



Date: October 9, 2017

Regarding: **Metal Theft Claims from January 1, 2014 through December 31, 2016**

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This *ForeCAST*SM report analyzes copper, bronze, brass, and aluminum theft claims identified in Insurance Services Office (ISO) ClaimSearch from January 1, 2014 to December 31, 2016 in order to identify any trends or patterns that may exist in the data.

Executive Summary

There were a total of 28,040 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2014 and December 31, 2016. Of the 28,040 total claims, the vast majority (98%) pertained to the theft of copper. Of these claims, 65% were on personal policies, while 35% were on commercial policies. When the number of metal theft claims and copper prices are compared, a statistically significant positive correlation was found to exist¹. It should be noted that the price of copper began to climb again beginning in November 2016 and was approaching an average of \$3 per pound by August 2017².

While the number of metal theft claims was increasing from 2006 through 2011, in 2012 the number of claims leveled off, and from 2014 through 2016 has been decreasing. In the prior years, the number of claims was seen to decrease in summer months, and increase in winter months, with spikes in claims in January and October; however the current trend for 2015 and 2016 appears to be a general decrease over the year with a slight increase observed in October.

Ohio was identified as the loss state with the most metal theft claims in ISO ClaimSearch, with 15% more claims than New Jersey, the state with the 2nd largest number of claims. Connecticut had the highest rate of claims per capita while it only ranked 8th in number of claims.

The New York-Newark-Jersey City, NY-NJ-PA Core Based Statistical Area (CBSA)³ ranked 1st in ISO ClaimSearch metal theft claims from 2014 through 2016.

Metal Theft Overview

Law enforcement agencies across the country and around the globe started seeing increased numbers of thefts of metals such as copper, bronze, brass, and aluminum in the years leading up to the recent economic downturn. Copper prices were at record highs, increasing the attractiveness of the metal as a target for theft. Thieves have been willing to go to almost any length to obtain the metal. They have stripped sheets of metal from building rooftops, stolen memorial decorations from cemeteries, ripped apart air conditioners for the copper coils within, and stripped homes and buildings of wiring and piping. Construction sites are frequent victims because metal is often left on-site unguarded and relatively unsecured. Farm equipment such as irrigation pipes and fixtures are also targeted. The thieves can endanger the safety of themselves and those in the surrounding community, and weaken the infrastructure vital to our everyday lives. Unoccupied buildings have exploded due to gas lines being stolen. Stretches of highway have been left dark and tornado warning

¹ The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .902 (significant at the .01 level).

² The average price of copper was observed at \$2.96 according to <http://www.iwgcopper.com/price-history>.

³ Core Based Statistical Areas (CBSAs) are defined by the United States Office of Management and Budget. CBSAs consist of a core urban area with a population of at least 10,000 and the surrounding communities that have strong economic and social ties to the core area.

sirens have been rendered inoperable due to wiring being stolen. Thieves have removed wiring from traffic and railway signals and even posed as utility workers in order to remove large sections of thick utility cable from the sewers beneath city streets. Electrical substations are frequently targeted and some thieves have been electrocuted trying to steal live electrical wiring.

The damage caused by such thefts is often several times the value of the metal stolen, leaving the victims with hefty repair costs which are then often passed on to insurance companies. The U.S. Department of Energy has estimated that metal theft costs U.S. businesses around \$1 billion a year⁴. Some states and cities have taken measures to combat metal theft, such as requiring scrap yards to check identification of any individual who sells them scrap metal, note the license plate of the vehicle used to transport the metal, maintain the information on file, pay the seller with check instead of cash, or retain the scrap metal for a designated amount of time to allow law enforcement an opportunity to identify stolen materials before it is recycled. However, identifying stolen metal is not always possible and opposition to these laws has made it difficult to get effective measures passed in some areas. Even in areas where such laws exist, some unscrupulous scrap dealers may not abide by them and enforcement of the laws has not always been a major priority until recent years when increases in metal thefts brought more attention to the problem. Some states and local governments have increased the penalties associated with metal theft or are charging thieves with additional crimes if the theft caused damage to infrastructure or created a hazard to the public. On the federal level, a bill was introduced to Congress in 2013 that would make certain cases of metal theft a federal crime, such as thefts that affect infrastructure, and incorporates some of the approaches just mentioned, but it has not been passed.

Metal Theft Claims in ISO ClaimSearch

This section of the report analyzes the claims identified in ISO ClaimSearch as involving the theft of copper, aluminum, brass, or bronze. ISO ClaimSearch is a database designed to help insurers, self-insurers, law enforcement agencies, and state fraud bureaus detect and prevent fraud, evaluate risk, and process meritorious claims by providing a central repository of claims. Insurers and agencies with access can query this database to research prior loss histories, identify claims patterns, and detect suspect claims.

