APPENDIX A

Abbreviations and Units of Measure

1 carat (metric) (diamond)	= 200 milligrams
1 flask (fl)	= 76 pounds, avoirdupois, or 34.47 kilograms
1 karat (gold)	= one twenty-fourth part
1 kilogram (kg)	= 2.2046 pounds, avoirdupois
1 kilopascal (kPa)	= 0.145 pounds per square inch
1 liter (L)	= 0.264172 gallon
1 long ton (lt)	= 2,240 pounds, avoirdupois
1 long ton unit (ltu)	= 1% of 1 long ton, or 22.4 pounds, avoirdupois
long calcined ton (lct)	= excludes water of hydration
long dry ton (ldt)	= excludes excess free moisture
Mcf	= 1,000 cubic feet
1 metric ton (t)	= 2,204.6 pounds, avoirdupois, or 1,000 kilograms
1 metric ton (t)	= 1.1023 short ton
1 metric ton unit (mtu)	= 1% of 1 metric ton, or 10 kilograms
metric dry ton (mdt)	= excludes excess free moisture
1 pound (lb)	= 453.6 grams
1 short ton (st)	= 2,000 pounds, avoirdupois
1 short ton unit (stu)	= 1% of 1 short ton, or 20 pounds, avoirdupois
short dry ton (sdt)	= excludes excess free moisture
1 square foot (ft^2)	= 0.092903 square meter
1 square mile (mi^2)	= 2.58999 square kilometers
1 troy ounce (tr oz)	= 1.09714 avoirdupois ounces, or 31.103 grams
1 troy pound	= 12 troy ounces

APPENDIX B

Definitions of Selected Terms Used in This Report

Terms Used for Materials in the National Defense Stockpile and Federal Helium Reserve

Fiscal year for the U.S. Government is the period from October 1 through September 30. Fiscal year (FY) 2025 is from October 1, 2024, through September 30, 2025. FY 2026 is from October 1, 2025, through September 30, 2026.

Inventory refers to the quantity of mineral materials held in the National Defense Stockpile or in the Federal Helium Reserve. Beginning in 2023, National Defense Stockpile shipments and inventory levels are no longer included.

Potential disposals indicate the total amount of a material in the National Defense Stockpile that the U.S. Department of Defense is permitted to dispose of under the Annual Materials Plan approved by Congress for the fiscal year. Congress has authorized disposal over the long term at rates designed to maximize revenue but avoid undue disruption to the usual markets and financial loss to the United States. Disposals are defined as any disposal or sale of National Defense Stockpile stock. Starting in FY 2026, the Annual Materials Plan is no longer available publicly. The Federal Helium System assets (formerly operated by the Bureau of Land Management) were sold and transferred in June 2024 to a private company. This satisfied the requirements of the Helium Stewardship Act of 2013 (HSA), which mandated the privatization of the Federal Helium System.

Potential acquisitions indicate the maximum amount of a material that may be acquired by the U.S. Department of Defense for the National Defense Stockpile under the Annual Materials Plan approved by Congress for the fiscal year.

Depletion Allowance

The depletion allowance is a business tax deduction analogous to depreciation, but which applies to an ore reserve rather than equipment or production facilities. Federal tax law allows this deduction from taxable corporate income, recognizing that an ore deposit is a depletable asset that must eventually be replaced.

APPENDIX C

Reserves and Resources

Reserves data are dynamic. They may be reduced as ore is mined and (or) the feasibility of extraction diminishes, or more commonly, they may continue to increase as additional deposits (known or recently discovered) are developed, or currently exploited deposits are more thoroughly explored and (or) new technology or economic variables improve their economic feasibility. Reserves may be considered a working inventory of mining companies' supplies of an economically extractable mineral commodity. As such, the magnitude of that inventory is necessarily limited by many considerations, including cost of drilling, taxes, price of the mineral commodity being mined, and the demand for it. Reserves will be developed to the point of business needs and geologic limitations of economic ore grade and tonnage. For example, in 1970, identified and undiscovered world copper resources were estimated to contain 1.6 billion metric tons of copper, with reserves of about 280 million tons of copper. Since then, about 712 million tons of copper have been produced worldwide, but world copper reserves in 2024 were estimated to be 980 million tons of copper, more than 3.5 times those in 1970, despite the depletion by mining of much more than the 1970 estimated reserves.

