

Sample: Forestry and wildfire, Bend: report

Project: Sample: Forestry and wildfire, Bend

Goal: Describe the project Sample: Forestry and wildfire, Bend: run the analyses that tell the most about its data, draw every result, and write a cited report.

Run: 8ded6244-4d76-45b7-a92e-f62fd8a76afe (running, 11 agent run(s))

Generated: 2026-10-18T06:17:30Z, version 1

Model cost: USD 0.0000 over 0 model call(s)

Data used

Data	Kind	Rows	Time span	Summary	Source
Fuel units	vector, Polygon	36		36 polygon (area) features; 'fuel_model' has 5 values (top: timber litter 10, timber understory 7, slash 7); 'fuel_load_t_ha' 1.5 to 37.1 (mean 15.26); 'canopy_cover_pct' 7 to 91 (mean 45.36); 'last_burned' 1996 to 2020 (mean 2011); total area 80.03 km2; extent -121.4833,43.9831 to -121.3566,44.0568. Areas (Fuel units) with fuel_load_t_ha to compare and map.	[98]
Fire perimeters	vector, Polygon	10	2017-08-10 to 2026-07-16	10 polygon (area) features; dated by 'start_date' from 2017-08-10 to 2026-07-16; 'cause' has 3 values (top: equipment 6, human 3, lightning 1); 'acres' 85 to 378 (mean 219.2); 'containment_days' 2 to 20 (mean 11); named by 'fire_name' (e.g. Westbrook Fire, Station Quarter Fire, Riverside Fire); total area 8.894 km2; extent -121.4744,43.9952 to -121.3725,44.0490. Areas (Fire perimeters) with acres to compare and map.	[2]
Ignitions	vector, Point	900	2018-01-07 to 2026-09-30	900 point features; dated by 'detected_at' from 2018-01-07 to 2026-09-30; 'cause' has 7 values (top: lightning 243, campfire 186, vehicle 112); 'final_acres' 0 to 45.9 (mean 1.727); 'elevation_m' 1158 to 1737 (mean 1449); extent -121.4824,43.9841 to -121.3576,44.0560. Dated point events by cause: where and when Ignitions happen.	[3]
Forest roads	vector, LineString	15		15 line features; 'surface' has 3 values (top: native 8, gravel 6, paved 1); 'gated' has 2 values (top: False 10, True 5); named by 'name' (e.g. Highway corridor, Forest Road 314, Forest Road 321); total length 74.47 km; extent -121.4826,43.9869 to -121.3584,44.0558. Lines (Forest roads) such as routes or networks.	[99]
Weather stations	vector, Point	6		6 point features; 'elevation_m' 1253 to 1663 (mean 1503); named by 'name' (e.g. RAWS weather station 1, RAWS weather station 2, RAWS weather station 3); extent -121.4578,44.0051 to -121.3674,44.0455. Point locations of Weather stations.	[100]
Fire lookouts	vector, Point	3		3 point features; 'staffed' has 2 values (top: True 2, False 1); 'tower_height_m' 9 to 12 (mean 11); named by 'name' (e.g. Pine Butte lookout, Cinder Butte lookout, Eagle Butte lookout); extent -121.4430,44.0109 to -121.3763,44.0430. Point locations of Fire lookouts by staffed.	[101]

Data	Kind	Rows	Time span	Summary	Source
Fuel treatments	vector, Polygon	12	2019-06-01 to 2025-01-01	12 polygon (area) features; dated by 'completed' from 2019-06-01 to 2025-01-01; 'method' has 3 values (top: prescribed burn 7, mastication 3, thinning 2); 'acres' 62 to 188 (mean 119.8); total area 5.842 km2; extent -121.4681,44.0078 to -121.3572,44.0561. Areas (Fuel treatments) with acres to compare and map.	[4]
Forest terrain model (DEM)	raster			1-band float32 raster (dem), 333 x 267 cells; resolution 30; band 1 1152 to 1745; extent -121.4833,43.9830 to -121.3568,44.0568. An elevation surface for terrain analysis.	[102]
Station weather by day	table	918	2026-05-01 to 2026-09-30	Table of 918 rows and 6 columns without geometry; dated by 'date' from 2026-05-01 to 2026-09-30; 'temp_max_c' 14.6 to 42.8 (mean 29.96); 'rh_min_pct' 5 to 56 (mean 25.28); 'wind_kmh' 0 to 29 (mean 13.63). A table of Station weather by day without locations.	[5]
Treatment costs	table	12		Table of 12 rows and 4 columns without geometry; 'method' has 3 values (top: prescribed burn 7, mastication 3, thinning 2); 'cost_usd_per_acre' 472 to 1,391 (mean 910); 'crew_days' 5 to 40 (mean 25.67). A table of Treatment costs without locations.	[103]
Fuels treatment plan	document			1-page pdf document 'Fuels treatment plan'; language en; mentions 5 place(s): Highway corridor (2), Thornbury Vale Fire (1), Queensway Fire (1), Pine Butte lookout (1), Cinder Butte lookout (1). A document about Highway corridor, Thornbury Vale Fire, Queensway Fire.	[104]
Sample: Forestry and wildfire, Bend	record				[105]
Hot spot analysis: Ignitions	layer, Polygon	344			[106]
Hot spot analysis: Fire perimeters	layer, Polygon	10			[107]
Hot spot analysis: Fuel treatments	layer, Polygon	12			[108]
Emerging hot spots: Ignitions	layer, Polygon	135			[109]
Repeat and near repeat classification: Ignitions	layer, Point	900			[110]
Summarize within: Fire perimeters	layer, Polygon	10			[111]
Summarize within: Fire perimeters	layer, Polygon	10			[112]
Summarize within: Fire perimeters	layer, Polygon	10			[113]
Find point clusters: Ignitions	layer, Point	900			[114]
Find point clusters: cluster hulls	layer, Polygon	1			[115]
Calculate density: Ignitions	layer, Polygon	2,136			[116]
Find outliers: Fire perimeters	layer, Polygon	10			[117]
Find outliers: Fuel treatments	layer, Polygon	12			[118]

Data	Kind	Rows	Time span	Summary	Source
Find outliers: Fuel units	layer, Polygon	36			[119]

Timeline

Timeline: events per quarter by dataset

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +4.46 per quarter; first half 360, second half 1,475 (+309.7%)

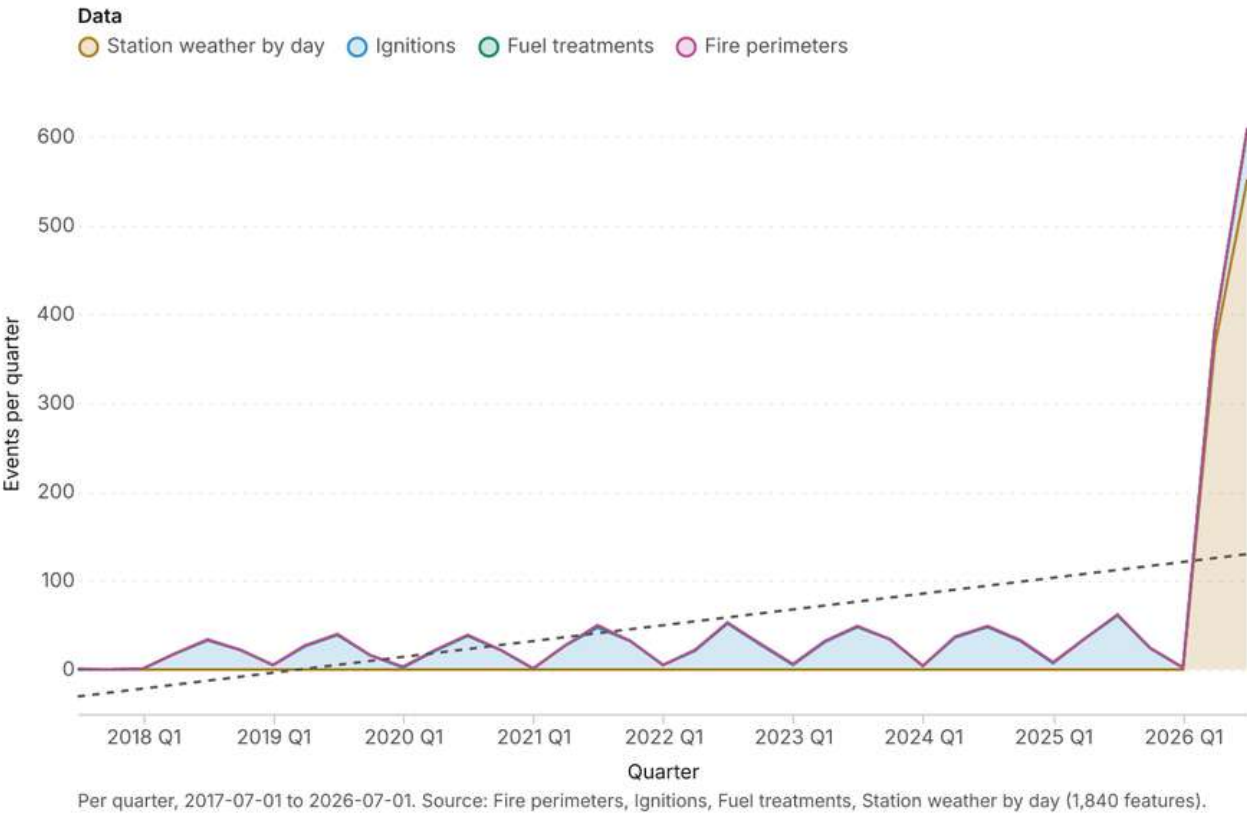


Figure 1. Timeline: events per quarter by dataset [1]. Per quarter, 2017-07-01 to 2026-07-01. Source: Fire perimeters, Ignitions, Fuel treatments, Station weather by day (1,840 features). The data is in the appendix.

The timeline counts 1,840 dated events in Fire perimeters, Ignitions, Fuel treatments and 1 more per quarter, from Q3 2017 to Q3 2026 [1][2][3][4][5]. By dataset: Station weather by day 918; Ignitions 900; Fuel treatments 12; Fire perimeters 10 [1]. The trend is +4.46 events per quarter; the second half of the quarters has 1,475 against 360 in the first (+309.7%) [1]. 1 of the 37 quarters had no events [1]. Change point detection found no shift in the counts [6].

Busiest quarters

- Q3 2026: 610 events [1]
- Q2 2026: 386 events [1]
- Q3 2025: 62 events [1]

Quietest quarters with events

- Q3 2017: 1 event [1]
- Q1 2018: 1 event [1]
- Q1 2021: 1 event [1]

Hot spots

What this analysis is. Hot spot analysis: Getis-Ord Gi* hot and cold spots with z-scores, p-values and confidence bins [7]. In ArcGIS it is Find Hot Spots or Hot Spot Analysis (Getis-Ord Gi*); in QGIS, qgis:hotspot (plugin) [7].

Why it was run on this data. 900 points: Getis-Ord Gi* tests whether the concentrations in Ignitions are statistically significant [8].

What it found. Hot spots on Ignitions: Hot spot analysis: 1 layer saved: Hot spot analysis: Ignitions (344 features) [9][10]. It reported result, bins 344; result, count 344; result, elapsed ms 21; result, cell size m 500; result, incidents used 900; result, distance band m 500 [9].

Result	Value
result, bins	344
result, count	344
result, elapsed ms	21
result, cell size m	500
result, incidents used	900
result, distance band m	500
billing, cost	0.068
billing, list price	0.068
billing, upstream cost	0

Findings

Evidenced: Hot spots on Ignitions: Hot spot analysis: 1 layer saved: Hot spot analysis: Ignitions (344 features) [9][10].

Evidenced: It reported result, bins 344; result, count 344; result, elapsed ms 21; result, cell size m 500; result, incidents used 900; result, distance band m 500 [9].

Tool gp_hot_spots; parameters {"project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}, "aggregation": "hexagon", "cell_size_m": 500.0, "distance_band_m": 500.0}

Hot spots

What this analysis is. Hot spot analysis: Getis-Ord Gi* hot and cold spots with z-scores, p-values and confidence bins [7]. In ArcGIS it is Find Hot Spots or Hot Spot Analysis (Getis-Ord Gi*); in QGIS, qgis:hotspot (plugin) [7].

Why it was run on this data. Gi* hot spots of 'acres' across the areas [11].

What it found. Hot spots on Fire perimeters: Hot spot analysis: 1 layer saved: Hot spot analysis: Fire perimeters (10 features) [12][13]. It reported result, count 10; result, elapsed ms 3; result, excluded null 0; result, distance band m 2,652; billing, cost 0.0502; billing, list price 0.0502 [12].

Result	Value
result, count	10
result, elapsed ms	3
result, excluded null	0
result, distance band m	2,652
billing, cost	0.0502
billing, list price	0.0502
billing, upstream cost	0

Findings

Evidenced: Hot spots on Fire perimeters: Hot spot analysis: 1 layer saved: Hot spot analysis: Fire perimeters (10 features) [12][13].

Evidenced: It reported result, count 10; result, elapsed ms 3; result, excluded null 0; result, distance band m 2,652; billing, cost 0.0502; billing, list price 0.0502 [12].

Tool gp_hot_spots; parameters {"field": "acres", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fire perimeters (4401c868)"}}

Hot spots

What this analysis is. Hot spot analysis: Getis-Ord Gi* hot and cold spots with z-scores, p-values and confidence bins [7]. In ArcGIS it is Find Hot Spots or Hot Spot Analysis (Getis-Ord Gi*); in QGIS, qgis:hotspot (plugin) [7].

Why it was run on this data. Gi* hot spots of 'acres' across the areas [14].

What it found. Hot spots on Fuel treatments: Hot spot analysis: 1 layer saved: Hot spot analysis: Fuel treatments (12 features) [15][16]. It reported result, count 12; result, elapsed ms 2; result, excluded null 0; result, distance band m 2,799; billing, cost 0.05024; billing, list price 0.05024 [15].

Result	Value
result, count	12
result, elapsed ms	2
result, excluded null	0
result, distance band m	2,799
billing, cost	0.05024
billing, list price	0.05024
billing, upstream cost	0

Findings

Evidenced: Hot spots on Fuel treatments: Hot spot analysis: 1 layer saved: Hot spot analysis: Fuel treatments (12 features) [15][16].

Evidenced: It reported result, count 12; result, elapsed ms 2; result, excluded null 0; result, distance band m 2,799; billing, cost 0.05024; billing, list price 0.05024 [15].

Tool gp_hot_spots; parameters {"field": "acres", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fuel treatments (d603668d)"}}

Space time hot spots

What this analysis is. Emerging hot spots: Where hot spots are new, consecutive, intensifying, persistent, diminishing, sporadic, oscillating or historical over time [17]. In ArcGIS it is Emerging Hot Spot Analysis or Create Space Time Cube [17].

Why it was run on this data. Ignitions carry dates in 'detected_at': emerging hot spot analysis finds new, intensifying and fading hot spots per month [18].

What it found. Space time hot spots on Ignitions: Emerging hot spots: 1 layer saved: Emerging hot spots: Ignitions (135 features) [10][19]. It reported result, count 135; result, elapsed ms 35; result, resolution 8; result, features used 900; result, time neighbors 0; billing, cost 0.145 [19].

Result	Value
result, count	135
result, elapsed ms	35
result, resolution	8
result, features used	900
result, time neighbors	0
billing, cost	0.145
billing, list price	0.145
billing, upstream cost	0

Findings

Evidenced: Space time hot spots on Ignitions: Emerging hot spots: 1 layer saved: Emerging hot spots: Ignitions (135 features) [10][19].

Evidenced: It reported result, count 135; result, elapsed ms 35; result, resolution 8; result, features used 900; result, time neighbors 0; billing, cost 0.145 [19].

Tool gp_space_time_hot_spots; parameters {"project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}, "interval": "month", "bin_shape": "h3", "resolution": 8, "time_field": "detected_at"}

Near repeat

What this analysis is. Repeat and near repeat classification: Classify incidents as originators, repeats (same place) or near repeats within a distance and time window, with a Knox test table [20]. In ArcGIS it is Repeat and Near Repeat Classification or Near Repeat Calculator [20].

Why it was run on this data. Near repeat analysis tests whether Ignitions close in space also follow each other within 30 days [21].

What it found. The near repeat classification utilized the `gp\_near\_repeat` tool [22] and processed the Ignitions dataset [10]. The tool yielded overall results showing a count of 900 [22], 63 chains [22], and a maximum distance of 200 m [22]. The execution was efficient, linking 80 pairs in an elapsed time of 18 ms [22]. Financially, the operation incurred a cost of 0.077 [22].

Result	Value
result, days	30
result, count	900
result, chains	63
result, distance m	200
result, elapsed ms	18
result, pairs linked	80
billing, cost	0.077
billing, list price	0.077
billing, upstream cost	0

Findings

Evidenced: Near repeat on Ignitions: Repeat and near repeat classification: 1 layer saved: Repeat and near repeat classification: Ignitions (900 features) [10][22].

Evidenced: It reported result, days 30; result, count 900; result, chains 63; result, distance m 200; result, elapsed ms 18; result, pairs linked 80 [22].

Tool gp_near_repeat; parameters {"days": 30, "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}, "distance_m": 200.0, "time_field": "detected_at"}

Change point detection

What this analysis is. Change point detection: When did the level, count, trend or variability change [23]? For the whole study area or for every bin [23]. In ArcGIS it is Change Point Detection [23].

Why it was run on this data. Change point detection finds when the monthly count of Ignitions shifted [24].

What it found. Change point detection was executed using the tool `gp\_change\_point\_detection` [6]. The input data for the analysis was Ignitions [10]. The tool summary reported that change point detection was successfully done, although no map output was generated [6].

Findings

Evidenced: Change point detection on Ignitions: Change point detection: done; no map output [6][10].

Tool gp_change_point_detection; parameters {"method": "count", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)", "interval": "month", "time_field": "detected_at"}}

Summarize within

What this analysis is. Summarize within: Count and aggregate the features inside each polygon (or bin), proportionally for lines and polygons [25]. In ArcGIS it is Summarize Within or Aggregate Points; in QGIS, native:countpointsinpolygon or native:sumlinelengths [25].

Why it was run on this data. Count Ignitions inside each feature of Fire perimeters by cause; the counts map as a choropleth (natural breaks, sequential colors) [26].

What it found. Summarize within on Ignitions, Fire perimeters: Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features) [10][13][27]. It reported result, count 10; result, elapsed ms 3; billing, cost 0.02822; billing, list price 0.02822; billing, upstream cost 0 [27].

Result	Value
result, count	10
result, elapsed ms	3
billing, cost	0.02822
billing, list price	0.02822
billing, upstream cost	0

Findings

Evidenced: Summarize within on Ignitions, Fire perimeters: Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features) [10][13][27].

Evidenced: It reported result, count 10; result, elapsed ms 3; billing, cost 0.02822; billing, list price 0.02822; billing, upstream cost 0 [27].

Tool gp_summarize_within; parameters {"stats": [{"stat": "sum", "field": "final_acres"}], "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)", "group_by": "cause", "polygons": {"layer": "Fire perimeters (4401c868)"}}

Summarize within

What this analysis is. Summarize within: Count and aggregate the features inside each polygon (or bin), proportionally for lines and polygons [25]. In ArcGIS it is Summarize Within or Aggregate Points; in QGIS, native:countpointsinpolygon or native:sumlinelengths [25].

Why it was run on this data. Count Ignitions inside each feature of Fire perimeters by cause; the counts map as a choropleth (natural breaks, sequential colors) [26].

What it found. The analysis used Fire perimeters [13] and Fire lookouts [29] as inputs for the `gp\_summarize\_within` function [28].

Result	Value
result, count	10
result, elapsed ms	2
billing, cost	0.01028
billing, list price	0.01028
billing, upstream cost	0

Findings

Evidenced: Summarize within on Fire lookouts, Fire perimeters: Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features) [13][28][29].

Evidenced: It reported result, count 10; result, elapsed ms 2; billing, cost 0.01028; billing, list price 0.01028; billing, upstream cost 0 [28].

Tool gp_summarize_within; parameters {"stats": [{"stat": "sum", "field": "tower_height_m"}], "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fire lookouts (81fdb6e)", "group_by": "staffed", "polygons": {"layer": "Fire perimeters (4401c868)"}}

Summarize within

What this analysis is. Summarize within: Count and aggregate the features inside each polygon (or bin), proportionally for lines and polygons [25]. In ArcGIS it is Summarize Within or Aggregate Points; in QGIS, native:countpointsinpolygon or native:sumlinelengths [25].

Why it was run on this data. Count Ignitions inside each feature of Fire perimeters by cause; the counts map as a choropleth (natural breaks, sequential colors) [26].

What it found. Summarize within on Weather stations, Fire perimeters: Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features) [13][30][31]. It reported result, count 10; result, elapsed ms 2; billing, cost 0.01034; billing, list price 0.01034; billing, upstream cost 0 [30].

Result	Value
result, count	10
result, elapsed ms	2
billing, cost	0.01034
billing, list price	0.01034
billing, upstream cost	0

Findings

Evidenced: Summarize within on Weather stations, Fire perimeters: Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features) [13][30][31].

Evidenced: It reported result, count 10; result, elapsed ms 2; billing, cost 0.01034; billing, list price 0.01034; billing, upstream cost 0 [30].

Tool gp_summarize_within; parameters {"stats": [{"stat": "sum", "field": "elevation_m"}], "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Weather stations (6b183e69)", "polygons": {"layer": "Fire perimeters (4401c868)"}}

Zonal statistics

What this analysis is. Zonal statistics: count/min/max/mean/std/sum/median/majority per polygon as a table and as GeoJSON [32]. In ArcGIS it is Zonal Statistics as Table (polygons) [32].

Why it was run on this data. Statistics of Forest terrain model (DEM) inside each feature of Fire perimeters [33].

What it found. The analysis utilized the zonal statistics tool, specifically tool rs_zonal_statistics [34]. This tool summary indicates that the zonal statistics were run, yielding 10 row(s) for 10 zones [34]. Available source information for this process is provided by rs_zonal_statistics at step 0 [34].

Findings

Evidenced: Zonal statistics: Zonal statistics: 10 row(s) [34].

Evidenced: zones 10 [34].

Tool rs_zonal_statistics; parameters {"stats": ["mean", "min", "max", "std"], "zones": "Fire perimeters (4401c868)", "raster_id": "Forest terrain model (DEM) (71497b8b)"}

Zonal statistics

What this analysis is. Zonal statistics: count/min/max/mean/std/sum/median/majority per polygon as a table and as GeoJSON [32]. In ArcGIS it is Zonal Statistics as Table (polygons) [32].

Why it was run on this data. Statistics of Forest terrain model (DEM) inside each feature of Fire perimeters [33].

What it found. The tool rs_zonal_statistics processes 12 rows and 12 zones [35]. It is listed as the function rs_zonal_statistics during step 1 [35].

Findings

Evidenced: Zonal statistics: Zonal statistics: 12 row(s) [35].

Evidenced: zones 12 [35].

Tool rs_zonal_statistics; parameters {"stats": ["mean", "min", "max", "std"], "zones": "Fuel treatments (d603668d)", "raster_id": "Forest terrain model (DEM) (71497b8b)"}

Zonal statistics

What this analysis is. Zonal statistics: count/min/max/mean/std/sum/median/majority per polygon as a table and as GeoJSON [32]. In ArcGIS it is Zonal Statistics as Table (polygons) [32].

Why it was run on this data. Statistics of Forest terrain model (DEM) inside each feature of Fire perimeters [33].

What it found. The Zonal statistics analysis utilized the rs_zonal_statistics tool [36]. The tool summary indicates that Zonal statistics generated 36 row(s) [36].

Findings

Evidenced: Zonal statistics: Zonal statistics: 36 row(s) [36].

Evidenced: zones 36 [36].

Tool rs_zonal_statistics; parameters {"stats": ["mean", "min", "max", "std"], "zones": "Fuel units (42f78cee)", "raster_id": "Forest terrain model (DEM) (71497b8b)"}

Find point clusters

What this analysis is. Find point clusters: Density-based clusters (DBSCAN, HDBSCAN or OPTICS, optionally space-time) with hulls and noise [37]. In ArcGIS it is Find Point Clusters or Density-based Clustering; in QGIS, native:dbscanclustering or native:stbbscanclustering [37].

Why it was run on this data. DBSCAN finds dense groups of Ignitions and separates noise [38].

What it found. Find point clusters on Ignitions: Find point clusters: 2 layers saved: Find point clusters: Ignitions (900 features); Find point clusters: cluster hulls (1 feature) [10][39]. It reported result, count 900; result, noise 376; result, distance m 500; result, elapsed ms 15; result, min points 20; billing, cost 0.068 [39].

Result	Value
result, count	900
result, noise	376
result, distance m	500
result, elapsed ms	15
result, min points	20
billing, cost	0.068
billing, list price	0.068
billing, upstream cost	0

Findings

Evidenced: Find point clusters on Ignitions: Find point clusters: 2 layers saved: Find point clusters: Ignitions (900 features); Find point clusters: cluster hulls (1 feature) [10][39].

Evidenced: It reported result, count 900; result, noise 376; result, distance m 500; result, elapsed ms 15; result, min points 20; billing, cost 0.068 [39].

Tool gp_find_point_clusters; parameters {"method": "dbscan", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}, "distance_m": 500.0, "min_points": 20}

Nearest neighbor index

What this analysis is. Average nearest neighbor: Clark-Evans ratio: clustered, dispersed or random [40]. In ArcGIS it is Average Nearest Neighbor; in QGIS, native:nearestneighbouranalysis [40].

Why it was run on this data. The average nearest neighbor ratio says whether Ignitions are clustered, random or dispersed [41].