A total of 28,040 claims for the theft of copper, bronze, brass, or aluminum were identified in ISO ClaimSearch between January 1, 2014 and December 31, 2016⁵. Of the 28,040 total claims, 27,450 (98%) related to copper, 443 (2%) to aluminum, 134 (<1%) to brass, and 101 (<1%) to bronze⁶. There were 9,730 claims on commercial policies (35%), while 18,306 (65%) were on personal policies⁷.

⁴ (US Dept. of Energy, 2007)

⁵ There is no exact method for extracting metal theft claims from ISO ClaimSearch. For this report, a claim was determined to be a metal theft claim if the loss description for the claim contained “cop”, “brass”, “bronz”, or “alum”, as well as either: a) one of the terms “stole”, “theft”, “thief”, “thieves”, “theif”, “theives”, “took”, “steal”, “robber”, “robbed”, “miss”, “cut”, “rip”, “break”, “broke”, “tore”, “gone”, “remov”, “burg”, or “vand” is in the loss description; or b) the loss type is theft, burglary, or vandalism related. Policy and loss types that were found to be likely to include unrelated claims were examined and cleaned of false positives, as well as claims that contained terms found to likely result in false positives, e.g. “Copperas Cove” or “Copperate”.

⁶ Some claims contained more than one of the metal terms.

⁷ 4 claims listed policy types that could not be identified as either commercial or personal in nature.

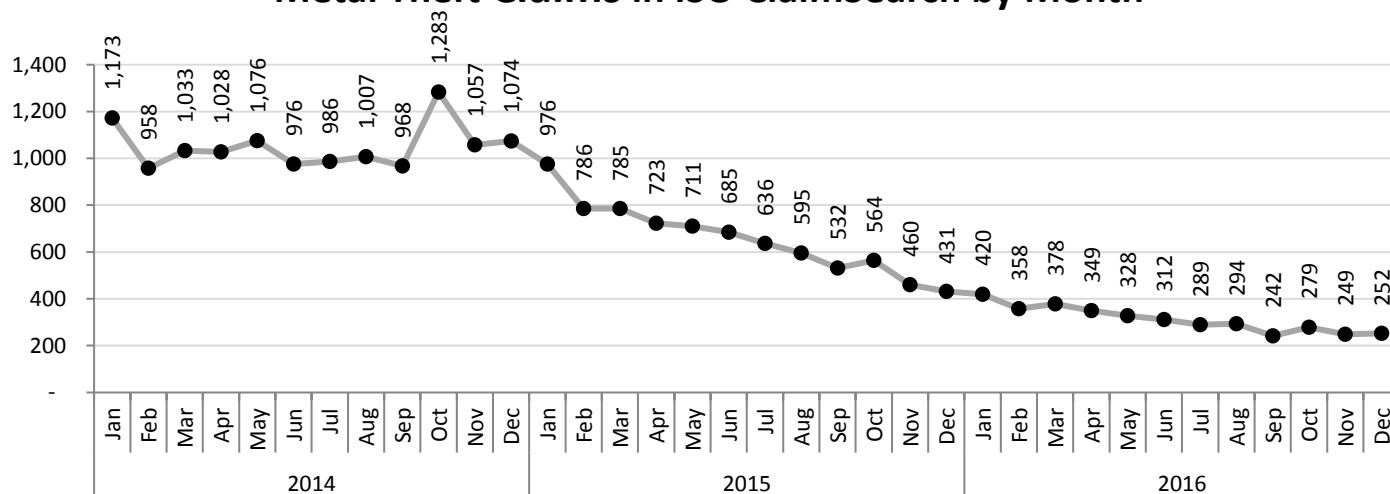
The following tables show the number of claims containing common keywords identified in the data⁸ and the number of claims relating to each metal:

Common Keywords	2014-2016 Claims
“pipe” or “piping”	5,693
“wire” or “wiring”	3,193
“plumbing”	4,964
“a/c” or “ac” or “air cond” or “hvac”	3,356
“line”	1,493
“tube” or “tubing”	275
“coil”	270
“gutter” or “spout”	190
“roof”	211

Metal Type	2014-2016 Claims
Copper	27,450
Aluminum	443
Brass	134
Bronze	101

The following chart shows the number of metal theft claims that occurred per month from January 1, 2014 through December 31, 2016. It should be noted that there is often a delay before claims are entered into ISO ClaimSearch⁹. Claims that occurred in 2016 and earlier but were entered in the 1st quarter 2017 are included in the following chart to minimize the impact of these delays, however some months may still be underrepresented in the data, particularly the final months.

