

### AASG

The Association of American State Geologists (AASG) represents the State Geologists of the 50 United States and Puerto Rico. Founded in 1908, AASG seeks to advance the science and practical application of geology and related earth sciences in the United States and its territories, commonwealths and possessions

## Position Statement

AASG strongly supports adequate funding of mineral-resource programs within relevant Federal agencies, including the Departments of Agriculture, Defense, Energy, Health and Human Services, Interior, and Labor. Further, AASG advocates that, as appropriate, these programs be implemented through Federal-State partnerships to achieve mutually beneficial goals relative to mineral resources.

## Background

The United States is a major consumer of nearly every class of natural materials, such as energy resources (oil, gas, coal, uranium, geothermal fluids, etc.), forest and agricultural products, and nonfuel mineral resources. Nonfuel mineral resources include more than 100 commodities used in all facets of modern society, from construction of our homes, businesses, and infrastructure, to manufacture of vehicles, computers, satellites, and fertilizers that support our farm economy.

Mineral resources are quarried or mined in every state in the U.S. Crushed stone, sand, and gravel, needed for concrete and asphalt, are widely distributed, but many other commodities have been concentrated by geological processes and occur only in certain locations. Locally, social or political factors prevent some mineral resources from being mined. With its large land area and diverse geologic settings, the U.S. has many key mineral resources needed for society to function, including metals and construction raw materials. Some commodities, such as aluminum and tungsten, are not currently mined in the U.S. because economically more favorable deposits in other parts of the world are able to meet the global demand.

Along with other natural-resource industries, mining adds wealth to local, state, national, and global economies. China and the U.S. are significant producers of 18 of the 22 key mineral commodities listed in the table below.

**Statistics on Selected Mineral Resources** (source: USGS Mineral Commodity Summaries, 2011).

Commodity	U.S. Import Reliance (% of U.S. consumption)	Leading Producers (% of world mine production in 2010)
Aluminum ore	100	Australia (33%), <b>China</b> (19%), Brazil (15%)
Manganese	100	<b>China</b> (22%), Australia (18%), South Africa (17%)
Rare earths	100	<b>China</b> (97%), India (2%), Brazil (0.4%)
Platinum	94	South Africa (75%), Russia (13%), Zimbabwe (5%)
Potash	83	Canada (29%), Russia (21%), Belarus (15%)
Zinc	77	<b>China</b> (29%), Peru (13%), Australia (12%)
Barite Tin	76	<b>China</b> (52%), India (14%), <b>U.S.</b> (10%)
Tungsten	69	<b>China</b> (44%), Indonesia (23%), Peru (15%)
Silver	68	<b>China</b> (85%), Russia (4%), Bolivia (2%)
Chromium	65	Peru (18%), Mexico (16%), <b>China</b> (14%)
Beryllium	56	South Africa (39%), India (17%), Kazakhstan (15%)
Lithium	47	<b>U.S.</b> (89%), <b>China</b> (11%), Mozambique (1%)
Nickel	43	Chile (34%), Australia (33%), <b>China</b> (18%)
Gold	43	Russia (17%), Indonesia (15%), Philippines (10%)
Copper	33	<b>China</b> (14%), Australia (10%), <b>U.S.</b> (9%)
Gypsum	30	Chile (34%), Peru (8%), <b>China</b> (7%), <b>U.S.</b> (7%)
Phosphate rock	15	<b>China</b> (31%), Iran (9%), Spain (8%)
Cement	15	<b>China</b> (37%), <b>U.S.</b> (15%), Morocco (15%)
Iron ore	8	<b>China</b> (55%), India (7%), <b>U.S.</b> (2%)
Molybdenum	<b>U.S.</b> is exporter	<b>China</b> (38%), Australia (18%), Brazil (15%)
Diatomite	<b>U.S.</b> is exporter	<b>China</b> (40%), <b>U.S.</b> (24%), Chile (17%)
	<b>U.S.</b> is exporter	<b>U.S.</b> (30%), <b>China</b> (25%), Denmark (12%)



Gold (3.3 cm high, Round Mountain Mine).  
Photo by Jeff Sovill, courtesy  
Nevada Bureau of Mines and Geology.

