

# THE MINERAL INDUSTRY OF GEORGIA

**This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Georgia Geologic Survey for collecting information on all nonfuel minerals.**

In 2000, the estimated value<sup>1</sup> of nonfuel mineral production for Georgia was \$1.66 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was a little more than 1% increase from that of 1999,<sup>2</sup> following a 4.7% decrease from 1998 to 1999. The State was seventh in rank (sixth in 1999) among the 50 States in total nonfuel mineral production value, of which Georgia accounted for more than 4% of the U.S. total.

Georgia was by far the leading clay-producing State in the Nation, accounting for about 24% of total U.S. clay production. Kaolin remained the State's foremost nonfuel mineral commodity in 2000, accounting for more than 54% of Georgia's estimated total nonfuel mineral value and, of that, about 92% of its clay value; crushed stone was second, accounting for almost 28% of Georgia's nonfuel mineral value. In 2000, crushed stone with a \$16 million increase and portland cement, up more than \$7 million, led the State's increase in value. Increases also occurred in crude mica, construction sand and gravel, masonry cement, feldspar, barite, and gemstones (descending order of change). Decreases in crushed marble, kaolin, dimension stone, and industrial sand and gravel somewhat offset these gains (table 1). In 1999, a \$91 million decrease in kaolin plus a smaller yet significant decrease in portland cement more than offset increases in crushed stone, masonry cement, and dimension stone, resulting in a net decrease for the year (table 1). All other changes were \$1 million or less and had little effect on the overall total.

Based upon USGS estimates of the quantities produced in the United States during 2000, Georgia remained first among the 50 States in kaolin and fuller's earth; second of three barite-producing States; third in iron oxide pigments; fourth in dimension stone and feldspar; fifth in common clays; and ninth in masonry cement. The State decreased to fifth from third in the production of crude mica and to seventh from fifth in

<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

<sup>2</sup>Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also be subject to change.

crushed stone. Additionally, the State was a significant producer of industrial sand and gravel.

The following narrative information was provided by the Georgia Geologic Survey,<sup>3</sup> in cooperation with representatives of Elberton Granite Association, the Georgia Mining Association, the China Clay Producers Association, and the Georgia Crushed Stone Association. Georgia's mining industry is dominated by the kaolin and crushed stone industries. Overall, the mining industry is strong and spends millions of dollars in research and development. It is also one of the safest mining industries in the Nation. In support of the industry, the Georgia Mining Association sponsors a variety of mining industry-related activities. In 2000, the association sponsored environmental and safety training, education seminars and workshops, and awarded \$64,000 in college scholarships to 78 Georgia high school students. Additional information on mining in Georgia and the Georgia Mining Association can be found on their web site at URL <http://www.georgiamining.org>.

Georgia's kaolin industry is concentrated in the four members of the China Clay Producers Association: Engelhard Corp., Imerys, J.M. Huber Corp., and Thiele Kaolin Co. In 2000, the Association's members announced an after-tax profit of \$33.2 million for 1999. This represents a return on the net investment for the industry of 2.7% (compared with the 1998 profit of \$64.5 million and a return of 5.84%). In 1999, the industry had a net investment of over \$1.2 billion and employed 4,000 persons directly as well as 3,000 additional contractors. In 2000, the industry experienced reduced capacity because of increased energy costs, and overall profitability was negative. Additional information on Georgia's kaolin industry and the China Clay Producers Association can be found on their web site at URL <http://www.kaolin.com>.

The Georgia Crushed Stone Association, which includes the major producers in Georgia, reports that in 2000 quarry shipments increased 3% more than 1999's record production of approximately 70 million metric tons of crushed stone. The industry is mostly dependent on construction activity. The market is evenly distributed among three major sectors: (1) road and highway construction, (2) residential, office and shopping center construction, and (3) public works projects. These three sectors represent approximately 40%, 30%, and 30% of the crushed stone market, respectively. Future prospects are for slight to modest growth in the Georgia crushed stone industry for 2001.

The counties in the Atlanta metro area have continued air quality problems—particularly for ozone nonattainment. This means major new highway construction in the Atlanta metro area will not be possible until the air quality problems are resolved. This should not have a major adverse impact over the short term, however, because crushed stone use is evenly distributed between the three construction sectors.

<sup>3</sup>Bruce J. O'Connor, Principal Geologist, authored the text of mineral industry information submitted by the Georgia Geologic Survey.

Georgia's dimension granite industry is concentrated in the Elberton granite district (Elbert, Oglethorpe, Madison, Greene, and Wilkes Counties) in central eastern Georgia; however, most quarries and plants are in Elbert County. In 2000, there were approximately 45 active quarries in the district with 330 production workers and an annual payroll of \$7 million. The total work force in the district, including more than 150 granite manufacturing operations, was approximately 2,400 persons with a total payroll of \$568 million. A shortage of skilled labor, however, was a limiting factor in granite production in the district.

The demand for Elberton's monumental-grade granite remained strong throughout the domestic market in 2000, but the district has lost about 95% of its business in the Asian

markets to the Chinese. The volume of finished memorials being imported by brokers from India and China continues to grow and is having a serious impact on Elberton's and other U.S. granite products.