Metal Theft Claims in ISO ClaimSearch by Month

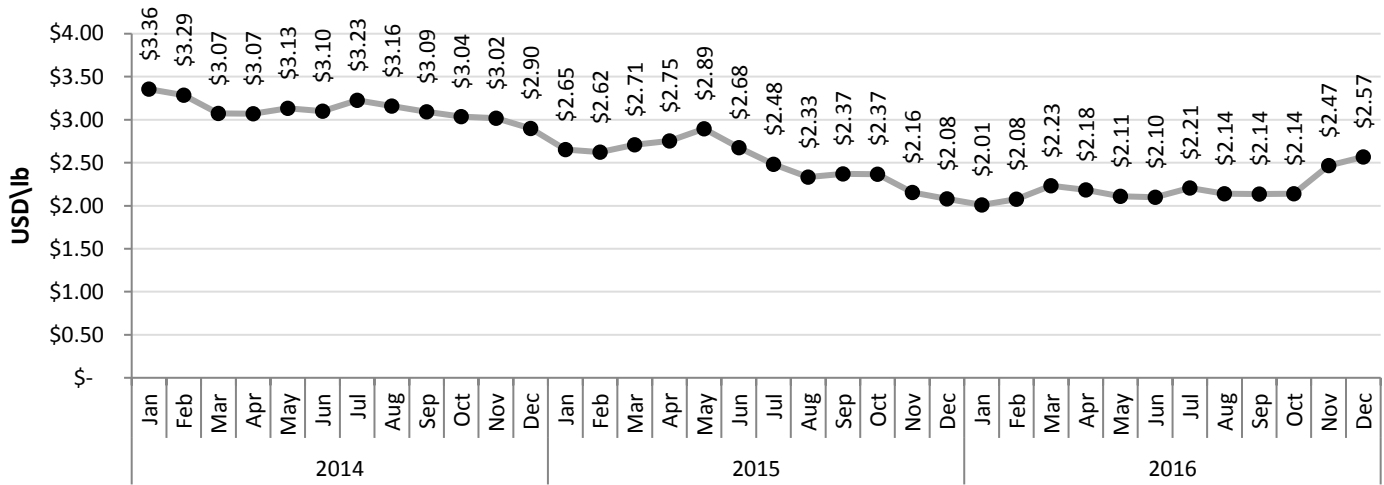


⁸ Some claims may contain more than one of the keywords identified, while others may not contain any.

⁹ Note: There was an average delay of 133 days between a claim occurring and it being entered into ISO ClaimSearch, therefore the last months of the data are likely underreported. Of the metal thefts reported between 1/1/2014 and 3/31/2017, 3,787 had dates of loss prior to 1/1/2014 and were not included in the graph.

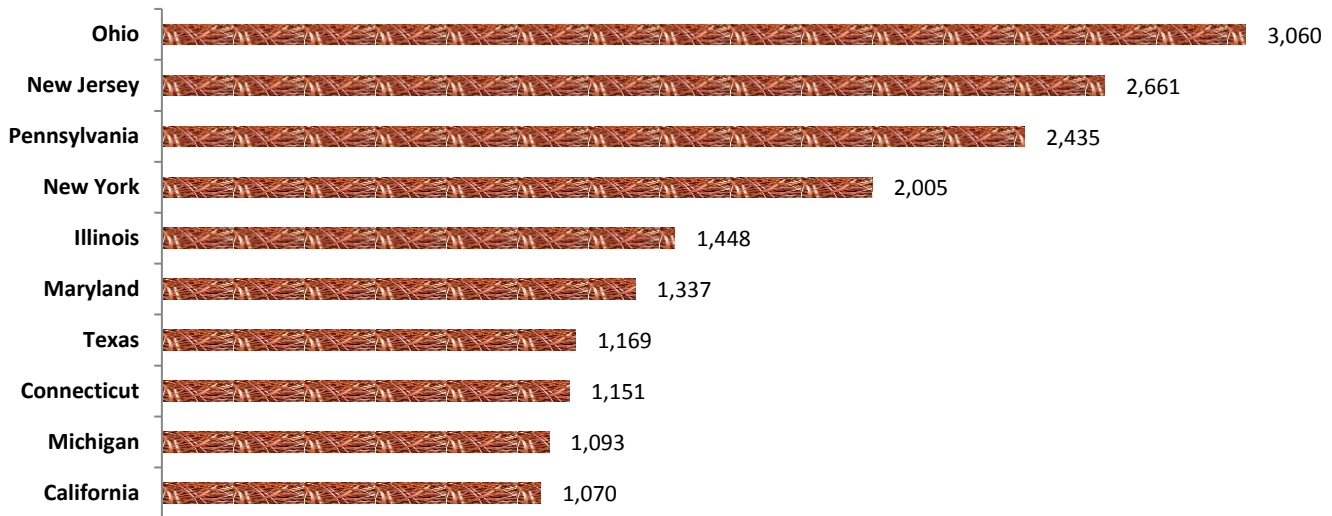
When compared with the graph of copper prices for the same time period a statistically significant positive correlation between metal prices and the number of metal theft claims was found to exist¹⁰.

