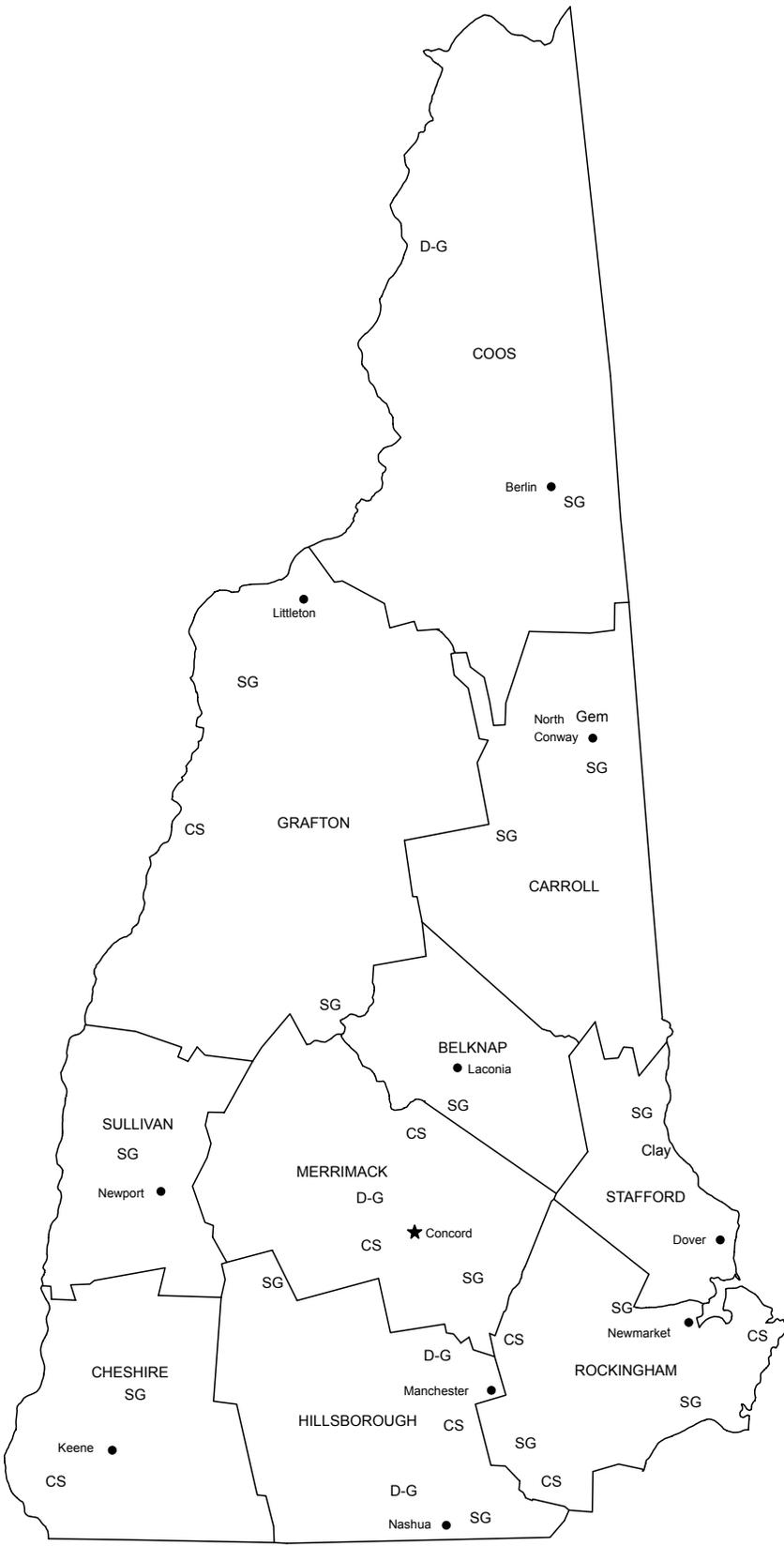


NEW HAMPSHIRE



LEGEND

- County boundary
- ★ Capital
- City

**MINERAL SYMBOLS
(Major producing areas)**

- Clay Common clay
- CS Crushed stone
- D-G Dimension granite
- Gem Gemstones
- SG Construction sand and gravel



Source: New Hampshire Geological Survey/U.S. Geological Survey (2004)

THE MINERAL INDUSTRY OF NEW HAMPSHIRE

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

In 2004, New Hampshire's nonfuel raw mineral production was valued¹ at \$70.6 million, based upon annual U.S. Geological Survey (USGS) data. This was a 13% increase compared with that of 2003,² which was down 5.4% from 2002. Because data for dimension granite have been withheld (company proprietary data), the State's actual total nonfuel mineral values for 2002-04 are higher than those reported in table 1.

Construction sand and gravel, a high-volume, low-unit-value mineral commodity, remained New Hampshire's leading nonfuel mineral commodity in 2004, accounting for about 66% of its nonfuel raw mineral production value. Crushed stone was the State's second leading nonfuel mineral.

In 2004, construction sand and gravel and crushed stone production rose, the values of which were up \$5.4 million and \$2.6 million, respectively, accounting for all the State's increase in nonfuel mineral production value. Conversely, in 2003, decreases were in the production and values of both commodities—crushed stone value down \$3.1 million and that of construction sand and gravel, down about \$0.4 million—resulted in the State's decrease in total value from 2002 (table 1).