What it found. Nearest neighbor index on Ignitions: Average nearest neighbor: done; no map output [10][42]. It reported result, n 900; result, p value 0; result, z score -9.013; result, elapsed ms 4; result, study area m2 76,190,873; result, nearest neighbor ratio 0.843 [42].

Result	Value
result, n	900
result, p value	0
result, z score	-9.013
result, elapsed ms	4
result, study area m2	76,190,873
result, nearest neighbor ratio	0.843
result, expected mean distance m	145.5
result, observed mean distance m	122.6
billing, cost	0.02
billing, list price	0.02
billing, upstream cost	0

Findings

Evidenced: Nearest neighbor index on Ignitions: Average nearest neighbor: done; no map output [10][42].

Evidenced: It reported result, n 900; result, p value 0; result, z score -9.013; result, elapsed ms 4; result, study area m2 76,190,873; result, nearest neighbor ratio 0.843 [42].

Tool gp_nearest_neighbor_index; parameters {"project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}}

Nearest neighbor index

What this analysis is. Average nearest neighbor: Clark-Evans ratio: clustered, dispersed or random [40]. In ArcGIS it is Average Nearest Neighbor; in QGIS, native:nearestneighbouranalysis [40].

Why it was run on this data. The average nearest neighbor ratio says whether Weather stations are clustered, random or dispersed [43].

What it found. The nearest neighbor index tool was applied using Weather stations [31] and calculated a nearest neighbor ratio of 2.891 [44].

Result	Value
result, n	6
result, p value	0
result, z score	8.863
result, elapsed ms	0
result, study area m2	26,350,582
result, nearest neighbor ratio	2.891

Result	Value
result, expected mean distance m	1,048
result, observed mean distance m	3,030
billing, cost	0.02
billing, list price	0.02
billing, upstream cost	0

Findings

Evidenced: Nearest neighbor index on Weather stations: Average nearest neighbor: done; no map output [31][44].

Evidenced: It reported result, n 6; result, p value 0; result, z score 8.863; result, elapsed ms 0; result, study area m2 26,350,582; result, nearest neighbor ratio 2.891 [44].

Tool gp_nearest_neighbor_index; parameters {"project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Weather stations (6b183e69)"}}

Calculate density

What this analysis is. Calculate density: Kernel density per square kilometer on a grid [45]. In ArcGIS it is Calculate Density or Kernel Density; in QGIS, native:heatmapkerneldensityestimation [45].

Why it was run on this data. 900 points in Ignitions: a density surface shows where they concentrate [46].

What it found. The density calculation utilized the Ignitions data [10], resulting in 2,136 features [47]. The process was completed in 61 elapsed milliseconds [47], using a 500 meter bandwidth and a 200 meter cell size [47].

Result	Value
result, count	2,136
result, elapsed ms	61
result, bandwidth m	500
result, cell size m	200
result, excluded null	0
result, max density per km2	102.6
billing, cost	0.068
billing, list price	0.068
billing, upstream cost	0

Findings

Evidenced: Calculate density on Ignitions: Calculate density: 1 layer saved: Calculate density: Ignitions (2136 features) [10][47].

Evidenced: It reported result, count 2,136; result, elapsed ms 61; result, bandwidth m 500; result, cell size m 200; result, excluded null 0; result, max density per km2 102.6 [47].

Tool gp_calculate_density; parameters {"kernel": "quartic", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Ignitions (73bb3d60)"}, "bandwidth_m": 500.0, "cell_size_m": 200.0}

Outliers

What this analysis is. Find outliers: Anselin local Moran's I: HH, LL clusters and HL, LH outliers [48]. In ArcGIS it is Find Outliers or Cluster and Outlier Analysis (Anselin Local Moran's I) [48].

Why it was run on this data. Local Moran's I maps clusters and outliers of 'acres' [49].

What it found. Outliers on Fire perimeters: Find outliers: 1 layer saved: Find outliers: Fire perimeters (10 features) [13][50]. It reported result, count 10; result, elapsed ms 8; result, permutations 199; result, excluded null 0; result,

distance band m 2,652; billing, cost 0.0503 [50].

Result	Value
result, count	10
result, elapsed ms	8
result, permutations	199
result, excluded null	0
result, distance band m	2,652
billing, cost	0.0503
billing, list price	0.0503
billing, upstream cost	0

Findings

Evidenced: Outliers on Fire perimeters: Find outliers: 1 layer saved: Find outliers: Fire perimeters (10 features) [13][50].

Evidenced: It reported result, count 10; result, elapsed ms 8; result, permutations 199; result, excluded null 0; result, distance band m 2,652; billing, cost 0.0503 [50].

Tool gp_outliers; parameters {"field": "acres", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fire perimeters (4401c868)"}, "aggregation": "hexagon"}

Outliers

What this analysis is. Find outliers: Anselin local Moran's I: HH, LL clusters and HL, LH outliers [48]. In ArcGIS it is Find Outliers or Cluster and Outlier Analysis (Anselin Local Moran's I) [48].

Why it was run on this data. Local Moran's I maps clusters and outliers of 'acres' [51].

What it found. Outliers on Fuel treatments: Find outliers: 1 layer saved: Find outliers: Fuel treatments (12 features) [16][52]. It reported result, count 12; result, elapsed ms 3; result, permutations 199; result, excluded null 0; result, distance band m 2,799; billing, cost 0.05036 [52].

Result	Value
result, count	12
result, elapsed ms	3
result, permutations	199
result, excluded null	0
result, distance band m	2,799
billing, cost	0.05036
billing, list price	0.05036
billing, upstream cost	0

Findings

Evidenced: Outliers on Fuel treatments: Find outliers: 1 layer saved: Find outliers: Fuel treatments (12 features) [16][52].

Evidenced: It reported result, count 12; result, elapsed ms 3; result, permutations 199; result, excluded null 0; result, distance band m 2,799; billing, cost 0.05036 [52].

Tool gp_outliers; parameters {"field": "acres", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fuel treatments (d603668d)"}, "aggregation": "hexagon"}

Outliers

What this analysis is. Find outliers: Anselin local Moran's I: HH, LL clusters and HL, LH outliers [48]. In ArcGIS it is Find Outliers or Cluster and Outlier Analysis (Anselin Local Moran's I) [48].

Why it was run on this data. Local Moran's I maps clusters and outliers of 'fuel_load_t_ha' [53].

What it found. The outlier analysis was performed on the Fuel units layer using the gp_outliers tool [54], which successfully saved 1 layer and analyzed 36 features [54]. Key results indicate a result count of 36, and the process required an elapsed time of 2 milliseconds [54].

Result	Value
result, count	36
result, elapsed ms	2
result, permutations	199
result, excluded null	0
result, distance band m	1,580
billing, cost	0.05108
billing, list price	0.05108
billing, upstream cost	0

Findings

Evidenced: Outliers on Fuel units: Find outliers: 1 layer saved: Find outliers: Fuel units (36 features) [54][55].

Evidenced: It reported result, count 36; result, elapsed ms 2; result, permutations 199; result, excluded null 0; result, distance band m 1,580; billing, cost 0.05108 [54].

Tool gp_outliers; parameters {"field": "fuel_load_t_ha", "project": "721d878b-84af-42eb-9c9c-858bf9a6a75e", "features": {"layer": "Fuel units (42f78cee)"}, "aggregation": "hexagon"}

Maps and charts

The run also made 17 map image(s) [56][57][58][59][60][61][62][63][64][65][66][67][68][69][70][71][72] and 25 chart(s) [73][74][75][76][77][78][79][80][81][82][83][84][85][86][87][88][89][90][91][92][93][94][95][96][97].

Hot spot analysis: Ignitions

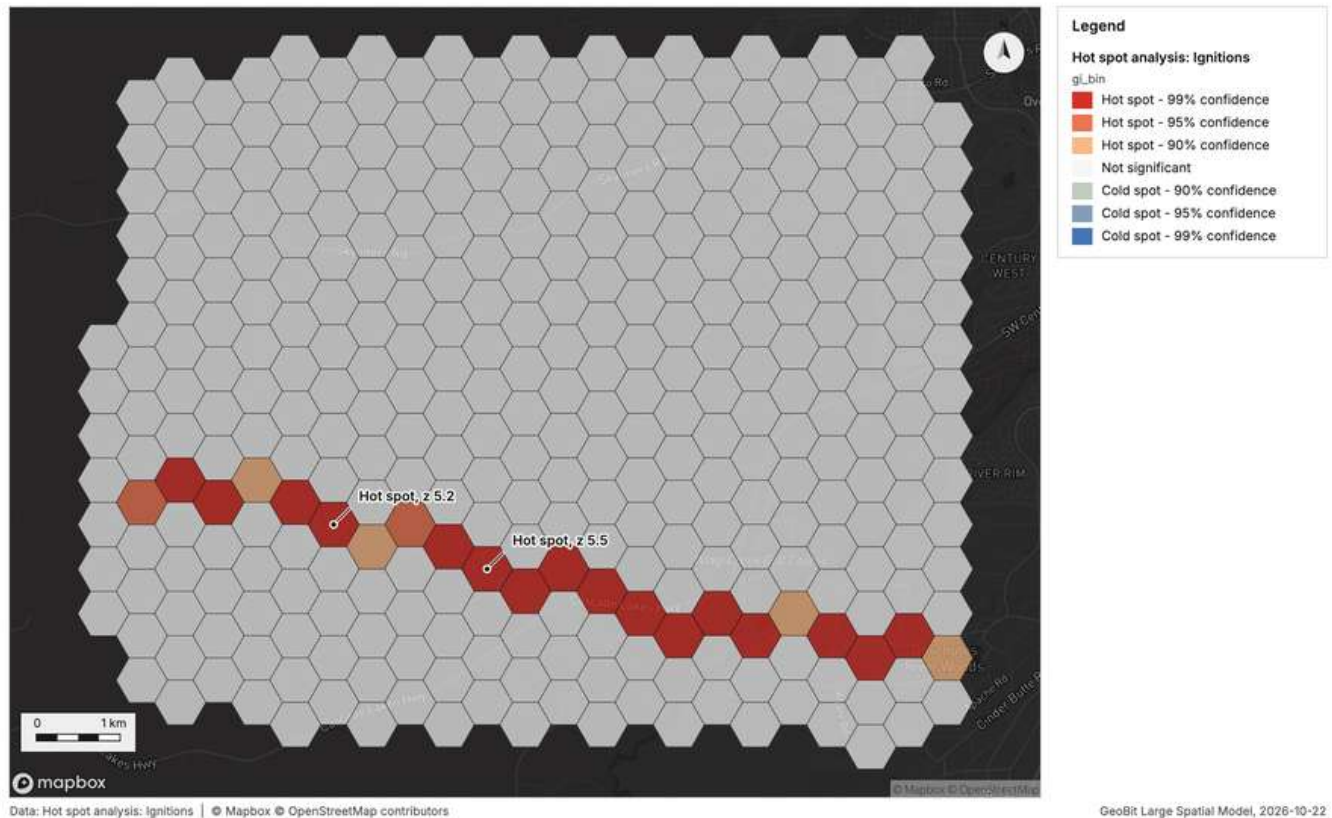


Figure 2. Hot spot analysis: Ignitions [56]

Hot spot analysis: Fire perimeters



Figure 3. Hot spot analysis: Fire perimeters [57]

Hot spot analysis: Fuel treatments



Figure 4. Hot spot analysis: Fuel treatments [58]

Emerging hot spots: Ignitions

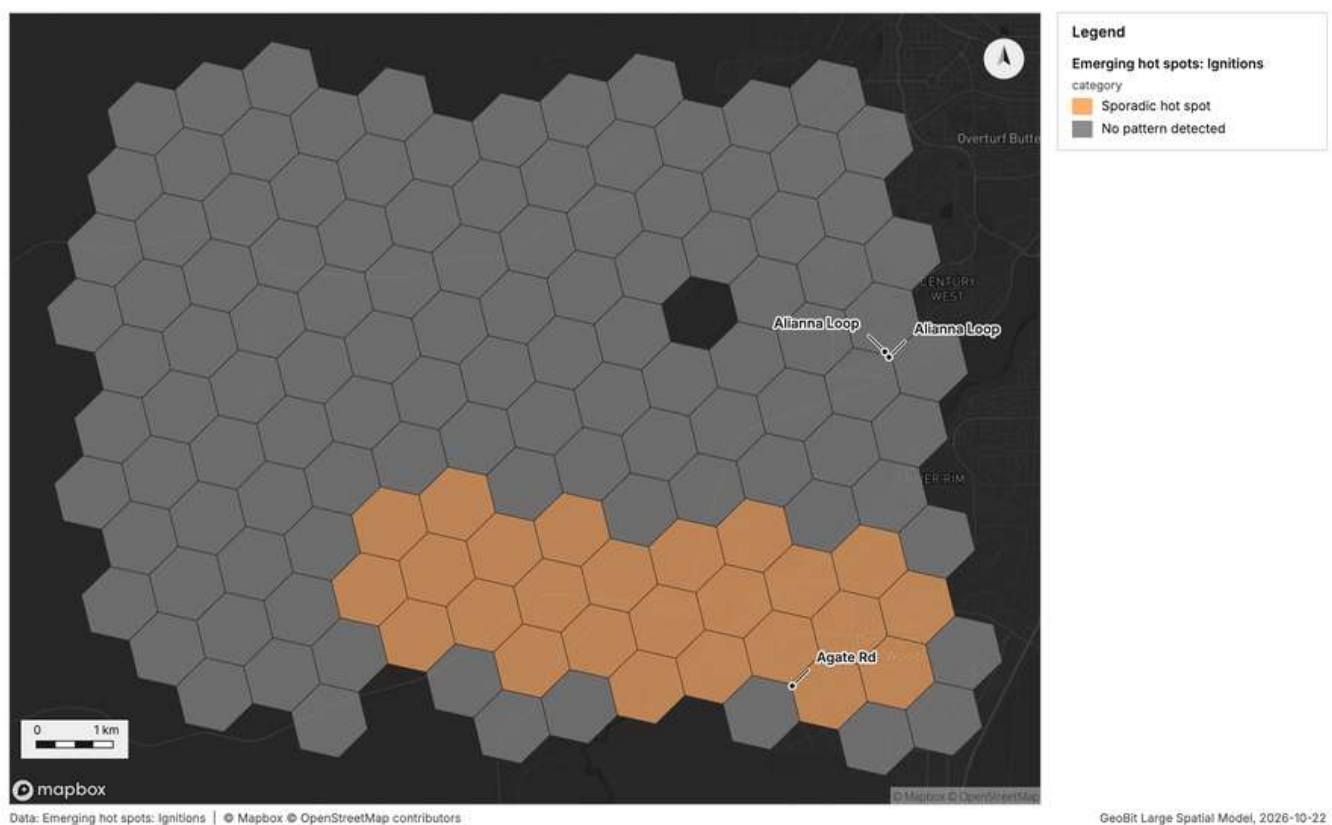


Figure 5. Emerging hot spots: Ignitions [59]

Repeat and near repeat classification: Ignitions

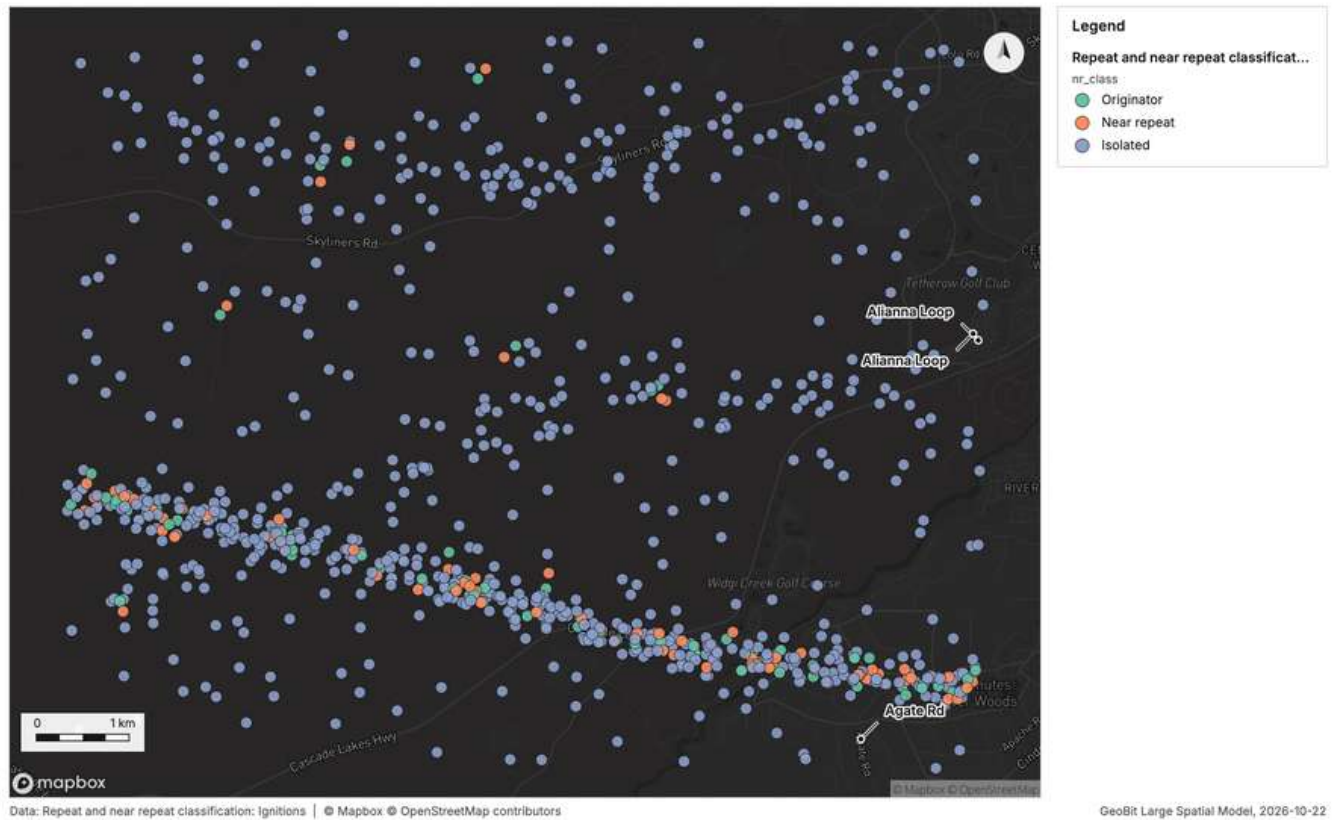


Figure 6. Repeat and near repeat classification: Ignitions [60]

Summarize within: Fire perimeters

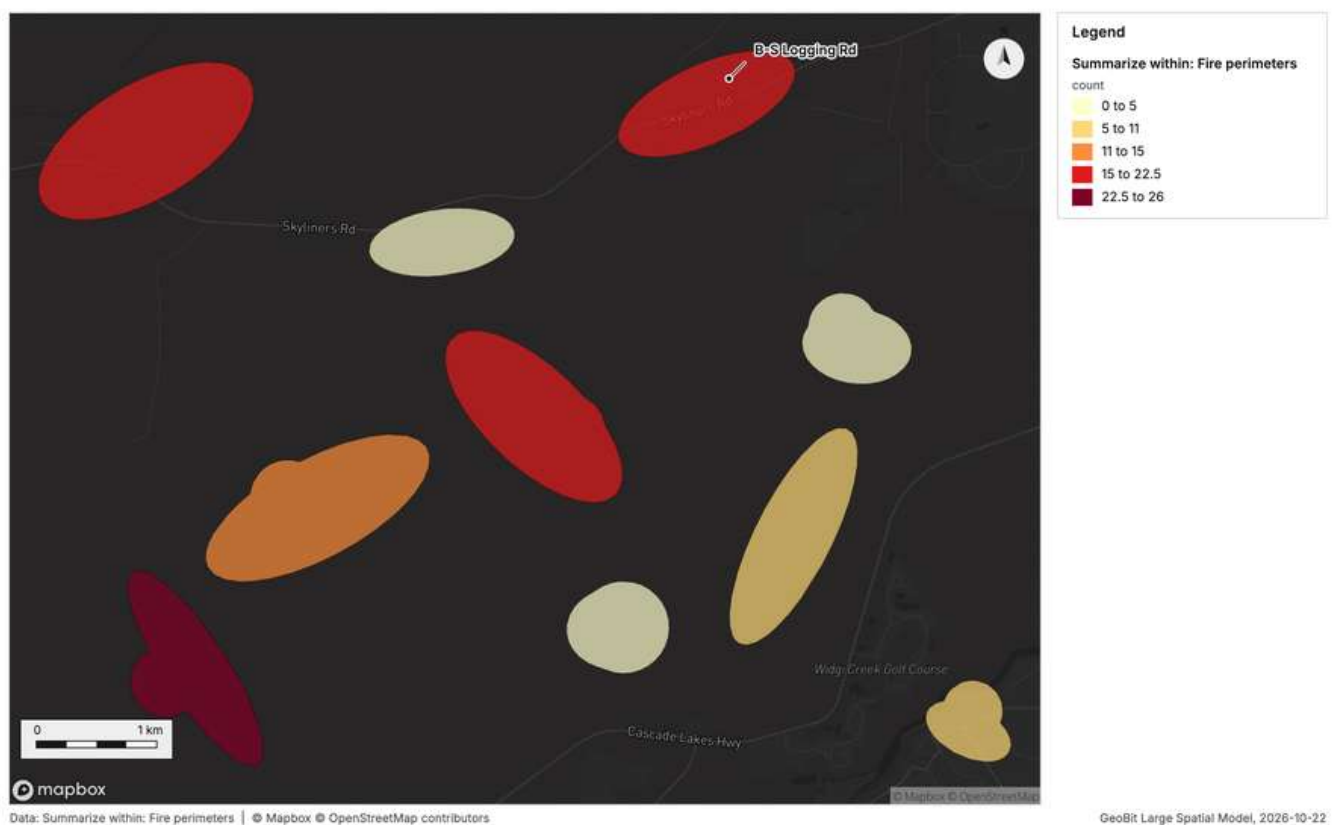


Figure 7. Summarize within: Fire perimeters [61]

Summarize within: Fire perimeters



Figure 8. Summarize within: Fire perimeters [62]

Summarize within: Fire perimeters



Figure 9. Summarize within: Fire perimeters [63]

Find point clusters: Ignitions

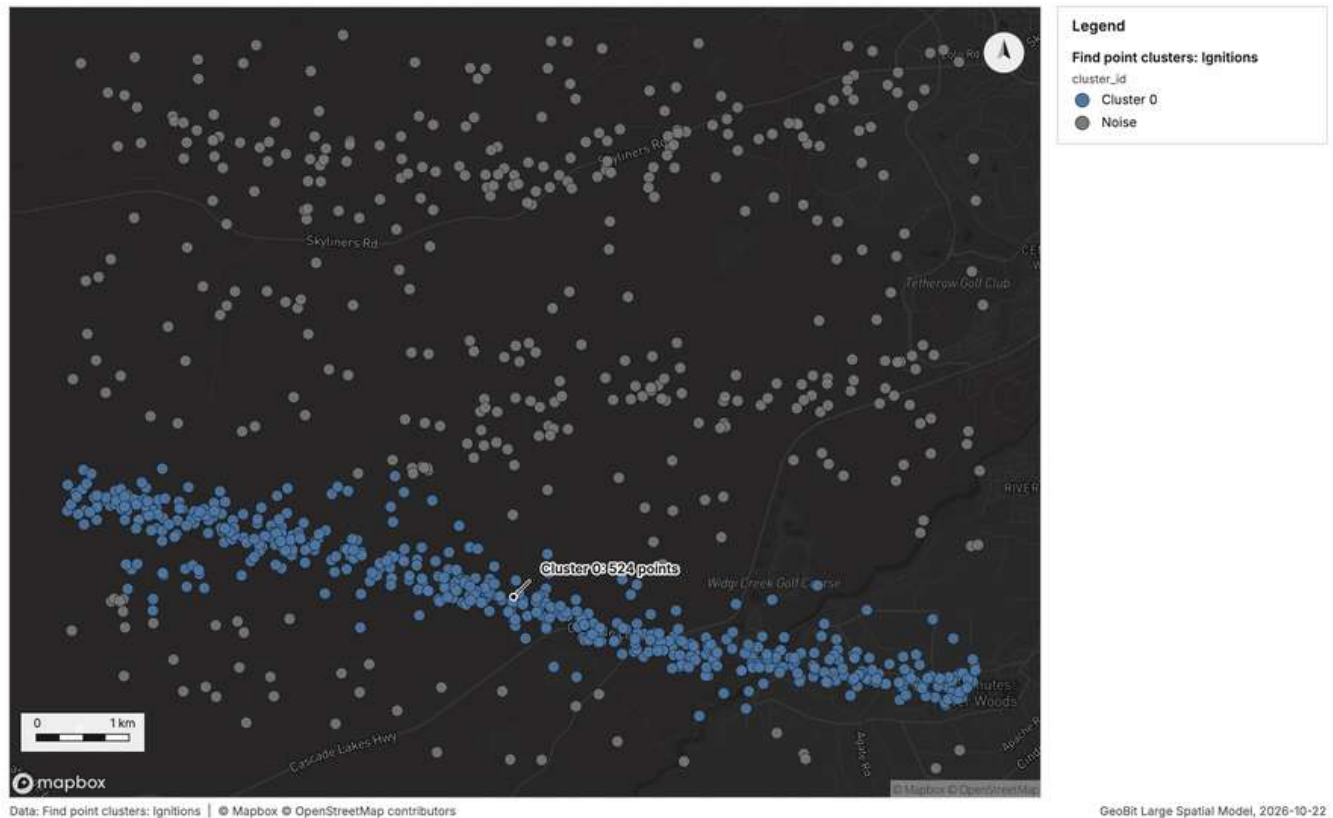


Figure 10. Find point clusters: Ignitions [64]

