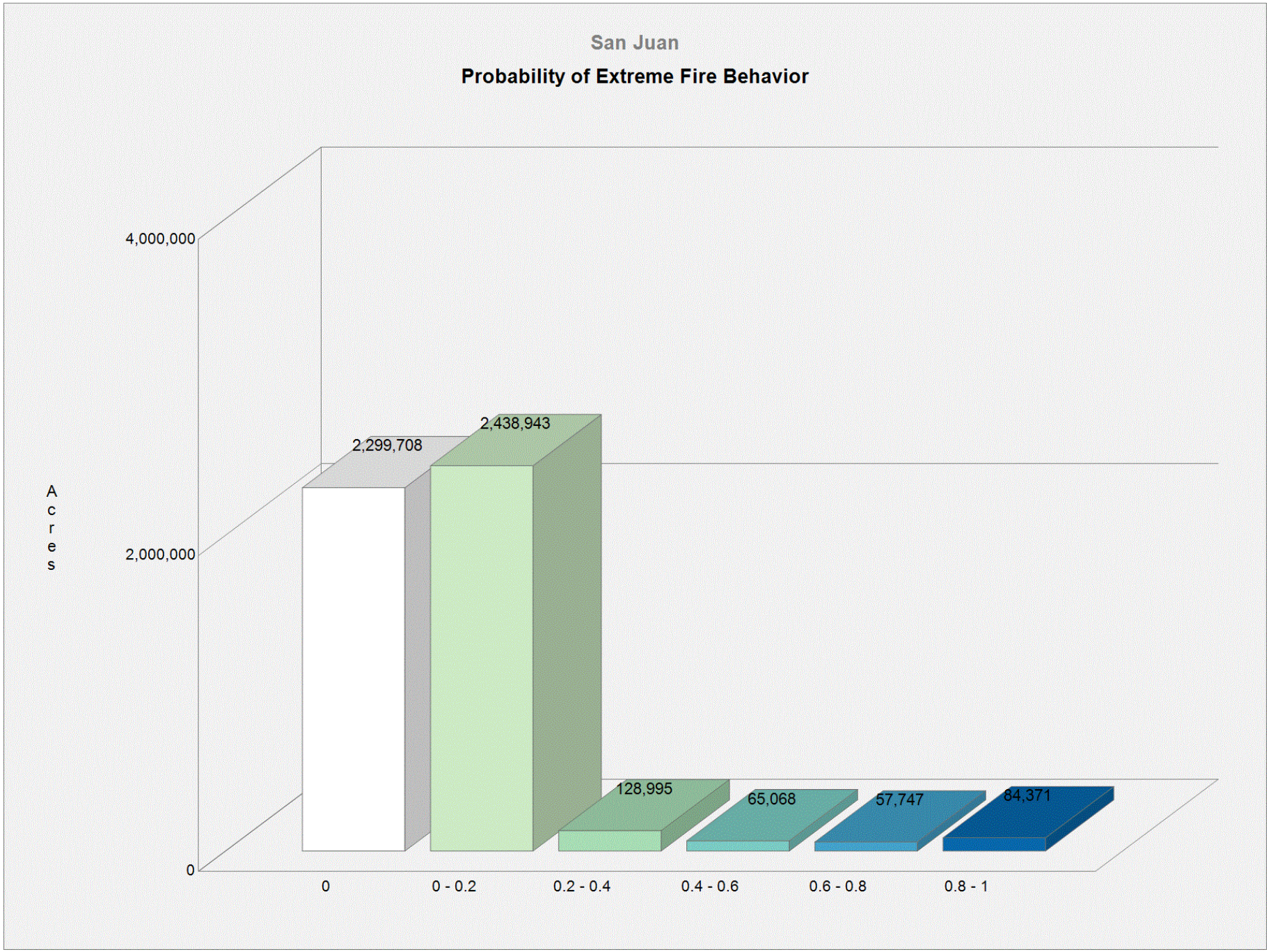
	Probability of Exceeding Mechanical Control Category	Acres	Percent
	0	2,045,447	40 %
	0 - 0.2	1,108,659	22 %
	0.2 - 0.4	1,150,696	23 %
	0.4 - 0.6	467,995	9 %
	0.6 - 0.8	125,607	2 %
	0.8 - 1	176,429	3 %
	Total	**5,074,833**	**100 %**


San Juan
Probability of Exceeding Mechanical Control
Acres
3,000,000
2,000,000
1,000,000
0
2,045,447
1,108,659
1,150,696
467,995
125,607
176,429
0
0 - 0.2
0.2 - 0.4
0.4 - 0.6
0.6 - 0.8
0.8 - 1

Probability of Extreme Fire Behavior

This dataset represents the probability of heading flame lengths exceeding 11 feet, which is generally considered the threshold for exceeding extreme fire behavior during fire operations.

