



Date: November 1, 2016

Regarding: **Metal Theft Claims from January 1, 2013 through December 31, 2015**

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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, 2013 to December 31, 2015 in order to identify any trends or patterns that may exist in the data.

Executive Summary

There were a total of 35,961 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2013 and December 31, 2015. Of the 35,961 total claims, the vast majority (98%) pertained to the theft of copper. Of these claims, 58% were on personal policies, while 42% 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.

While the number of metal theft claims was increasing from 2006 through 2011, in 2012 the number of claims leveled off, and from 2013 through 2015 has been decreasing. In general, the number of claims was seen to decrease in summer months, and increase in winter months, with spikes in claims in January and October.

Ohio was identified as the loss state with the most metal theft claims in ISO ClaimSearch, with 44% more claims than Pennsylvania, the state with the 2nd largest number of claims. Ohio also had the highest rate of claims per capita.

The New York-Newark-Jersey City, NY-NJ-PA Core Based Statistical Area (CBSA)² ranked 1st in ISO ClaimSearch metal theft claims from 2013 through 2015.

¹ The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .879 (significant at the .01 level).

² 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.

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 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 year³. 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.

³ (US Dept. of Energy, 2007)

Metal Theft Claims in ISO ClaimSearch

This 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 other agencies with access can query this database to research prior loss histories, identify claims patterns, and detect suspect claims.

A total of 35,961 claims for the theft of copper, bronze, brass, or aluminum were identified in ISO ClaimSearch between January 1, 2013 and December 31, 2015⁴. Of the 35,961 total claims, 35,134 (98%) related to copper, 599 (2%) to aluminum, 193 (<1%) to brass, and 162 (<1%) to bronze⁵. There were 15,056 claims on commercial policies (42%), while 20,898 (58%) were on personal policies⁶.

The following tables show the number of claims containing common keywords identified in the data⁷ and the number of claims relating to each metal:

Common Keywords	2013-2015 Claims
"pipe" or "piping"	8,024
"wire" or "wiring"	5,203
"plumbing"	5,984
"a/c" or "ac" or "air cond" or "hvac"	5,062
"line"	1,804
"tube" or "tubing"	444
"coil"	344
"gutter" or "spout"	338
"roof"	324

Metal Type	2013-2015 Claims
Copper	35,134
Aluminum	599
Brass	193
Bronze	162

⁴ 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".

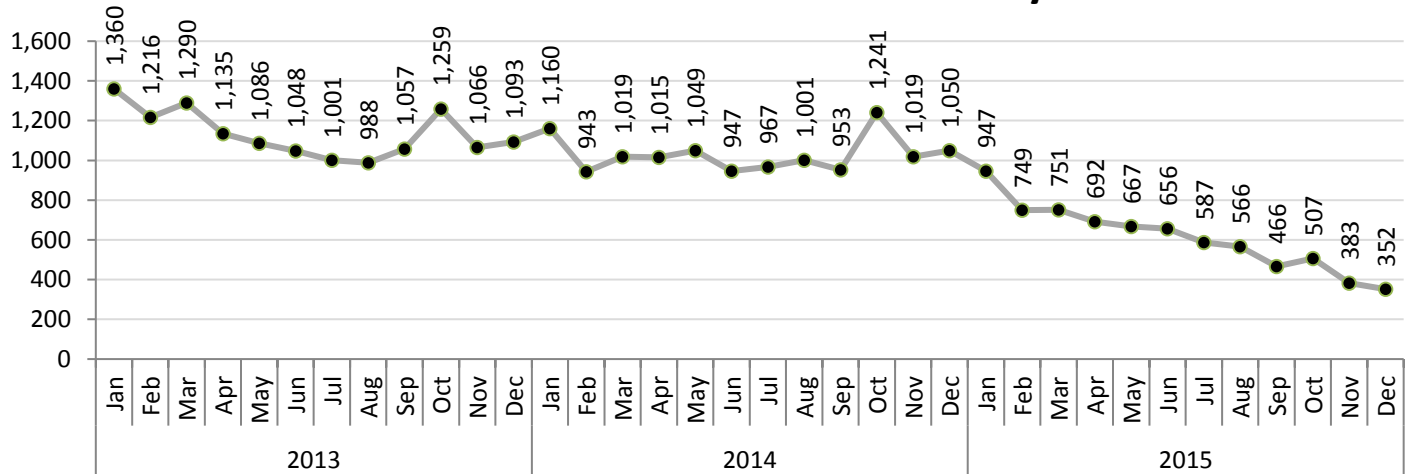
⁵ Some claims contained more than one of the metal terms.

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

⁷ Some claims may contain more than one of the keywords identified, while others may not contain any.

