Treasure for the Taking

America Gives Away Billions' Worth of Hardrock Minerals

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RANKING MEMBER, PETER DeFAZIO

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Mining companies, many of them foreign-owned, take billions of dollars' worth of gold, silver and other hardrock minerals from America's public lands every year—free of charge. They are able to do this because of the anachronistic General Mining Act of 1872, which was originally passed to help settle the West. The law allows companies to freely prospect for hardrock minerals across almost 500 million acres of federal "public domain" lands,[1] stake unlimited claims for deposits, and mine their claims without paying royalties to the American people.

If existing hardrock mines on these lands were charged a 4 percent royalty rate, as proposed in new legislation introduced by Natural Resources Committee Ranking Member Peter DeFazio (D-OR), the federal government over 2012 and 2013 would have collected an estimated $384 million from the owners of 46 of the nation's top-producing hardrock mines, according to calculations performed for this report (see Tables 1 and 2). This number understates the total royalties that would have been collected in those years—possibly by a significant amount—because there was inadequate data to assess at least 26 other top-producing mines on public domain lands.

The Interior Department's Bureau of Land Management (BLM), which administers the General Mining Act, does not require mining companies to report data on the hardrock minerals they extract from federal public domain lands. Ranking Member DeFazio therefore requested this report to provide a better sense of what is being taken and the amount that could be collected if the federal government charged royalties for hardrock minerals.

Table 1: 2013 hardrock production, sales value and foregone royalties from 46 mines

Hardrock Mineral[a]	Total amount produced	Total sales value	Estimated amount produced from federal public domain lands	Estimated sales value from federal public domain lands	Estimated royalties that would have been collected under DeFazio legislation
Gold	5.85 million oz.	$8.76 billion	2.54 million oz.	$3.8 billion	$152.07 million
Silver[b]	18.13 million oz.	$536.15 million	6.56 million oz.	$194.09 million	$7.76 million
Copper[b]	2.07 billion lbs.	$6.99 billion	20.7 million lbs.	$69.9 million	$2.80 million
Molybdenum	67.99 million lbs.	$643.80 million[c]	2.04 million lbs.	$19.31 million	$.77 million
Platinum Group (Palladium and Platinum)	524,000 oz.	$478.9 million	524,000 oz.	$478.9 million	$19.16 million
Total		$17.41 billion		$4.56 billion	$182.56 million

Source: Natural Resources Committee Democratic staff analysis of production and sales data from SEC filings of 20 leading mining companies

[a] Negligible amounts of zinc also were produced. The six minerals listed in the table account for the vast majority of the sales value for minerals produced from the 46 mines looked at for this report.

[b] Total amounts do not include ASARCO's Ray mine or Revett Minerals Inc.'s Troy mine for 2013.

[c] Total sales value does not include Kennecott Utah Copper Corporation's Bingham Canyon Mine.

[1] Public domain lands are lands acquired by the United States through treaty, cession or purchase as part of the country's general territory. The Mining Act does not cover "acquired" lands that the U.S. government has obtained from a state or private owner by purchase, gift or condemnation for particular federal purposes. Nor does the Act cover about 164 million acres of withdrawn lands such as national parks and wildlife refuges.

Table 2: 2012 hardrock production, sales value and foregone royalties from 46 mines

Hardrock Mineral [a]	Total amount produced	Total sales value	Estimated amount produced from federal public domain lands	Estimated sales value from federal public domain lands	Estimated royalties that would have been collected under DeFazio legislation
Gold	6.07 million oz.	$9.95 billion	2.63 million oz.	$4.32 billion	$172.73 million
Silver [b]	15.53 million oz.	$519.01 million	5.62 million oz.	$187.88 million	$7.52 million
Copper	2.16 billion lbs.	$8.02 billion	21.6 million lbs.	$80.20 million	$3.21 million
Molybdenum	75.49 million lbs.	$961.48 million	2.26 million lbs.	$28.84 million	$1.15 million
Platinum Group (Palladium and Platinum)	514,000 oz.	$424.77 million	514,000 oz.	$424.77 million	$16.99 million
Total		$19.88 billion		$5.04 billion	$201.60 million

Source: Natural Resources Committee Democratic staff analysis of production and sales data from SEC filings of 20 leading mining companies

[a] Negligible amounts of zinc also were produced. The six minerals listed in the table account for the vast majority of the sales value for minerals produced from the 46 mines looked at for this report.

[b] Hecla Mining Co.'s Lucky Friday mine was offline in 2012.

