

# SEG 100 Conference: Celebrating a Century of Discovery

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## **1991-2020: Russian Gold Production**

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During 30 years after the collapse of the USSR, Russia has produced more than 6,000 t (194 million ounces) of gold, about 10% of the annual world production. By 2020, the total Russian gold production increased 2.3 times to 1991 level (Fig. 1), whereas the world production went up ~1.5 times. In 1991-2020, Russian gold was extracted from more than 100 hardrock deposits and many placers (about 4,500 placers historically). Eastern Siberia and the Far East are undisputed regional leaders in Russian world-class hardrock gold mining.

Excluding gold extracted from scrap, placers provided 79.2% of 143.1 t of Russian gold in 1991, and in 2020, their share was 24% from the total of 331.1 t Au. In absolute terms, this was 30% less than in 1991 (113.4 vs. 79.5 t), meaning that gold from placers is still a significant contributor to the overall production. On the other hand, gold production from hardrock deposits has grown 8.5 times from 29.7 t (in 1991) to 251.6 t (in 2020).

The fall in gold prices in 1998-2001 affected the operation of the "Soviet" mines and eventually led to the closure of some of them. However, the production of hardrock gold in Russia began to increase in 1997 after modernization at the Olimpiada mine in Krasnoyarsk and Kubaka in Magadan. In 2002, the production of hardrock gold exceeded alluvial gold, and in 2017, Russian gold mining exceeded the all-Soviet peak of 1989.

Taking the average annual production of 6 t (193 thousand ounces) of gold as the minimum criterion for a world-class mine, in 1991, only Kuranakh deposits met this criterion, contributing 46% to the extraction of the hardrock gold (excluding by-product gold) or 30.5% of the total hardrock production, including by-product gold. The rest of the hardrock gold mining in Russia was dispersed among the numerous small underground mines and a few open pits in the Urals, Siberia, and the Far East, producing from 200 to 1,500 kg of gold per year. Some have been operating in such low-productivity mode for many decades and even more than 150 years. In 1991, a world-class gold mining industry in Russia simply did not exist.

From 1991 to 2020, more than 6 t of gold during at least one year was produced at only 18 hardrock deposits. At only 9 mines, such production has been maintained consistently or for 5-10 years. In 2020, the 15 largest Russian mines produced 129.8 t of gold, or 55.8% of the hardrock gold production.

Fig. 1: Gold production from hardrock deposits (in tons) and distribution of placers in Russia in 2020.