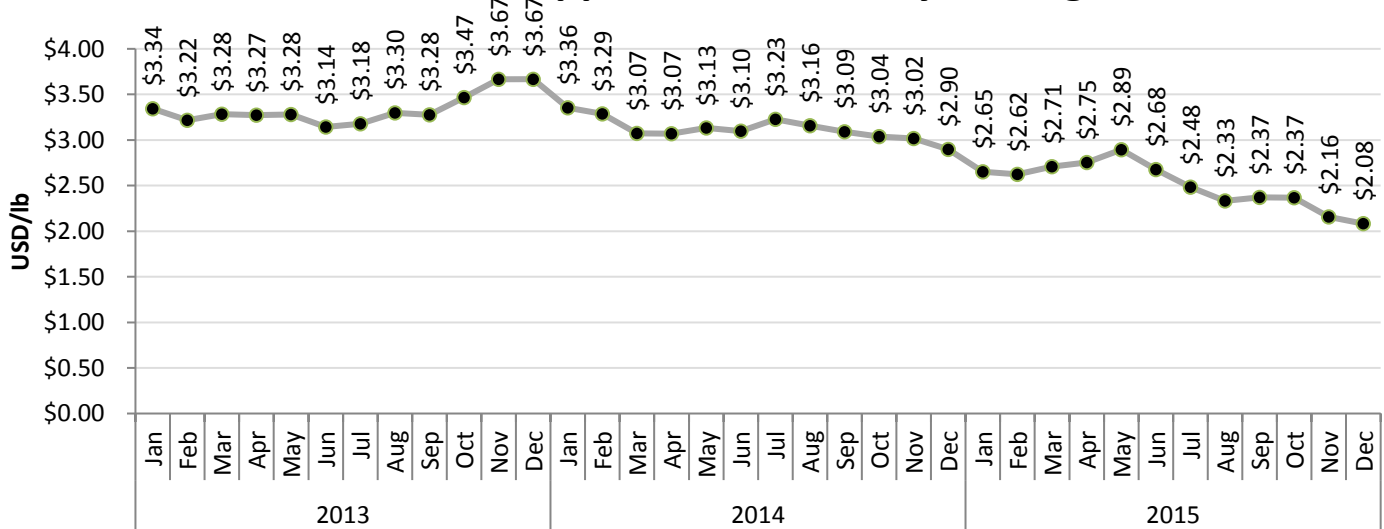
The following chart shows the number of metal theft claims that occurred per month from January 1, 2013 through December 31, 2015. It should be noted that there is often a delay before claims are entered into ISO ClaimSearch⁸. Claims that occurred in 2015 and earlier but were entered in the 1st quarter 2016 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



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 exist⁹.

COMEX Copper Price Monthly Averages

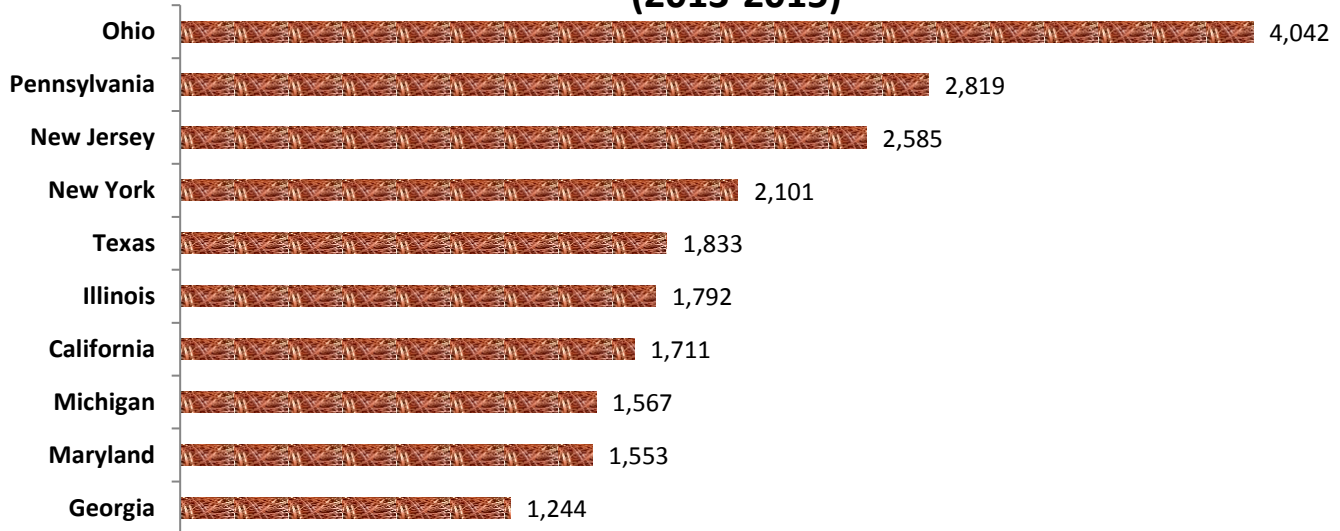


⁸ Note: There was an average delay of 128 days between a claim occurring and it being entered into ISO ClaimSearch, therefore the last months of the data are likely underreported. Of the metal thefts reported between 1/1/2013 and 3/31/2016, 3,567 had dates of loss prior to 1/1/2013 and were not included in the graph.