Future supplies of minerals will come from reserves and other identified resources, currently undiscovered resources in deposits that will be discovered in the future, and material that will be recycled from current in-use stocks of minerals or from minerals in waste disposal sites. Undiscovered deposits of minerals constitute an important consideration in assessing future supplies. Mineral-resource assessments have been carried out for small parcels of land being evaluated for land reclassification, for the Nation, and for the world.

Part A—Resource and Reserve Classification for Minerals[1]

Introduction

Through the years, geologists, mining engineers, and others operating in the minerals field have used various terms to describe and classify mineral resources, which as defined herein include energy materials. Some of these terms have gained wide use and acceptance, although they are not always used with precisely the same meaning.

The U.S. Geological Survey (USGS) collects information about the quantity and quality of all mineral resources. In 1976, the USGS and the U.S. Bureau of Mines developed a common classification and nomenclature, which was published as USGS Bulletin 1450–A—"Principles of the Mineral Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey." Experience with this resource classification system showed that some changes were necessary in order to make it more workable in practice and more useful in long-term planning. Therefore, representatives of the USGS and the U.S. Bureau of Mines collaborated to revise Bulletin 1450–A. Their work was published in 1980 as USGS Circular 831—"Principles of a Resource/Reserve Classification for Minerals."

Long-term public and commercial planning must be based on the probability of discovering new deposits, on developing economic extraction processes for currently unworkable deposits, and on knowing which resources are immediately available. Thus, resources must be continuously reassessed in the light of new geologic knowledge, of progress in science and technology, and of shifts in economic and political conditions. To best serve these planning needs, known resources should be classified from two standpoints: (1) purely geologic or physical and chemical characteristics—such as grade, quality, tonnage, thickness, and depth—of the material in place; and (2) profitability analyses based on costs of extracting and marketing the material in a given economy at a given time. The former constitutes important objective scientific information of the resource and a relatively unchanging foundation upon which the latter more valuable economic delineation can be based.

The revised classification system, designed generally for all mineral materials, is shown graphically in figures C1 and C2; its components and their usage are described in the text. The classification of mineral and energy resources is necessarily arbitrary because definitional criteria do not always coincide with natural boundaries. The system can be used to report the status of mineral and energy-fuel resources for the Nation or for specific areas.

Resource and Reserve Definitions

A dictionary definition of resource, "something in reserve or ready if needed," has been adapted for mineral and energy resources to comprise all materials, including those only surmised to exist, that have present or anticipated future value.

Resource.—A concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.

Original Resource.—The amount of a resource before production.

Identified Resources.—Resources for which location, grade, quality, and quantity are known or estimated from specific geologic evidence. Identified resources include economic, marginally economic, and subeconomic components. To reflect varying degrees of geologic certainty, these economic divisions can be subdivided into measured, indicated, and inferred.

[1]Based on U.S. Geological Survey Circular 831, 1980.

Demonstrated.—A term for the sum of measured plus indicated resources.

Measured.—Quantity is computed from dimensions revealed in outcrops, trenches, workings, or drill holes; grade and (or) quality are computed from the results of detailed sampling. The sites for inspection, sampling, and measurements are spaced so closely and the geologic character is so well defined that size, shape, depth, and mineral content of the resource are well established.

Indicated.—Quantity and grade and (or) quality are computed from information similar to that used for measured resources, but the sites for inspection, sampling, and measurements are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for measured resources, is high enough to assume continuity between points of observation.

Inferred.—Estimates are based on an assumed continuity beyond measured and (or) indicated resources, for which there is geologic evidence. Inferred resources may or may not be supported by samples or measurements.