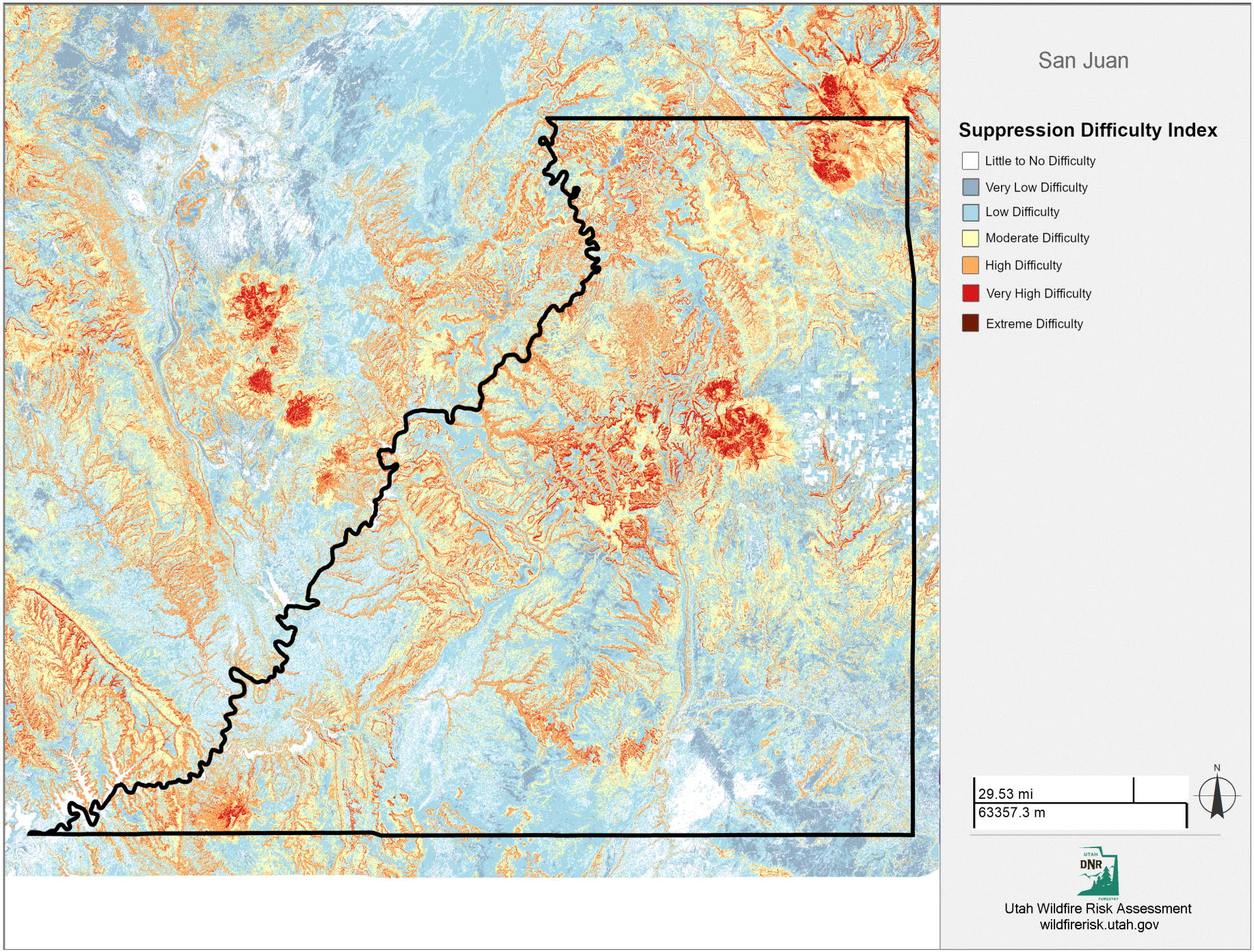
	Probability of Extreme Fire Behavior Category	Acres	Percent
	0	2,299,708	45 %
	0 - 0.2	2,438,943	48 %
	0.2 - 0.4	128,995	3 %
	0.4 - 0.6	65,068	1 %
	0.6 - 0.8	57,747	1 %
	0.8 - 1	84,371	2 %
	Total	**5,074,833**	**100 %**