The Natural Resources Committee's Democratic staff began by identifying the nation's 100 top-producing mines of commonly mined hardrock minerals,[2] including gold, copper, silver, palladium, platinum, and molybdenum (used for steel alloys),[3] which account for the vast majority of U.S. hardrock production on public domain lands.[4] We excluded 54 of these mines from our examination because: (a) they are not located on federal public domain lands, even in part[5] (20 mines); (b) they are located on federal public domain lands but are owned by privately held companies that do not file with the Securities and Exchange Commission (16 mines); (c) they are located on federal public domain lands but are missing production data in company SEC filings (10 mines); or (d) information is inadequate to determine whether they are located on federal public domain lands (eight mines).

The remaining 46 top-producing mines are located at least partly on federal public domain lands and are owned by 20 publicly traded companies. Democratic staff used these companies' 2013 and 2012 SEC filings to compile data on the type, amount and sales value of hard rock minerals being extracted from each of the 46 mines. Two of these mines are located completely on federal public domain lands and account for virtually all of U.S. production of platinum group minerals (palladium and platinum, which are mined together). The remaining 44 mines, which produce mostly gold, copper, silver and molybdenum, span both federal public domain lands and private or state lands.

[2] We did this using U.S. Geological Survey, "2011 Minerals Yearbook: Mining and Quarrying Trends," available at http://minerals.usgs.gov/minerals/pubs/commodity/m&q/myb1-2011-mquar.pdf.

[3] Other commonly mined minerals we looked at were zinc, beryllium, magnesium, tungsten and iron. The 46 mines produced negligible amounts of zinc and no beryllium, magnesium, tungsten or iron.

[4] U.S. Department of the Interior, "Economic Implications of a Royalty System for Hardrock Minerals," 1993. There is not a more recent assessment, but available data suggest these minerals still are the most heavily mined.

[5] Under the General Mining Law of 1872, mining companies may file a patent application to obtain legal title to surface and mineral rights and obtain relief from paying annual fees. Congress since 1995 has blocked patented claims from being issued.

In most cases, the private land occupied by these mines was previously public domain land but was "patented" by companies under the General Mining Act and converted to private land, in a process that has been blocked annually by Congress since 1995. Democratic staff was able to determine for each mine the number of acres located on public domain land and the number located on private or state land (see Table 7). These numbers can be deceiving, however, because typically more hardrock production occurs on the private patented land—this land was patented for a reason—even if the mine's footprint is mostly on public domain land. The public domain land often is used as dumping ground for tailings and rock waste from mining that occurs on adjacent patented land.

Unfortunately, the Interior Department has not taken advantage of its authority to collect more detailed information on how public domain land is used and mined.[6] Nor do company SEC filings break down a mine's production by public domain land and private land; only a mine's total production is provided. Without knowing how much of a mine's production is from public domain land, it is impossible to estimate the amount of royalties that would have been collected from the mine owner. So while we were able to calculate the royalties that would have been paid for each of the two mines that are located completely on federal public domain lands, we were unable to calculate mine-by-mine royalty estimates for the other 44 mines. Instead, we calculated aggregate and mineral-by-mineral royalty estimates for these mines, as follows.

The Interior Department last estimated the share of hardrock mineral production on federal public domain lands in 1993, the year before Congress stopped allowing companies to patent mining claims on public domain lands. The department at the time estimated that 15 percent of total hardrock production came from public domain lands, but it also found a great deal of variance by individual mineral. In particular, the department estimated that 43 percent of gold, 36 percent of silver, and 100 percent of platinum group minerals were produced from federal public domain lands while just 1 percent of copper and 3 percent of molybdenum came from public domain lands (see Table 3).

Table 3: DOI's 1993 estimates of mineral production from federal public domain lands

Hardrock mineral	Sales value of U.S. domestic production	Production from federal claims	Share of total production from federal claims
Beryllium	$400,000	$400,000	100%
Copper	$3.60 billion	$36.0 million	1%
Gold	$3.36 billion	$1.46 billion	43.4%
Molybdenum	$281.2 million	$8.4 million	3%
Platinum Group (Palladium and Platinum)	$26.9 million	$26.9 million	100%
Silver	$157.4 million	$57.0 million	36.2%
Zinc	$169 million	$70,000	0.0%

Source: U.S. Department of the Interior, "Economic Implications of a Royalty System for Hardrock Minerals," 1993.

[6] The National Materials and Minerals Policy, Research and Development Act of 1980 provides authority for "improved collection, analysis, and dissemination of scientific, technical, and economic materials information." Using this authority, the U.S. Geological Survey (USGS) within the Interior Department conducts an annual voluntary survey to collect information from mining companies on the production and sales value of the minerals they extract. USGS could include questions in this survey related to minerals produced on federal land.