Reserve Base.—That part of an identified resource that meets specified minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth. The reserve base is the in-place demonstrated (measured plus indicated) resource from which reserves are estimated. It may encompass those parts of the resources that have a reasonable potential for becoming economically available within planning horizons beyond those that assume proven technology and current economics. The reserve base includes those resources that are currently economic (reserves), marginally economic (marginal reserves), and some of those that are currently subeconomic (subeconomic resources). The term “geologic reserve” has been applied by others generally to the reserve-base category, but it also may include the inferred-reserve-base category; it is not a part of this classification system.

Inferred Reserve Base.—The in-place part of an identified resource from which inferred reserves are estimated. Quantitative estimates are based largely on knowledge of the geologic character of a deposit and for which there may be no samples or measurements. The estimates are based on an assumed continuity beyond the reserve base, for which there is geologic evidence.

Reserves.—That part of the reserve base that could be economically extracted or produced at the time of determination. The term “reserves” need not signify that extraction facilities are in place and operative. Reserves include only recoverable materials; thus, terms such as “extractable reserves” and “recoverable reserves” are redundant and are not a part of this classification system.

Marginal Reserves.—That part of the reserve base which, at the time of determination, borders on being economically producible. Its essential characteristic is economic uncertainty. Included are resources that would be producible, given postulated changes in economic or technological factors.

Economic.—This term implies that profitable extraction or production under defined investment assumptions has been established, analytically demonstrated, or assumed with reasonable certainty.

Subeconomic Resources.—The part of identified resources that does not meet the economic criteria of reserves and marginal reserves.

Undiscovered Resources.—Resources, the existence of which are only postulated, comprising deposits that are separate from identified resources. Undiscovered resources may be postulated in deposits of such grade and physical location as to render them economic, marginally economic, or subeconomic. To reflect varying degrees of geologic certainty, undiscovered resources may be divided into two parts, as follows:

Hypothetical Resources.—Undiscovered resources that are similar to known mineral bodies and that may be reasonably expected to exist in the same producing district or region under analogous geologic conditions. If exploration confirms their existence and reveals enough information about their quality, grade, and quantity, they will be reclassified as identified resources.

Speculative Resources.—Undiscovered resources that may occur either in known types of deposits in favorable geologic settings where mineral discoveries have not been made, or in types of deposits as yet unrecognized for their economic potential. If exploration confirms their existence and reveals enough information about their quantity, grade, and quality, they will be reclassified as identified resources.

Restricted Resources or Reserves.—That part of any resource or reserve category that is restricted from extraction by laws or regulations. For example, restricted reserves meet all the requirements of reserves except that they are restricted from extraction by laws or regulations.

Other Occurrences.—Materials that are too low grade or for other reasons are not considered potentially economic, in the same sense as the defined resource, may be recognized and their magnitude estimated, but they are not classified as resources. A separate category, labeled “other occurrences,” is included in figures C1 and C2. In figure C1, the boundary between subeconomic and other occurrences is limited by the concept of current or potential feasibility of economic production, which is required by the definition of a resource. The boundary is obviously uncertain, but limits may be specified in terms of grade, quality, thickness, depth, extractable percentage, or other economic-feasibility variables.

Cumulative Production.—The amount of past cumulative production is not, by definition, a part of the resource. Nevertheless, a knowledge of what has been produced is important in order to understand current resources, in terms of both the amount of past production and the amount of residual or remaining in-place resource. A separate space for cumulative production is shown in figures C1 and C2. Residual material left in the ground during current or future extraction should be recorded in the resource category appropriate to its economic-recovery potential.

Figure C1.—Major Elements of Mineral-Resource Classification, Excluding *Reserve Base* and *Inferred Reserve Base*