San Juan
Probability of Extreme Fire Behavior
Acres
4,000,000
2,000,000
0
2,299,708
2,438,943
128,995
65,068
57,747
84,371
0
0 - 0.2
0.2 - 0.4
0.4 - 0.6
0.6 - 0.8
0.8 - 1

Suppression Difficulty Index

Wildfire Suppression Difficulty Index (SDI) is a quantitative rating of relative difficulty in performing fire control work. SDI factors in topography, fuels, expected fire behavior under severe fire weather conditions, firefighter line production rates in various fuel types, and accessibility (distance from roads/trails) to assess relative suppression difficulty.

	Suppression Difficulty Index Category	Acres	Percent
	Little to No Difficulty	374,107	7 %
	Very Low Difficulty	310,888	6 %
	Low Difficulty	1,892,057	37 %
	Moderate Difficulty	1,490,487	29 %
	High Difficulty	792,082	16 %
	Very High Difficulty	213,995	4 %
	Extreme Difficulty	1,217	0 %
	Total	**5,074,833**	**100 %**


San Juan
Suppression Difficulty Index
Little to No Difficulty
Very Low Difficulty
Low Difficulty
Moderate Difficulty
High Difficulty
Very High Difficulty
Extreme Difficulty
29.53 mi
63357.3 m
N
Utah Wildfire Risk Assessment
wildfirerisk.utah.gov

Flame Length

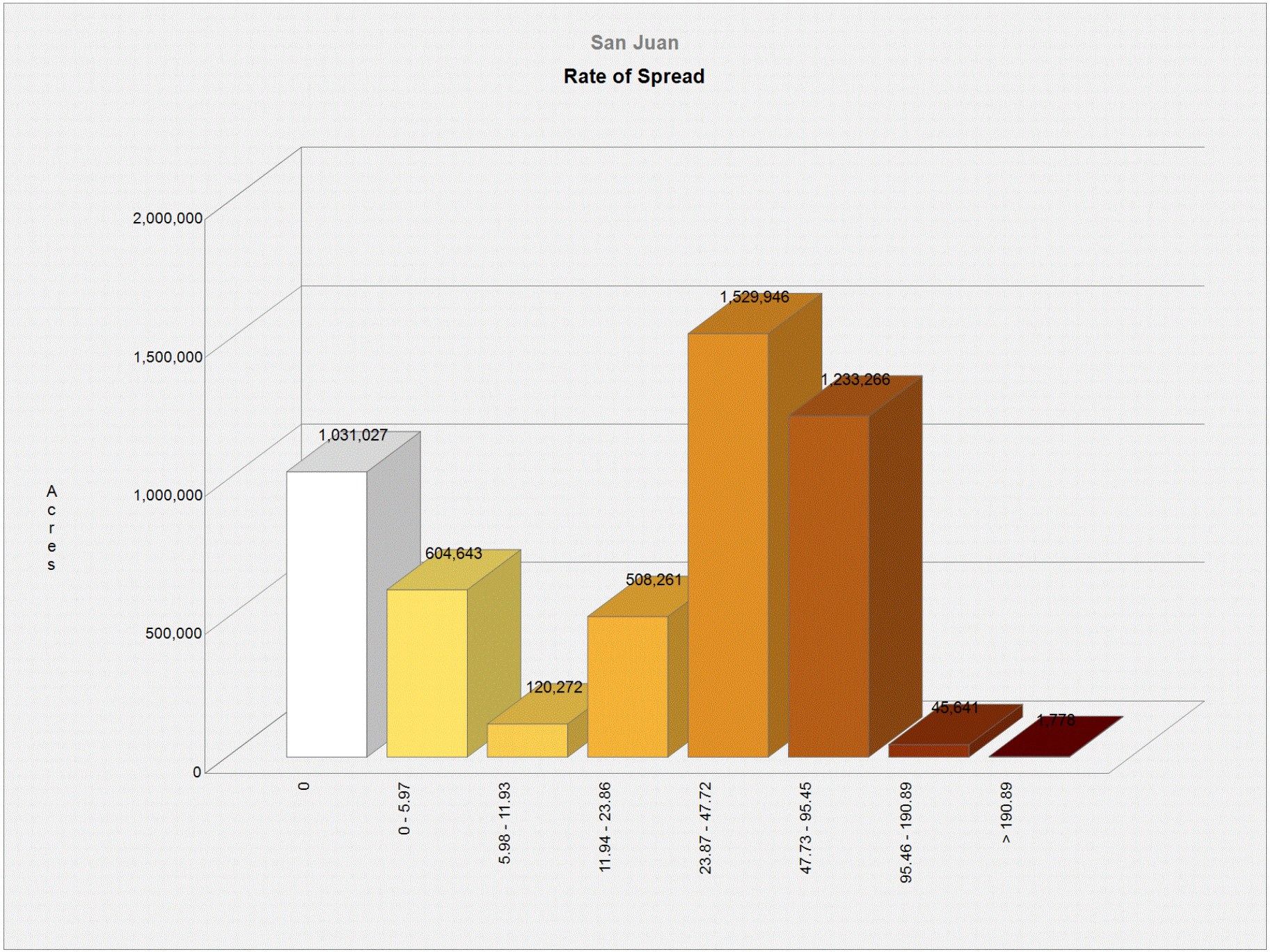
This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel). Flame length is the distance (in feet) between the flame tip and the midpoint of the flame depth at the base (generally the ground surface). This is a good indicator of fire intensity. Flame length is a strong indicator of the potential damage to structures; longer flame lengths will likely have a greater negative consequence. Flame lengths are also utilized in fuel-break planning.