COMEX Copper Price Monthly Averages



The following charts show the 10 loss states associated with the most metal theft claims in ISO ClaimSearch, both by simple number of claims and by number of claims per 100,000 residents¹¹:

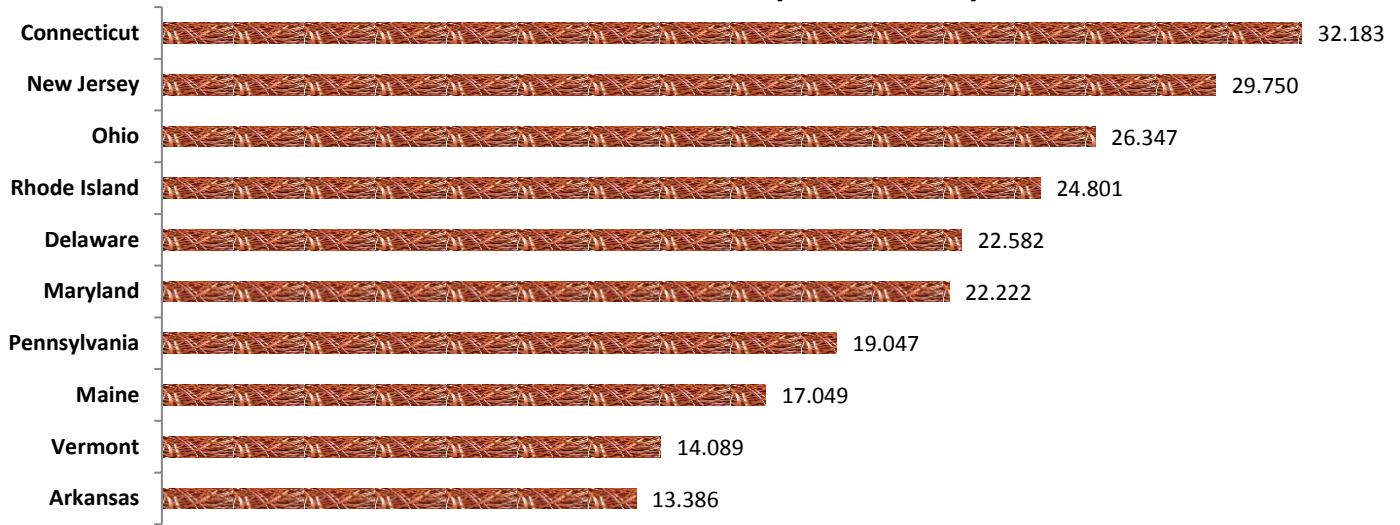
Ten States with Most Metal Theft Claims in ISO ClaimSearch (2014-2016)



¹⁰ Copper price data was obtained from <http://www.iwgcopper.com/price-history>. The Pearson’s correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .902 (significant at the .01 level).

¹¹ Note: 18 claims either did not have the loss state field populated, or it was populated with invalid entries / locations outside the US.

Ten States with Most Metal Theft Claims in ISO ClaimSearch Per 100,000 Residents (2014-2016)



Ohio was the state with the greatest number of metal theft claims in ISO ClaimSearch, followed by New Jersey and Pennsylvania. When ranked by claims per 100,000 residents, Connecticut was found to be the top state followed by New Jersey and Ohio ranked 2nd and 3rd respectively. Ohio, New Jersey, Pennsylvania, Maryland, and Connecticut appear in both charts.

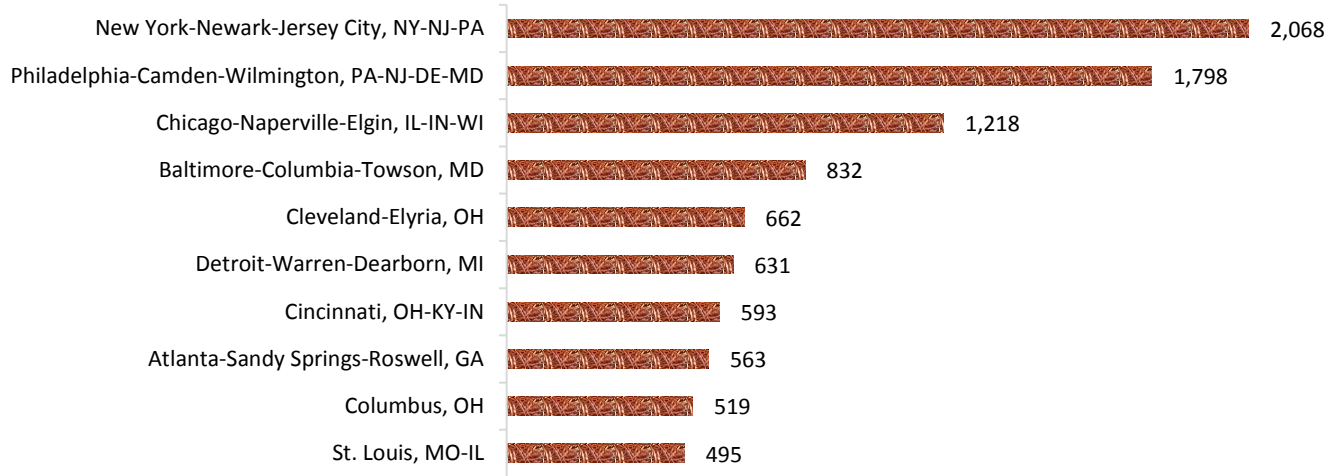
The following table, in alphabetical order by state, shows the number of claims per state for all 50 states and the District of Columbia, as well as the number of claims per 100,000 residents. Maps are available in the appendices displaying the number of metal theft claims by state and by claims per 100,000 residents.