Find point clusters: cluster hulls

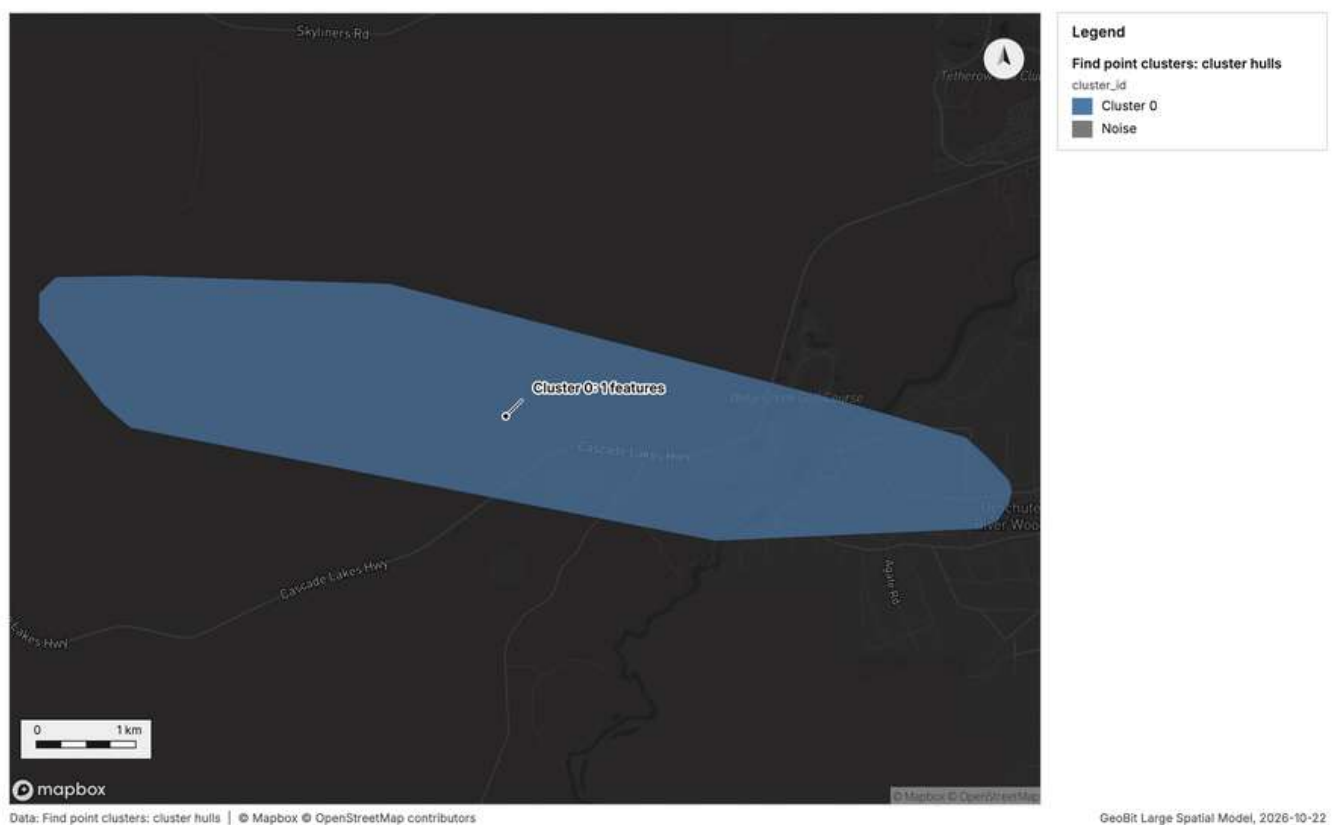


Figure 11. Find point clusters: cluster hulls [65]

Calculate density: Ignitions

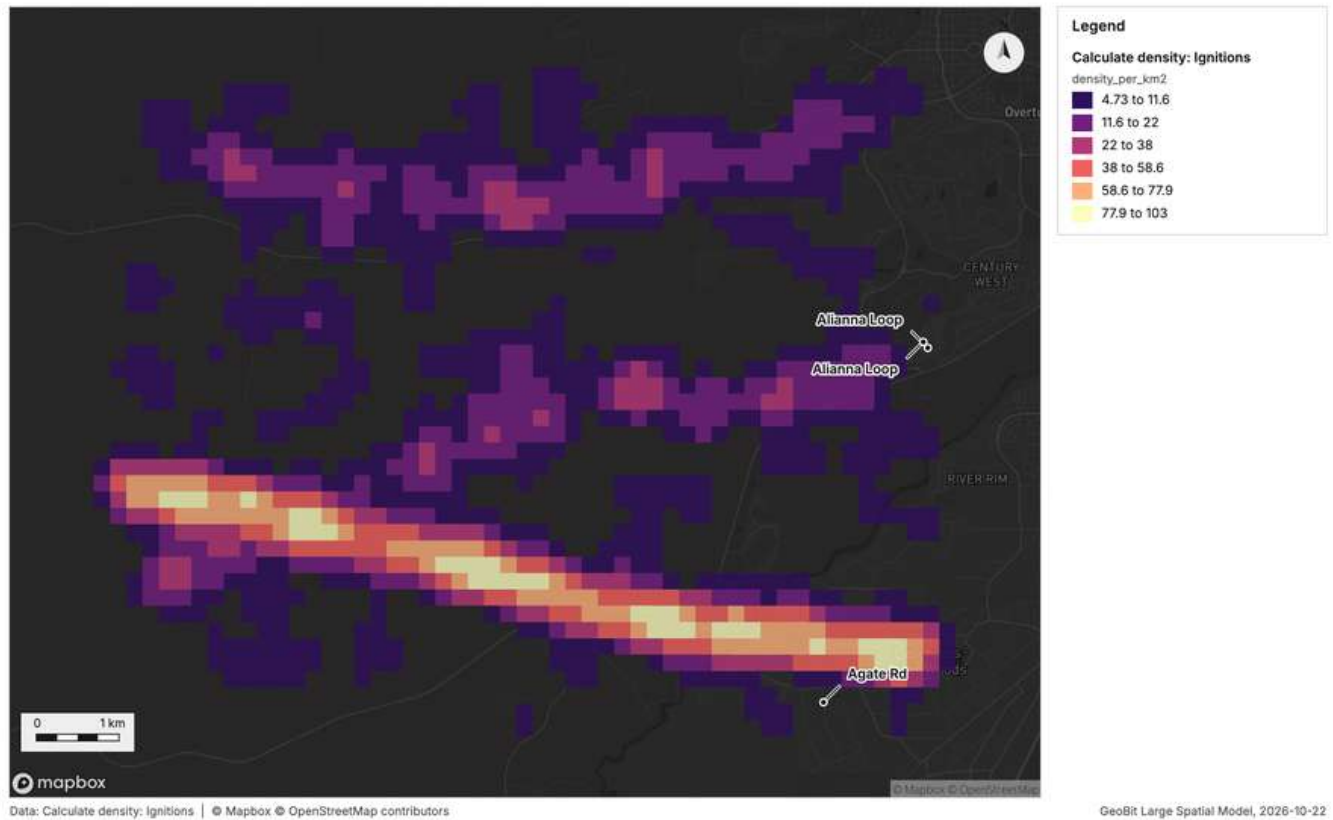


Figure 12. Calculate density: Ignitions [66]

Fire perimeters by acres



Figure 13. Fire perimeters by acres [67]

Fuel treatments by acres



Figure 14. Fuel treatments by acres [68]

Fuel units by fuel_load_t_ha

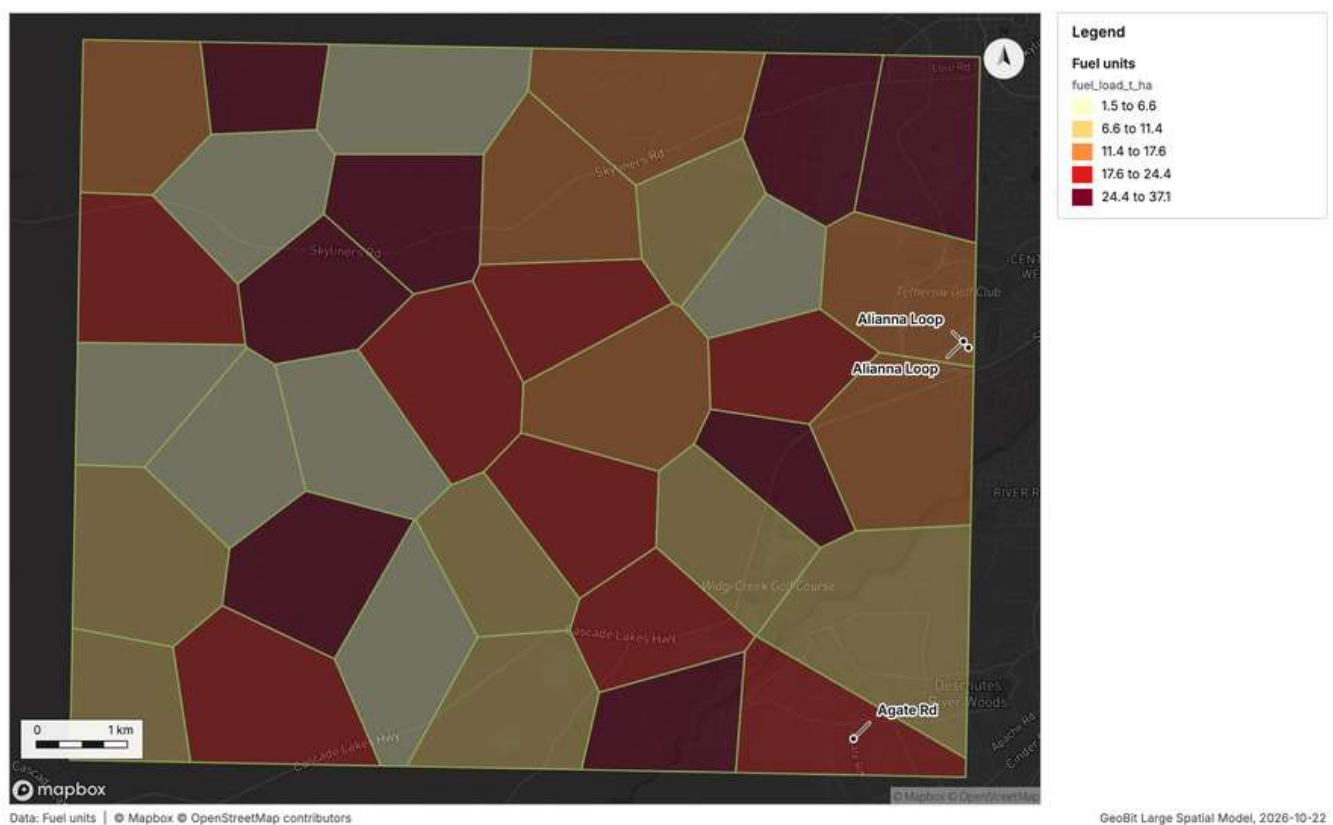


Figure 15. Fuel units by fuel_load_t_ha [69]

Find outliers: Fire perimeters



Figure 16. Find outliers: Fire perimeters [70]

Find outliers: Fuel treatments



Figure 17. Find outliers: Fuel treatments [71]

Find outliers: Fuel units

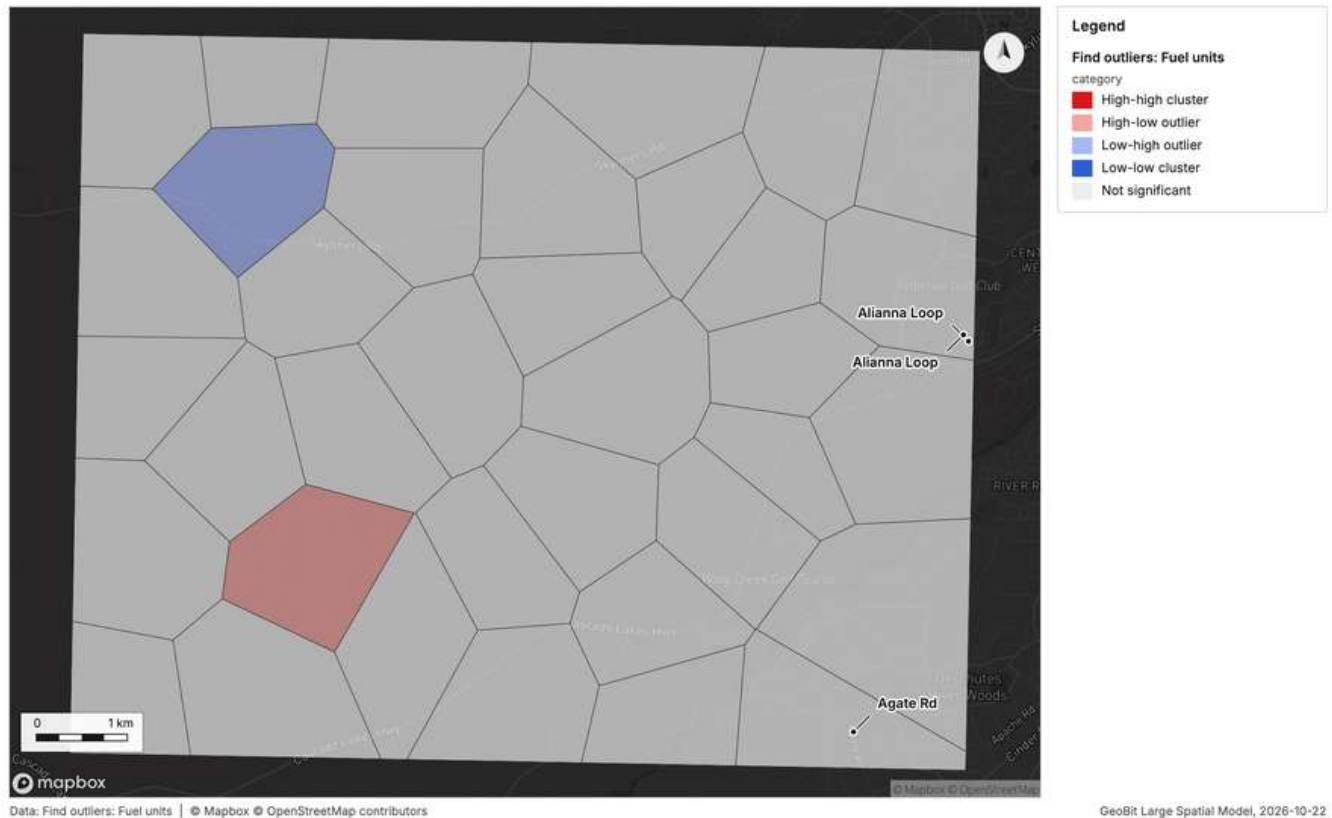


Figure 18. Find outliers: Fuel units [72]

What the map shows. The map displays a clear, concentrated hot spot pattern for ignitions, showing a pronounced band of elevated activity [56]

Inferred: read from the image by gemma4:e4b, not evidence.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

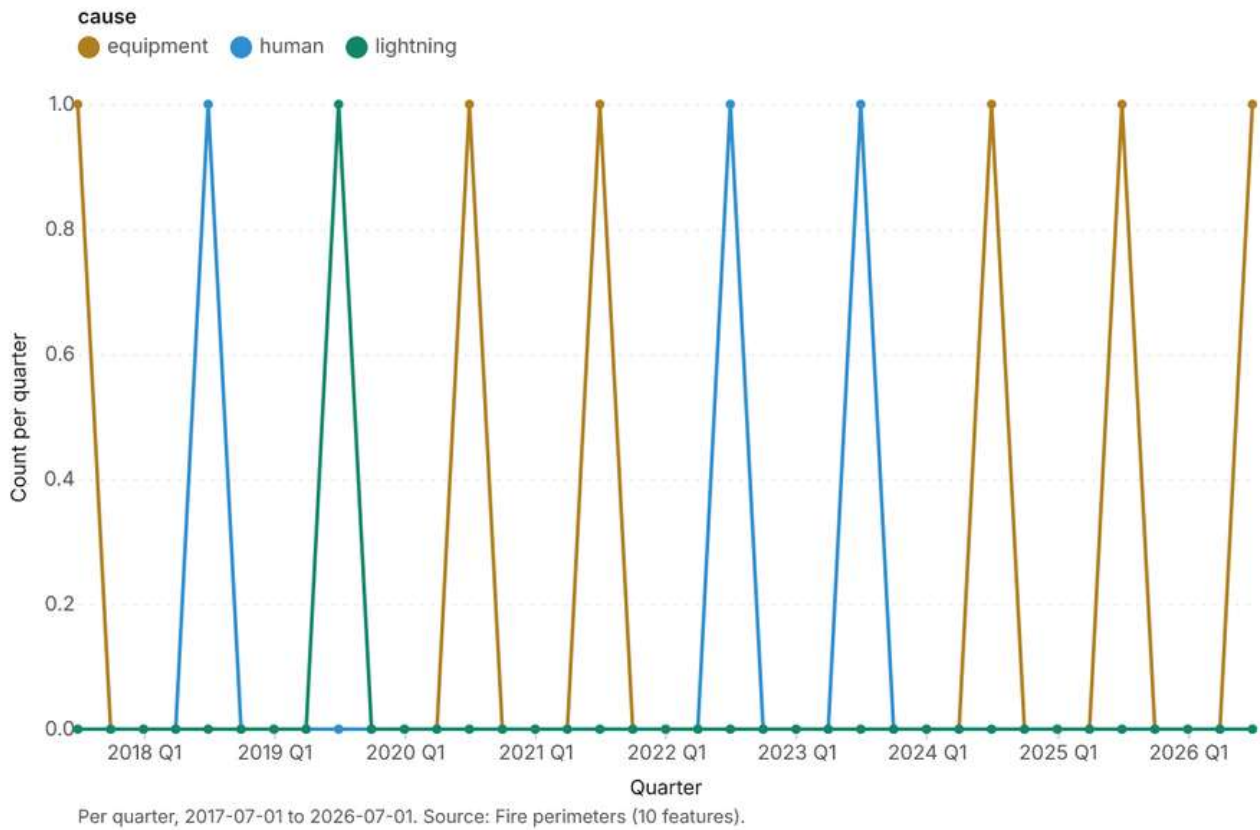


Figure 19. Fire perimeters over time (start_date) [73]. Per quarter, 2017-07-01 to 2026-07-01. Source: Fire perimeters (10 features). The data is in the appendix.

Count per week by date

Per week: 23 weeks from 2026-04-27 to 2026-09-28; trend +0 per week; first half 438, second half 438 (+0.0%)

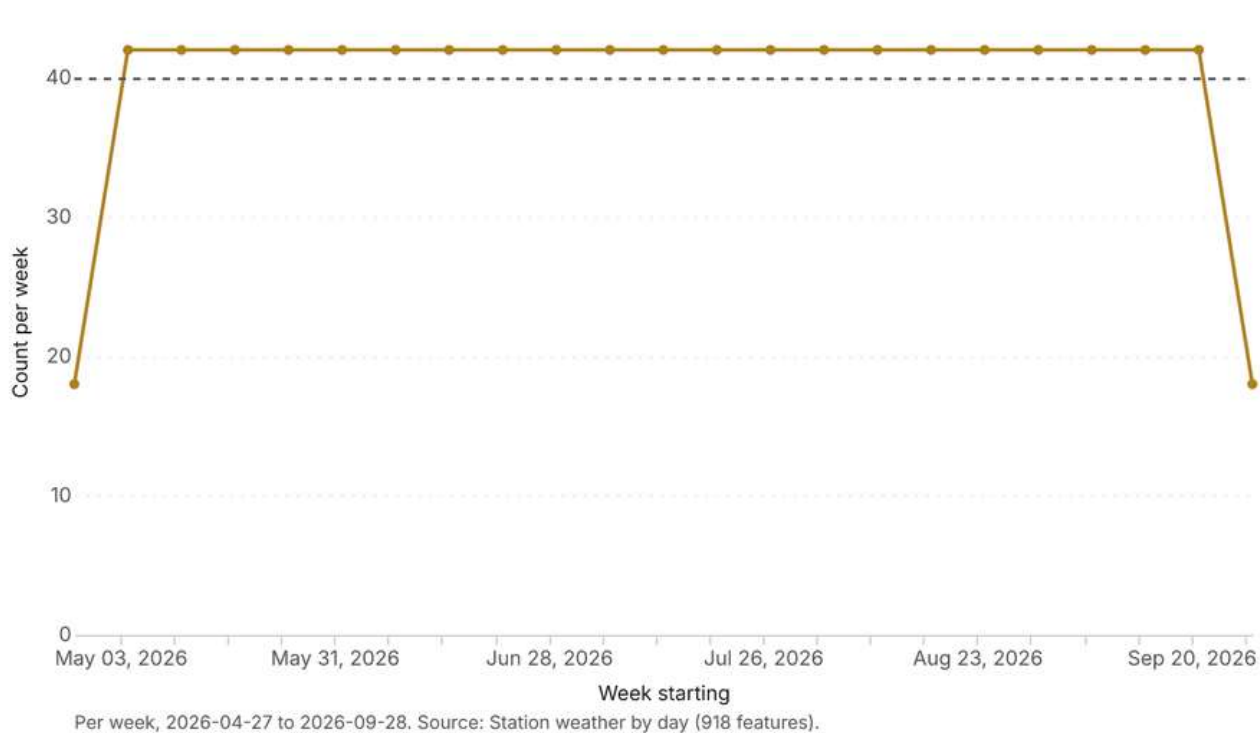
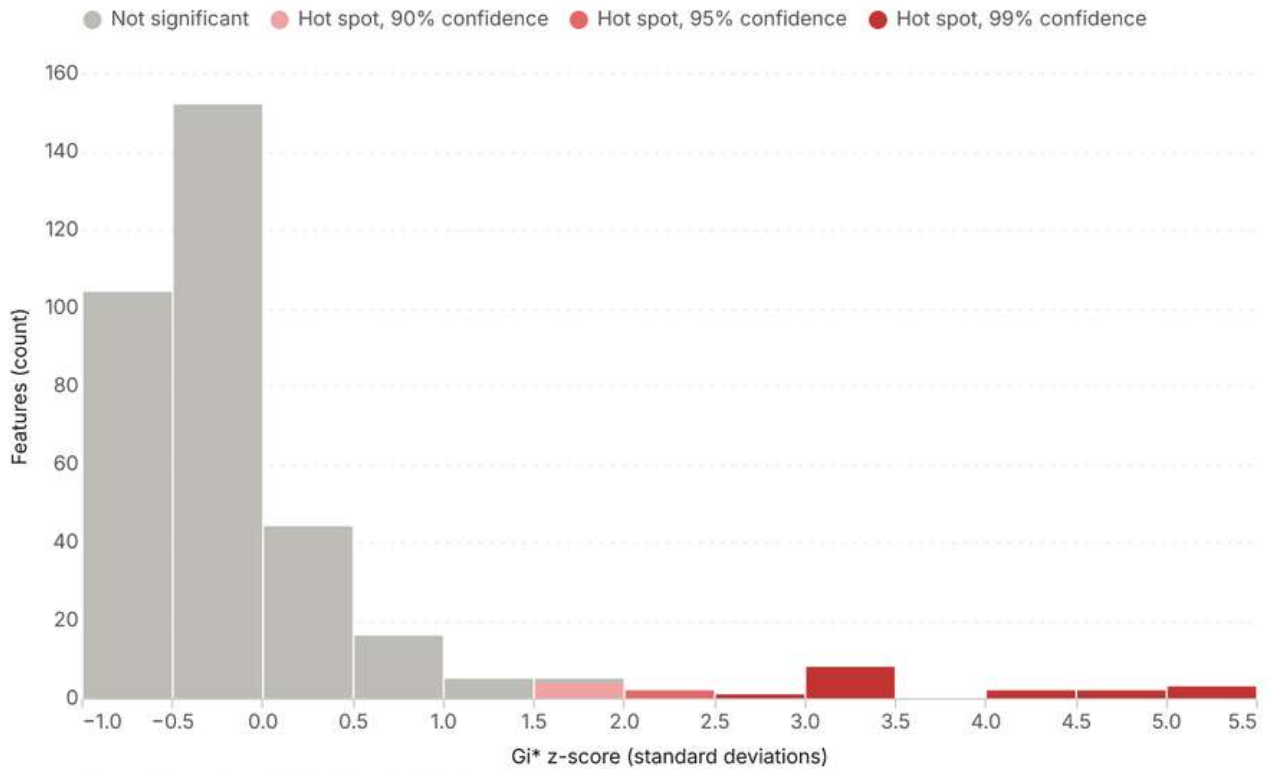


Figure 20. Station weather by day over time (date) [74]. Per week, 2026-04-27 to 2026-09-28. Source: Station weather by day (918 features). The data is in the appendix.