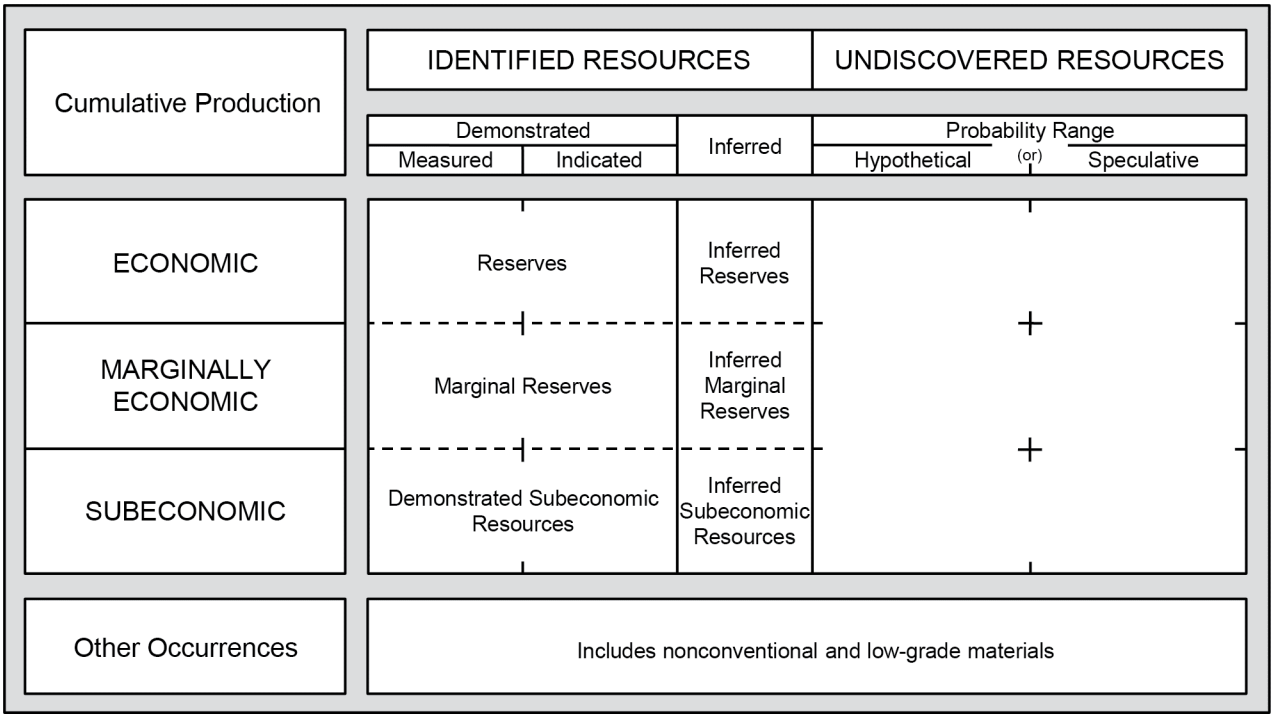
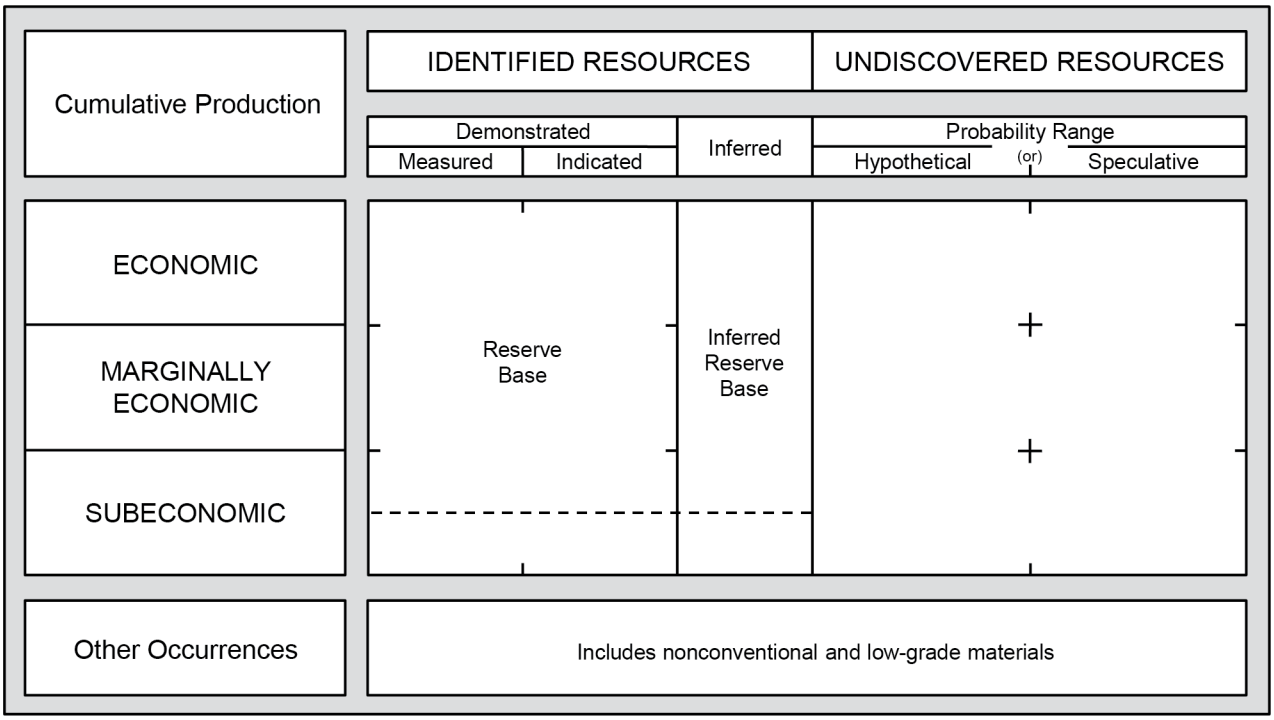