State	Population ¹²	Claims	Claims / 100,000 Residents	Rank by Number of Claims	Rank by Claims / 100,000 Residents
Alabama	4,863,300	408	8.389	17	20
Alaska	741,894	6	0.809	49	46
Arizona	6,931,071	239	3.448	26	38
Arkansas	2,988,248	400	13.386	18	10
California	39,250,017	1,070	2.726	10	42
Colorado	5,540,545	157	2.834	34	41
Connecticut	3,576,452	1,151	32.183	8	1
Delaware	952,065	215	22.582	30	5
District of Columbia	681,170	82	12.038	42	13
Florida	20,612,439	798	3.871	13	35
Georgia	10,310,371	843	8.176	12	24
Hawaii	1,428,557	10	0.700	47	48
Idaho	1,683,140	15	0.891	45	45
Illinois	12,801,539	1,448	11.311	5	14
Indiana	6,633,053	596	8.985	16	19
Iowa	3,134,693	149	4.753	36	30
Kansas	2,907,289	184	6.329	33	26
Kentucky	4,436,974	365	8.226	20	23
Louisiana	4,681,666	144	3.076	37	40
Maine	1,331,479	227	17.049	28 (tie)	8
Maryland	6,016,447	1,337	22.222	6	6
Massachusetts	6,811,779	858	12.596	11	12
Michigan	9,928,300	1,093	11.009	9	15
Minnesota	5,519,952	210	3.804	31	36
Mississippi	2,988,726	93	3.112	40	39
Missouri	6,093,000	772	12.670	15	11
Montana	1,042,520	7	0.671	48	49
Nebraska	1,907,116	98	5.139	39	28
Nevada	2,940,058	301	10.238	22	16
New Hampshire	1,334,795	111	8.316	38	22
New Jersey	8,944,469	2,661	29.750	2	2
New Mexico	2,081,015	189	9.082	32	18
New York	19,745,289	2,005	10.154	4	17
North Carolina	10,146,788	791	7.796	14	25
North Dakota	757,952	13	1.715	46	44
Ohio	11,614,373	3,060	26.347	1	3
Oklahoma	3,923,561	236	6.015	27	27
Oregon	4,093,465	32	0.782	44	47
Pennsylvania	12,784,227	2,435	19.047	3	7
Rhode Island	1,056,426	262	24.801	24	4
South Carolina	4,961,119	227	4.576	28 (tie)	32
South Dakota	865,454	5	0.578	50	50
Tennessee	6,651,194	331	4.977	21	29
Texas	27,862,596	1,169	4.196	7	34
Utah	3,051,217	66	2.163	43	43
Vermont	624,594	88	14.089	41	9
Virginia	8,411,808	398	4.731	19	31
Washington	7,288,000	265	3.636	23	37
West Virginia	1,831,102	153	8.356	35	21
Wisconsin	5,778,708	246	4.257	25	33
Wyoming	585,501	3	0.512	51	51

¹² US Census Bureau - Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2016

The following chart shows the 10 CBSAs with the most metal theft claims in ISO ClaimSearch¹³:

Ten CBSAs with Most Metal Theft Claims in ISO ClaimSearch (2014-2016)



The New York-Newark-Jersey City, NY-NJ-PA CBSA had the largest number of metal theft claims from 2014-2016, followed by the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD and Chicago-Naperville-Elgin, IL-IN-WI CBSAs. A map is available displaying the number of metal theft claims by CBSA in the appendices.

¹³ Note: 2,051 metal theft claims, 7% of the total number, did not provide sufficient information to be included in a CBSA.

Conclusions

There were a total of 28,040 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2014 and December 31, 2016. Of the 28,040 total claims, the vast majority (98%) pertained to the theft of copper. Of these claims, 65% were on personal policies, while 35% were on commercial policies. When the number of metal theft claims and copper prices are compared, a statistically significant positive correlation was found to exist¹⁴.

While the number of metal theft claims was increasing from 2006 through 2011, in 2012 the number of claims leveled off, and from 2014 through 2016 has been decreasing. In general, the number of metal theft claims was seen to decrease throughout the last two years with a slight increase in observed in October. The recent increase of copper prices beginning in November 2016 and resulting in an observed average of \$2.96/lbs in August 2017¹⁵ may affect the number of metal theft claims in 2017.