Gi* z-score distribution

344 features: 22 hot and 0 cold at 90% confidence or more

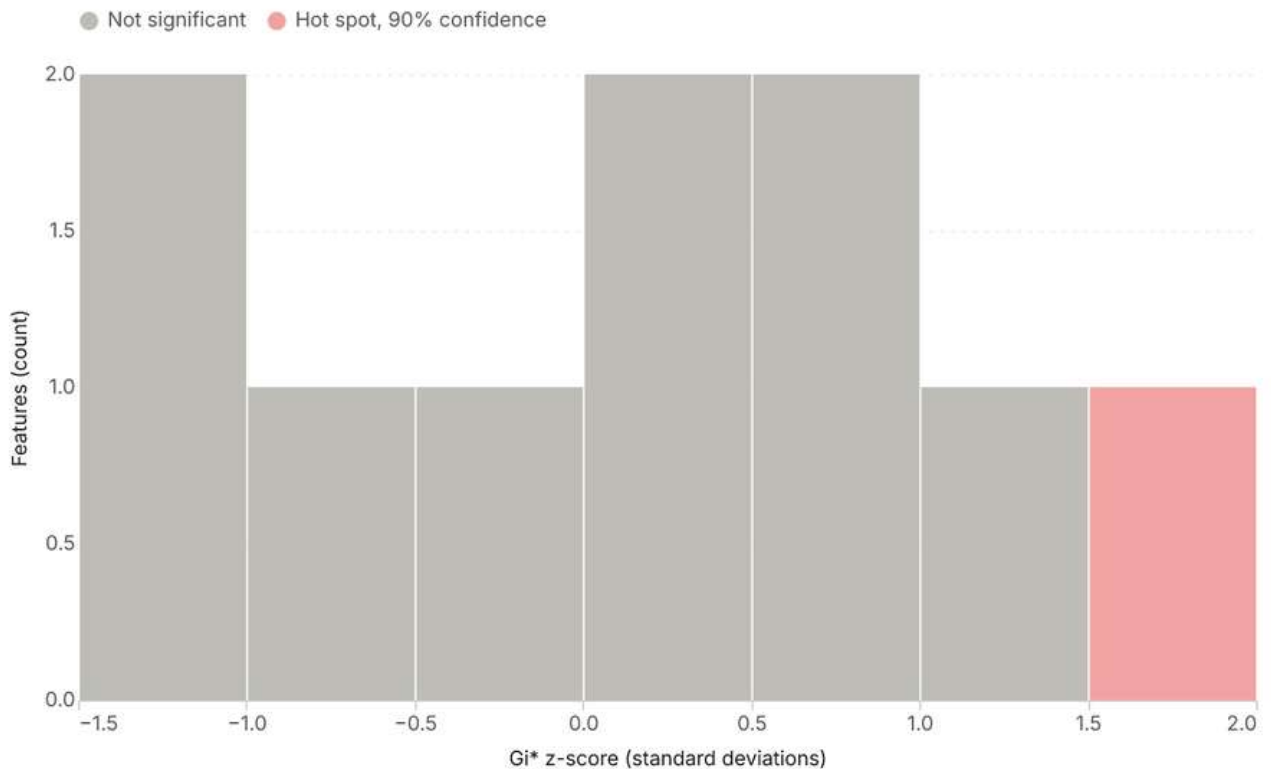


Source: Hot spot analysis: Ignitions (344 features).

Figure 21. Hot spot analysis: Ignitions [75]. Source: Hot spot analysis: Ignitions (344 features). The data is in the appendix.

Gi* z-score distribution

10 features: 1 hot and 0 cold at 90% confidence or more



Period: 2017-08-10 to 2026-07-16 (start_date). Source: Hot spot analysis: Fire perimeters (10 features).

Figure 22. Hot spot analysis: Fire perimeters [76]. Period: 2017-08-10 to 2026-07-16 (start_date). Source: Hot spot analysis: Fire perimeters (10 features). The data is in the appendix.

Gi* z-score distribution

12 features: 0 hot and 1 cold at 90% confidence or more

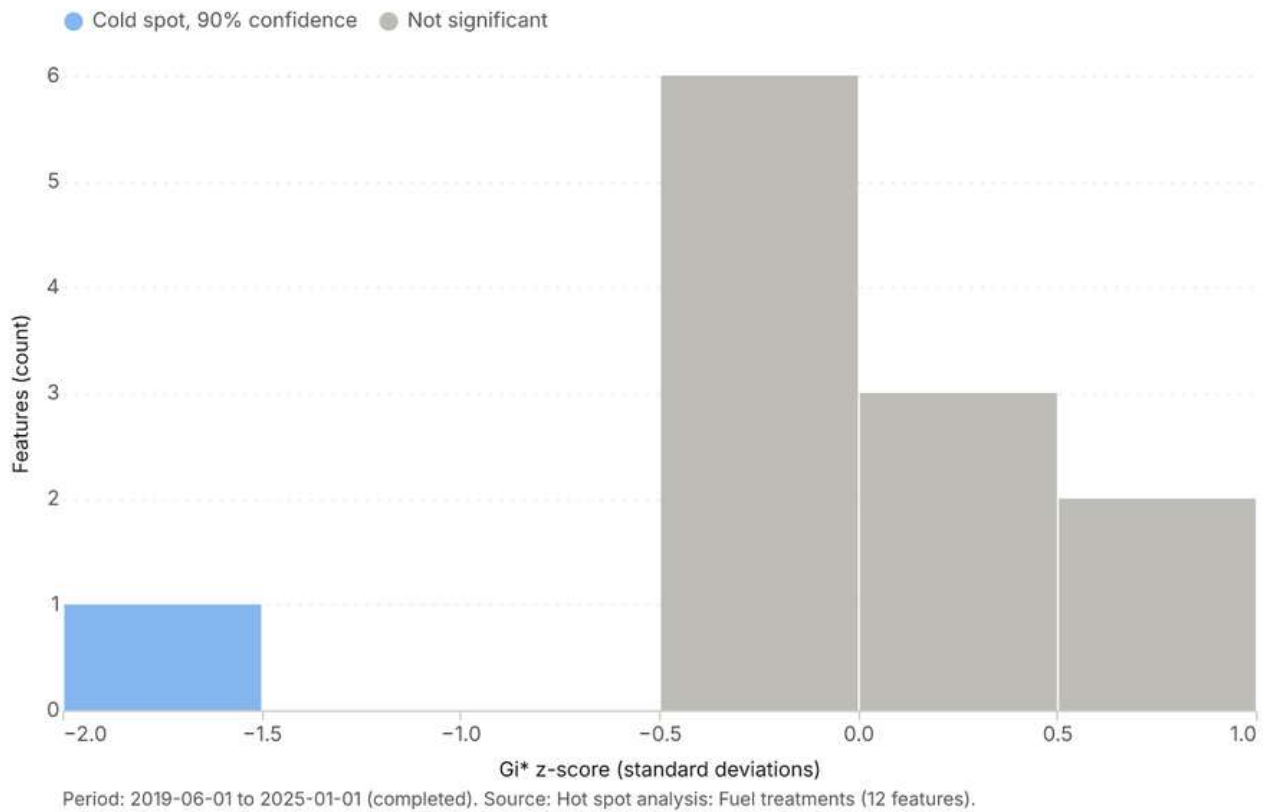


Figure 23. Hot spot analysis: Fuel treatments [77]. Period: 2019-06-01 to 2025-01-01 (completed). Source: Hot spot analysis: Fuel treatments (12 features). The data is in the appendix.

Distribution of last_z

135 values in 9 bins

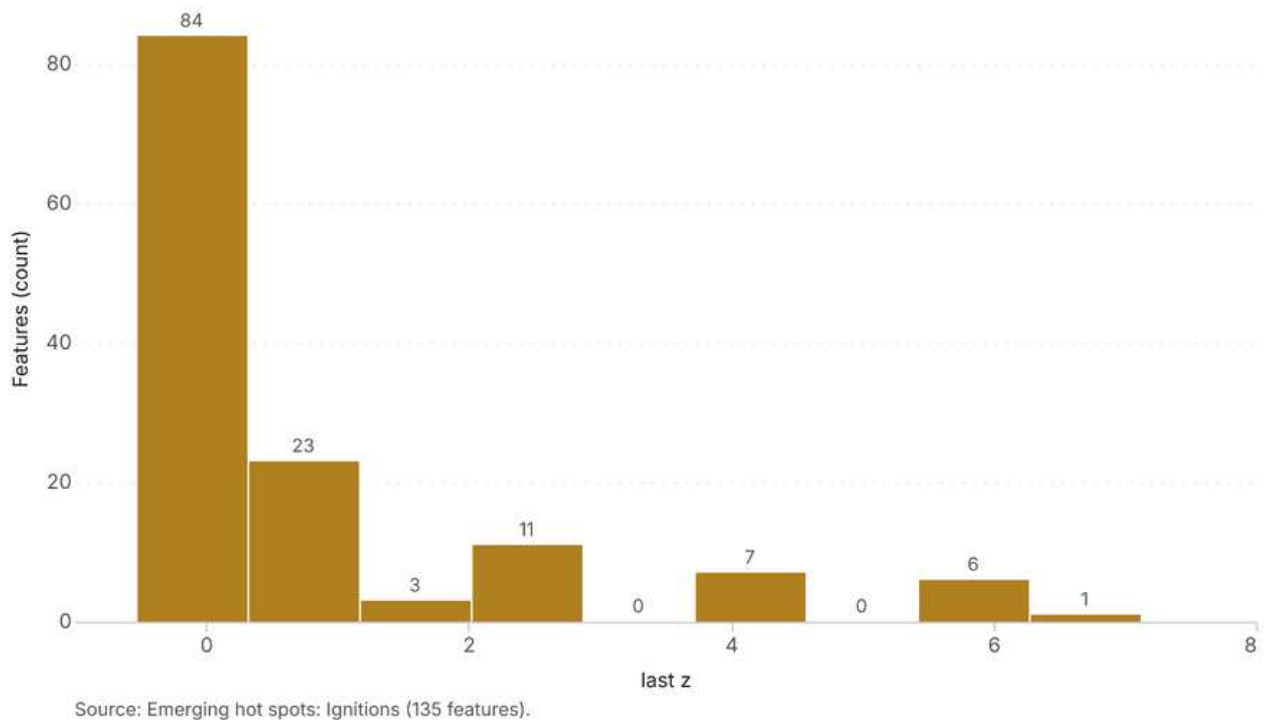


Figure 24. Emerging hot spots: Ignitions [78]. Source: Emerging hot spots: Ignitions (135 features). The data is in the appendix.

Count per quarter by detected_at and cause

Per quarter: 35 quarters from 2018-01-01 to 2026-07-01; trend +0.483 per quarter; first half 355, second half 524 (+47.6%)

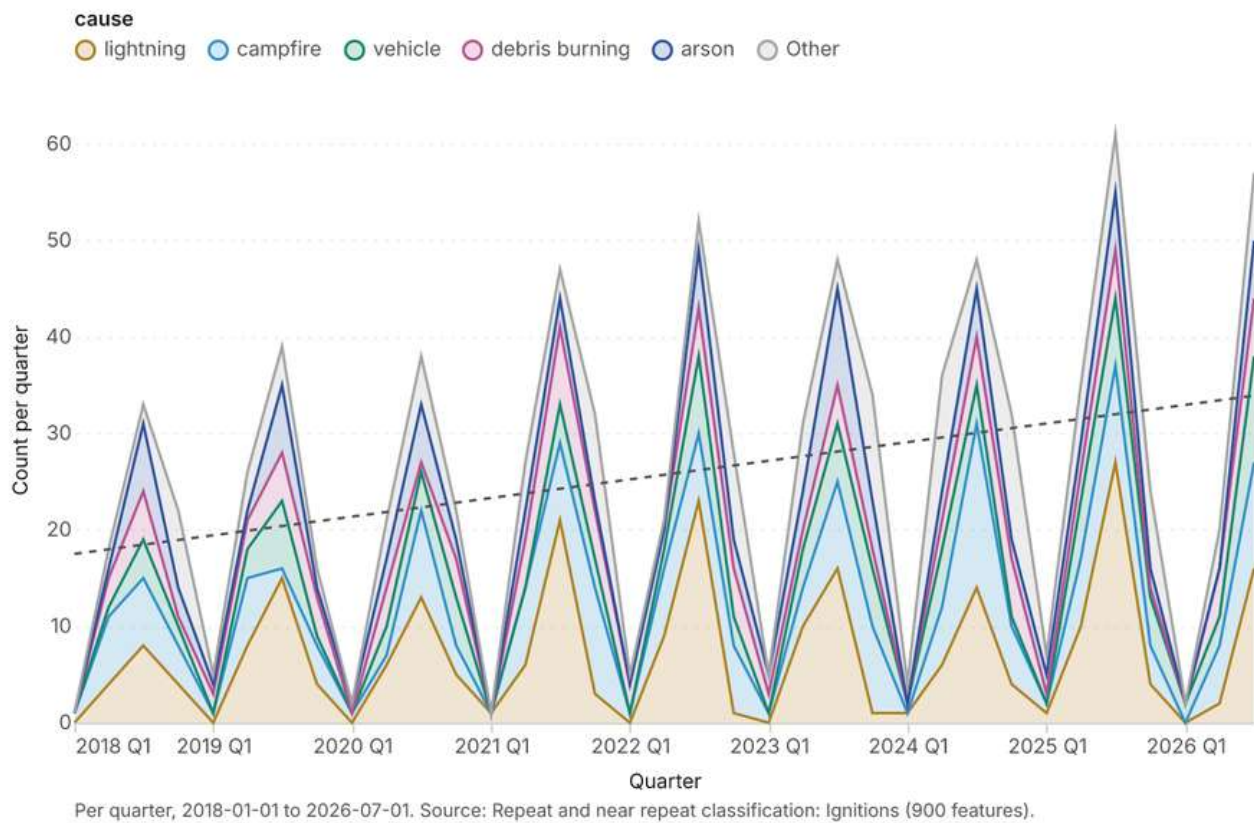


Figure 25. Repeat and near repeat classification: Ignitions [79]. Per quarter, 2018-01-01 to 2026-07-01. Source: Repeat and near repeat classification: Ignitions (900 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

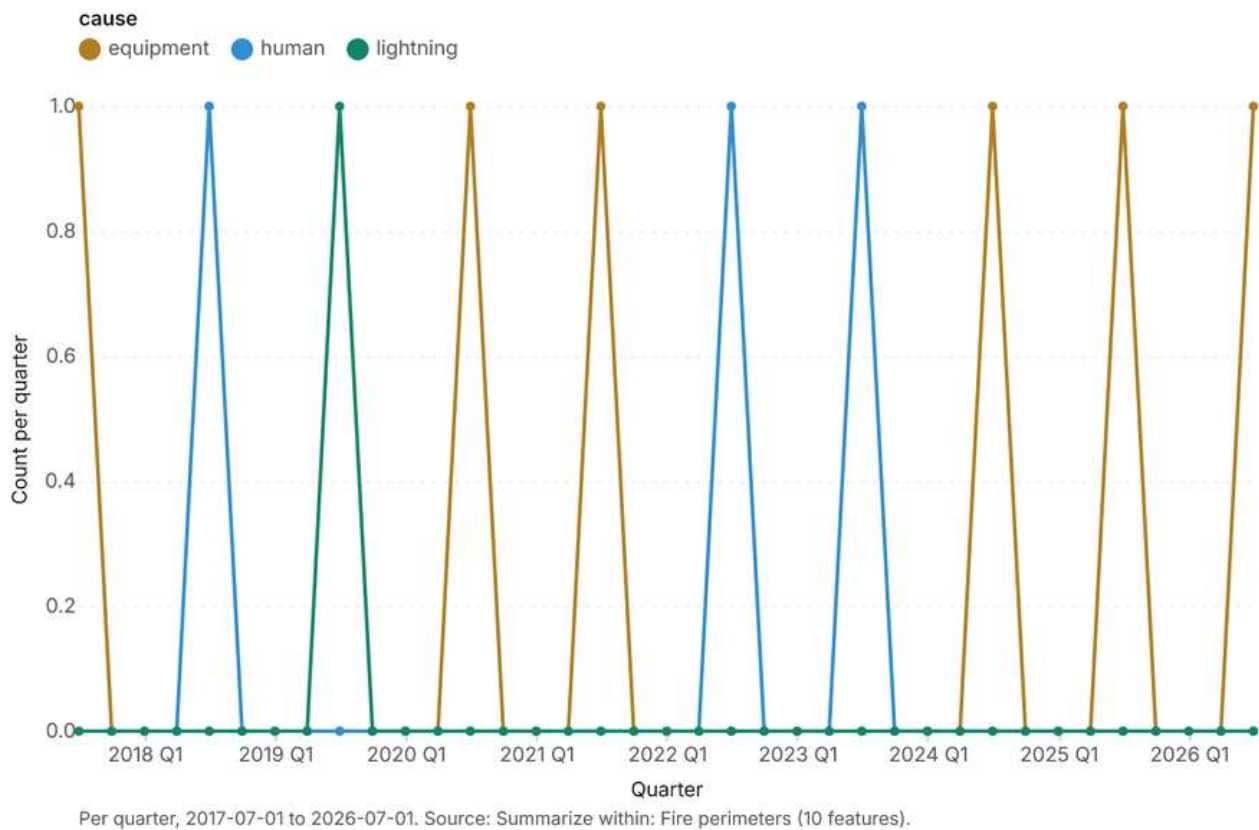


Figure 26. Summarize within: Fire perimeters [80]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

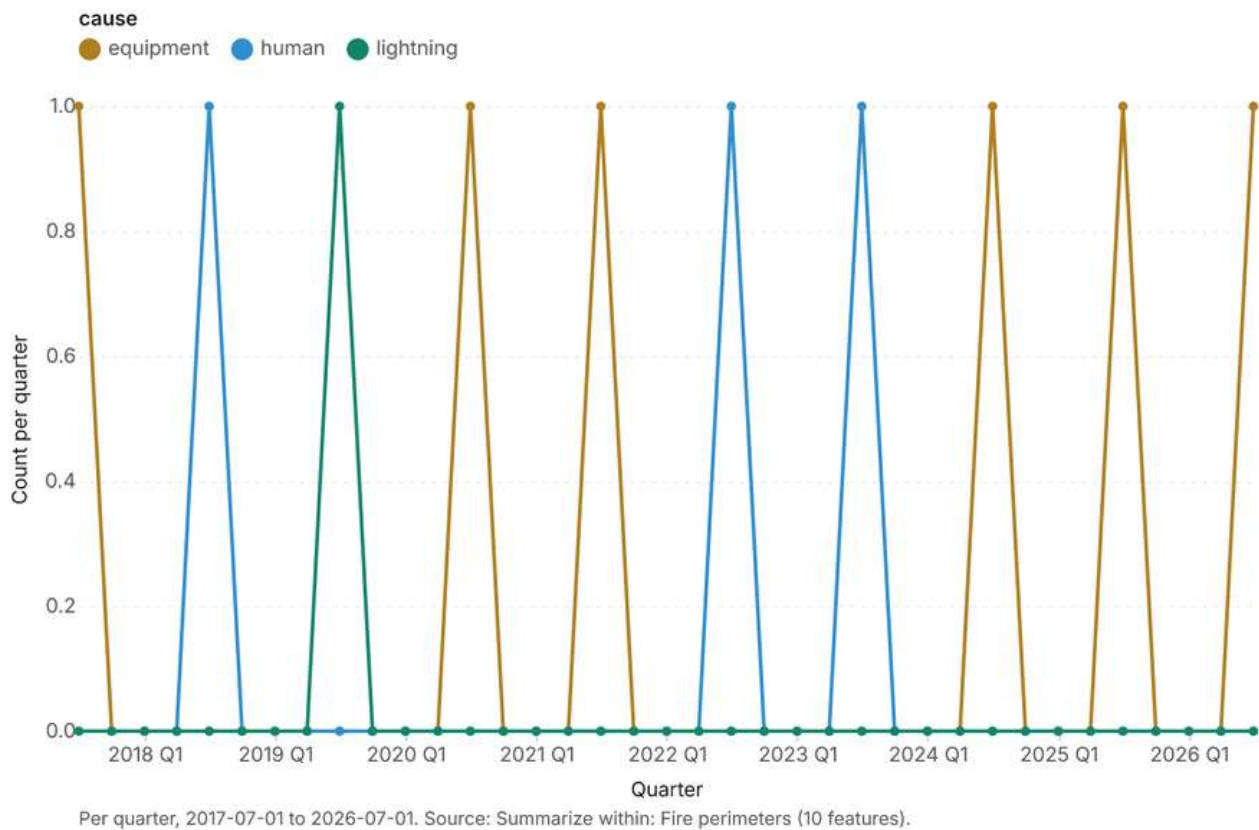


Figure 27. Summarize within: Fire perimeters [81]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

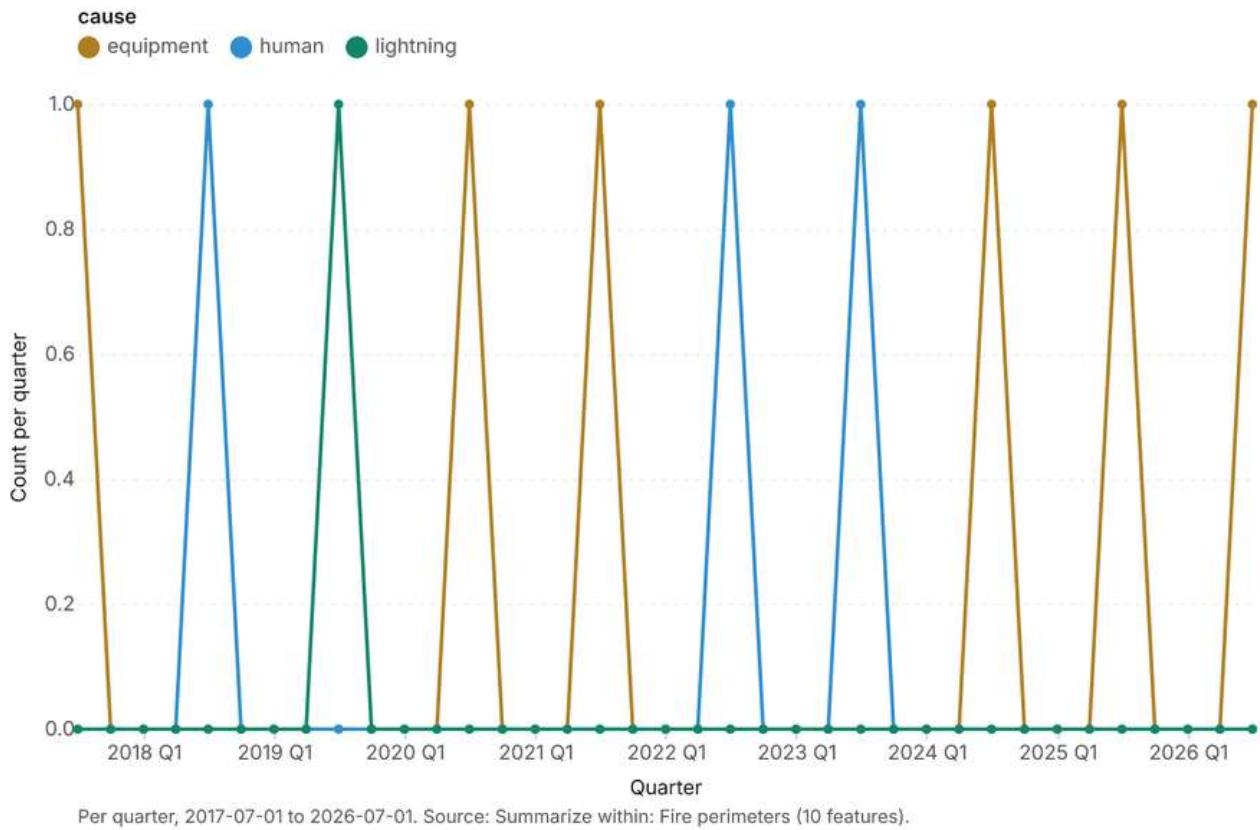


Figure 28. Summarize within: Fire perimeters [82]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Cluster sizes

1 clusters over 900 features

cluster	features	share
0	524	58.2%
Noise	376	41.8%

Period: 2018-01-07 to 2026-09-30 (detected_at). Source: Find point clusters: Ignitions (900 f...

Figure 29. Find point clusters: Ignitions [83]. Period: 2018-01-07 to 2026-09-30 (detected_at). Source: Find point clusters: Ignitions (900 features). The data is in the appendix.

Cluster sizes

1 clusters over 1 features

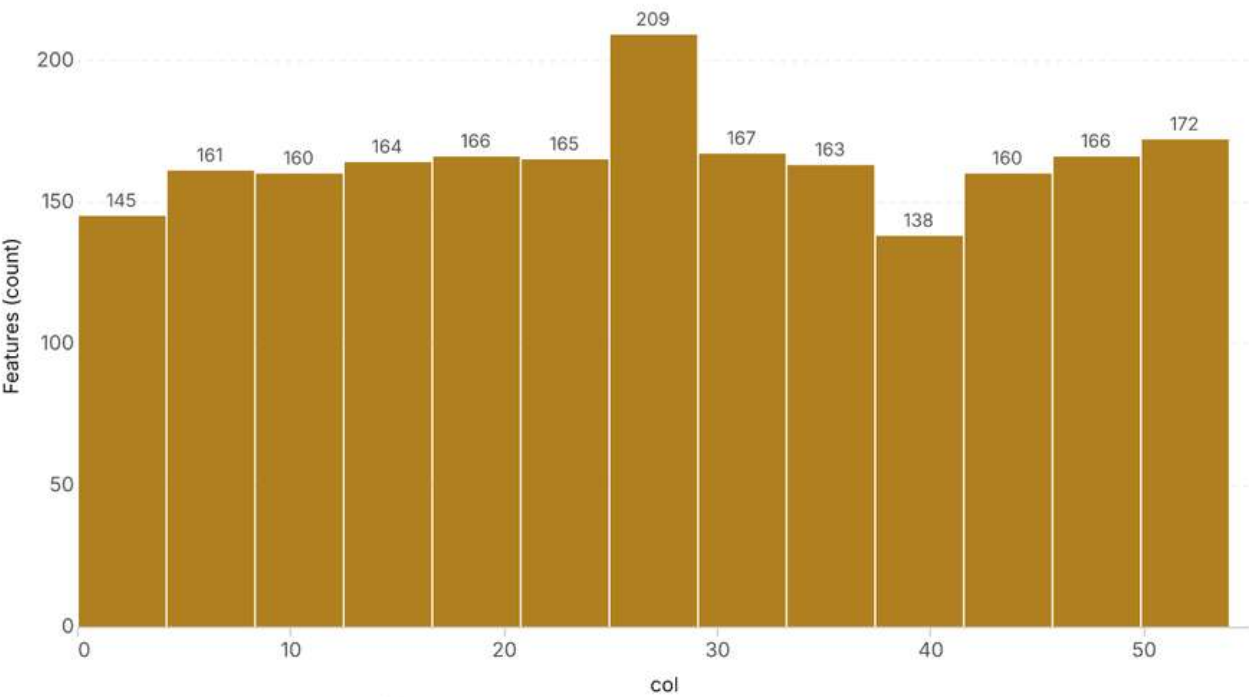
cluster	features	share
0	1	100.0%

Source: Find point clusters: cluster hulls (1 features).