The use of high-pressure water-cutting systems ("water jet") is growing in popularity in the district; however, the flame burner remains the primary method of cutting granite within the quarry. Two new rail sidings with overhead crane loading capabilities have been built in Elberton to improve delivery of granite curbing to customers in the Northeast. The sidings are also being used for storage of blocks brought in from South Africa and Zimbabwe, which are shipped by rail from the port of Savannah.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN GEORGIA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Clays:</b>						
Common	1,650	5,470	1,600	5,130	1,600	5,130
Fuller's earth	686	74,800	725	73,800	703	73,800
Kaolin	8,350	998,000	8,170	907,000	7,790	903,000
Gemstones	NA	8	NA	3	NA	8
<b>Sand and gravel:</b>						
Construction	7,130	29,500	7,200	30,100	7,310	31,000
Industrial	608	10,900	612	11,100	605	11,000
<b>Stone:</b>						
Crushed 3/ Dimension metric tons	74,200	440,000	74,200	448,000	75,000	464,000
	72,100	8,790	83,400	12,200	84,100	12,100
Combined values of barite, cement, feldspar, iron oxide pigments (crude), lime, mica (crude), stone (crushed marble)						
	XX	152,000	XX	153,000	XX	156,000
Total	XX	1,720,000	XX	1,640,000	XX	1,660,000

p/ Preliminary. NA Not available. XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Excludes certain stones; kind and value included with "Combined values" data.

TABLE 2  
GEORGIA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	23 r/	W	W	\$6.42 r/	18	W	W	\$6.21
Dolomite	2 r/	W	W	6.32 r/	2	W	W	6.60
Granite	59 r/	62,400 r/	\$365,000 r/	5.85 r/	55	63,900	\$384,000	6.01
Marble	10	(2/)	(2/)	(2/)	10	(2/)	(2/)	(2/)
Quartzite	2	W	W	3.86	2	W	W	4.18
Total or average	XX	74,200	440,000	5.93	XX	74,200	448,000	6.03

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Excluded from total to avoid disclosing company proprietary data.

TABLE 3  
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS  
 IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	873	\$8,310	\$9.52
Filter stone	W	W	8.86
Other coarse aggregate	661	5,930	11.33
Total or average	1,530	14,200	9.28
Coarse aggregate, graded:			
Concrete aggregate, coarse	9,230	56,500	6.12
Bituminous aggregate, coarse	8,090	53,700	6.64
Bituminous surface-treatment aggregate	W	W	4.00
Railroad ballast	696	3,400	4.89
Other graded coarse aggregate	10,400	76,500	7.38
Total or average	28,400	190,000	6.70
Fine aggregate (-3/8 inch):			
Stone sand, concrete	3,530	20,200	5.72
Stone sand, bituminous mix or seal	2,780	15,000	5.39
Screening, undesignated	1,360	4,900	3.60
Other fine aggregate	1,100	6,850	6.24
Total or average	8,770	46,900	5.35
Coarse and fine aggregates:			
Graded road base or subbase	7,250	32,200	4.45
Terrazzo and exposed aggregate	W	W	7.17
Crusher run or fill or waste	7,520	44,800	5.95
Other coarse and fine aggregates	2,820	15,300	5.42
Total or average	17,600	92,300	5.25
Other construction materials	386	1,410	3.64
Agricultural, agricultural limestone	(3/)	(3/)	10.00
Chemical and metallurgical, cement manufacture	(3/)	(3/)	5.67
Special, other fillers or extenders	(3/)	(3/)	8.00
Other miscellaneous uses and specified uses not listed	(3/)	(3/)	7.72
Unspecified: 4/			
Reported	14,700	85,600	5.84
Estimated	770	4,100	5.36
Total or average	15,400	89,700	5.81
Grand total or average	74,200	448,000	6.03

W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

2/ Includes dolomite, granite, limestone, and quartzite; excludes marble from total to avoid disclosing company proprietary data.

3/ Withheld to avoid disclosing company proprietary data, included in "Grand total."

4/ Reported and estimated production without a breakdown by end use.

TABLE 4  
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999, BY USE AND DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) 3/	W	W	W	W	W	W
Coarse aggregate, graded 4/	W	W	W	W	W	W
Fine aggregate (-3/8 inch) 5/	2,220	13,100	5,460	29,600	1,090	4,240
Coarse and fine aggregate 6/	5,470	29,700	10,800	57,200	1,290	5,330
Other construction materials	324	1,160	10	60	52	185
Agricultural 7/	W	W	--	--	--	--
Chemical and metallurgical 8/	W	W	--	--	W	W
Special 9/	W	W	--	--	--	--
Other miscellaneous uses and specified uses not listed	W	W	W	W	--	--
Unspecified: 10/						
Reported	3,570	20,900	305	1,780	10,800	62,900
Estimated	770	4,100	--	--	--	--
Total	21,700	132,000	34,800	220,000	17,800	95,500

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Excludes marble from total to avoid disclosing company proprietary data.

3/ Includes filter stone, riprap and jetty stone, and other coarse aggregate.

4/ Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

5/ Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

6/ Includes crusher run (select material or fill), graded road base or subbase, terrazzo and exposed aggregate, and other coarse and fine aggregate.

7/ Includes agricultural limestone.

8/ Includes cement manufacture.

9/ Includes other fillers or extenders.

10/ Reported and estimated production without a breakdown by end use.

TABLE 5  
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,  
 BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,720	\$12,100	\$4.44
Plaster and gunite sands	463	1,860	4.02
Concrete products (blocks, bricks, pipe, decorative, etc.)	223	1,300	5.84
Fill	171	481	2.81
Other miscellaneous uses 2/	45	333	7.40
Unspecified: 3/			
Reported	2,050	7,530	3.68
Estimated	1,500	6,500	4.33
Total or average	7,200	30,100	4.18

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes asphaltic concrete aggregate and road base materials.

3/ Reported and estimated production without a breakdown by end use.

TABLE 6  
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,  
 BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	474	2,890	2,930	12,400
Asphaltic concrete aggregates and road base materials	W	W	W	W
Fill	W	W	W	W
Other miscellaneous uses	43	351	174	463
Unspecified: 3/				
Reported	3	14	2,050	7,520
Estimated	310	1,600	1,200	4,900
Total	833	4,850	6,360	25,300

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Reported and estimated production without a breakdown by end use.