Ohio was identified as the loss state with the most metal theft claims in ISO ClaimSearch, with 15% more claims than New Jersey, the state with the 2nd largest number of claims. Connecticut had the highest rate of claims per capita.

The New York-Newark-Jersey City, NY-NJ-PA Core Based Statistical Area (CBSA) ranked 1st in ISO ClaimSearch metal theft claims from 2014 through 2016.

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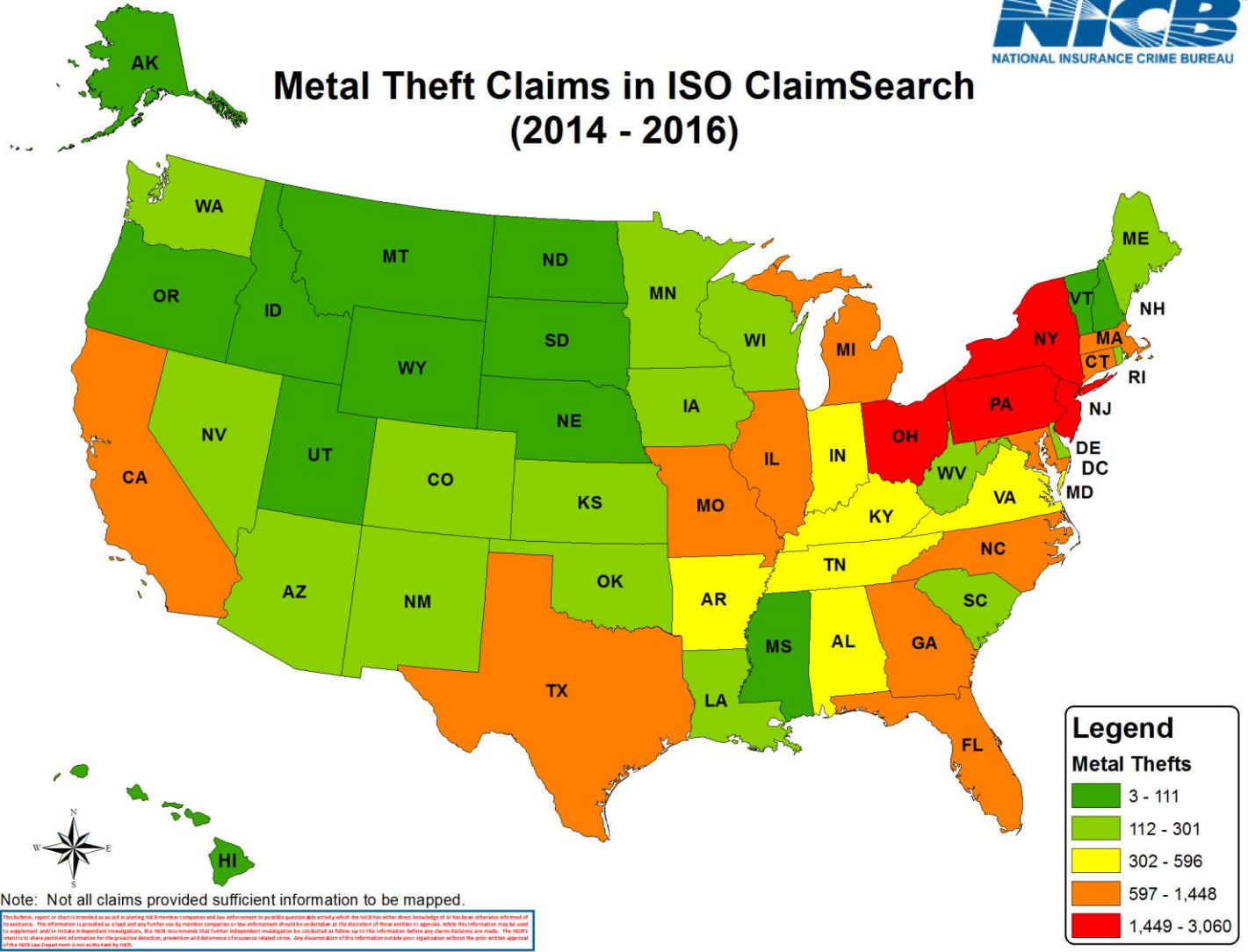
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Appendix

The below map displays the number of ISO ClaimSearch metal theft claims by state between 2014 and 2016.