Figure 30. Find point clusters: cluster hulls [84]. Source: Find point clusters: cluster hulls (1 features). The data is in the appendix.

Distribution of col

2,136 values in 13 bins

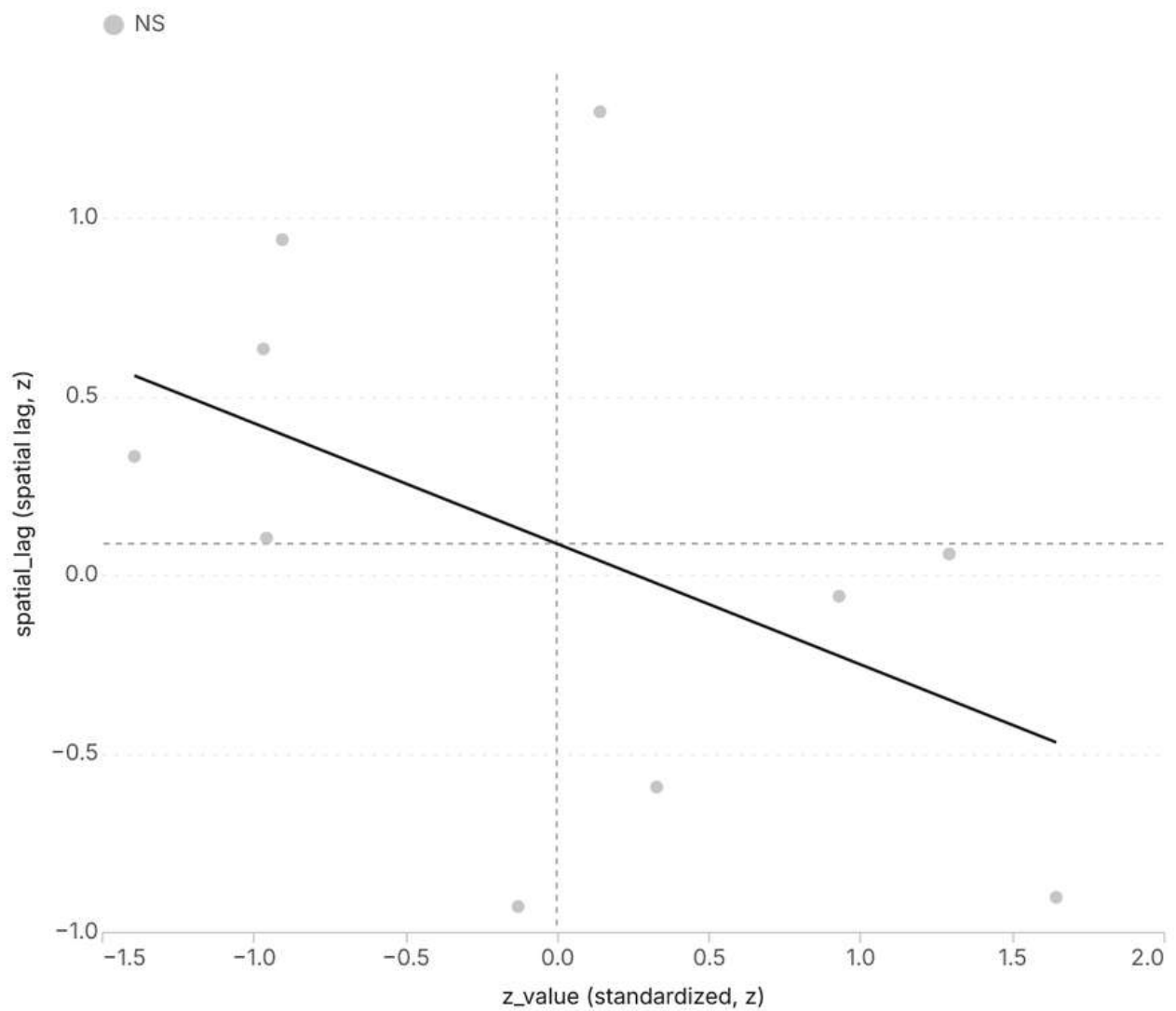


Source: Calculate density: Ignitions (2,136 features).

Figure 31. Calculate density: Ignitions [85]. Source: Calculate density: Ignitions (2,136 features). The data is in the appendix.

Moran scatter

10 features; slope -0.338 (the Moran's I of these standardized values)

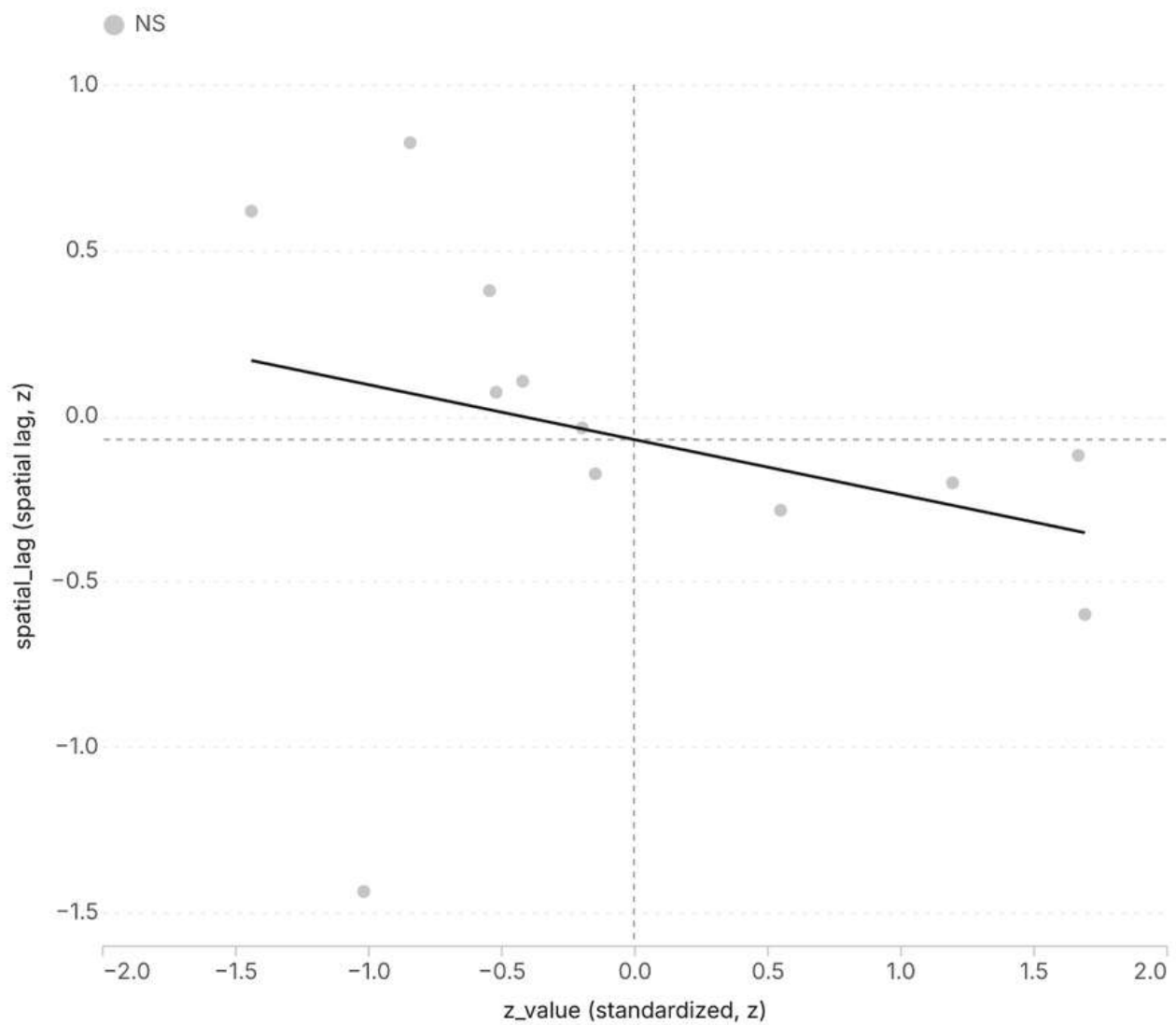


Period: 2017-08-10 to 2026-07-16 (start_date). Source: Find outliers: Fire perimeters (10 features).

Figure 32. Find outliers: Fire perimeters [86]. Period: 2017-08-10 to 2026-07-16 (start_date). Source: Find outliers: Fire perimeters (10 features). The data is in the appendix.

Moran scatter

12 features; slope -0.166 (the Moran's I of these standardized values)

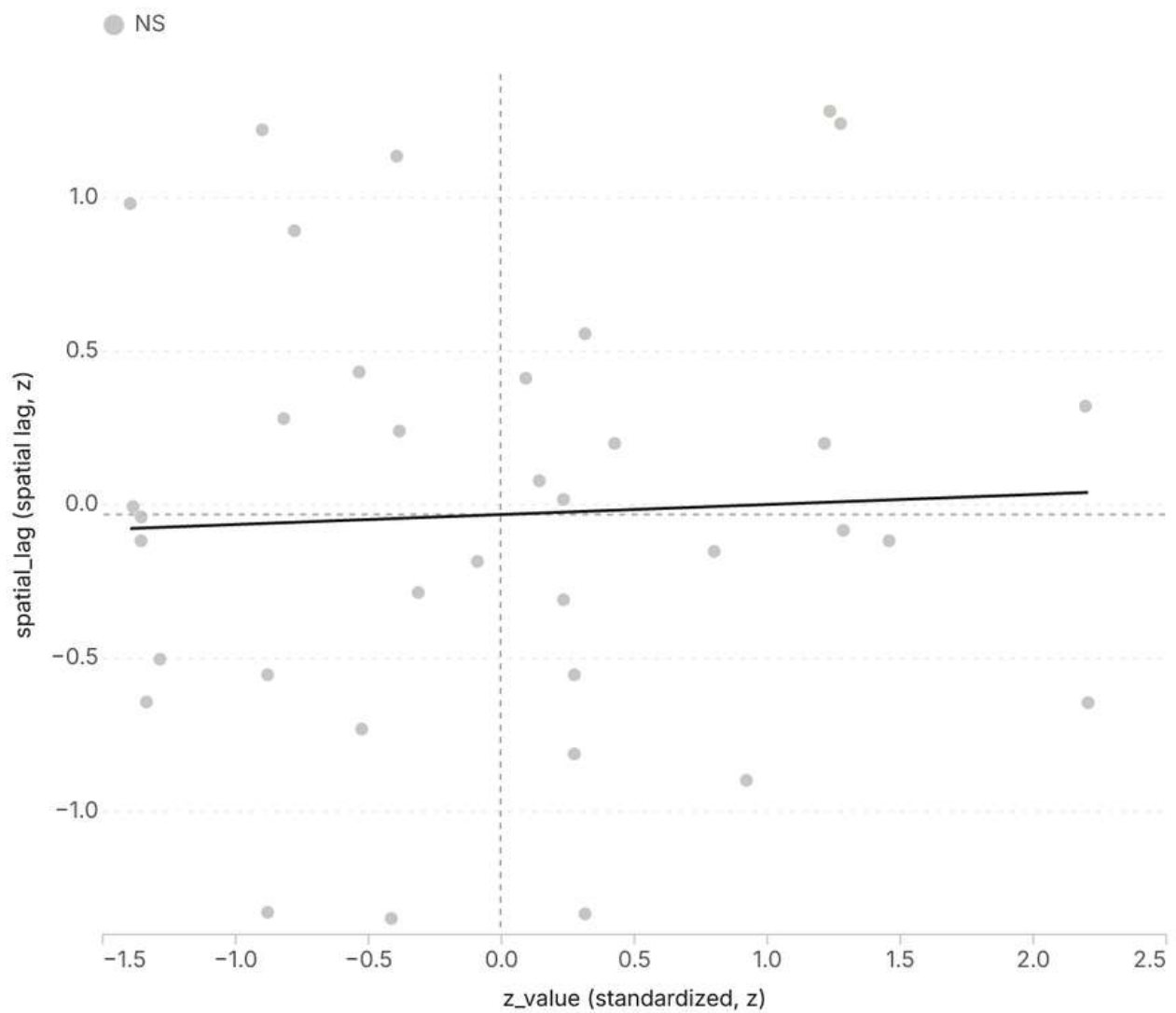


Period: 2019-06-01 to 2025-01-01 (completed). Source: Find outliers: Fuel treatments (12 features).

Figure 33. Find outliers: Fuel treatments [87]. Period: 2019-06-01 to 2025-01-01 (completed). Source: Find outliers: Fuel treatments (12 features). The data is in the appendix.

Moran scatter

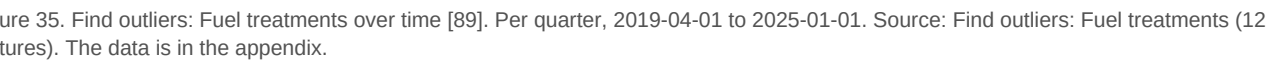
36 features; slope 0.033 (the Moran's I of these standardized values)



Source: Find outliers: Fuel units (36 features).

Figure 34. Find outliers: Fuel units [88]. Source: Find outliers: Fuel units (36 features). The data is in the appendix.

Per quarter: 24 quarters from 2019-04-01 to 2025-01-01; trend +0.00783 per quarter; first half 5, second half 7 (+40.0%)



Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

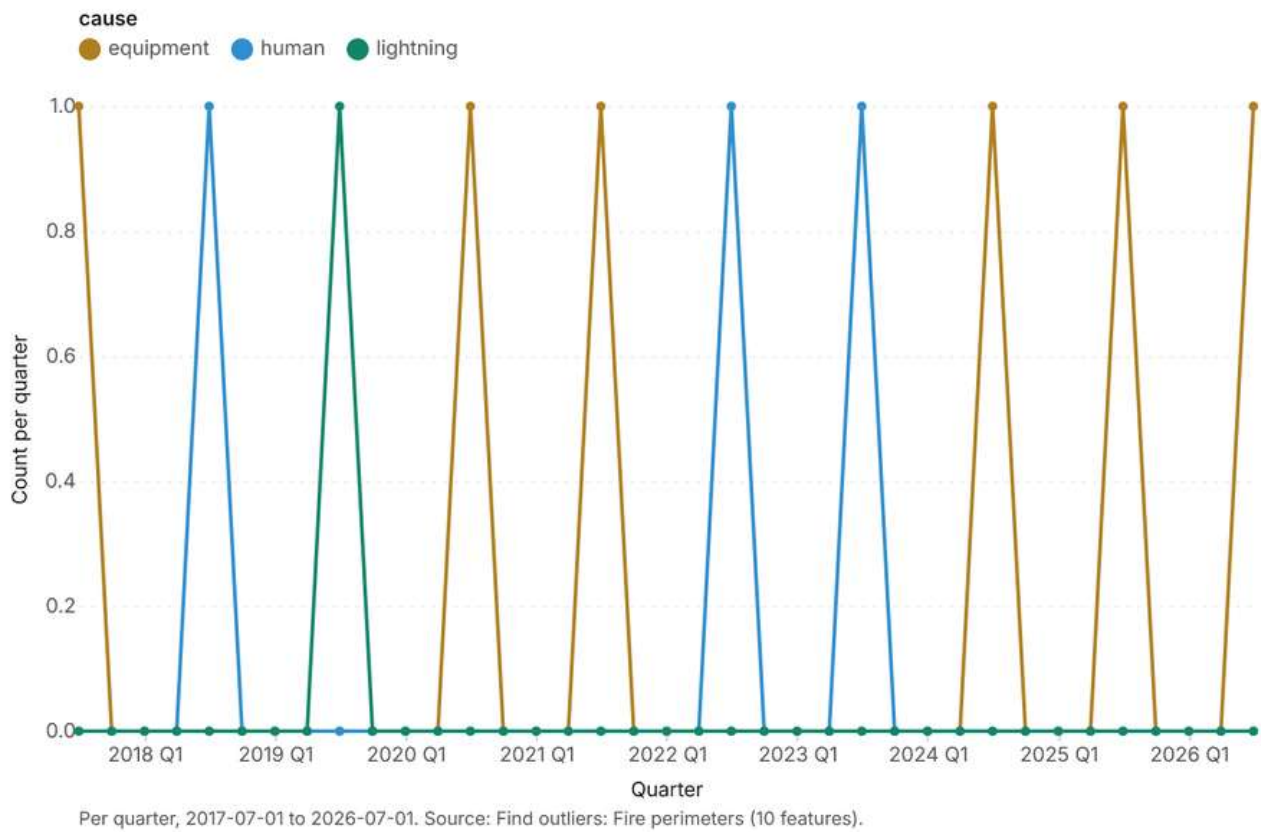


Figure 36. Find outliers: Fire perimeters over time [90]. Per quarter, 2017-07-01 to 2026-07-01. Source: Find outliers: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by detected_at and cause

Per quarter: 35 quarters from 2018-01-01 to 2026-07-01; trend +0.483 per quarter; first half 355, second half 524 (+47.6%)

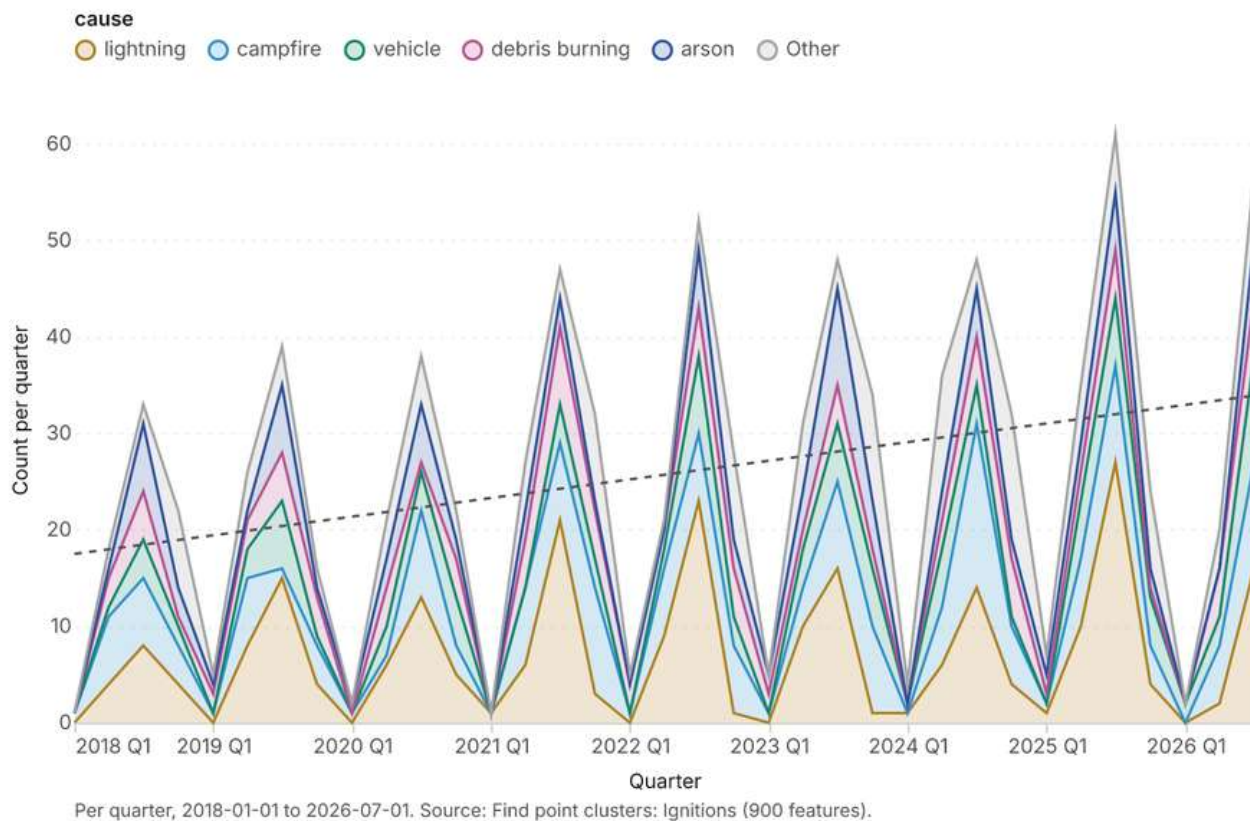


Figure 37. Find point clusters: Ignitions over time [91]. Per quarter, 2018-01-01 to 2026-07-01. Source: Find point clusters: Ignitions (900 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

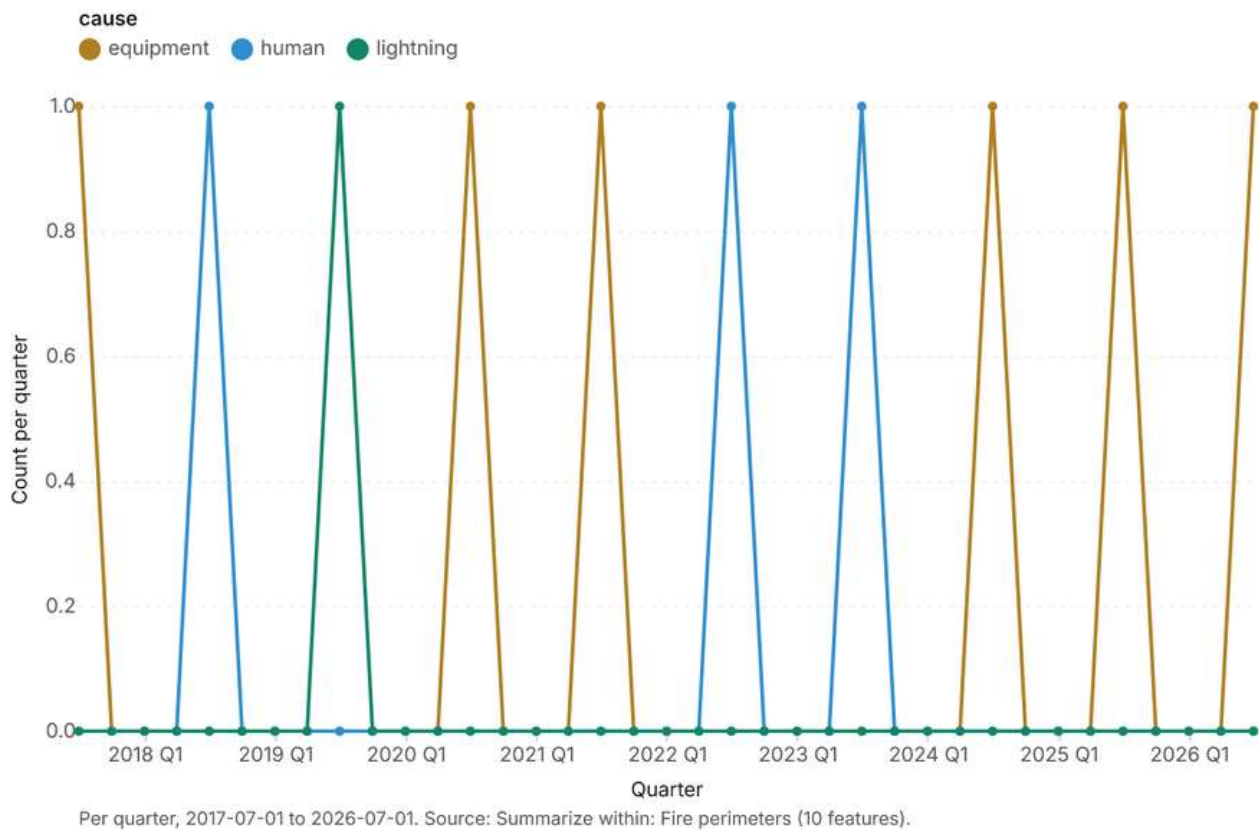


Figure 38. Summarize within: Fire perimeters over time [92]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