## Background (continued)

Locations of mineral resources are not all known. Many mineral resources lie buried beneath younger rocks, and various geologic, geophysical, and geochemical techniques are needed to discover deposits that can be mined responsibly and at a profit. Recent discoveries of world-class deposits of gold, copper, and zinc in the U.S. and continued exploration by mining companies illustrate that the U.S. remains a prime target for new resource discovery.

If the U.S. were to prevent mining from taking place within the bounds of the country on environmental grounds, demand would have to be met by supplies from other countries, often to the detriment of the global environment. We would run the risk of practicing de facto environmental imperialism, if environmental controls in other countries were not as strong as those in the U.S. and other developed nations. By taking a "not in my backyard" attitude, we would simply be shipping the environmental consequences of mining to other countries. Instead, we can control the consequences at home by using proven, environmentally sound extraction techniques and regulations to safeguard the environment and workers alike.

Two recent studies by the National Research Council, *Minerals, Critical Minerals, and the U.S. Economy* and *Managing Materials for a 21st Century Military*, and a 2011 report by the American Physical Society on *Energy Critical Elements* find that the U.S. lacks sufficient information about mineral needs and supplies. Up-to-date, accurate, geologic mapping is critical to fulfilling State and Federal responsibilities for stewardship of our natural resources. Geologic maps and investigations are essential to an understanding of natural processes responsible for the formation of mineral deposits and the hydrological-chemical consequences of mining and reclamation.



Gypsum (12 cm high, Robinson district). Photo by Jeff Scovil, courtesy Nevada Bureau of Mines and Geology.

## Implementation at the Federal Level

AASG strongly supports adequate funding of mineral-resource programs within relevant Federal agencies, including the Departments of Agriculture, Energy, Health and Human Services, Interior, and Labor. Such programs are key to sound energy, mineral, and environmental policy decisions, as well as national security and a vibrant economy. Whenever practical, programs should be conducted cooperatively with, or be contracted to, State Geological Surveys in order to maximize cost effectiveness and focus on State-identified issues and needs. Many mineral commodities have the same strategic importance as oil, and strong Federal programs (and partnerships with State programs) aimed at reducing exploration risk in finding domestic sources are essential to minimizing our vulnerability.

The **USGS Mineral Resources Program** is the only national program to document mineral-resource production, assess potential for undiscovered resources, or research the breadth of scientific issues regarding mineral resources and material flows, which is the tracking of supplies, use, and paths of minerals and other materials within the global economy. Through agreements with states and foreign countries, USGS is the only entity that collects reliable statistics on national and international mineral-resource production-information vital in our geopolitical world. AASG encourages increased support of the **Mineral Resources External Research Grants Program**.

The **National Cooperative Geologic Mapping Program** is an excellent example of a partnership between Federal and State governments, wherein complementary priorities are met and costs are shared. Collaboration between USGS, State Geological Surveys, and universities has led to production of thousands of new maps and training of the next generation of qualified professionals. Reauthorization of this program, as well as funding at the fully authorized level, is a vital part of the national movement to locate, assess, and responsibly mine mineral resources needed in society.

AASG encourages Congress to ensure the education of an adequate domestic workforce of professionals needed to meet the mineral- and energy-resource demands of America. These professionals are needed not only in industry but also in governmental regulatory, research, and land-management agencies.

The **Mining Safety and Health Research Program** within the **National Institute for Occupational Safety and Health** (Department of Health and Human Services) advances technologies needed to protect workers, and the **Mine Safety and Health Administration** (Department of Labor) helps to ensure that best practices are implemented. The **Department of Energy** is investigating its role in research on mineral resources needed for emerging "green" energy technologies. The **Department of Defense** has important responsibilities regarding the supply of critical and strategic materials produced from minerals. As stewards of large tracts of public lands, the **Bureau of Land Management** (Interior) and **Forest Service** (Agriculture) have important roles in mineral-resource development. AASG supports consistent and scientifically based programs by all agencies to guide responsible minerals policy and development.

### For more information contact:

<b>President</b>	<b>President-Elect</b>
Steve Masterman	Karen Berry
steve.masterman@alaska.gov	kaberry@mines.edu
Alaska State Geologist	Colorado State Geologist
<b>Chair, Mineral Resources Committee</b>	
	Ed Ratchford
	reed@uidaho.edu
	Idaho State Geologist