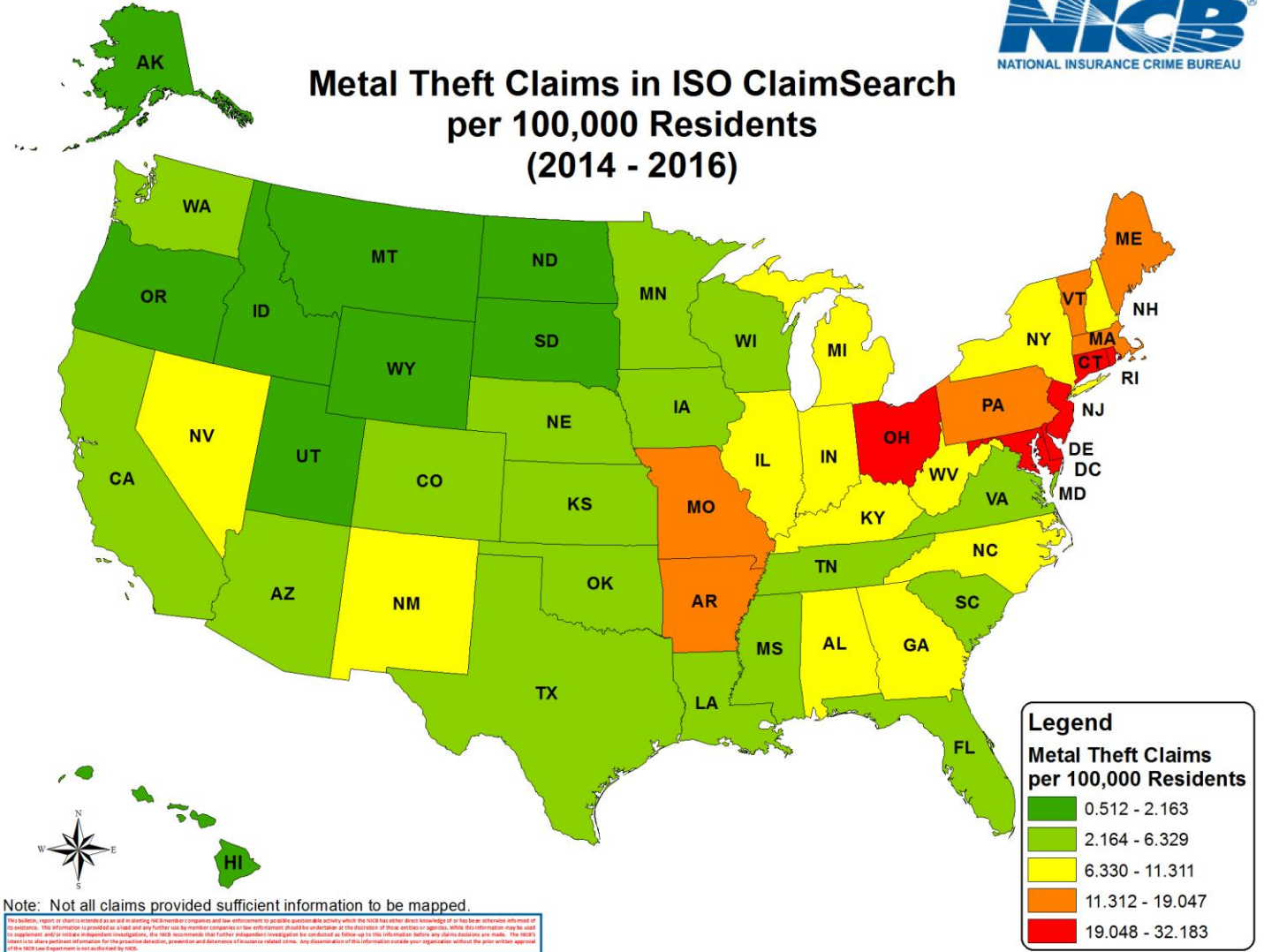


Metal Theft Claims in ISO ClaimSearch (2014 - 2016)



The following map displays the number of ISO ClaimSearch metal theft claims per 100,000 residents by state between 2014 and 2016.