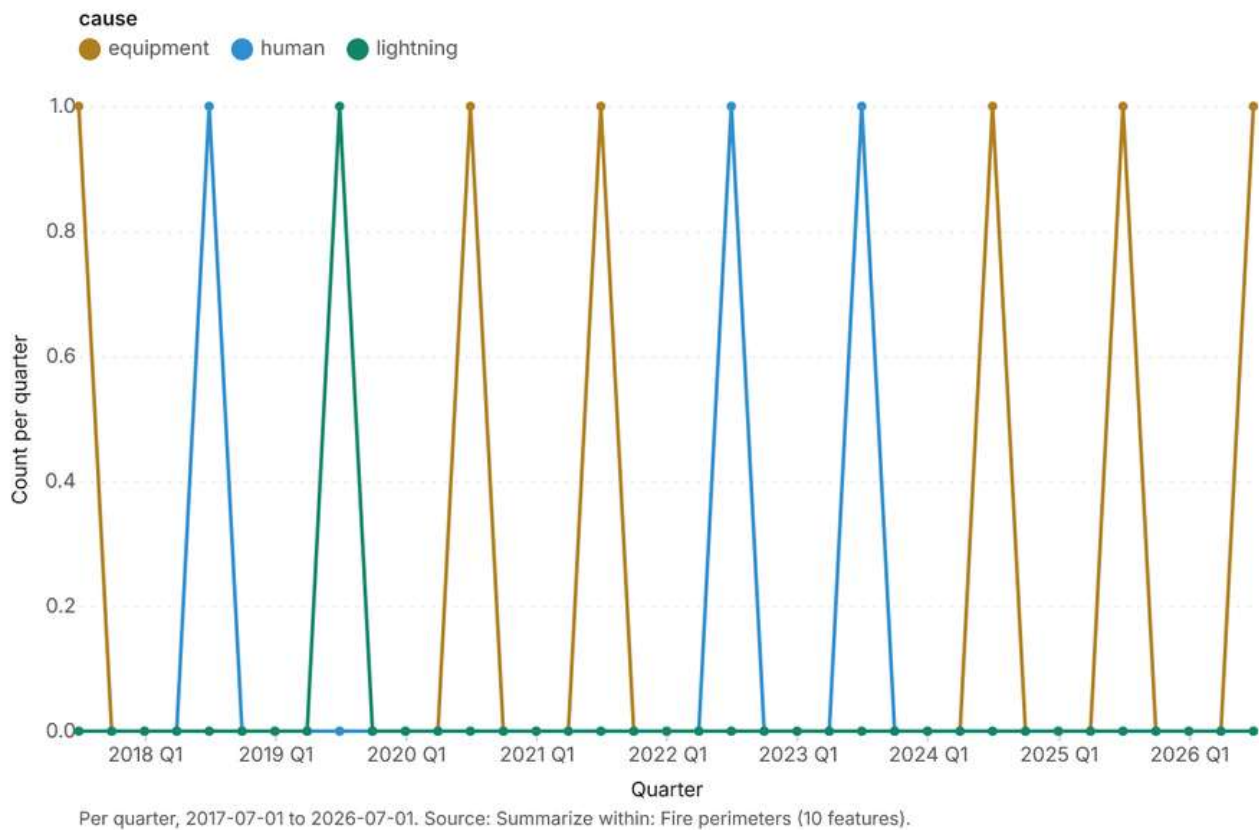


Figure 39. Summarize within: Fire perimeters over time [93]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

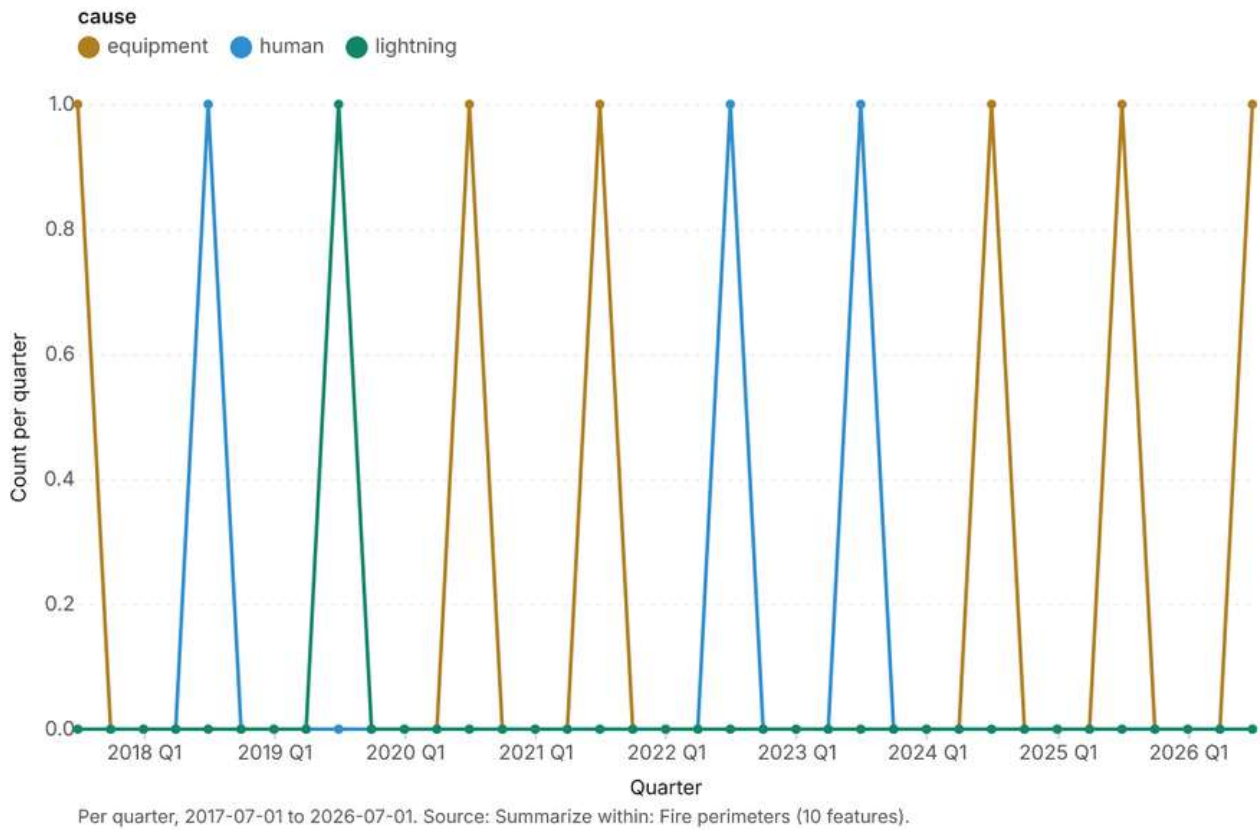


Figure 40. Summarize within: Fire perimeters over time [94]. Per quarter, 2017-07-01 to 2026-07-01. Source: Summarize within: Fire perimeters (10 features). The data is in the appendix.

Count per quarter by detected_at and cause

Per quarter: 35 quarters from 2018-01-01 to 2026-07-01; trend +0.483 per quarter; first half 355, second half 524 (+47.6%)

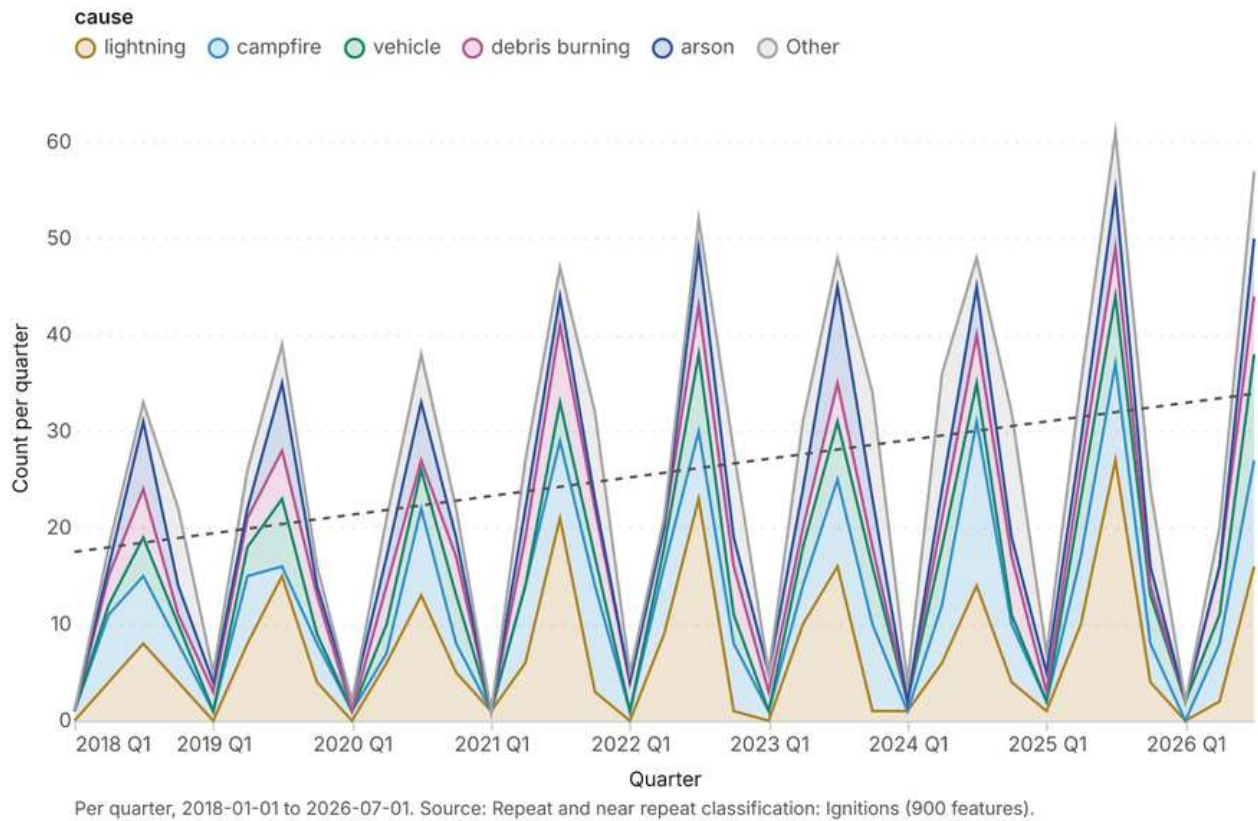


Figure 41. Repeat and near repeat classification: Ignitions over time [95]. Per quarter, 2018-01-01 to 2026-07-01. Source: Repeat and near repeat classification: Ignitions (900 features). The data is in the appendix.

Count per quarter by completed and gi_bin

Per quarter: 24 quarters from 2019-04-01 to 2025-01-01; trend +0.00783 per quarter; first half 5, second half 7 (+40.0%)

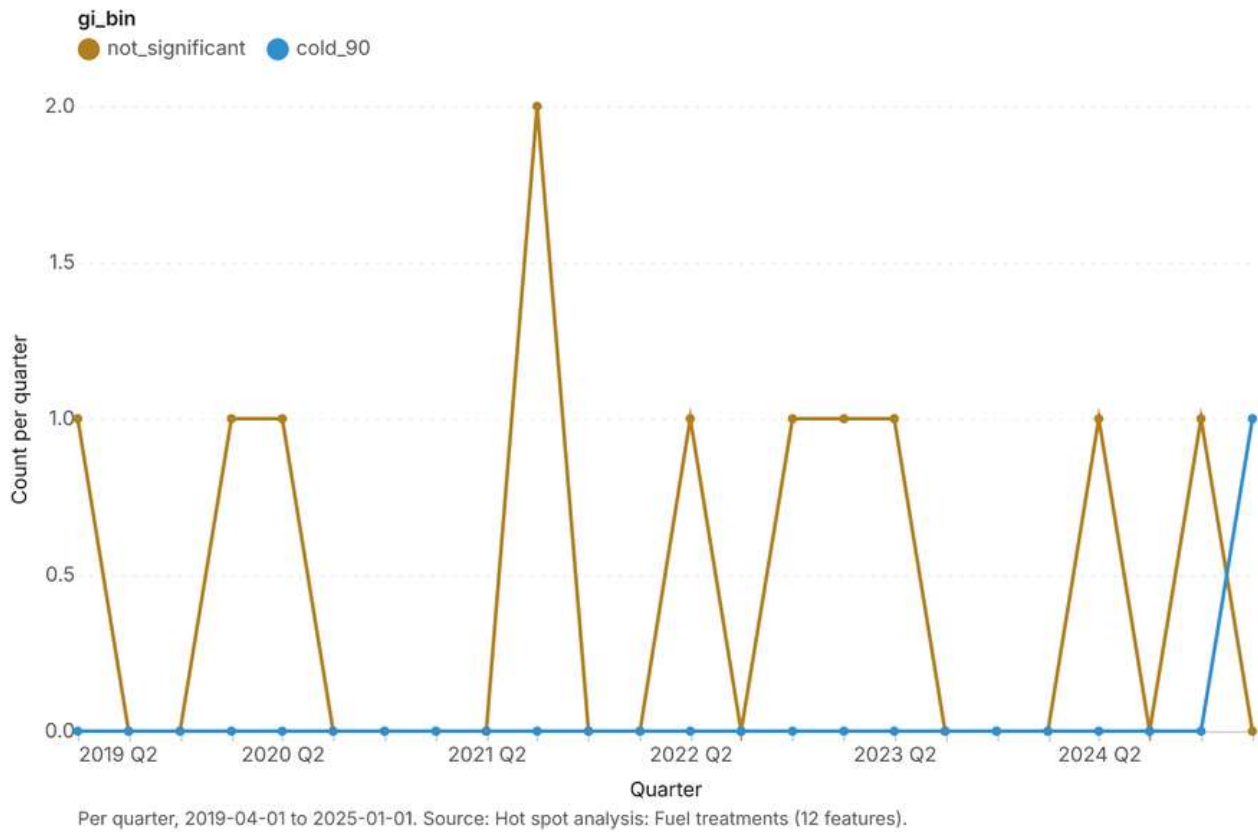


Figure 42. Hot spot analysis: Fuel treatments over time [96]. Per quarter, 2019-04-01 to 2025-01-01. Source: Hot spot analysis: Fuel treatments (12 features). The data is in the appendix.

Count per quarter by start_date and cause

Per quarter: 37 quarters from 2017-07-01 to 2026-07-01; trend +0 per quarter; first half 5, second half 5 (+0.0%)

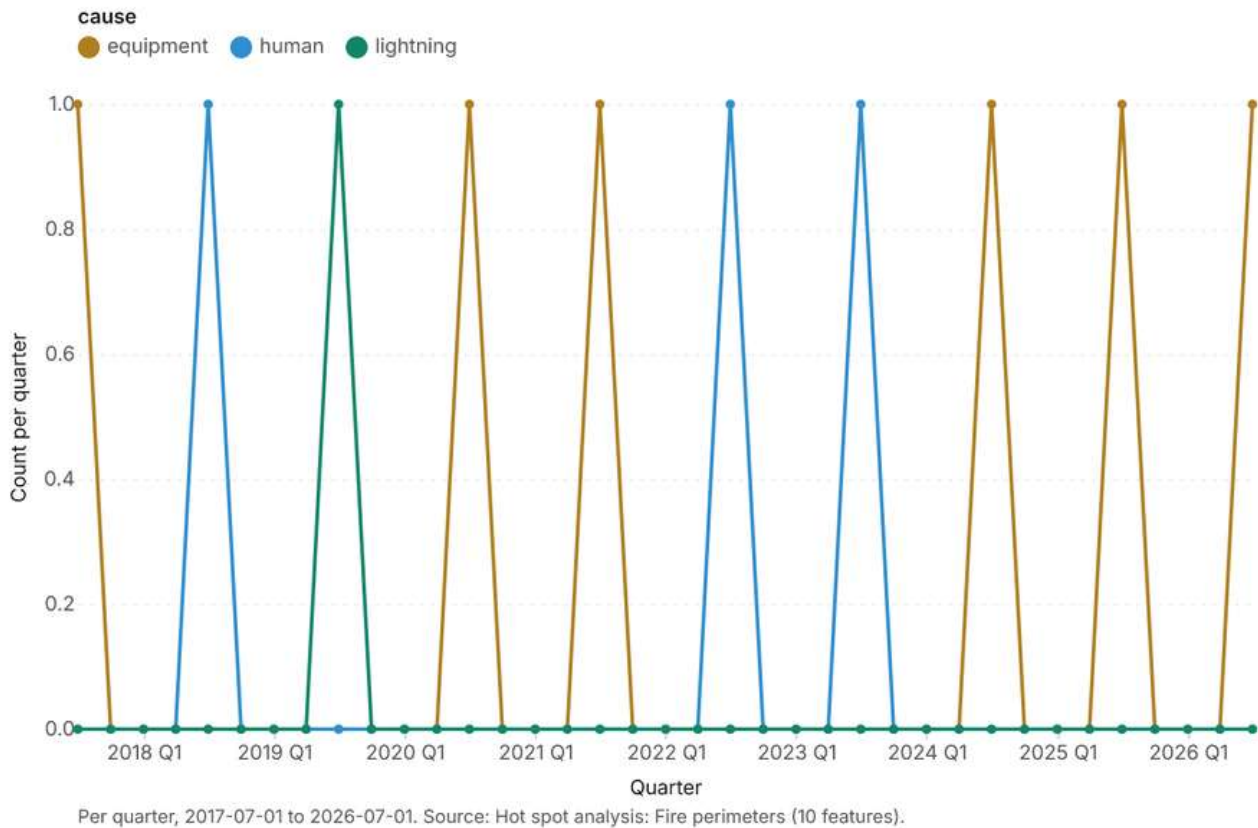


Figure 43. Hot spot analysis: Fire perimeters over time [97]. Per quarter, 2017-07-01 to 2026-07-01. Source: Hot spot analysis: Fire perimeters (10 features). The data is in the appendix.

Changes since the last run

This is the first report of this project.

Sources

- [1] Rendering: Chart: Timeline: events per quarter by dataset. 148 rows (id 797c6488-16c8-42a7-904d-8adb7f974668)
- [2] Dataset: Fire perimeters. vector, 10 rows (id 0b1e7d40-89ae-4b37-84e1-6536d5653088)
- [3] Dataset: Ignitions. vector, 900 rows (id 02464168-4470-4a98-855b-8ef6d9cdbfa9)
- [4] Dataset: Fuel treatments. vector, 12 rows (id cfd664dc-8716-42bf-982f-5f1be0e31a76)
- [5] Dataset: Station weather by day. table, 918 rows (id 6ea34ef2-dc8d-4e46-8fa7-1ac3431365c9)
- [6] Tool result: gp_change_point_detection, step 2. Change point detection: done; no map output. (id 47a00a32-eb67-4c26-bfcb-905c59a0b600:2)
- [7] Catalog: Hot spot analysis (operation catalog, gp_hot_spots). Getis-Ord Gi* hot and cold spots with z-scores, p-values and confidence bins. ArcGIS: Find Hot Spots, Hot Spot Analysis (Getis-Ord Gi*). QGIS: qgis:hotspot (plugin). (id gp_hot_spots)
- [8] Plan: Hot spots of Ignitions (the Start plan's candidate c_0e0a46dce832). 900 points: Getis-Ord Gi* tests whether the concentrations in Ignitions are statistically significant. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_0e0a46dce832)
- [9] Tool result: gp_hot_spots, step 0. Hot spot analysis: 1 layer saved: Hot spot analysis: Ignitions (344 features). (id 8f951621-3c96-471a-b3ef-37aee18172da:0)
- [10] Layer: Ignitions. 900 features (id 73bb3d60-f194-4b32-b9a6-832891cc6297)
- [11] Plan: Hot spots of Fire perimeters (the Start plan's candidate c_9b033ea5babc). Gi* hot spots of 'acres' across the areas. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_9b033ea5babc)
- [12] Tool result: gp_hot_spots, step 1. Hot spot analysis: 1 layer saved: Hot spot analysis: Fire perimeters (10 features). (id 8f951621-3c96-471a-b3ef-37aee18172da:1)
- [13] Layer: Fire perimeters. 10 features (id 4401c868-dc08-4f13-9bc9-d6e9bb6c8164)

- [14] Plan: Hot spots of Fuel treatments (the Start plan's candidate c_a70567ae8653). Gi* hot spots of 'acres' across the areas. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_a70567ae8653)
- [15] Tool result: gp_hot_spots, step 2. Hot spot analysis: 1 layer saved: Hot spot analysis: Fuel treatments (12 features). (id 8f951621-3c96-471a-b3ef-37aee18172da:2)
- [16] Layer: Fuel treatments. 12 features (id d603668d-1752-4332-9003-5646b7e22e12)
- [17] Catalog: Emerging hot spots (operation catalog, gp_space_time_hot_spots). Where hot spots are new, consecutive, intensifying, persistent, diminishing, sporadic, oscillating or historical over time. ArcGIS: Emerging Hot Spot Analysis, Create Space Time Cube. (id gp_space_time_hot_spots)
- [18] Plan: Space time hot spots of Ignitions (the Start plan's candidate c_60f3f9ce8f26). Ignitions carry dates in 'detected_at': emerging hot spot analysis finds new, intensifying and fading hot spots per month. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_60f3f9ce8f26)
- [19] Tool result: gp_space_time_hot_spots, step 0. Emerging hot spots: 1 layer saved: Emerging hot spots: Ignitions (135 features). (id 47a00a32-eb67-4c26-bfcb-905c59a0b600:0)
- [20] Catalog: Repeat and near repeat classification (operation catalog, gp_near_repeat). Classify incidents as originators, repeats (same place) or near repeats within a distance and time window, with a Knox test table. ArcGIS: Repeat and Near Repeat Classification, Near Repeat Calculator. (id gp_near_repeat)
- [21] Plan: Near repeat of Ignitions (the Start plan's candidate c_10f86c3efd81). Near repeat analysis tests whether Ignitions close in space also follow each other within 30 days. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_10f86c3efd81)
- [22] Tool result: gp_near_repeat, step 1. Repeat and near repeat classification: 1 layer saved: Repeat and near repeat classification: Ignitions (900 features). (id 47a00a32-eb67-4c26-bfcb-905c59a0b600:1)
- [23] Catalog: Change point detection (operation catalog, gp_change_point_detection). When did the level, count, trend or variability change? For the whole study area or for every bin. ArcGIS: Change Point Detection. (id gp_change_point_detection)
- [24] Plan: Change points of Ignitions (the Start plan's candidate c_03da66dfe7e8). Change point detection finds when the monthly count of Ignitions shifted. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_03da66dfe7e8)
- [25] Catalog: Summarize within (operation catalog, gp_summarize_within). Count and aggregate the features inside each polygon (or bin), proportionally for lines and polygons. ArcGIS: Summarize Within, Aggregate Points. QGIS: native:countpointsinpolygon, native:sumlinelengths. (id gp_summarize_within)
- [26] Plan: Ignitions per feature of Fire perimeters (the Start plan's candidate c_2c750e088dcf). Count Ignitions inside each feature of Fire perimeters by cause; the counts map as a choropleth (natural breaks, sequential colors). (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_2c750e088dcf)
- [27] Tool result: gp_summarize_within, step 0. Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features). (id d0d6a5af-89c4-4ed0-a643-2d3531685abc:0)
- [28] Tool result: gp_summarize_within, step 1. Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features). (id d0d6a5af-89c4-4ed0-a643-2d3531685abc:1)
- [29] Layer: Fire lookouts. 3 features (id 81fdb6e6-83c1-4f4d-8dc9-e59c43c15d96)
- [30] Tool result: gp_summarize_within, step 2. Summarize within: 1 layer saved: Summarize within: Fire perimeters (10 features). (id d0d6a5af-89c4-4ed0-a643-2d3531685abc:2)
- [31] Layer: Weather stations. 6 features (id 6b183e69-c85a-4bf5-8192-07431db200f4)
- [32] Catalog: Zonal statistics (analysis catalog, rs_zonal_statistics). count/min/max/mean/std/sum/median/majority per polygon as a table and as GeoJSON. ArcGIS: Zonal Statistics as Table (polygons). (id rs_zonal_statistics)
- [33] Plan: Zonal statistics of Forest terrain model (DEM) and Fire perimeters (the Start plan's candidate c_f8c34509825d). Statistics of Forest terrain model (DEM) inside each feature of Fire perimeters. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_f8c34509825d)
- [34] Tool result: rs_zonal_statistics, step 0. Zonal statistics: 10 row(s). zones 10. (id 585cf8a3-03c6-4f2b-ae1f-4e561bc33bf0:0)
- [35] Tool result: rs_zonal_statistics, step 1. Zonal statistics: 12 row(s). zones 12. (id 585cf8a3-03c6-4f2b-ae1f-4e561bc33bf0:1)
- [36] Tool result: rs_zonal_statistics, step 2. Zonal statistics: 36 row(s). zones 36. (id 585cf8a3-03c6-4f2b-ae1f-4e561bc33bf0:2)
- [37] Catalog: Find point clusters (operation catalog, gp_find_point_clusters). Density-based clusters (DBSCAN, HDBSCAN or OPTICS, optionally space-time) with hulls and noise. ArcGIS: Find Point Clusters, Density-based Clustering. QGIS: native:dbscanclustering, native:stdbscanclustering. (id gp_find_point_clusters)
- [38] Plan: Cluster points of Ignitions (the Start plan's candidate c_03b5374e7f2f). DBSCAN finds dense groups of Ignitions and separates noise. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_03b5374e7f2f)
- [39] Tool result: gp_find_point_clusters, step 0. Find point clusters: 2 layers saved: Find point clusters: Ignitions (900 features); Find point clusters: cluster hulls (1 feature). (id d750a3d5-f804-48d7-a5ab-cea0c64036e0:0)
- [40] Catalog: Average nearest neighbor (operation catalog, gp_nearest_neighbor_index). Clark-Evans ratio: clustered, dispersed or random. ArcGIS: Average Nearest Neighbor. QGIS: native:nearestneighbouranalysis. (id gp_nearest_neighbor_index)
- [41] Plan: Nearest neighbor index of Ignitions (the Start plan's candidate c_394da09ac152). The average nearest neighbor ratio says whether Ignitions are clustered, random or dispersed. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_394da09ac152)

[42] Tool result: gp_nearest_neighbor_index, step 1. Average nearest neighbor: done; no map output. (id d750a3d5-f804-48d7-a5ab-cea0c64036e0:1)

[43] Plan: Nearest neighbor index of Weather stations (the Start plan's candidate c_30762cad9c11). The average nearest neighbor ratio says whether Weather stations are clustered, random or dispersed. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_30762cad9c11)

[44] Tool result: gp_nearest_neighbor_index, step 2. Average nearest neighbor: done; no map output. (id d750a3d5-f804-48d7-a5ab-cea0c64036e0:2)