Figure C2.—*Reserve Base* and *Inferred Reserve Base* Classification Categories



Part B—Sources of Reserves Data

National information on reserves for most mineral commodities found in this report, including those for the United States, is derived from a variety of sources. The ideal source of such information would be comprehensive evaluations that apply the same criteria to deposits in different geographic areas and report the results by country. In the absence of such evaluations, national reserves estimates compiled by countries for selected mineral commodities are a primary source of national reserves information. Lacking national assessment information by governments, sources such as academic articles, company reports, presentations by company representatives, and trade journal articles, or a combination of these, serve as the basis for national information on reserves reported in the mineral commodity sections of this publication.

A national estimate may be assembled from the following: historically reported reserves information carried for years without alteration because no new information is available, historically reported reserves reduced by the amount of historical production, and company-reported reserves. International minerals availability studies conducted by the U.S. Bureau of Mines before 1996 and estimates of identified resources by an international collaborative effort (the International Strategic Minerals Inventory) are the bases for some reserves estimates. The USGS collects some qualitative information about the quantity and quality of mineral resources but does not directly measure reserves or resources, and companies or governments do not directly report information about reserves or resources to the USGS. Reassessment of reserves is a continuing process, and the intensity of this process differs by mineral commodity, country, and time period.

Some countries have specific definitions for reserves data, and reserves for each country are assessed separately, based on reported data and definitions. An attempt is made to make reserves consistent among countries for a mineral commodity and its byproducts. For example, the Australasian Joint Ore Reserves Committee (JORC) established the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) that sets out minimum standards, recommendations, and guidelines for public reporting in Australasia of exploration results, mineral resources, and ore reserves. Companies listed on the Australian Securities Exchange and the New Zealand Stock Exchange are required to report publicly on ore reserves and mineral resources under their control, using the JORC Code.

Data reported for individual deposits by mining companies are compiled in Geoscience Australia's national mineral resources database and used in the preparation of the annual national assessments of Australia's mineral resources. Because of its specific use in the JORC Code, the term "reserves" is not used in the national inventory, where the highest category is "Economic Demonstrated Resources" (EDR). In essence, EDR combines the JORC Code categories "proved reserves" and "probable reserves," plus measured resources and indicated resources. This is considered to provide a reasonable and objective estimate of what is likely to be available for mining in the long term. Accessible Economic Demonstrated Resources represent the resources within the EDR category that are accessible for mining. Reserves for Australia in the Mineral Commodity Summaries 2026 are Accessible EDR. For more information, see "Australia's Estimated Ore Reserves as at December 2023—Table 2" (https://www.ga.gov.au/aimr2024/australias-estimated-ore-reserves).