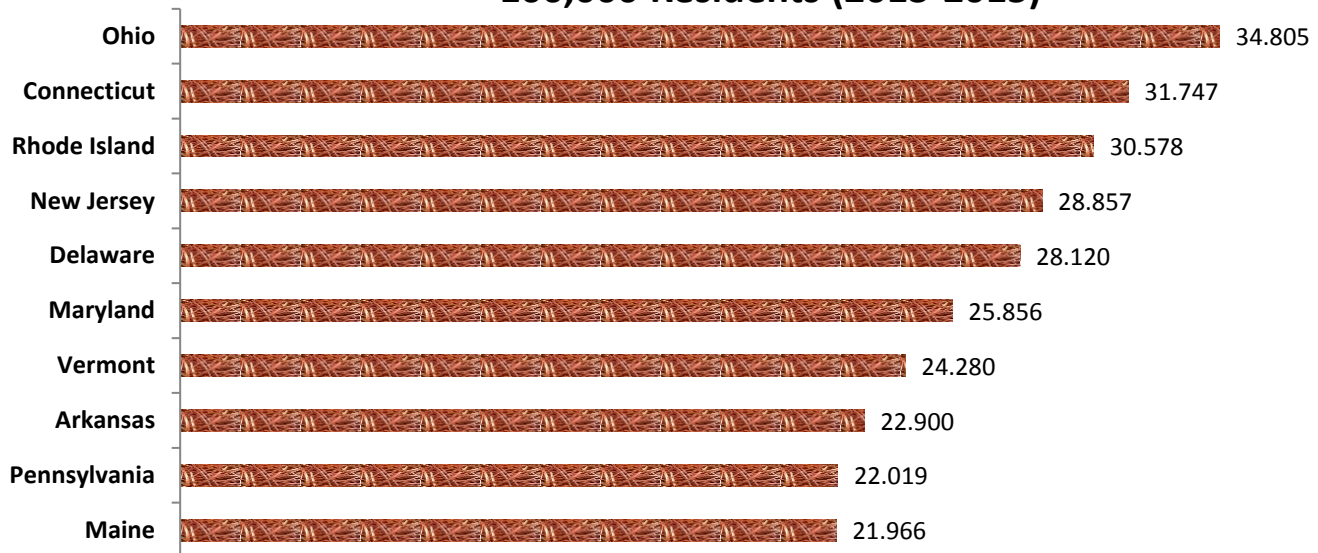
⁹ Copper price data was obtained from <http://www.iwgcopper.com/price-history>. The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .879 (significant at the .01 level).

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 residents¹⁰:

Ten States with Most Metal Theft Claims in ISO ClaimSearch (2013-2015)



Ten States with Most Metal Theft Claims in ISO ClaimSearch Per 100,000 Residents (2013-2015)



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

¹⁰ Note: 22 claims either did not have the loss state field populated, or it was populated with invalid entries / locations outside the US.

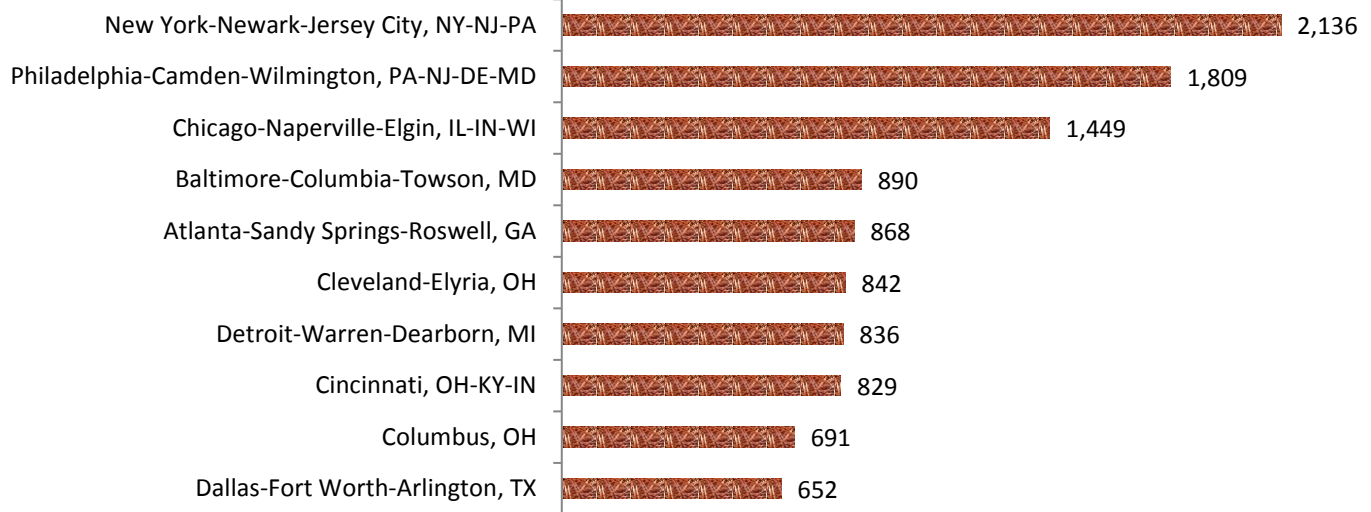
The following table, in alphabetical order by state, shows the number of claims per state for all 50 states and the District of Columbia, as well as the number of claims per 100,000 residents:

State	Population ¹¹	Claims	Claims / 100,000 Residents	Rank by Number of Claims	Rank by Claims / 100,000 Residents
Alabama	4,858,979	555	11.422	18	23
Alaska	738,432	5	0.677	49 (tie)	50
Arizona	6,828,065	467	6.839	22	32
Arkansas	2,978,204	682	22.900	17	8
California	39,144,818	1711	4.371	7	41
Colorado	5,456,574	239	4.380	34	40
Connecticut	3,590,886	1140	31.747	12	2
Delaware	945,934	266	28.120	32	5
District of Columbia	672,228	95	14.132	42	13
Florida	20,271,272	1091	5.382	13	36
Georgia	10,214,860	1244	12.178	10	19
Hawaii	1,431,603	18	1.257	46	46
Idaho	1,654,930	23	1.390	45	45
Illinois	12,859,995	1792	13.935	6	15
Indiana	6,619,680	826	12.478	16	17
Iowa	3,123,899	233	7.459	35	30
Kansas	2,911,641	275	9.445	31	26
Kentucky	4,425,092	527	11.909	20	20
Louisiana	4,670,724	213	4.560	36	39
Maine	1,329,328	292	21.966	29	10
Maryland	6,006,401	1553	25.856	9	6
Massachusetts	6,794,422	953	14.026	15	14
Michigan	9,922,576	1567	15.792	8	12
Minnesota	5,489,594	291	5.301	30	37
Mississippi	2,992,333	129	4.311	41	42
Missouri	6,083,672	1017	16.717	14	11
Montana	1,032,949	7	0.678	48	49
Nebraska	1,896,190	162	8.543	38	27
Nevada	2,890,845	395	13.664	23	16
New Hampshire	1,330,608	156	11.724	39	21
New Jersey	8,958,013	2585	28.857	3	4
New Mexico	2,085,109	254	12.182	33	18
New York	19,795,791	2101	10.613	4	24
North Carolina	10,042,802	1165	11.600	11	22
North Dakota	756,927	11	1.453	47	44
Ohio	11,613,423	4042	34.805	1	1
Oklahoma	3,911,338	326	8.335	26	28
Oregon	4,028,977	48	1.191	44	47
Pennsylvania	12,802,503	2819	22.019	2	9
Rhode Island	1,056,298	323	30.578	27	3
South Carolina	4,896,146	349	7.128	24	31
South Dakota	858,469	5	0.582	49 (tie)	51
Tennessee	6,600,299	519	7.863	21	29
Texas	27,469,114	1833	6.673	5	33
Utah	2,995,919	93	3.104	43	43
Vermont	626,042	152	24.280	40	7
Virginia	8,382,993	528	6.298	19	34
Washington	7,170,351	342	4.770	25	38
West Virginia	1,844,128	195	10.574	37	25
Wisconsin	5,771,337	321	5.562	28	35
Wyoming	586,107	4	0.682	51	48

¹¹ US Census Bureau - Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2015

The following chart shows the 10 CBSAs with the most metal theft claims in ISO ClaimSearch¹²:

Ten CBSAs with Most Metal Theft Claims in ISO ClaimSearch (2013-2015)



The New York-Newark-Jersey City, NY-NJ-PA CBSA has the largest number of metal theft claims from 2013-2015, followed by the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD and Chicago-Naperville-Elgin, IL-IN-WI CBSAs.

¹² Note: 3,179 metal theft claims, 9% of the total number, either did not list a loss city or listed one that is not included in a CBSA.

Conclusions

There were a total of 35,961 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2013 and December 31, 2015. Of the 35,961 total claims, the vast majority (98%) pertained to the theft of copper. Of these claims, 58% were on personal policies, while 42% were on commercial policies. When the number of metal theft claims and copper prices are compared, a statistically significant positive correlation was found to exist¹³.

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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*