[45] Catalog: Calculate density (operation catalog, gp_calculate_density). Kernel density per square kilometer on a grid. ArcGIS: Calculate Density, Kernel Density. QGIS: native:heatmapkerneldensityestimation. (id gp_calculate_density)

[46] Plan: Kernel density of Ignitions (the Start plan's candidate c_8031c96859c6). 900 points in Ignitions: a density surface shows where they concentrate. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_8031c96859c6)

[47] Tool result: gp_calculate_density, step 0. Calculate density: 1 layer saved: Calculate density: Ignitions (2136 features). (id a9724881-6b90-401e-86d3-b3e78a11a086:0)

[48] Catalog: Find outliers (operation catalog, gp_outliers). Anselin local Moran's I: HH, LL clusters and HL, LH outliers. ArcGIS: Find Outliers, Cluster and Outlier Analysis (Anselin Local Moran's I). (id gp_outliers)

[49] Plan: Local morans i of Fire perimeters (the Start plan's candidate c_97cb8e0f2668). Local Moran's I maps clusters and outliers of 'acres'. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_97cb8e0f2668)

[50] Tool result: gp_outliers, step 0. Find outliers: 1 layer saved: Find outliers: Fire perimeters (10 features). (id d2855091-5bee-4e72-92bc-f4d96c2ad80a:0)

[51] Plan: Local morans i of Fuel treatments (the Start plan's candidate c_f3914935665b). Local Moran's I maps clusters and outliers of 'acres'. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_f3914935665b)

[52] Tool result: gp_outliers, step 1. Find outliers: 1 layer saved: Find outliers: Fuel treatments (12 features). (id d2855091-5bee-4e72-92bc-f4d96c2ad80a:1)

[53] Plan: Local morans i of Fuel units (the Start plan's candidate c_d1cbc9b93230). Local Moran's I maps clusters and outliers of 'fuel_load_t_ha'. (id 186bc213-2630-4d8c-bbef-bc1854404d12:c_d1cbc9b93230)

[54] Tool result: gp_outliers, step 2. Find outliers: 1 layer saved: Find outliers: Fuel units (36 features). (id d2855091-5bee-4e72-92bc-f4d96c2ad80a:2)

[55] Layer: Fuel units. 36 features (id 42f78cee-8de2-430c-8f54-a3b77306f0e7)

[56] Rendering: Map: Hot spot analysis: Ignitions (id bb63cb93-55aa-4f5b-9b90-3bf45d6dc57f)

[57] Rendering: Map: Hot spot analysis: Fire perimeters (id c5abc0f0-1d90-42a7-890d-973a23eae10f)

[58] Rendering: Map: Hot spot analysis: Fuel treatments (id b4e60dce-bab6-4223-a5db-f854367edcc9)

[59] Rendering: Map: Emerging hot spots: Ignitions (id 86125b2e-c24e-46d9-bf32-2bc320dd67bf)

[60] Rendering: Map: Repeat and near repeat classification: Ignitions (id d2b0ab7d-8519-4953-a574-41a63e22f158)

[61] Rendering: Map: Summarize within: Fire perimeters (id 1b0b59ae-d26e-448d-99f4-13f97a2e6e22)

[62] Rendering: Map: Summarize within: Fire perimeters (id 79f494a0-8339-4630-9f2b-1eb51920b75e)

[63] Rendering: Map: Summarize within: Fire perimeters (id 157a695e-39d9-4eda-a959-2757ef39dd1f)

[64] Rendering: Map: Find point clusters: Ignitions (id 769cd190-b6cd-4baf-bb26-89b68980f41b)

[65] Rendering: Map: Find point clusters: cluster hulls (id 39ce8fbd-9d74-4a4f-9be5-a6510ea09ce6)

[66] Rendering: Map: Calculate density: Ignitions (id dc62fd3d-336d-4e9a-b0cb-53b02e35914a)

[67] Rendering: Map: Fire perimeters by acres (id b5a6d9fb-5e10-4e3d-8f27-49001ad00173)

[68] Rendering: Map: Fuel treatments by acres (id ad8c35df-63f5-4cf4-bc47-ecf9d02f74f8)

[69] Rendering: Map: Fuel units by fuel_load_t_ha (id 102ee2da-8af4-42d9-9311-7ee514591e21)

[70] Rendering: Map: Find outliers: Fire perimeters (id 74f7137e-d925-4cf8-8637-4cf18c53ed90)

[71] Rendering: Map: Find outliers: Fuel treatments (id f7d92071-015a-4f7a-853e-6834d900f625)

[72] Rendering: Map: Find outliers: Fuel units (id 2b4bb626-f282-4cd0-9678-a86f686584ce)

[73] Rendering: Chart: Fire perimeters over time (start_date). 111 rows (id 3cb8b4ab-f4bc-4698-939c-3d9a7ff84f07)

[74] Rendering: Chart: Station weather by day over time (date). 23 rows (id ddf56570-bae6-49fc-b4c3-4800008acb48)

[75] Rendering: Chart: Hot spot analysis: Ignitions. 13 rows (id ac627744-6825-4c3d-9670-c93a9bfb2e42)

[76] Rendering: Chart: Hot spot analysis: Fire perimeters. 7 rows (id 3c9aad31-e9ac-49eb-982d-37bc396afad8)

[77] Rendering: Chart: Hot spot analysis: Fuel treatments. 4 rows (id 638ff2d9-34f9-403b-a35d-d9a308e3ec25)

[78] Rendering: Chart: Emerging hot spots: Ignitions. 9 rows (id 0a4caa2f-337b-4a6b-b4d4-b142afafe031)

[79] Rendering: Chart: Repeat and near repeat classification: Ignitions. 210 rows (id 632a779a-47b0-4035-b53d-354cabd5d360)

[80] Rendering: Chart: Summarize within: Fire perimeters. 111 rows (id 22ee21d5-58dc-4e1e-a070-6a67a901c965)

[81] Rendering: Chart: Summarize within: Fire perimeters. 111 rows (id db2f619e-43fa-4d26-9640-fb162068f74e)

[82] Rendering: Chart: Summarize within: Fire perimeters. 111 rows (id b7f0dd9d-22ad-4e93-9b93-cf9a83fadf84)

[83] Rendering: Chart: Find point clusters: Ignitions. 2 rows (id 1e027e4b-22a2-45d5-9086-2a36c8138f69)

[84] Rendering: Chart: Find point clusters: cluster hulls. 1 rows (id 0789a6b7-999c-4f6b-9d42-1cd13d066287)

[85] Rendering: Chart: Calculate density: Ignitions. 13 rows (id 0be10378-cba5-4926-a390-c5d82995b1a3)

[86] Rendering: Chart: Find outliers: Fire perimeters. 10 rows (id 84e826fe-c1a8-45f7-9c15-b536ccc175c6)

[87] Rendering: Chart: Find outliers: Fuel treatments. 12 rows (id 8efc3778-a287-41ed-b887-f7929e06afc2)

[88] Rendering: Chart: Find outliers: Fuel units. 36 rows (id 05890114-2897-4a1f-b199-efec992907fe)

[89] Rendering: Chart: Find outliers: Fuel treatments over time. 72 rows (id af3a74cb-f5e6-45e1-ae7-be2f209870ab)

[90] Rendering: Chart: Find outliers: Fire perimeters over time. 111 rows (id ffd1204d-4f08-4461-8cd1-44fce92e2c2)

[91] Rendering: Chart: Find point clusters: Ignitions over time. 210 rows (id 2d0515c1-e371-4a5e-aded-37ced56bb910)

[92] Rendering: Chart: Summarize within: Fire perimeters over time. 111 rows (id 3f4630a7-8117-4a45-ad96-0b64158a7db3)

[93] Rendering: Chart: Summarize within: Fire perimeters over time. 111 rows (id 01777e29-c207-4718-a2ee-d69065a84d99)

[94] Rendering: Chart: Summarize within: Fire perimeters over time. 111 rows (id ff1e5279-5ea0-474a-9e56-4e42867284ca)

[95] Rendering: Chart: Repeat and near repeat classification: Ignitions over time. 210 rows (id cb6bd5ac-4983-40a6-adb2-f8cbdca32ee7)

[96] Rendering: Chart: Hot spot analysis: Fuel treatments over time. 48 rows (id 94c4e65c-ee4e-4a2b-9d8c-c1fa5cd5282a)

[97] Rendering: Chart: Hot spot analysis: Fire perimeters over time. 111 rows (id d8ab7b19-e10f-4683-bd70-1708bd93b637)

[98] Dataset: Fuel units. vector, 36 rows (id fc5028cb-a84d-444c-a982-49a4f156c28e)

[99] Dataset: Forest roads. vector, 15 rows (id c0892d0e-cdf3-4371-9e82-477a931a88d7)

[100] Dataset: Weather stations. vector, 6 rows (id 720b6843-88fb-4d45-b04c-efa7b051e0a4)

[101] Dataset: Fire lookouts. vector, 3 rows (id 57d287f4-2d44-451b-9f1c-7e45316002b6)

[102] Dataset: Forest terrain model (DEM). raster, ? rows (id 81d246c7-6131-4938-9f61-f7279a97cc5e)

[103] Dataset: Treatment costs. table, 12 rows (id 8c3b32c2-3535-489c-94ca-7cf557f9e65d)

[104] Dataset: Fuels treatment plan. document, ? rows (id 275ae7d9-0d0b-407c-aa5b-b35298e6ba4e)

[105] Record: Sample: Forestry and wildfire, Bend (id 721d878b-84af-42eb-9c9c-858bf9a6a75e)

[106] Layer: Hot spot analysis: Ignitions. 344 features (id 0fd14c27-6dc5-40ab-9367-9526fed96488)

[107] Layer: Hot spot analysis: Fire perimeters. 10 features (id 712f8542-d935-4ffb-9017-4996ae740395)

[108] Layer: Hot spot analysis: Fuel treatments. 12 features (id 17998548-cdf7-4623-86fa-b34232ee3f92)

[109] Layer: Emerging hot spots: Ignitions. 135 features (id 6cd30a8d-a6bb-41fa-aa35-bde687bf9907)

[110] Layer: Repeat and near repeat classification: Ignitions. 900 features (id e22031fb-e461-400b-8e9e-72ffaa953304)

[111] Layer: Summarize within: Fire perimeters. 10 features (id b8d71f1c-d5f1-49e2-a2bd-f7b2532714da)

[112] Layer: Summarize within: Fire perimeters. 10 features (id f9a795e9-aa11-4cf7-919f-3fd6479f41aa)

[113] Layer: Summarize within: Fire perimeters. 10 features (id 072dac32-c222-4fd9-a81b-67d2bbd389f9)

[114] Layer: Find point clusters: Ignitions. 900 features (id f0f43900-3843-44c7-a966-3fad40f516a7)

[115] Layer: Find point clusters: cluster hulls. 1 features (id 9eb7e362-3675-466c-b2bd-13b526913ffe)

[116] Layer: Calculate density: Ignitions. 2,136 features (id 4c8afb06-e51c-4b81-abd6-8abc0805636a)

[117] Layer: Find outliers: Fire perimeters. 10 features (id 32df7e83-bd50-4624-8151-7a1c53594cda)

[118] Layer: Find outliers: Fuel treatments. 12 features (id d3cbfd02-4bf8-4255-8459-f80c861e5a3c)

[119] Layer: Find outliers: Fuel units. 36 features (id 4f521496-6165-4997-b713-4947d4e59c52)

Appendix: the data behind the charts

Figure 1. Timeline: events per quarter by dataset [1]

period	series	value
2017-07-01	Station weather by day	0
2017-07-01	Ignitions	0
2017-07-01	Fuel treatments	0
2017-07-01	Fire perimeters	1
2017-10-01	Station weather by day	0
2017-10-01	Ignitions	0
2017-10-01	Fuel treatments	0
2017-10-01	Fire perimeters	0
2018-01-01	Station weather by day	0
2018-01-01	Ignitions	1
2018-01-01	Fuel treatments	0
2018-01-01	Fire perimeters	0
2018-04-01	Station weather by day	0
2018-04-01	Ignitions	18
2018-04-01	Fuel treatments	0
2018-04-01	Fire perimeters	0
2018-07-01	Station weather by day	0
2018-07-01	Ignitions	33
2018-07-01	Fuel treatments	0
2018-07-01	Fire perimeters	1
2018-10-01	Station weather by day	0
2018-10-01	Ignitions	22
2018-10-01	Fuel treatments	0
2018-10-01	Fire perimeters	0
2019-01-01	Station weather by day	0
2019-01-01	Ignitions	5
2019-01-01	Fuel treatments	0
2019-01-01	Fire perimeters	0
2019-04-01	Station weather by day	0
2019-04-01	Ignitions	26
2019-04-01	Fuel treatments	1
2019-04-01	Fire perimeters	0
2019-07-01	Station weather by day	0
2019-07-01	Ignitions	39
2019-07-01	Fuel treatments	0
2019-07-01	Fire perimeters	1
2019-10-01	Station weather by day	0
2019-10-01	Ignitions	16
2019-10-01	Fuel treatments	0
2019-10-01	Fire perimeters	0
2020-01-01	Station weather by day	0
2020-01-01	Ignitions	2
2020-01-01	Fuel treatments	1

period	series	value
2020-01-01	Fire perimeters	0
2020-04-01	Station weather by day	0
2020-04-01	Ignitions	21
2020-04-01	Fuel treatments	1
2020-04-01	Fire perimeters	0
2020-07-01	Station weather by day	0
2020-07-01	Ignitions	38
2020-07-01	Fuel treatments	0
2020-07-01	Fire perimeters	1
2020-10-01	Station weather by day	0
2020-10-01	Ignitions	22
2020-10-01	Fuel treatments	0
2020-10-01	Fire perimeters	0
2021-01-01	Station weather by day	0
2021-01-01	Ignitions	1
2021-01-01	Fuel treatments	0
2021-01-01	Fire perimeters	0
2021-04-01	Station weather by day	0
2021-04-01	Ignitions	27
2021-04-01	Fuel treatments	0
2021-04-01	Fire perimeters	0
2021-07-01	Station weather by day	0
2021-07-01	Ignitions	47
2021-07-01	Fuel treatments	2
2021-07-01	Fire perimeters	1
2021-10-01	Station weather by day	0
2021-10-01	Ignitions	32
2021-10-01	Fuel treatments	0
2021-10-01	Fire perimeters	0
2022-01-01	Station weather by day	0
2022-01-01	Ignitions	5
2022-01-01	Fuel treatments	0
2022-01-01	Fire perimeters	0
2022-04-01	Station weather by day	0
2022-04-01	Ignitions	21
2022-04-01	Fuel treatments	1
2022-04-01	Fire perimeters	0
2022-07-01	Station weather by day	0
2022-07-01	Ignitions	52
2022-07-01	Fuel treatments	0
2022-07-01	Fire perimeters	1
2022-10-01	Station weather by day	0
2022-10-01	Ignitions	28

period	series	value
2022-10-01	Fuel treatments	1
2022-10-01	Fire perimeters	0
2023-01-01	Station weather by day	0
2023-01-01	Ignitions	5
2023-01-01	Fuel treatments	1
2023-01-01	Fire perimeters	0
2023-04-01	Station weather by day	0
2023-04-01	Ignitions	31
2023-04-01	Fuel treatments	1
2023-04-01	Fire perimeters	0
2023-07-01	Station weather by day	0
2023-07-01	Ignitions	48
2023-07-01	Fuel treatments	0
2023-07-01	Fire perimeters	1
2023-10-01	Station weather by day	0
2023-10-01	Ignitions	34
2023-10-01	Fuel treatments	0
2023-10-01	Fire perimeters	0
2024-01-01	Station weather by day	0
2024-01-01	Ignitions	4
2024-01-01	Fuel treatments	0
2024-01-01	Fire perimeters	0
2024-04-01	Station weather by day	0
2024-04-01	Ignitions	36
2024-04-01	Fuel treatments	1
2024-04-01	Fire perimeters	0
2024-07-01	Station weather by day	0
2024-07-01	Ignitions	48
2024-07-01	Fuel treatments	0
2024-07-01	Fire perimeters	1
2024-10-01	Station weather by day	0
2024-10-01	Ignitions	32
2024-10-01	Fuel treatments	1
2024-10-01	Fire perimeters	0
2025-01-01	Station weather by day	0
2025-01-01	Ignitions	7
2025-01-01	Fuel treatments	1
2025-01-01	Fire perimeters	0
2025-04-01	Station weather by day	0
2025-04-01	Ignitions	35
2025-04-01	Fuel treatments	0
2025-04-01	Fire perimeters	0
2025-07-01	Station weather by day	0

period	series	value
2025-07-01	Ignitions	61
2025-07-01	Fuel treatments	0
2025-07-01	Fire perimeters	1
2025-10-01	Station weather by day	0
2025-10-01	Ignitions	24
2025-10-01	Fuel treatments	0
2025-10-01	Fire perimeters	0
2026-01-01	Station weather by day	0
2026-01-01	Ignitions	2
2026-01-01	Fuel treatments	0
2026-01-01	Fire perimeters	0
2026-04-01	Station weather by day	366
2026-04-01	Ignitions	20
2026-04-01	Fuel treatments	0
2026-04-01	Fire perimeters	0
2026-07-01	Station weather by day	552
2026-07-01	Ignitions	57
2026-07-01	Fuel treatments	0
2026-07-01	Fire perimeters	1

Figure 19. Fire perimeters over time (start_date) [73]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0

period	series	value
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0

period	series	value
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0

period	series	value
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 20. Station weather by day over time (date) [74]

period	value
2026-04-27	18
2026-05-04	42
2026-05-11	42
2026-05-18	42
2026-05-25	42
2026-06-01	42
2026-06-08	42
2026-06-15	42
2026-06-22	42
2026-06-29	42
2026-07-06	42
2026-07-13	42
2026-07-20	42
2026-07-27	42
2026-08-03	42
2026-08-10	42
2026-08-17	42
2026-08-24	42
2026-08-31	42
2026-09-07	42
2026-09-14	42
2026-09-21	42
2026-09-28	18

Figure 21. Hot spot analysis: Ignitions [75]

bin_start	bin_end	band	band_label	count
-1	-0.5	not_significant	Not significant	104
-0.5	0	not_significant	Not significant	152
0	0.5	not_significant	Not significant	44
0.5	1	not_significant	Not significant	16
1	1.5	not_significant	Not significant	5
1.5	2	hot_90	Hot spot, 90% confidence	4
1.5	2	not_significant	Not significant	1
2	2.5	hot_95	Hot spot, 95% confidence	2
2.5	3	hot_99	Hot spot, 99% confidence	1
3	3.5	hot_99	Hot spot, 99% confidence	8

bin_start	bin_end	band	band_label	count
4	4.5	hot_99	Hot spot, 99% confidence	2
4.5	5	hot_99	Hot spot, 99% confidence	2
5	5.5	hot_99	Hot spot, 99% confidence	3

Figure 22. Hot spot analysis: Fire perimeters [76]

bin_start	bin_end	band	band_label	count
-1.5	-1	not_significant	Not significant	2
-1	-0.5	not_significant	Not significant	1
-0.5	0	not_significant	Not significant	1
0	0.5	not_significant	Not significant	2
0.5	1	not_significant	Not significant	2
1	1.5	not_significant	Not significant	1
1.5	2	hot_90	Hot spot, 90% confidence	1

Figure 23. Hot spot analysis: Fuel treatments [77]

bin_start	bin_end	band	band_label	count
-2	-1.5	cold_90	Cold spot, 90% confidence	1
-0.5	0	not_significant	Not significant	6
0	0.5	not_significant	Not significant	3
0.5	1	not_significant	Not significant	2

Figure 24. Emerging hot spots: Ignitions [78]

bin_start	bin_end	count
-0.534	0.3166	84
0.3166	1.167	23
1.167	2.018	3
2.018	2.868	11
2.868	3.719	0
3.719	4.569	7
4.569	5.42	0
5.42	6.27	6
6.27	7.121	1

Figure 25. Repeat and near repeat classification: Ignitions [79]

period	series	value
2018-01-01	lightning	0
2018-01-01	campfire	1
2018-01-01	vehicle	0
2018-01-01	debris burning	0
2018-01-01	arson	0
2018-01-01	Other	0
2018-04-01	lightning	4

period	series	value
2018-04-01	campfire	7
2018-04-01	vehicle	1
2018-04-01	debris burning	3
2018-04-01	arson	1
2018-04-01	Other	2
2018-07-01	lightning	8
2018-07-01	campfire	7
2018-07-01	vehicle	4
2018-07-01	debris burning	5
2018-07-01	arson	7
2018-07-01	Other	2
2018-10-01	lightning	4
2018-10-01	campfire	4
2018-10-01	vehicle	2
2018-10-01	debris burning	1
2018-10-01	arson	3
2018-10-01	Other	8
2019-01-01	lightning	0
2019-01-01	campfire	1
2019-01-01	vehicle	0
2019-01-01	debris burning	2
2019-01-01	arson	1
2019-01-01	Other	1
2019-04-01	lightning	8
2019-04-01	campfire	7
2019-04-01	vehicle	3
2019-04-01	debris burning	3
2019-04-01	arson	1
2019-04-01	Other	4
2019-07-01	lightning	15
2019-07-01	campfire	1
2019-07-01	vehicle	7
2019-07-01	debris burning	5
2019-07-01	arson	7
2019-07-01	Other	4
2019-10-01	lightning	4
2019-10-01	campfire	4
2019-10-01	vehicle	1
2019-10-01	debris burning	4
2019-10-01	arson	1
2019-10-01	Other	2
2020-01-01	lightning	0
2020-01-01	campfire	1

period	series	value
2020-01-01	vehicle	0
2020-01-01	debris burning	0
2020-01-01	arson	1
2020-01-01	Other	0
2020-04-01	lightning	6
2020-04-01	campfire	1
2020-04-01	vehicle	3
2020-04-01	debris burning	4
2020-04-01	arson	3
2020-04-01	Other	4
2020-07-01	lightning	13
2020-07-01	campfire	9
2020-07-01	vehicle	4
2020-07-01	debris burning	1
2020-07-01	arson	6
2020-07-01	Other	5
2020-10-01	lightning	5
2020-10-01	campfire	3
2020-10-01	vehicle	5
2020-10-01	debris burning	4
2020-10-01	arson	2
2020-10-01	Other	3
2021-01-01	lightning	1
2021-01-01	campfire	0
2021-01-01	vehicle	0
2021-01-01	debris burning	0
2021-01-01	arson	0
2021-01-01	Other	0
2021-04-01	lightning	6
2021-04-01	campfire	8
2021-04-01	vehicle	0
2021-04-01	debris burning	5
2021-04-01	arson	3
2021-04-01	Other	5
2021-07-01	lightning	21
2021-07-01	campfire	8
2021-07-01	vehicle	4
2021-07-01	debris burning	8
2021-07-01	arson	3
2021-07-01	Other	3
2021-10-01	lightning	3
2021-10-01	campfire	11
2021-10-01	vehicle	3

period	series	value
2021-10-01	debris burning	5
2021-10-01	arson	1
2021-10-01	Other	9
2022-01-01	lightning	0
2022-01-01	campfire	1
2022-01-01	vehicle	0
2022-01-01	debris burning	3
2022-01-01	arson	0
2022-01-01	Other	1
2022-04-01	lightning	9
2022-04-01	campfire	7
2022-04-01	vehicle	2
2022-04-01	debris burning	2
2022-04-01	arson	0
2022-04-01	Other	1
2022-07-01	lightning	23
2022-07-01	campfire	7
2022-07-01	vehicle	8
2022-07-01	debris burning	5
2022-07-01	arson	6
2022-07-01	Other	3
2022-10-01	lightning	1
2022-10-01	campfire	7
2022-10-01	vehicle	3
2022-10-01	debris burning	5
2022-10-01	arson	3
2022-10-01	Other	9
2023-01-01	lightning	0
2023-01-01	campfire	1
2023-01-01	vehicle	0
2023-01-01	debris burning	2
2023-01-01	arson	2
2023-01-01	Other	0
2023-04-01	lightning	10
2023-04-01	campfire	4
2023-04-01	vehicle	4
2023-04-01	debris burning	2
2023-04-01	arson	4
2023-04-01	Other	7
2023-07-01	lightning	16
2023-07-01	campfire	9
2023-07-01	vehicle	6
2023-07-01	debris burning	4

period	series	value
2023-07-01	arson	10
2023-07-01	Other	3
2023-10-01	lightning	1
2023-10-01	campfire	9
2023-10-01	vehicle	6
2023-10-01	debris burning	2
2023-10-01	arson	5
2023-10-01	Other	11
2024-01-01	lightning	1
2024-01-01	campfire	0
2024-01-01	vehicle	1
2024-01-01	debris burning	0
2024-01-01	arson	0
2024-01-01	Other	2
2024-04-01	lightning	6
2024-04-01	campfire	6
2024-04-01	vehicle	6
2024-04-01	debris burning	3
2024-04-01	arson	3
2024-04-01	Other	12
2024-07-01	lightning	14
2024-07-01	campfire	17
2024-07-01	vehicle	4
2024-07-01	debris burning	5
2024-07-01	arson	5
2024-07-01	Other	3
2024-10-01	lightning	4
2024-10-01	campfire	6
2024-10-01	vehicle	1
2024-10-01	debris burning	6
2024-10-01	arson	2
2024-10-01	Other	13
2025-01-01	lightning	1
2025-01-01	campfire	1
2025-01-01	vehicle	0
2025-01-01	debris burning	1
2025-01-01	arson	2
2025-01-01	Other	2
2025-04-01	lightning	10
2025-04-01	campfire	7
2025-04-01	vehicle	6
2025-04-01	debris burning	3
2025-04-01	arson	3

period	series	value
2025-04-01	Other	6
2025-07-01	lightning	27
2025-07-01	campfire	10
2025-07-01	vehicle	7
2025-07-01	debris burning	5
2025-07-01	arson	6
2025-07-01	Other	6
2025-10-01	lightning	4
2025-10-01	campfire	4
2025-10-01	vehicle	5
2025-10-01	debris burning	1
2025-10-01	arson	2
2025-10-01	Other	8
2026-01-01	lightning	0
2026-01-01	campfire	0
2026-01-01	vehicle	2
2026-01-01	debris burning	0
2026-01-01	arson	0
2026-01-01	Other	0
2026-04-01	lightning	2
2026-04-01	campfire	6
2026-04-01	vehicle	3
2026-04-01	debris burning	5
2026-04-01	arson	0
2026-04-01	Other	4
2026-07-01	lightning	16
2026-07-01	campfire	11
2026-07-01	vehicle	11
2026-07-01	debris burning	6
2026-07-01	arson	6
2026-07-01	Other	7