It seems reasonable to assume that a greater share of hardrock production comes from public domain lands today, 20 years after the moratorium on patented claims. Democratic staff nonetheless relied on Interior's 1993 percentages for this report's calculations. Specifically, we added up the total amount of each top mineral produced from the 46 mines in 2013 and 2012; then we applied Interior's percentages to estimate the share of that total production that came from federal public domain lands.[7]

Ranking Member DeFazio's legislation would institute an 8 percent royalty rate for new mines on public domain lands and a 4 percent royalty rate for existing mines. Democratic staff used this 4 percent royalty rate to calculate the royalties that would have been collected in 2013 and 2012 for the hardrock minerals that, according to our estimates, were produced from federal public domain lands by the 46 mines.

Based on the data and assumptions described above, we estimate that:

- **The 46 mines in 2013 produced more than $4.56 billion worth of royalty-free hardrock minerals from federal public domain lands.** This included almost 2.54 million ounces of gold sold for more than $3.8 billion; 524,000 ounces of platinum group metals sold for $478.9 million; 6.56 million ounces of silver sold for $194.09 million; 20.7 million pounds of copper sold for $69.9 million; and 2.04 million pounds of molybdenum sold for $19.31 million.

- **The 46 mines in 2012 produced more than $5.04 billion worth of royalty-free hardrock minerals from federal public domain lands.** This included almost 2.63 million ounces of gold sold for more than $4.32 billion; 514,000 ounces of platinum group metals sold for $424.77 million; 5.62 million ounces of silver sold for $187.88 million; 21.6 million pounds of copper sold for $80.20 million; and 2.26 million pounds of molybdenum sold for $28.84 million.

Table 4: Uses of commonly mined hardrock minerals

Hardrock mineral	Common uses
Gold	Jewelry and arts; dental; electrical and electronics; and other
Copper	Construction; electric and electronic products; transportation equipment; consumer and general products; and industrial machinery and equipment
Molybdenum	Iron, steel, and superalloy production
Silver	Coins and medals, electrical and electronics, jewelry and silverware, and photography
Palladium	Emission reduction catalysts in motor vehicles; chemical manufacturing; special silicones; petroleum refining; and laboratory equipment.
Platinum	Catalysts to decrease emissions in motor vehicles; catalysts for chemical manufacturing; special silicones; petroleum refining; and laboratory equipment.

[7] It should be noted that Interior's estimates were for all mines located on public domain lands while our estimates are for only the 46 mines that provided sufficient data in their SEC filings. Thus, it's possible the percentages of public-domain-land production are different for these 46 mines than what the Interior Department found for all mines. Our estimates could be understated or overstated to the extent that this is true.

Table 5: Changes in total U.S. hardrock production and mineral prices

Hardrock mineral	Percent change in U.S. production, 2008-2012	Percent change in price, 2008-2012	Percent change in U.S. production, 2012-2013	Percent change in price, 2012-2013
Gold	-1%	49%	-3%	-15%
Copper	-14%	14%	4%	-7%
Molybdenum	2%	-116%	1%	-19%
Silver	-19%	50%	3%	-24%
Palladium	2%	45%	2%	13%
Platinum	3%	-0.1%	1%	-3%

Source: Committee Democratic staff analysis of data found in U.S. Geological Survey, "Mineral Commodity Summaries 2013," Jan. 24, 2013, available at http://minerals.usgs.gov/minerals/pubs/mcs/2013/mcs2013.pdf and U.S. Geological Survey, "Mineral Commodity Summaries 2014," Feb. 28, 2014, available at http://minerals.usgs.gov/minerals/pubs/mcs/2014/mcs2014.pdf.

- **The owners of these mines would have paid royalties of $182.56 million in 2013 and almost $202 million in 2012 if the DeFazio legislation had been law.**[8] Royalties would have been higher in 2012 than previous years because of a general rise in hardrock mineral prices. The price of gold, the number one hardrock mineral taken from federal public domain lands, increased 49 percent between 2008-2012; the price of silver and palladium increased by 50 percent and 45 percent, respectively; and the price of copper increased 14 percent. Hardrock mineral prices mostly declined from 2012 to 2013—palladium had the only price increase among minerals we looked at—but remained high compared to earlier years (see Table 5).