In Canada, the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) provides definition standards for the classification of mineral resources and mineral reserves estimates into various categories. The category to which a resource or reserves estimate is assigned depends on the level of confidence in the geologic information available on the mineral deposit, the quality and quantity of data available on the deposit, the level of detail of the technical and economic information that has been generated about the deposit, and the interpretation of the data and information. For more information on the CIM definition standards, see https://mrmr.cim.org/media/1128/cim-definition-standards_2014.pdf.

In Russia, reserves for most minerals can appear in a number of sources, although no comprehensive list of reserves is published. Reserves data for a limited set of mineral commodities are available in the annual report "Gosudarstvennyi Doklad o Sostoyanii i Ispol'zovanii Mineral'no-Syryevyh Resursov Rossiyskoy Federatsii" (State Report on the State and Use of Mineral and Raw Materials Resources of the Russian Federation), which is published by Russia's Ministry of Natural Resources and Environment. Reserves data for various minerals appear at times in journal articles, such as those in the journal "Mineral'nyye Resursy Rossii. Ekonomika i Upravleniye" (Mineral Resources of Russia. Economics and Management), which is published by the "OOO RG-Inform," a subsidiary of Rosgeologiya Holding. Also, reserves data for individual jurisdictions are available on the website of the Federal'noye Agentstvo po Nedropol'zovaniyu (Federal Agency for Subsoil Use). It is sometimes not clear if the reserves are being reported in ore or mineral content. It is also in many cases not clear which definition of reserves is being used, because the system inherited from the former Soviet Union has a number of ways in which the term "reserves" is defined, and these definitions qualify the percentage of resources that are included in a specific category. For example, the Soviet reserves classification system, besides the categories A, B, C1, and C2, which represent progressively detailed knowledge of a mineral deposit based on exploration data, has other subcategories cross imposed upon the system. Under the broad category reserves (zapasy), there are subcategories that include balance reserves (balansovyye zapasy, or economic reserves) and outside-the-balance reserves (zabalansovye zapasy, or subeconomic reserves), as well as categories that include explored, industrial, and proven reserves, and the reserves totals can vary significantly, depending on the specific definition of reserves being reported.

APPENDIX D

Country Specialists Directory

Minerals information country specialists at the U.S. Geological Survey collect and analyze information on the mineral industries of more than 170 nations throughout the world. The specialists are available to answer minerals-related questions concerning individual countries.

Africa and the Middle East

Algeria	Kathleen D. Gans
Angola	Meralis Plaza-Toledo
Bahrain	Iman Salehihikouei
Benin	Meralis Plaza-Toledo
Botswana	Yadira Soto-Viruet
Burkina Faso	Alberto Alexander Perez
Burundi	Yadira Soto-Viruet
Cabo Verde	Meralis Plaza-Toledo
Cameroon	Edgardo J. Pujols
Central African Republic	Edgardo J. Pujols
Chad	Edgardo J. Pujols
Comoros	Edgardo J. Pujols
Congo (Brazzaville)	Edgardo J. Pujols
Congo (Kinshasa)	Edgardo J. Pujols
Côte d'Ivoire	Alberto Alexander Perez
Djibouti	Alberto Alexander Perez
Egypt	Kathleen D. Gans
Equatorial Guinea	Meralis Plaza-Toledo
Eritrea	Alberto Alexander Perez
Eswatini	Edgardo J. Pujols
Ethiopia	Meralis Plaza-Toledo
Gabon	Alberto Alexander Perez
The Gambia	Meralis Plaza-Toledo
Ghana	Meralis Plaza-Toledo
Guinea	Alberto Alexander Perez
Guinea-Bissau	Meralis Plaza-Toledo
Iran	Iman Salehihikouei
Iraq	Iman Salehihikouei
Israel	Kathleen D. Gans
Jordan	Iman Salehihikouei
Kenya	Meralis Plaza-Toledo
Kuwait	Iman Salehihikouei
Lebanon	Kathleen D. Gans
Lesotho	Edgardo J. Pujols
Liberia	Meralis Plaza-Toledo
Libya	Kathleen D. Gans
Madagascar	Meralis Plaza-Toledo
Malawi	Jesse J. Inestroza
Mali	Alberto Alexander Perez
Mauritania	Meralis Plaza-Toledo
Mauritius	Edgardo J. Pujols
Morocco and Western Sahara	Kathleen D. Gans
Mozambique	Meralis Plaza-Toledo
Namibia	Edgardo J. Pujols
Niger	Alberto Alexander Perez
Nigeria	Meralis Plaza-Toledo
Oman	Iman Salehihikouei
Qatar	Iman Salehihikouei
Reunion	Edgardo J. Pujols
Rwanda	Yolanda Fong-Sam

