

THE MINERAL INDUSTRY OF NORTH CAROLINA

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

In 1998, the preliminary estimated value¹ of nonfuel mineral production for North Carolina was \$785 million, according to the U.S. Geological Survey (USGS). This was about a 6% increase from that of 1997² and followed a 7.5% increase from 1996 to 1997. The State remained 19th in rank among the 50 States in total nonfuel mineral production value, of which North Carolina accounted for about 2% of the U.S. total.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on 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 1998 USGS mineral production data published in this chapter are preliminary estimates as of February 1999 and are expected to change. For some mineral commodities (for example, 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 <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 <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1997 may vary from the *Minerals Yearbook, Area Reports: Domestic 1997, Volume II*, owing to the revision of preliminary 1997 to final 1997 data. Data for 1998 are preliminary and expected to change, while related rankings may also be subject to change.

In 1998, the increased values of crushed stone and phosphate rock accounted for most of the State's rise in value. The only significant decreases were those that occurred for lithium minerals, feldspar, and construction sand and gravel (table 1). (Mineral commodity listings are in descending order of change.) Lithium mineral production declined because of the closure of FMC Corp., Lithium Division's, spodumene mine and lithium carbonate plant at Cherryville near Bessemer City, NC, early in 1998. In 1997, increases in the values of crushed stone, construction sand and gravel, phosphate rock, and industrial sand and gravel significantly offset a substantial decrease in the value of lithium minerals.

Based on 1998 USGS estimates of the quantities of minerals produced in the 50 States, North Carolina continued as the leading² State in feldspar, crude mica, and pyrophyllite production; second in common clays and second of two States that produced lithium minerals and olivine; sixth in industrial sand and gravel; and ninth in crushed stone. The State was second of four States that produce phosphate rock and eighth in the production of dimension stone. North Carolina mines exclusively have produced industrial minerals since the early 1970's, particularly since the 1971 closing of the Tungsten Queen Mine, an underground tungsten mine in Vance County. Metal production in the State, especially that of primary aluminum, resulted from the processing of recycled materials or raw materials received from other domestic and foreign sources.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NORTH CAROLINA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1996		1997		1998 p/		
	Quantity	Value	Quantity	Value	Quantity	Value	
Clays: Common	2,400	12,400	2,460	11,900	2,510	12,100	
Feldspar	metric tons	481,000	18,400	467,000	18,700	368,000	15,800
Gemstones	NA	348 r/	NA	368	NA	369	
Mica, crude	62	4,900	W	W	W	W	
Peat	15	311	W	W	W	W	
Sand and gravel:							
Construction	10,000	50,500	11,100	61,200	10,400	59,500	
Industrial	1,500	21,700	1,600	26,400	1,630	27,200	
Stone:							
Crushed	57,200	394,000	63,700	464,000	65,000	507,000	
Dimension	metric tons	37,300	14,300	39,300	15,300	42,700	14,900
Combined values of clays (kaolin), lithium minerals, olivine, phosphate rock, talc and pyrophyllite, and values indicated by symbol W							
	XX	172,000	XX	143,000	XX	148,000	
Total	XX	689,000 r/	XX	741,000	XX	785,000	

p/ Preliminary. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. XX Not applicable.

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

2/ Data are rounded to three significant digits; may not add to totals shown.

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

Kind	1996				1997			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	11	6,250	\$43,200	\$6.91	11	6,810	\$48,400	\$7.10
Dolomite	1	251	1,720	6.85	1	302	2,010	6.66
Calcareous marl	3	131	917	7.00	--	--	--	--
Granite	70 r/	41,500 r/	283,000 r/	6.81 r/	70	46,000	331,000	7.20
Traprock	8 r/	5,350 r/	37,900 r/	7.08 r/	7	6,560	51,400	7.84
Slate	3	W	W	7.35	3	W	W	7.55
Volcanic cinder and scoria	1	W	W	7.39	1	W	W	7.58
Quartzite	2	W	W	7.09	2	W	W	7.41
Miscellaneous stone	1	W	W	8.20	1	W	W	8.40
Total	XX	57,200	394,000	6.89	XX	63,700	464,000	7.28