	Flame Length Category	Acres	Percent
	0	1,031,027	20 %
	0 to 4 feet	1,031,041	20 %
	4 to 8 feet	2,410,952	48 %
	8 to 11 feet	395,773	8 %
	11 to 25 feet	105,984	2 %
	> 25 feet	100,056	2 %
	Total	**5,074,833**	**100 %**

Rate of Spread (chains/hr)

Rate of Spread (ROS) represents the weighted-average rate of spread in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate). Rate of spread can affect suppression efforts by “outrunning” direct attack and can have an impact on evacuation.

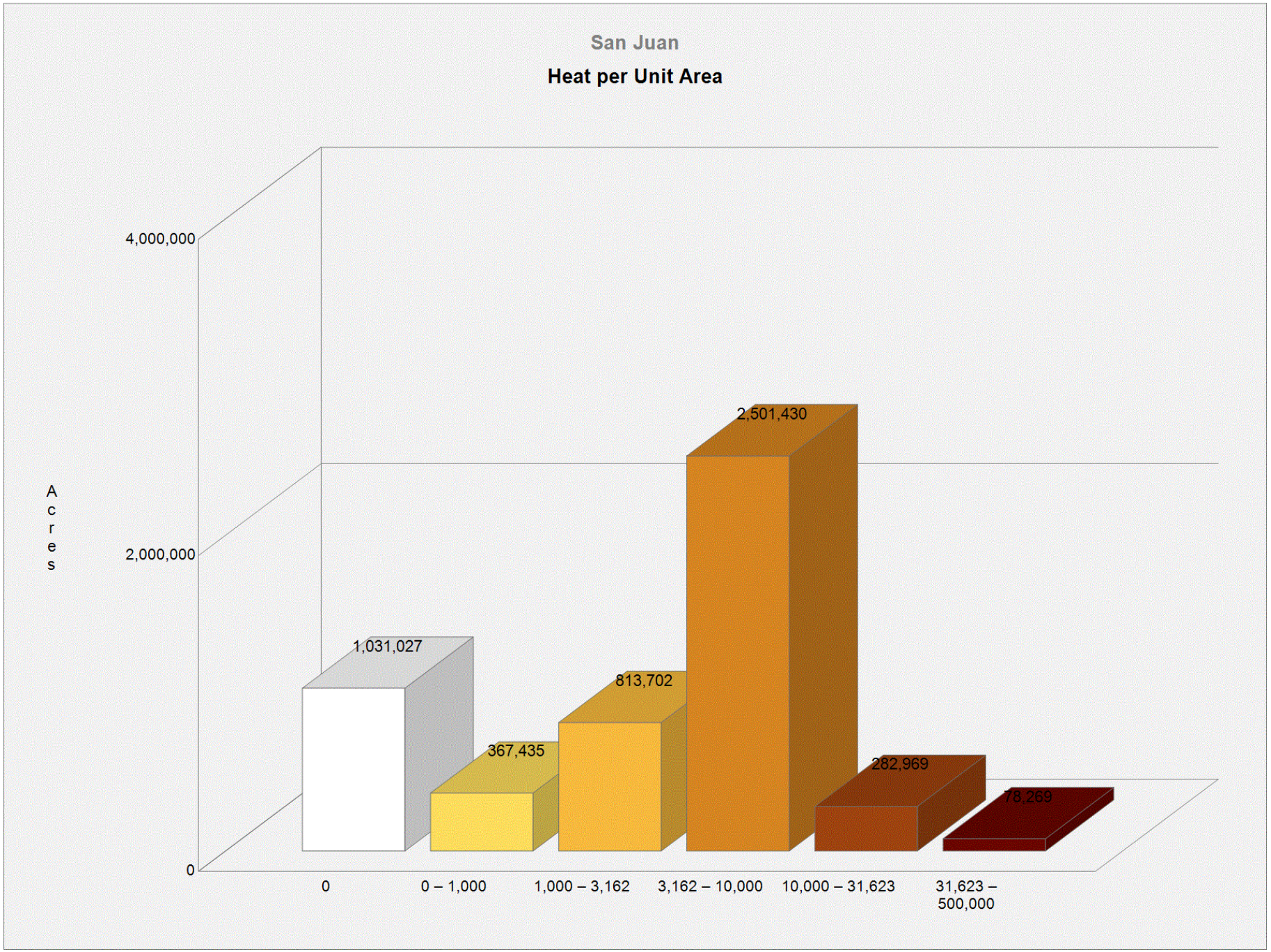
	Rate of Spread Category (chains/hr)	Acres	Percent
	0	1,031,027	20 %
	0 - 5.97	604,643	12 %
	5.98 - 11.93	120,272	2 %
	11.94 - 23.86	508,261	10 %
	23.87 - 47.72	1,529,946	30 %
	47.73 - 95.45	1,233,266	24 %
	95.46 - 190.89	45,641	1 %
	> 190.89	1,778	0 %
	Total	**5,074,833**	**100 %**