Figure 26. Summarize within: Fire perimeters [80]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0

period	series	value
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0

period	series	value
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0

period	series	value
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 27. Summarize within: Fire perimeters [81]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0

period	series	value
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0

period	series	value
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 28. Summarize within: Fire perimeters [82]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0

period	series	value
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0

period	series	value
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 29. Find point clusters: Ignitions [83]

cluster	features	fraction	share
0	524	0.5822	58.2%
Noise	376	0.4178	41.8%

Figure 30. Find point clusters: cluster hulls [84]

cluster	features	fraction	share
0	1	1	100.0%

Figure 31. Calculate density: Ignitions [85]

bin_start	bin_end	count
0	4.154	145
4.154	8.308	161
8.308	12.46	160
12.46	16.62	164
16.62	20.77	166
20.77	24.92	165
24.92	29.08	209
29.08	33.23	167

bin_start	bin_end	count
33.23	37.38	163
37.38	41.54	138
41.54	45.69	160
45.69	49.85	166
49.85	54	172

Figure 32. Find outliers: Fire perimeters [86]

value	lag	type
1.294	0.0567	NS
-0.956	0.1016	NS
1.647	-0.9042	NS
-0.9664	0.6304	NS
-1.391	0.3297	NS
-0.9042	0.9363	NS
-0.1265	-0.9301	NS
0.1431	1.294	NS
0.9311	-0.0617	NS
0.3297	-0.5957	NS

Figure 33. Find outliers: Fuel treatments [87]

value	lag	type
-0.4185	0.1036	NS
1.695	-0.6008	NS
-0.1947	-0.0373	NS
-0.5179	0.0704	NS
-0.8411	0.8245	NS
-1.015	-1.438	NS
1.198	-0.203	NS
-1.438	0.6174	NS
1.67	-0.1202	NS
-0.5428	0.3771	NS
-0.145	-0.1761	NS
0.5511	-0.2859	NS

Figure 34. Find outliers: Fuel units [88]

value	lag	type
0.2369	0.0143	NS
1.289	-0.0868	NS
0.4292	0.1965	NS
0.3179	0.554	NS
-0.3803	0.2369	NS
0.3179	-1.336	NS
-0.5219	-0.7344	NS
0.8035	-0.1551	NS
-1.392	0.9781	NS

value	lag	type
0.2774	-0.8153	NS
0.0953	0.4089	NS
1.239	1.279	NS
-0.7749	0.8895	NS
2.21	-0.6484	NS
-1.352	-0.043	NS
1.218	0.1965	NS
-0.876	-1.331	NS
-0.3904	1.132	NS
0.9249	-0.9013	NS
-1.331	-0.6459	NS
-0.532	0.4292	NS
-0.8963	1.218	NS
-0.4106	-1.352	NS
2.2	0.3179	NS
-1.281	-0.5067	NS
-0.0868	-0.188	NS
-1.352	-0.1206	NS
0.1459	0.075	NS
1.461	-0.1206	NS
-0.876	-0.5573	NS
1.279	1.239	NS
-0.8153	0.2774	NS
-0.3094	-0.2892	NS
0.2369	-0.3128	NS
-1.382	-0.0093	NS
0.2774	-0.5573	NS

Figure 35. Find outliers: Fuel treatments over time [89]

period	series	value
2019-04-01	prescribed burn	0
2019-04-01	mastication	1
2019-04-01	thinning	0
2019-07-01	prescribed burn	0
2019-07-01	mastication	0
2019-07-01	thinning	0
2019-10-01	prescribed burn	0
2019-10-01	mastication	0
2019-10-01	thinning	0
2020-01-01	prescribed burn	1
2020-01-01	mastication	0
2020-01-01	thinning	0
2020-04-01	prescribed burn	0
2020-04-01	mastication	0

period	series	value
2020-04-01	thinning	1
2020-07-01	prescribed burn	0
2020-07-01	mastication	0
2020-07-01	thinning	0
2020-10-01	prescribed burn	0
2020-10-01	mastication	0
2020-10-01	thinning	0
2021-01-01	prescribed burn	0
2021-01-01	mastication	0
2021-01-01	thinning	0
2021-04-01	prescribed burn	0
2021-04-01	mastication	0
2021-04-01	thinning	0
2021-07-01	prescribed burn	1
2021-07-01	mastication	1
2021-07-01	thinning	0
2021-10-01	prescribed burn	0
2021-10-01	mastication	0
2021-10-01	thinning	0
2022-01-01	prescribed burn	0
2022-01-01	mastication	0
2022-01-01	thinning	0
2022-04-01	prescribed burn	1
2022-04-01	mastication	0
2022-04-01	thinning	0
2022-07-01	prescribed burn	0
2022-07-01	mastication	0
2022-07-01	thinning	0
2022-10-01	prescribed burn	0
2022-10-01	mastication	1
2022-10-01	thinning	0
2023-01-01	prescribed burn	0
2023-01-01	mastication	0
2023-01-01	thinning	1
2023-04-01	prescribed burn	1
2023-04-01	mastication	0
2023-04-01	thinning	0
2023-07-01	prescribed burn	0
2023-07-01	mastication	0
2023-07-01	thinning	0
2023-10-01	prescribed burn	0
2023-10-01	mastication	0
2023-10-01	thinning	0

period	series	value
2024-01-01	prescribed burn	0
2024-01-01	mastication	0
2024-01-01	thinning	0
2024-04-01	prescribed burn	1
2024-04-01	mastication	0
2024-04-01	thinning	0
2024-07-01	prescribed burn	0
2024-07-01	mastication	0
2024-07-01	thinning	0
2024-10-01	prescribed burn	1
2024-10-01	mastication	0
2024-10-01	thinning	0
2025-01-01	prescribed burn	1
2025-01-01	mastication	0
2025-01-01	thinning	0

Figure 36. Find outliers: Fire perimeters over time [90]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0

period	series	value
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0

period	series	value
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 37. Find point clusters: Ignitions over time [91]

period	series	value
2018-01-01	lightning	0
2018-01-01	campfire	1
2018-01-01	vehicle	0
2018-01-01	debris burning	0
2018-01-01	arson	0
2018-01-01	Other	0
2018-04-01	lightning	4
2018-04-01	campfire	7
2018-04-01	vehicle	1
2018-04-01	debris burning	3
2018-04-01	arson	1
2018-04-01	Other	2
2018-07-01	lightning	8
2018-07-01	campfire	7
2018-07-01	vehicle	4
2018-07-01	debris burning	5
2018-07-01	arson	7
2018-07-01	Other	2
2018-10-01	lightning	4
2018-10-01	campfire	4
2018-10-01	vehicle	2
2018-10-01	debris burning	1
2018-10-01	arson	3
2018-10-01	Other	8
2019-01-01	lightning	0
2019-01-01	campfire	1
2019-01-01	vehicle	0
2019-01-01	debris burning	2
2019-01-01	arson	1
2019-01-01	Other	1
2019-04-01	lightning	8
2019-04-01	campfire	7
2019-04-01	vehicle	3
2019-04-01	debris burning	3
2019-04-01	arson	1
2019-04-01	Other	4
2019-07-01	lightning	15
2019-07-01	campfire	1
2019-07-01	vehicle	7
2019-07-01	debris burning	5
2019-07-01	arson	7
2019-07-01	Other	4
2019-10-01	lightning	4

period	series	value
2019-10-01	campfire	4
2019-10-01	vehicle	1
2019-10-01	debris burning	4
2019-10-01	arson	1
2019-10-01	Other	2
2020-01-01	lightning	0
2020-01-01	campfire	1
2020-01-01	vehicle	0
2020-01-01	debris burning	0
2020-01-01	arson	1
2020-01-01	Other	0
2020-04-01	lightning	6
2020-04-01	campfire	1
2020-04-01	vehicle	3
2020-04-01	debris burning	4
2020-04-01	arson	3
2020-04-01	Other	4
2020-07-01	lightning	13
2020-07-01	campfire	9
2020-07-01	vehicle	4
2020-07-01	debris burning	1
2020-07-01	arson	6
2020-07-01	Other	5
2020-10-01	lightning	5
2020-10-01	campfire	3
2020-10-01	vehicle	5
2020-10-01	debris burning	4
2020-10-01	arson	2
2020-10-01	Other	3
2021-01-01	lightning	1
2021-01-01	campfire	0
2021-01-01	vehicle	0
2021-01-01	debris burning	0
2021-01-01	arson	0
2021-01-01	Other	0
2021-04-01	lightning	6
2021-04-01	campfire	8
2021-04-01	vehicle	0
2021-04-01	debris burning	5
2021-04-01	arson	3
2021-04-01	Other	5
2021-07-01	lightning	21
2021-07-01	campfire	8

period	series	value
2021-07-01	vehicle	4
2021-07-01	debris burning	8
2021-07-01	arson	3
2021-07-01	Other	3
2021-10-01	lightning	3
2021-10-01	campfire	11
2021-10-01	vehicle	3
2021-10-01	debris burning	5
2021-10-01	arson	1
2021-10-01	Other	9
2022-01-01	lightning	0
2022-01-01	campfire	1
2022-01-01	vehicle	0
2022-01-01	debris burning	3
2022-01-01	arson	0
2022-01-01	Other	1
2022-04-01	lightning	9
2022-04-01	campfire	7
2022-04-01	vehicle	2
2022-04-01	debris burning	2
2022-04-01	arson	0
2022-04-01	Other	1
2022-07-01	lightning	23
2022-07-01	campfire	7
2022-07-01	vehicle	8
2022-07-01	debris burning	5
2022-07-01	arson	6
2022-07-01	Other	3
2022-10-01	lightning	1
2022-10-01	campfire	7
2022-10-01	vehicle	3
2022-10-01	debris burning	5
2022-10-01	arson	3
2022-10-01	Other	9
2023-01-01	lightning	0
2023-01-01	campfire	1
2023-01-01	vehicle	0
2023-01-01	debris burning	2
2023-01-01	arson	2
2023-01-01	Other	0
2023-04-01	lightning	10
2023-04-01	campfire	4
2023-04-01	vehicle	4

period	series	value
2023-04-01	debris burning	2
2023-04-01	arson	4
2023-04-01	Other	7
2023-07-01	lightning	16
2023-07-01	campfire	9
2023-07-01	vehicle	6
2023-07-01	debris burning	4
2023-07-01	arson	10
2023-07-01	Other	3
2023-10-01	lightning	1
2023-10-01	campfire	9
2023-10-01	vehicle	6
2023-10-01	debris burning	2
2023-10-01	arson	5
2023-10-01	Other	11
2024-01-01	lightning	1
2024-01-01	campfire	0
2024-01-01	vehicle	1
2024-01-01	debris burning	0
2024-01-01	arson	0
2024-01-01	Other	2
2024-04-01	lightning	6
2024-04-01	campfire	6
2024-04-01	vehicle	6
2024-04-01	debris burning	3
2024-04-01	arson	3
2024-04-01	Other	12
2024-07-01	lightning	14
2024-07-01	campfire	17
2024-07-01	vehicle	4
2024-07-01	debris burning	5
2024-07-01	arson	5
2024-07-01	Other	3
2024-10-01	lightning	4
2024-10-01	campfire	6
2024-10-01	vehicle	1
2024-10-01	debris burning	6
2024-10-01	arson	2
2024-10-01	Other	13
2025-01-01	lightning	1
2025-01-01	campfire	1
2025-01-01	vehicle	0
2025-01-01	debris burning	1

period	series	value
2025-01-01	arson	2
2025-01-01	Other	2
2025-04-01	lightning	10
2025-04-01	campfire	7
2025-04-01	vehicle	6
2025-04-01	debris burning	3
2025-04-01	arson	3
2025-04-01	Other	6
2025-07-01	lightning	27
2025-07-01	campfire	10
2025-07-01	vehicle	7
2025-07-01	debris burning	5
2025-07-01	arson	6
2025-07-01	Other	6
2025-10-01	lightning	4
2025-10-01	campfire	4
2025-10-01	vehicle	5
2025-10-01	debris burning	1
2025-10-01	arson	2
2025-10-01	Other	8
2026-01-01	lightning	0
2026-01-01	campfire	0
2026-01-01	vehicle	2
2026-01-01	debris burning	0
2026-01-01	arson	0
2026-01-01	Other	0
2026-04-01	lightning	2
2026-04-01	campfire	6
2026-04-01	vehicle	3
2026-04-01	debris burning	5
2026-04-01	arson	0
2026-04-01	Other	4
2026-07-01	lightning	16
2026-07-01	campfire	11
2026-07-01	vehicle	11
2026-07-01	debris burning	6
2026-07-01	arson	6
2026-07-01	Other	7

Figure 38. Summarize within: Fire perimeters over time [92]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0

period	series	value
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0

period	series	value
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0

period	series	value
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 39. Summarize within: Fire perimeters over time [93]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0

period	series	value
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1

period	series	value
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0

period	series	value
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 40. Summarize within: Fire perimeters over time [94]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0

period	series	value
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0

period	series	value
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0

Figure 41. Repeat and near repeat classification: Ignitions over time [95]

period	series	value
2018-01-01	lightning	0
2018-01-01	campfire	1
2018-01-01	vehicle	0
2018-01-01	debris burning	0
2018-01-01	arson	0
2018-01-01	Other	0
2018-04-01	lightning	4
2018-04-01	campfire	7

period	series	value
2018-04-01	vehicle	1
2018-04-01	debris burning	3
2018-04-01	arson	1
2018-04-01	Other	2
2018-07-01	lightning	8
2018-07-01	campfire	7
2018-07-01	vehicle	4
2018-07-01	debris burning	5
2018-07-01	arson	7
2018-07-01	Other	2
2018-10-01	lightning	4
2018-10-01	campfire	4
2018-10-01	vehicle	2
2018-10-01	debris burning	1
2018-10-01	arson	3
2018-10-01	Other	8
2019-01-01	lightning	0
2019-01-01	campfire	1
2019-01-01	vehicle	0
2019-01-01	debris burning	2
2019-01-01	arson	1
2019-01-01	Other	1
2019-04-01	lightning	8
2019-04-01	campfire	7
2019-04-01	vehicle	3
2019-04-01	debris burning	3
2019-04-01	arson	1
2019-04-01	Other	4
2019-07-01	lightning	15
2019-07-01	campfire	1
2019-07-01	vehicle	7
2019-07-01	debris burning	5
2019-07-01	arson	7
2019-07-01	Other	4
2019-10-01	lightning	4
2019-10-01	campfire	4
2019-10-01	vehicle	1
2019-10-01	debris burning	4
2019-10-01	arson	1
2019-10-01	Other	2
2020-01-01	lightning	0
2020-01-01	campfire	1
2020-01-01	vehicle	0

period	series	value
2020-01-01	debris burning	0
2020-01-01	arson	1
2020-01-01	Other	0
2020-04-01	lightning	6
2020-04-01	campfire	1
2020-04-01	vehicle	3
2020-04-01	debris burning	4
2020-04-01	arson	3
2020-04-01	Other	4
2020-07-01	lightning	13
2020-07-01	campfire	9
2020-07-01	vehicle	4
2020-07-01	debris burning	1
2020-07-01	arson	6
2020-07-01	Other	5
2020-10-01	lightning	5
2020-10-01	campfire	3
2020-10-01	vehicle	5
2020-10-01	debris burning	4
2020-10-01	arson	2
2020-10-01	Other	3
2021-01-01	lightning	1
2021-01-01	campfire	0
2021-01-01	vehicle	0
2021-01-01	debris burning	0
2021-01-01	arson	0
2021-01-01	Other	0
2021-04-01	lightning	6
2021-04-01	campfire	8
2021-04-01	vehicle	0
2021-04-01	debris burning	5
2021-04-01	arson	3
2021-04-01	Other	5
2021-07-01	lightning	21
2021-07-01	campfire	8
2021-07-01	vehicle	4
2021-07-01	debris burning	8
2021-07-01	arson	3
2021-07-01	Other	3
2021-10-01	lightning	3
2021-10-01	campfire	11
2021-10-01	vehicle	3
2021-10-01	debris burning	5

period	series	value
2021-10-01	arson	1
2021-10-01	Other	9
2022-01-01	lightning	0
2022-01-01	campfire	1
2022-01-01	vehicle	0
2022-01-01	debris burning	3
2022-01-01	arson	0
2022-01-01	Other	1
2022-04-01	lightning	9
2022-04-01	campfire	7
2022-04-01	vehicle	2
2022-04-01	debris burning	2
2022-04-01	arson	0
2022-04-01	Other	1
2022-07-01	lightning	23
2022-07-01	campfire	7
2022-07-01	vehicle	8
2022-07-01	debris burning	5
2022-07-01	arson	6
2022-07-01	Other	3
2022-10-01	lightning	1
2022-10-01	campfire	7
2022-10-01	vehicle	3
2022-10-01	debris burning	5
2022-10-01	arson	3
2022-10-01	Other	9
2023-01-01	lightning	0
2023-01-01	campfire	1
2023-01-01	vehicle	0
2023-01-01	debris burning	2
2023-01-01	arson	2
2023-01-01	Other	0
2023-04-01	lightning	10
2023-04-01	campfire	4
2023-04-01	vehicle	4
2023-04-01	debris burning	2
2023-04-01	arson	4
2023-04-01	Other	7
2023-07-01	lightning	16
2023-07-01	campfire	9
2023-07-01	vehicle	6
2023-07-01	debris burning	4
2023-07-01	arson	10

period	series	value
2023-07-01	Other	3
2023-10-01	lightning	1
2023-10-01	campfire	9
2023-10-01	vehicle	6
2023-10-01	debris burning	2
2023-10-01	arson	5
2023-10-01	Other	11
2024-01-01	lightning	1
2024-01-01	campfire	0
2024-01-01	vehicle	1
2024-01-01	debris burning	0
2024-01-01	arson	0
2024-01-01	Other	2
2024-04-01	lightning	6
2024-04-01	campfire	6
2024-04-01	vehicle	6
2024-04-01	debris burning	3
2024-04-01	arson	3
2024-04-01	Other	12
2024-07-01	lightning	14
2024-07-01	campfire	17
2024-07-01	vehicle	4
2024-07-01	debris burning	5
2024-07-01	arson	5
2024-07-01	Other	3
2024-10-01	lightning	4
2024-10-01	campfire	6
2024-10-01	vehicle	1
2024-10-01	debris burning	6
2024-10-01	arson	2
2024-10-01	Other	13
2025-01-01	lightning	1
2025-01-01	campfire	1
2025-01-01	vehicle	0
2025-01-01	debris burning	1
2025-01-01	arson	2
2025-01-01	Other	2
2025-04-01	lightning	10
2025-04-01	campfire	7
2025-04-01	vehicle	6
2025-04-01	debris burning	3
2025-04-01	arson	3
2025-04-01	Other	6

period	series	value
2025-07-01	lightning	27
2025-07-01	campfire	10
2025-07-01	vehicle	7
2025-07-01	debris burning	5
2025-07-01	arson	6
2025-07-01	Other	6
2025-10-01	lightning	4
2025-10-01	campfire	4
2025-10-01	vehicle	5
2025-10-01	debris burning	1
2025-10-01	arson	2
2025-10-01	Other	8
2026-01-01	lightning	0
2026-01-01	campfire	0
2026-01-01	vehicle	2
2026-01-01	debris burning	0
2026-01-01	arson	0
2026-01-01	Other	0
2026-04-01	lightning	2
2026-04-01	campfire	6
2026-04-01	vehicle	3
2026-04-01	debris burning	5
2026-04-01	arson	0
2026-04-01	Other	4
2026-07-01	lightning	16
2026-07-01	campfire	11
2026-07-01	vehicle	11
2026-07-01	debris burning	6
2026-07-01	arson	6
2026-07-01	Other	7

Figure 42. Hot spot analysis: Fuel treatments over time [96]

period	series	value
2019-04-01	not_significant	1
2019-04-01	cold_90	0
2019-07-01	not_significant	0
2019-07-01	cold_90	0
2019-10-01	not_significant	0
2019-10-01	cold_90	0
2020-01-01	not_significant	1
2020-01-01	cold_90	0
2020-04-01	not_significant	1
2020-04-01	cold_90	0
2020-07-01	not_significant	0

period	series	value
2020-07-01	cold_90	0
2020-10-01	not_significant	0
2020-10-01	cold_90	0
2021-01-01	not_significant	0
2021-01-01	cold_90	0
2021-04-01	not_significant	0
2021-04-01	cold_90	0
2021-07-01	not_significant	2
2021-07-01	cold_90	0
2021-10-01	not_significant	0
2021-10-01	cold_90	0
2022-01-01	not_significant	0
2022-01-01	cold_90	0
2022-04-01	not_significant	1
2022-04-01	cold_90	0
2022-07-01	not_significant	0
2022-07-01	cold_90	0
2022-10-01	not_significant	1
2022-10-01	cold_90	0
2023-01-01	not_significant	1
2023-01-01	cold_90	0
2023-04-01	not_significant	1
2023-04-01	cold_90	0
2023-07-01	not_significant	0
2023-07-01	cold_90	0
2023-10-01	not_significant	0
2023-10-01	cold_90	0
2024-01-01	not_significant	0
2024-01-01	cold_90	0
2024-04-01	not_significant	1
2024-04-01	cold_90	0
2024-07-01	not_significant	0
2024-07-01	cold_90	0
2024-10-01	not_significant	1
2024-10-01	cold_90	0
2025-01-01	not_significant	0
2025-01-01	cold_90	1

Figure 43. Hot spot analysis: Fire perimeters over time [97]

period	series	value
2017-07-01	equipment	1
2017-07-01	human	0
2017-07-01	lightning	0
2017-10-01	equipment	0

period	series	value
2017-10-01	human	0
2017-10-01	lightning	0
2018-01-01	equipment	0
2018-01-01	human	0
2018-01-01	lightning	0
2018-04-01	equipment	0
2018-04-01	human	0
2018-04-01	lightning	0
2018-07-01	equipment	0
2018-07-01	human	1
2018-07-01	lightning	0
2018-10-01	equipment	0
2018-10-01	human	0
2018-10-01	lightning	0
2019-01-01	equipment	0
2019-01-01	human	0
2019-01-01	lightning	0
2019-04-01	equipment	0
2019-04-01	human	0
2019-04-01	lightning	0
2019-07-01	equipment	0
2019-07-01	human	0
2019-07-01	lightning	1
2019-10-01	equipment	0
2019-10-01	human	0
2019-10-01	lightning	0
2020-01-01	equipment	0
2020-01-01	human	0
2020-01-01	lightning	0
2020-04-01	equipment	0
2020-04-01	human	0
2020-04-01	lightning	0
2020-07-01	equipment	1
2020-07-01	human	0
2020-07-01	lightning	0
2020-10-01	equipment	0
2020-10-01	human	0
2020-10-01	lightning	0
2021-01-01	equipment	0
2021-01-01	human	0
2021-01-01	lightning	0
2021-04-01	equipment	0
2021-04-01	human	0

period	series	value
2021-04-01	lightning	0
2021-07-01	equipment	1
2021-07-01	human	0
2021-07-01	lightning	0
2021-10-01	equipment	0
2021-10-01	human	0
2021-10-01	lightning	0
2022-01-01	equipment	0
2022-01-01	human	0
2022-01-01	lightning	0
2022-04-01	equipment	0
2022-04-01	human	0
2022-04-01	lightning	0
2022-07-01	equipment	0
2022-07-01	human	1
2022-07-01	lightning	0
2022-10-01	equipment	0
2022-10-01	human	0
2022-10-01	lightning	0
2023-01-01	equipment	0
2023-01-01	human	0
2023-01-01	lightning	0
2023-04-01	equipment	0
2023-04-01	human	0
2023-04-01	lightning	0
2023-07-01	equipment	0
2023-07-01	human	1
2023-07-01	lightning	0
2023-10-01	equipment	0
2023-10-01	human	0
2023-10-01	lightning	0
2024-01-01	equipment	0
2024-01-01	human	0
2024-01-01	lightning	0
2024-04-01	equipment	0
2024-04-01	human	0
2024-04-01	lightning	0
2024-07-01	equipment	1
2024-07-01	human	0
2024-07-01	lightning	0
2024-10-01	equipment	0
2024-10-01	human	0
2024-10-01	lightning	0

period	series	value
2025-01-01	equipment	0
2025-01-01	human	0
2025-01-01	lightning	0
2025-04-01	equipment	0
2025-04-01	human	0
2025-04-01	lightning	0
2025-07-01	equipment	1
2025-07-01	human	0
2025-07-01	lightning	0
2025-10-01	equipment	0
2025-10-01	human	0
2025-10-01	lightning	0
2026-01-01	equipment	0
2026-01-01	human	0
2026-01-01	lightning	0
2026-04-01	equipment	0
2026-04-01	human	0
2026-04-01	lightning	0
2026-07-01	equipment	1
2026-07-01	human	0
2026-07-01	lightning	0