Africa and the Middle East—Continued

Sao Tome e Principe	Meralis Plaza-Toledo
Saudi Arabia	Iman Salehihikouei
Senegal	Alberto Alexander Perez
Seychelles	Edgardo J. Pujols
Sierra Leone	Alberto Alexander Perez
Somalia	Edgardo J. Pujols
South Africa	Edgardo J. Pujols
South Sudan	Alberto Alexander Perez
Sudan	Alberto Alexander Perez
Syria	Iman Salehihikouei
Tanzania	Yolanda Fong-Sam
Togo	Alberto Alexander Perez
Tunisia	Kathleen D. Gans
Uganda	Jesse J. Inestroza
United Arab Emirates	Iman Salehihikouei
Yemen	Iman Salehihikouei
Zambia	Edgardo J. Pujols
Zimbabwe	Edgardo J. Pujols

Asia and the Pacific

Afghanistan	Keita F. DeCarlo
Australia	Loyd M. Trimmer III
Bangladesh	Keita F. DeCarlo
Bhutan	Keita F. DeCarlo
Brunei	Loyd M. Trimmer III
Burma (Myanmar)	Keita F. DeCarlo
Cambodia	Keita F. DeCarlo
China	Ji Won Moon
Fiji	Loyd M. Trimmer III
India	Keita F. DeCarlo
Indonesia	Jaewon Chung
Japan	Keita F. DeCarlo
Korea, North	Jaewon Chung
Korea, Republic of	Jaewon Chung
Laos	Keita F. DeCarlo
Malaysia	Jaewon Chung
Mongolia	Jaewon Chung
Nauru	Loyd M. Trimmer III
Nepal	Keita F. DeCarlo
New Caledonia	Loyd M. Trimmer III
New Zealand	Loyd M. Trimmer III
Pakistan	Keita F. DeCarlo
Papua New Guinea	Loyd M. Trimmer III
Philippines	Ji Won Moon
Singapore	Loyd M. Trimmer III
Solomon Islands	Loyd M. Trimmer III
Sri Lanka	Keita F. DeCarlo
Taiwan	Jaewon Chung
Thailand	Jaewon Chung
Timor-Leste	Loyd M. Trimmer III
Vietnam	Ji Won Moon

Europe and Central Eurasia

Albania	Kristian A. Macias
Armenia	Elena Safirova
Austria	Kathleen R. Trafton
Azerbaijan	Elena Safirova
Belarus	Elena Safirova
Belgium	Elizabeth R. Neustaedter
Bosnia and Herzegovina	Kathleen R. Trafton
Bulgaria	Karine M. Renaud
Croatia	Kathleen R. Trafton
Cyprus	Kristian A. Macias
Czechia	Elizabeth R. Neustaedter
Denmark, Faroe Islands, and Greenland	Joanna Asha Goclawska
Estonia	Alexandru Hostiuc
Finland	Joanna Asha Goclawska
France	Kathleen R. Trafton
Georgia	Elena Safirova
Germany	Karine M. Renaud
Greece	Kristian A. Macias
Hungary	Elizabeth R. Neustaedter
Iceland	Joanna Asha Goclawska
Ireland	Joanna Asha Goclawska
Italy	Alexandru Hostiuc
Kazakhstan	Karine M. Renaud
Kosovo	Kristian A. Macias
Kyrgyzstan	Karine M. Renaud
Latvia	Alexandru Hostiuc
Lithuania	Alexandru Hostiuc
Luxembourg	Elizabeth R. Neustaedter
Malta	Kristian A. Macias
Moldova	Alexandru Hostiuc
Montenegro	Kristian A. Macias
Netherlands	Elizabeth R. Neustaedter
North Macedonia	Kathleen R. Trafton
Norway	Joanna Asha Goclawska
Poland	Joanna Asha Goclawska
Portugal	Kristian A. Macias
Romania	Alexandru Hostiuc
Russia	Elena Safirova
Serbia	Karine M. Renaud
Slovakia	Elizabeth R. Neustaedter
Slovenia	Elizabeth R. Neustaedter
Spain	Kristian A. Macias
Sweden	Joanna Asha Goclawska
Switzerland	Kathleen R. Trafton
Tajikistan	Karine M. Renaud
Turkey	Alexandru Hostiuc
Turkmenistan	Karine M. Renaud
Ukraine	Elena Safirova
United Kingdom	Kathleen R. Trafton
Uzbekistan	Elena Safirova