San Juan
Rate of Spread
Acres
2,000,000
1,500,000
1,000,000
500,000
0
1,031,027
604,643
120,272
508,261
1,529,946
1,233,266
45,641
1,778
0
0 - 5.97
5.98 - 11.93
11.94 - 23.86
23.87 - 47.72
47.73 - 95.45
95.46 - 190.89
> 190.89

Heat per Unit Area

This dataset represents the weighted-average heat per unit area (HPA) in kilojoules per square meter for a given pixel in the fuelscape (including any contribution of crown fuel).

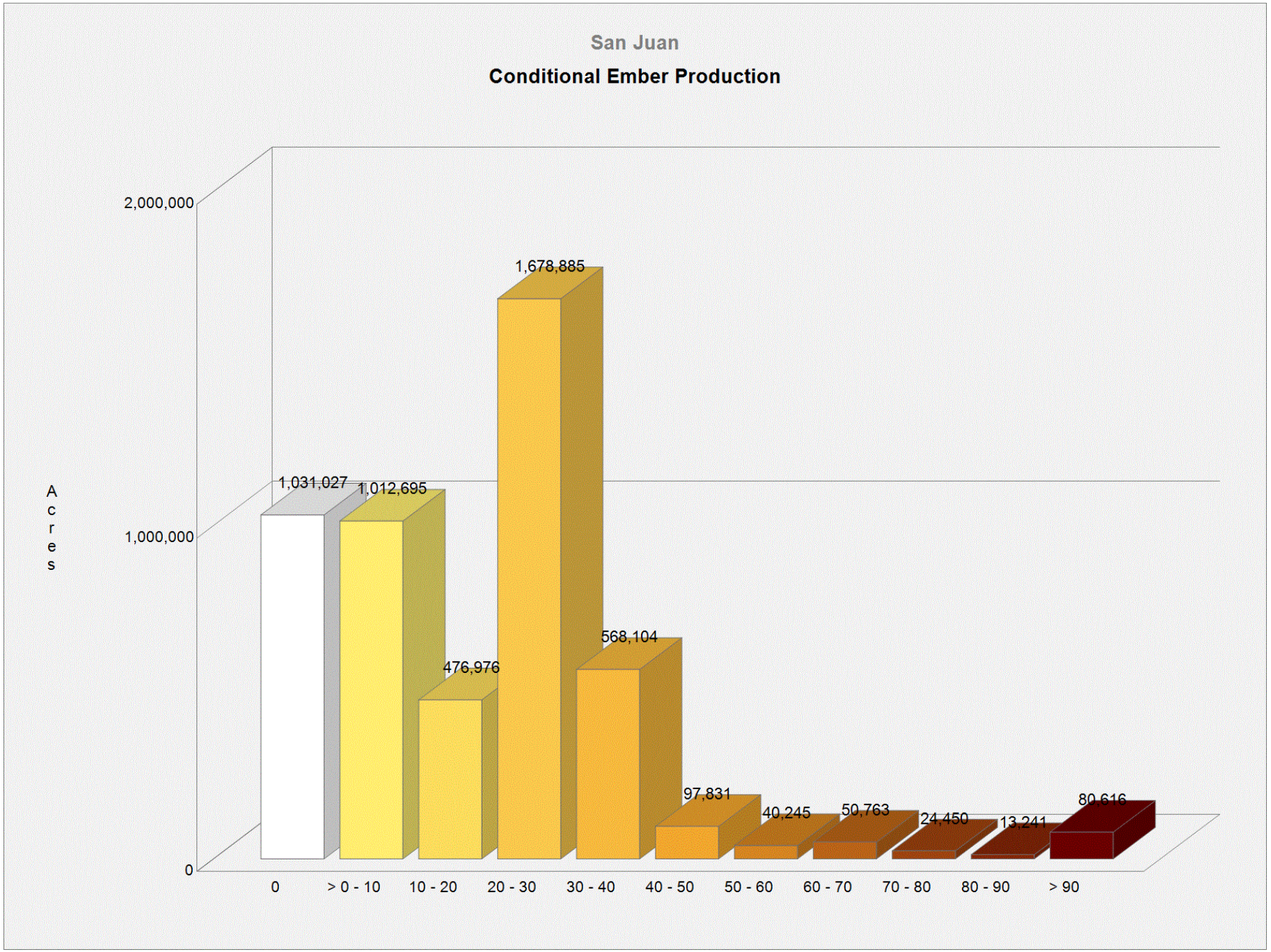
	Heat per Unit Area Category	Acres	Percent
	0	1,031,027	20 %
	0 – 1,000	367,436	7 %
	1,000 – 3,162	813,703	16 %
	3,162 – 10,000	2,501,430	49 %
	10,000 – 31,623	282,969	6 %
	31,623 – 500,000	78,269	2 %
	Total	**5,074,833**	**100 %**


San Juan
Heat per Unit Area
Acres
4,000,000
2,000,000
0
1,031,027
367,435
813,702
2,501,430
282,969
78,269
0
0 – 1,000
1,000 – 3,162
3,162 – 10,000
10,000 – 31,623
31,623 – 500,000

Conditional Ember Production

This dataset indicates where embers are originating when fires occur (so they could be targeted for treatment).