- **Eleven foreign-owned companies operate 21 of the largest mines located at least partly on federal public domain lands.** As explained earlier, the 46 mines examined for this report are owned by 20 companies. Eleven of these companies are foreign-owned, including nine Canadian companies, a Mexican company, and a British company. These companies, which own 21 of the 46 mines, took more high-priced gold than American companies and consequently may have paid more in royalties had the DeFazio legislation been law. The 21 mines owned by these foreign companies produced about $18.85 billion in 2013 and 2012 combined.[9] This production figure includes both private land and federal public domain lands. We chose not to estimate public-domain-land production and foregone royalties for these 21 mines because of the data limitations described above.

- **The two mines located completely on public domain lands would have paid $36.15 million in royalties over the last two years if the DeFazio legislation had been law.** These mines produced $903.67 million worth of platinum group minerals over the last two years, all from public domain land. One, the Stillwater mine located in Montana, would have paid $13.26 million in royalties in 2013 and $12.54 million in royalties in 2012. The other, the East Boulder mine also located in Montana, would have paid $5.9 million in royalties in 2013 and $4.45 million in royalties in 2012.

[8] These figures are calculated using a 4 percent royalty rate. As explained earlier, the DeFazio legislation would institute a 4 percent royalty rate for mining already occurring on hardrock claims on federal public domain lands. An 8 percent royalty rate would be applied to minerals from mines that begin operations after the date of enactment of the bill.

[9] This excludes 2013 sales by the Mexican company, ASARCO, which have not yet been reported to the SEC.

* * *

Hardrock mining companies have extracted hundreds of billions of dollars' worth of minerals from federal lands over the last 150 years without compensating the American people. This preferential system was put in place to encourage mineral development on formerly unsettled land in the western United States. But unlike prospectors in the 19th century, hardrock producers today are large multi-national corporations—some of which are owned by foreign governments—that do not need or deserve government favors. The original intent of the law has been achieved. Congress should enact the DeFazio legislation and end this hardrock handout.

Table 6: Hardrock production and sales value from 46 mines by company, 2012 & 2013 [a]

Mining Company	Company's home country	Sales value of minerals, 2012	Sales value of minerals, 2013	Minerals Produced [b]
Allied Nevada Gold Corp.	U.S	$214.56 million	$267.90 million	Gold, silver
ASARCO LLC	Mexico	$875.07 million	*No data* [c]	Copper, silver
Atna Resources Ltd.	Canada	$59.4 million	$31.7 million	Gold
Barrick Gold Corp.	Canada	$5.15 billion	$4.40 billion	Gold
Coeur d'Alene Mines Corp.	U.S.	$242.40 million	$268.01 million	Gold, silver
Freeport-McMoRan Copper & Gold Inc.	U.S.	$5.14 billion	$4.87 billion	Copper, molybdenum
Goldcorp Inc.	Canada	$160 million	$151 million	Gold
Hecla Mining Co.	U.S	$320.81 million	$403.47 million	Gold, silver
Kennecott Utah Copper Corp.	U.K.	$2.49 billion	$2.10 billion	Copper, gold, molybdenum
Kinross Gold Corp.	Canada	$577.3 million	$443.1 million	Gold
Lisbon Valley Mining Co. LLC	U.S.	$40.7 million	$70.3 million	Copper
Mercator Minerals Ltd.	Canada	$262.59 million	$215.30 million	Copper, molybdenum, silver
New Gold Inc.	Canada	$190.70 million	$113.70 million	Gold
Newmont Mining Corp.[d]	U.S.	$2.51 billion	$2.41 billion	Gold
Quadra FNX Mining Ltd.	Canada	$642.5 million	$503.8 million	Copper, gold
Revett Minerals Inc.	U.S.	$59.21 million	*No data* [e]	Copper, silver
Stillwater Mining Company	U.S.	$424.77 million	$478.90 million	Palladium, platinum
Thompson Creek Metals Co. Inc.	U.S.	$280.03 million	$319.4 million	Molybdenum
U.S. Silver Corp.	Canada	$68.81 million	$64.2 million	Silver
Veris Gold	Canada	$160.56 million	$187.90 million	Gold
Total		$20.12 billion	$17.53 billion	

Source: Data from SEC filings. Totals may not add due to rounding.

[a] This table shows total sales value, including sales of minerals from private land occupied by the mine as well as federal public domain land occupied by the mine.

[b] Minerals Produced includes only the commonly mined minerals that are used for this report's calculations.

[c] Sales data for ASARCO's Ray Mine was not available for 2013.

[d] Total sales values for 2012 and 2013 only includes eight gold mining operations in Nevada.

[e] Mining at Revett Minerals' Troy Mine was suspended in 2013.