Europe and Central Eurasia—Continued

North America, Central America, and the Caribbean

Aruba	Yadira Soto-Viruet
The Bahamas	Yadira Soto-Viruet
Belize	Jesse J. Inestroza
Canada	Jesse J. Inestroza
Costa Rica	Jesse J. Inestroza
Cuba	Yadira Soto-Viruet
Dominican Republic	Yadira Soto-Viruet
El Salvador	Jesse J. Inestroza
Guatemala	Jesse J. Inestroza
Haiti	Yadira Soto-Viruet
Honduras	Jesse J. Inestroza
Jamaica	Yadira Soto-Viruet
Mexico	Alberto Alexander Perez
Nicaragua	Jesse J. Inestroza
Panama	Jesse J. Inestroza
Trinidad and Tobago	Yadira Soto-Viruet

South America

Argentina	Jesse J. Inestroza
Bolivia	Yolanda Fong-Sam
Brazil	Yolanda Fong-Sam
Chile	Yadira Soto-Viruet
Colombia	Jesse J. Inestroza
Ecuador	Jesse J. Inestroza
French Guiana	Yolanda Fong-Sam
Guyana	Yolanda Fong-Sam
Paraguay	Yadira Soto-Viruet
Peru	Yadira Soto-Viruet
Suriname	Yolanda Fong-Sam
Uruguay	Yadira Soto-Viruet
Venezuela	Yolanda Fong-Sam

Country specialist	Telephone	Email
Jaewon Chung	(703) 648–4793	jchung@usgs.gov
Keita F. DeCarlo	(703) 648–7716	kdecarlo@usgs.gov
Yolanda Fong-Sam	(703) 648–7756	yfong-sam@usgs.gov
Kathleen D. Gans	(703) 648–4905	kgans@usgs.gov
Joanna Asha Goclawska	(703) 648–7973	jgoclawska@usgs.gov
Alexandru Hostiuc	(703) 648–7708	ahostiuc@usgs.gov
Jesse J. Inestroza	(703) 648–7779	jinestroza@usgs.gov
Kristian A. Macias	(703) 648–4902	kmacias@usgs.gov
Ji Won Moon	(703) 648–7791	jmoon@usgs.gov
Elizabeth R. Neustaedter	(703) 648–7732	eneustaedter@usgs.gov
Alberto Alexander Perez	(703) 648–7749	aperez@usgs.gov
Meralis Plaza-Toledo	(703) 648–7759	mplaza-toledo@usgs.gov
Edgardo J. Pujols	(703) 648–4919	epujolsvazquez@usgs.gov
Karine M. Renaud	(703) 648–7748	krenaud@usgs.gov
Elena Safirova	(703) 648–7731	esafirova@usgs.gov
Iman Salehihikouei	(703) 648–7744	isalehihikouei@usgs.gov
Yadira Soto-Viruet	(703) 648–4957	ysoto-viruet@usgs.gov
Kathleen R. Trafton	(703) 648–4903	ktrafton@usgs.gov
Loyd M. Trimmer III	(703) 648–4983	ltrimmer@usgs.gov