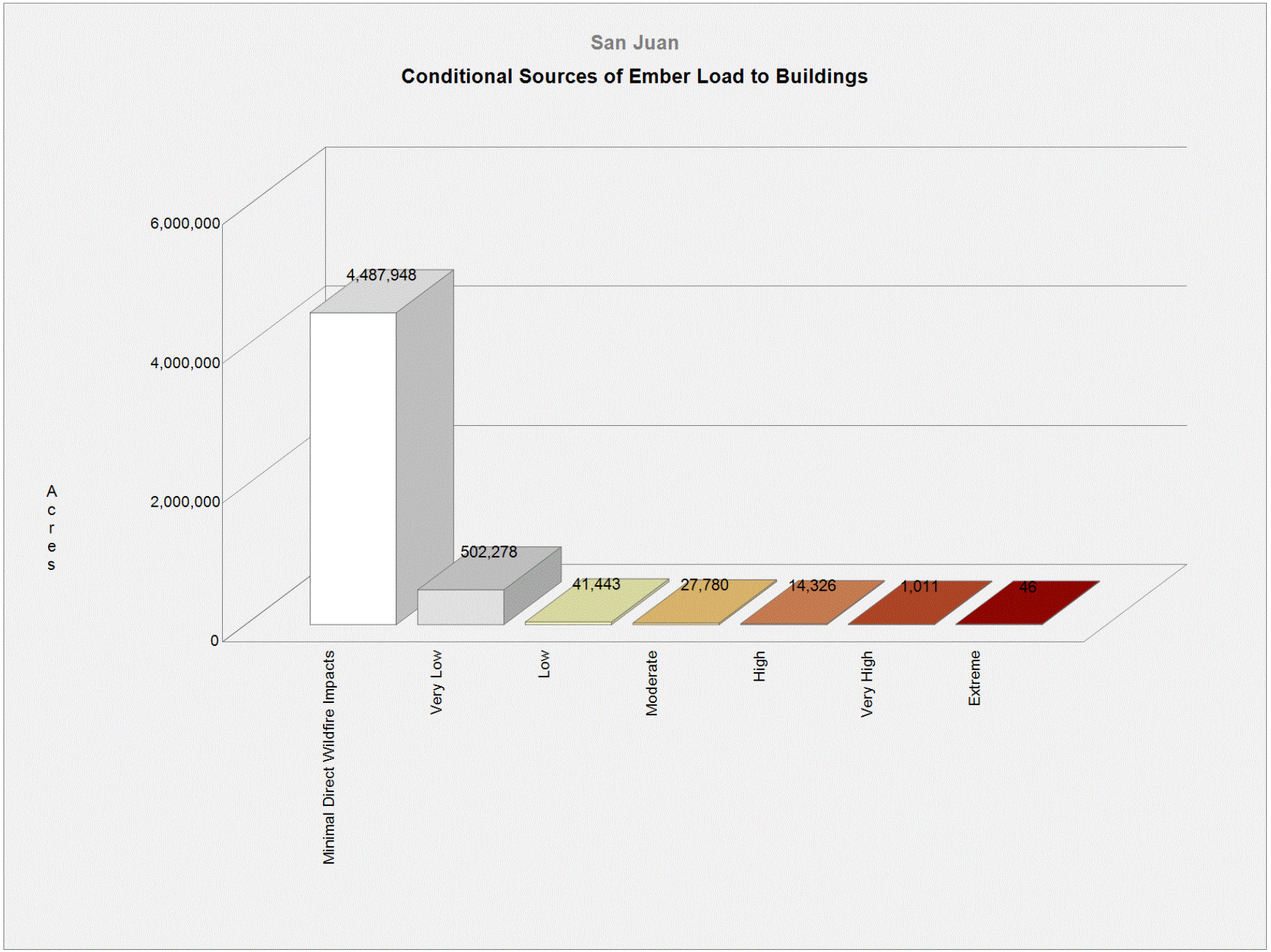
	Conditional Ember Production Category	Acres	Percent
	0	1,031,027	20 %
	> 0 - 10	1,012,695	20 %
	10 - 20	476,976	9 %
	20 - 30	1,678,885	33 %
	30 - 40	568,104	11 %
	40 - 50	97,831	2 %
	50 - 60	40,245	1 %
	60 - 70	50,763	1 %
	70 - 80	24,450	0 %
	80 - 90	13,241	0 %
	> 90	80,616	2 %
	Total	**5,074,833**	**100 %**


San Juan
Conditional Ember Production
Acres
2,000,000
1,000,000
0
1,031,027
1,012,695
476,976
1,678,885
568,104
97,831
40,245
50,763
24,450
13,241
80,616
0
> 0 - 10
10 - 20
20 - 30
30 - 40
40 - 50
50 - 60
60 - 70
70 - 80
80 - 90
> 90

Conditional Sources of Ember Load to Buildings

This dataset indicates where embers might land near buildings.