Table 7: Owner, location and acreage breakdown for 46 mines

Mine	Owner	Location	Total acres occupied by mine [a]	% of total acres located on federal lands [b]
Hycroft	Allied Nevada Gold Corp.	Nevada	61,389 acres	97%
Ray	ASARCO LLC.	Arizona	13,000 acres	84%
Briggs	Atna Resources Ltd.	California	4,480 acres	100%
Bald Mountain	Barrick Gold Corp.	Nevada	150,000 acres	95%
Cortez [c]	Barrick Gold Corp.	Nevada	248,491 acres	75%
Golden Sunlight	Barrick Gold Corp.	Montana	4,942 acres	19%
Goldstrike [d]	Barrick Gold Corp.	Nevada	10,371 acres	22%
Ruby Hill	Barrick Gold Corp.	Nevada	28,854 acres	26%
Marigold	Barrick Gold Corp.	Nevada	18,496 acres	55%
Turquoise Ridge	Barrick Gold Corp.	Nevada	42,929 acres	50%
Kensington	Coeur d'Alene Mines Corp.	Alaska	12,400 acres	45%
Rochester	Coeur d'Alene Mines Corp.	Nevada	10,800 acres	85%
Bagdad	Freeport-McMoRan Copper & Gold Inc.	Arizona	21,826 acres	11%
Morenci	Freeport-McMoRan Copper & Gold Inc.	Arizona	64,750 acres	3%
Sierrita	Freeport-McMoRan Copper & Gold Inc.	Arizona	37,650 acres	88%
Chino	Freeport-McMoRan Copper & Gold Inc.	New Mexico	118,600 acres	50%
Miami	Freeport-McMoRan Copper & Gold Inc.	Arizona	9,100 acres	22%
Safford	Freeport-McMoRan Copper & Gold Inc.	Arizona	25,000 acres	16%
Tyrone	Freeport-McMoRan Copper & Gold Inc.	New Mexico	35,200 acres	47%
Marigold	Gold Corp. Inc.	Nevada	18,496 acres	55%
Greens Creek	Hecla Mining Co.	Alaska	17,280 acres	75%
Lucky Friday	Hecla Mining Co.	Idaho	1,245 acres	43%
Bingham Canyon	Kennecott Utah Copper Corp.	Utah	27,000 acres	3%
Kettle River-Buckhorn	Kinross Gold Corp.	Washington	7,598 acres	40%
Smoky Valley Common	Kinross Gold Corp.	Nevada	52,384 acres	93%

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Table 7 continued

Mine	Owner	Location	Total acres occupied by mine[a]	% of total acres located on federal lands[b]
Lisbon Valley	Lisbon Valley Mining Co. LLC	Utah	875 acres	50%
Mineral Park	Mercator Minerals Ltd.	Arizona	6,237 acres	25%
Mesquite	New Gold Inc.	California	4,670 acres	35%
Carlin East	Newmont Mining Corp.	Nevada	2,760 acres	18%
Gold Quarry	Newmont Mining Corp.	Nevada	9,352 acres	31%
Leeville	Newmont Mining Corp.	Nevada	496 acres	92%
Midas	Newmont Mining Corp.	Nevada	4,417 acres	75%
North Lantern	Newmont Mining Corp.	Nevada	1,083 acres	5%
Pete	Newmont Mining Corp.	Nevada	3773 acres	10%
Phoenix	Newmont Mining Corp.	Nevada	8,125 acres	39%
Twin Creek	Newmont Mining Corp.	Nevada	13,270 acres	55%
Robinson	Quandra FNX Mining Ltd.	Nevada	22,466 acres	45%
Carlota	Quandra FNX Mining Ltd.	Arizona	920 acres	100%
Troy	Revett Minerals Inc.	Montana	1,206 acres	43%
East Boulder Mine	Stillwater Mining Company	Montana	969 acres	100%
Stillwater Mine	Stillwater Mining Company	Montana	2,613 acres	87%
Thompson Creek	Thompson Creek Metals Co. Inc.	Idaho	24,600 acres	77%
Galena	U.S. Silver Corp.	Idaho	10,931 acres	46%
Jerritt Canyon	Veris Gold	Nevada	24,715 acres	96%

Source: SEC filings and Committee Democratic staff analysis of other available sources.

[a] Total acres includes federal public domain land, private or patented land, and state land.

[b] We estimated acres located on federal public domain land using a variety of publicly available sources, including mine site acreages reported in National Environmental Policy Act (NEPA) analyses, mine site acreages reported in company SEC filings or on company websites, and mine acreage descriptions from third-party mining industry clearing house websites. We also compared mine location maps against state digital land ownership maps.

[c] Includes Cortez Hills and Cortez Pipeline Mines.

[d] Includes Storm Mine.