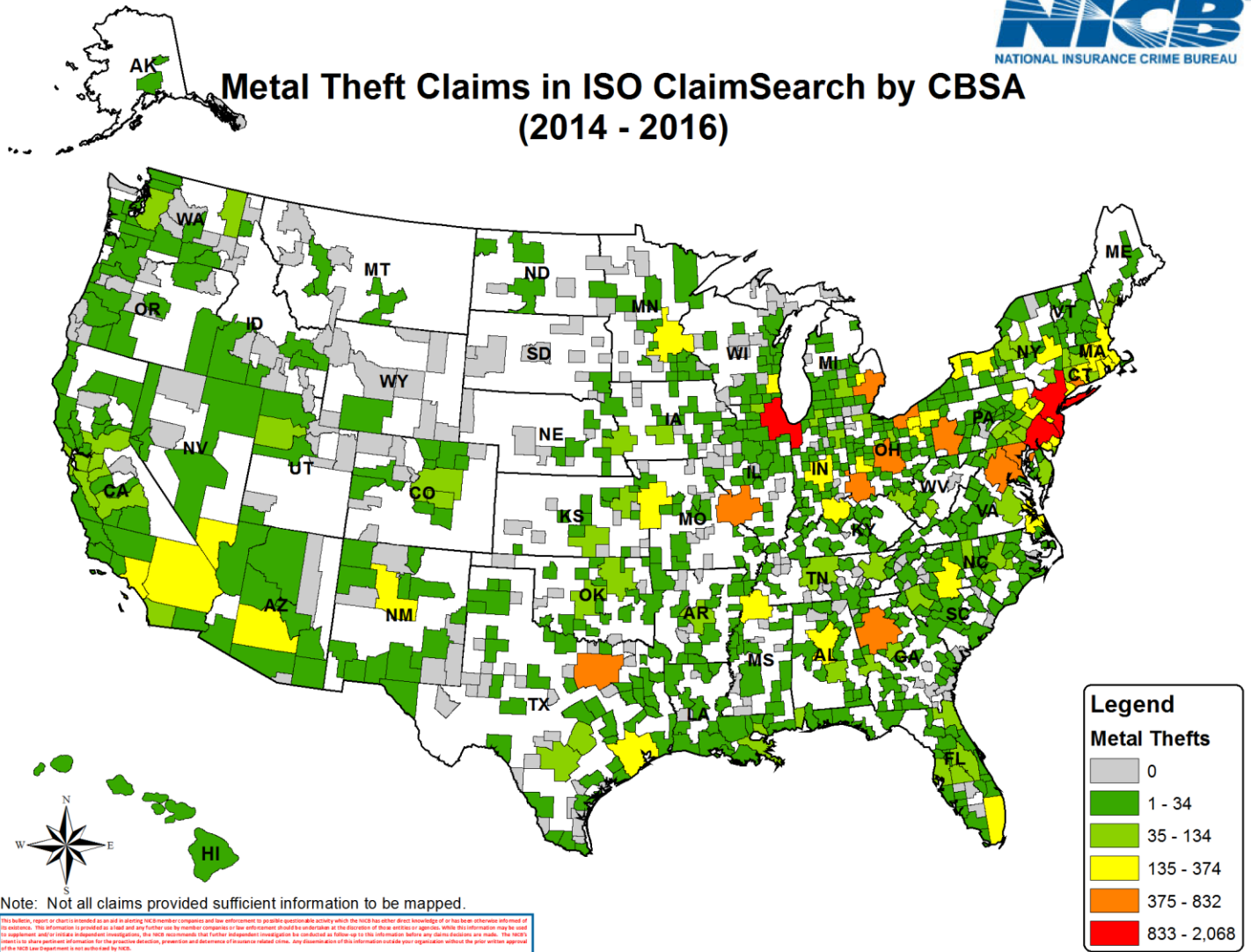
Metal Theft Claims in ISO ClaimSearch per 100,000 Residents (2014 - 2016)



Note: Not all claims provided sufficient information to be mapped.
This bulletin, report or chart is intended as an aid in assisting claimant companies and law enforcement to possible questionable activity which the NICB has either direct knowledge of or has been otherwise informed of or advised. This information is provided as a guide and any further use by member companies or law enforcement should be undertaken at the discretion of those entities or agencies. While this information may be used to supplement and/or initiate independent investigations, the NICB recommends that further independent investigation be conducted as follow-up to this information before any claims decisions are made. The NICB does not share product information for the purpose of detection, prevention and deterrence of insurance-related crime. Any dissemination of this information outside your organization without the prior written approval of the NICB law department may result in a lawsuit by NICB.

The below map displays the number of ISO ClaimSearch metal theft claims by CBSA between 2014 and 2016.

Metal Theft Claims in ISO ClaimSearch by CBSA (2014 - 2016)



Bibliography

International Wire Group. (2017). Price History. Retrieved August 25, 2017 from <http://www.iwgcopper.com/price-history>

U.S. Census Bureau. (2017). Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2016. Retrieved April 18, 2017 from http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2015_PEPA_NNRES&src=pt

U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability. (2007). An Assessment of Copper Wire Thefts from Electric Utilities. Retrieved January 20, 2012 from <http://www.oe.netl.doe.gov/docs/copper042707.pdf>

Metal Theft Resources

- <http://stopmetalstheft.org/> or <http://www.isri.org/stop-metals-theft>

Institute of Scrap Recycling Industries website that has information and tools for law enforcement, prosecutors, recyclers, and legislators; including a database of state laws related to metal theft.

- <http://www.scraptheftalert.com/>

Institute of Scrap Recycling Industries website that "is a tool for law enforcement that allows you to alert the scrap industry of significant thefts of materials in the United States and Canada. Upon validation and review, alerts you post are broadcast by email to all subscribed users within a 100 mile radius of where the incident occurred."

- http://www.popcenter.org/problems/metal_theft/1

Center for Problem-Oriented Policing webpage with information on metal theft and possible responses to reduce its occurrence.

- https://www.nicb.org/our_departments/data-analytics/webcasts/metal-theft

NICB webcast on metal theft posted in 2013. ***Requires log-in with nicb.org account*