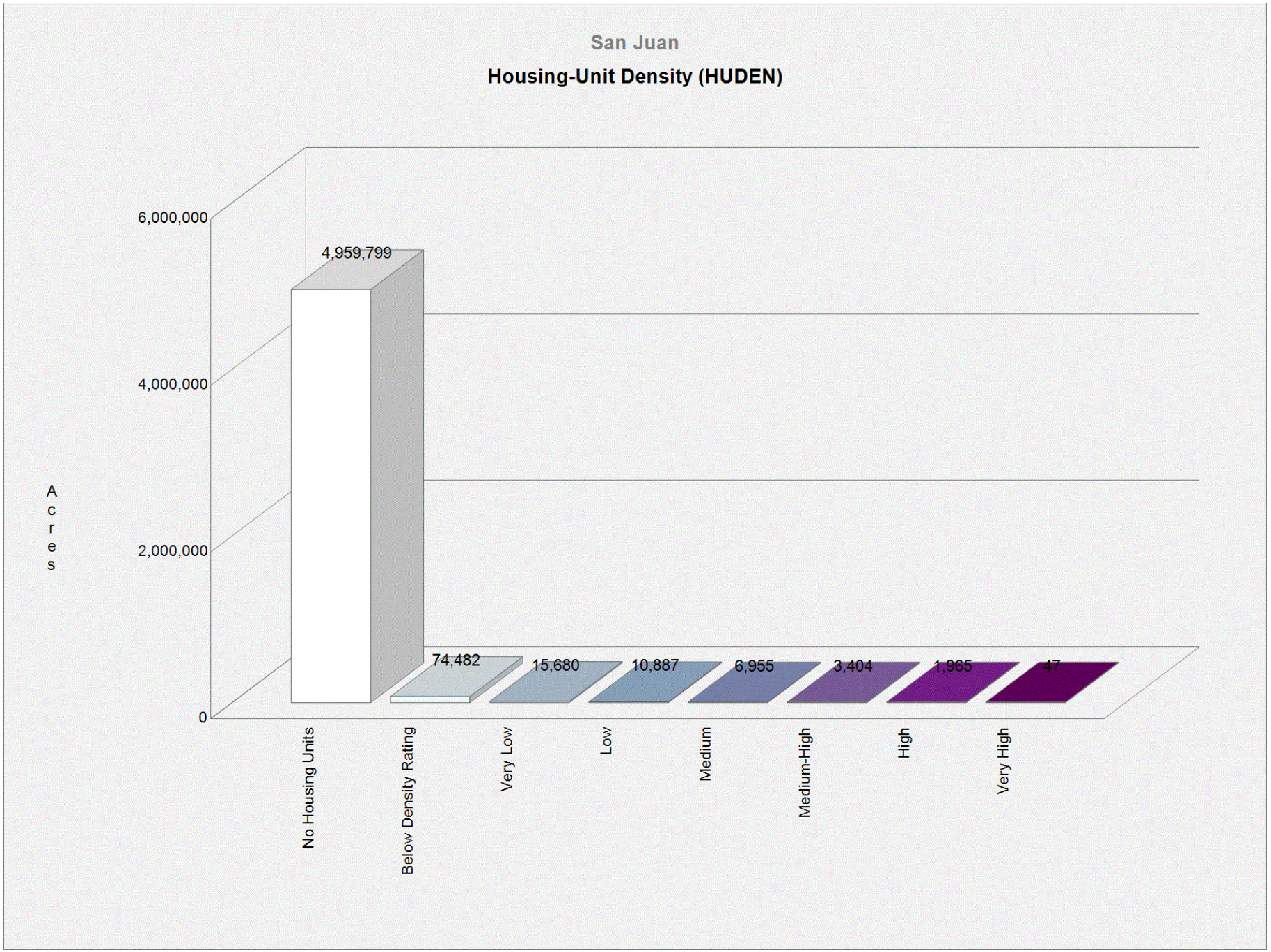
	Conditional Sources of Ember Load to Buildings Category	Acres	Percent
	Minimal Direct Wildfire Impacts	4,487,948	88 %
	Very Low	502,279	10 %
	Low	41,443	1 %
	Moderate	27,781	1 %
	High	14,326	0 %
	Very High	1,011	0 %
	Extreme	46	0 %
	Total	**5,074,833**	**100 %**


San Juan
Conditional Sources of Ember Load to Buildings
Acres
6,000,000
4,000,000
2,000,000
0
4,487,948
502,278
41,443
27,780
14,326
1,011
46
Minimal Direct Wildfire Impacts
Very Low
Low
Moderate
High
Very High
Extreme

Housing-Unit Density (HUDEN)

This dataset is the Housing-Unit Density (HUDEN) raster for the United States. HUDEN is a nationwide raster of housing-unit density measured in housing units per square kilometer. It reflects 2018 estimates of housing unit and population counts from the U.S. Census Bureau, combined with building footprint data from Microsoft (version 1.1), LandScan where building footprint data were unavailable, and land cover data from LANDFIRE.

	Housing-Unit Density (HUDEN) Category	Acres	Percent
	No Housing Units	4,959,799	98 %
	Below Density Rating	74,482	1 %
	Very Low	15,680	0 %
	Low	10,887	0 %
	Medium	6,955	0 %
	Medium-High	3,404	0 %
	High	1,965	0 %
	Very High	47	0 %
	Total	**5,073,218**	**100 %**


San Juan
Housing-Unit Density (HUDEN)
Acres
6,000,000
4,000,000
2,000,000
0
4,959,799
74,482
15,680
10,887
6,955
3,404
1,965
47
No Housing Units
Below Density Rating
Very Low
Low
Medium
Medium-High
High
Very High