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

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 3
NORTH CAROLINA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1997, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	24	\$172	\$7.17
Riprap and jetty stone	679	7,320	10.78
Filter stone	246	2,300	9.36
Other coarse aggregate	47	384	8.17
Coarse aggregate, graded:			
Concrete aggregate, coarse	3,330	32,500	9.74
Bituminous aggregate, coarse	1,660	14,700	8.85
Bituminous surface-treatment aggregate	1,540	14,100	9.12
Railroad ballast	1,440	7,680	5.33
Other graded coarse aggregate	1,840	17,100	9.27
Fine aggregate (-3/8 inch):			
Stone sand, concrete	226	1,450	6.40
Stone sand, bituminous mix or seal	658	4,470	6.80
Screening, undesignated	1,860	13,900	7.47
Other fine aggregate	158	1,050	6.63
Coarse and fine aggregates:			
Graded road base or subbase	8,620	59,300	6.88
Unpaved road surfacing	613	3,840	6.27
Crusher run or fill or waste	697	3,820	5.48
Other coarse and fine aggregates	1,890	10,300	5.46
Other construction materials 3/	9	46	5.11
Agricultural:			
Agricultural limestone	7	40	5.71
Other agricultural uses	W	W	5.85
Special:			
Mine dusting or acid water treatment	W	W	6.80
Lightweight aggregate, slate	W	W	6.99
Unspecified: 4/			
Actual	36,600	259,000	7.07
Estimated	1,000	6,970	6.95
Total	63,700	464,000	7.28

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

1/ Includes dolomite, granite, limestone, miscellaneous stone, quartzite, slate, traprock, and volcanic cinder and scoria.

2/ Data are rounded to three significant digits, except unit value; may not add to totals shown.

3/ Includes terrazzo and exposed aggregate.

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

TABLE 4
NORTH CAROLINA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1997,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:						
Coarse aggregate (+1 1/2 inch) 2/	292	2,330	440	4,600	264	3,250
Coarse aggregate, graded 3/	2,280	16,100	W	W	W	W
Fine aggregate (-3/8 inch) 4/	670	4,630	W	W	W	W
Coarse and fine aggregate 5/	2,740	17,100	W	W	W	W
Other construction materials	--	--	11,900	83,100	7,470	66,900
Agricultural 6/	7	(7/)	--	--	(8/)	(8/)
Special 9/	(7/)	(7/)	--	--	--	--
Unspecified: 10/						
Actual	2,830	19,200	20,400	147,000	(8/)	(8/)
Estimated	243	1,780	--	--	758	5,180
Total	9,060	61,200	32,700	235,000	21,900	168,000

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

1/ Data are rounded to three significant digits; may not add to totals shown.

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

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

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

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

6/ Includes agricultural limestone and other agricultural uses.

7/ Less than 1/2 unit.

8/ Withheld to avoid disclosing company proprietary data; included in "Total."

9/ Includes mine dusting or acid water treatment and lightweight aggregate (slate).

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

TABLE 5
NORTH CAROLINA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1997,
BY MAJOR USE CATEGORY 1/

Use	Quantity	Value (thousands)	Value per ton
	(thousand metric tons)		
Concrete aggregate (including concrete sand)	3,050	\$13,500	\$4.43
Plaster and gunite sands	80	360	4.50
Concrete products (blocks, bricks, pipe, decorative, etc.)	372	1,510	4.05
Asphaltic concrete aggregates and other bituminous mixtures	698	2,640	3.78
Road base and coverings 2/	997	5,790	5.80
Fill	781	2,080	2.66
Snow and ice control	16	79	4.94
Other miscellaneous uses 3/	1,610	18,100	11.29
Unspecified: 4/			
Actual	2,830	13,900	4.91
Estimated	629	3,260	5.18
Total or average	11,100	61,200	5.54

1/ Data are rounded to three significant digits, except value per ton; may not add to totals shown.

2/ Includes road and other stabilization (cement).

3/ Includes filtration and railroad ballast.

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

TABLE 6
 NORTH CAROLINA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1997,
 BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	409	2,940	1,070	4,420	2,010	8,000
Asphaltic concrete aggregate and road base materials 3/	792	5,020	388	1,230	1,300	4,250
Other miscellaneous uses 4/	171	1,000	1,140	16,500	305	731
Unspecified 5/	289	1,920	960	4,600	2,210	10,600
Total	1,660	10,900	3,570	26,700	5,820	23,600

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Includes fill and road and other stabilization (cement).

4/ Includes filtration, railroad ballast and snow and ice control.

5/ Includes reported and estimated production without a breakdown by end use.