New Hampshire continued to be a producer of significant quantities of dimension stone in 2004 and was 15th among 34 dimension stone-producing States.

The following narrative information was provided by the New Hampshire Geological Survey³ (NHGS).

Exploration

The public maintains a small but steady interest in panning for gold in northern New Hampshire. Exploration for economic deposits of crushed stone and sand and gravel continued in 2004.

Commodity Review

Industrial Minerals

Clays.—New Hampshire's extensive marine clays were not being used for other than as an ondemand local resource, such as borrow material for the base of land fills, ponds, and the core of dams. Some New Hampshire glacial tills, rich in silt and clay, are also used for these same purposes.

Dimension Stone.—The demand for New Hampshire's granite for use in landscaping continued strong in 2004. Granite for curbing was down slightly from that in 2003. The John Swenson Granite Works in Concord and the Fletcher Granite Company in Milford continued to be the State's major producers of dimension stone. Both quarries cut the Concord gray, two-mica granite. The Granite State had several other smaller, independent operations, also quarrying the Concord granite, which was used mostly for landscaping stone.

The Old Man of the Mountain, nicknamed the Great Stone Face or Profile, was located in Franconia Notch State Park. The Old Man of the Mountain was scenically set 366 meters above Profile Lake. Discovered in 1805, the rocks that made up the profile collapsed on May 3, 2003. Residents and tourists continued to mourn the loss of the New Hampshire State symbol—The Old Man of the Mountain. The New Hampshire State Geologist continued work with the Governor's Task Force, whose purpose was to examine ways to preserve the memory of the Old Man.

Gemstones.—Gemstones of amethyst, apatite, beryl, clear quartz, epidote, fluorite, garnet, smoky quartz, and topaz were the most common minerals collected. Again in 2004, commercial beryl and muscovite continued to be mined for resale by educational science supply houses. Most of these minerals are found in New Hampshire's abundant pegmatites.

Sand and Gravel.—Sand and gravel production increased from that of 2003. As the supply and access to good sand and gravel deposits decreased, there was a continued shift toward rock-base aggregates (crushed stone). Rock quarrying and crushing operations were able to supply the assortment of material sizes and blends as needed. Aggregate operations were faced with pressure from residents as to location and the effects of noise, dust, and heavy hauling. In spite of these factors, aggregate production in New Hampshire was up 3% since 2003. Cost for crushed stone and sand and gravel have risen slightly, mostly owing to the increase in the

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the 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 2004 USGS mineral production data published in this chapter are those available as of December 2005. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

³Lee Wilder, Public Outreach Coordinator for the New Hampshire Geological Survey, authored the text of State mineral industry information provided by that agency.

cost of fuel. New Hampshire aggregate was mainly used for asphalt, concrete, stone for rip-rap and drainage, roadway subgrade material, and general construction products. The future demand for these materials looked very promising.

Government Programs

The NHGS continued to be active in the STATEMAP Cooperative Geological Mapping Program. In 2004, under New Hampshire's STATEMAP Program, the surficial geology of four quadrangles—Hanover, West Alton, Parker Mountain, and Northwood—were mapped at the 1:24,000 scales.

NHGS is a cooperator with researchers at the University of New Hampshire's Jackson Estuarine Laboratory in a project designed to compile data and map subsea terrain to better understand the surficial geology off of the New Hampshire coastline, and to map potential sand and gravel resources for potential beach replenishment. The project was funded by the U.S. Minerals Management Service.

The NHGS continued to answer public inquiries regarding the State's bedrock, general geology, ground water, minerals, and surficial materials. Geologic inquiries came in the form of e-mails, telephone calls, and personal visits. Outreach and education efforts include staff participation at classroom presentations, conferences, public lectures, and workshops. Publications on the minerals, bedrock, surficial geology, and ground water resources of New Hampshire can be obtained by contacting the Public Information Center of the Department of Environmental Services. A current listing of available publications can be accessed at URL <http://www.des.state.nh.us/geolink.htm>.

Concern over having adequate quantities of quality ground water has become a problem with the continued increase in rural housing starts, the commercial demands for bottled water, and the needs of the mining industry. There was increased demand for New Hampshire's Geological Survey geologic mapping products for reliable aquifer information.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEW HAMPSHIRE^{1, 2}

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	6	NA	6	NA	6
Sand and gravel, construction	8,640	41,600	8,470	41,200	8,940	46,600
Stone:						
Crushed	4,810	24,500	4,110	21,400	4,750	24,000
Dimension, granite	W	(3)	W	(3)	W	(3)
Total	XX	66,100	XX	62,500	XX	70,600

NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

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

³Value excluded to avoid disclosing company proprietary data.

TABLE 2
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2002				2003				2004			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Granite	7	1,910	\$8,890	\$4.67	7	1,680	\$7,920	\$4.72	7	1,840	\$8,750	\$4.75
Traprock	8	2,910	15,600	5.36	8	2,430	13,500	5.54	8	2,900	15,200	5.25
Total or average	XX	4,810	24,500	5.08	XX	4,110	21,400	5.20	XX	4,750	24,000	5.06

XX Not applicable.

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

TABLE 3a

NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	W	W	\$4.54
Filter stone	W	W	4.54
Coarse aggregate graded:			
Bituminous aggregate, coarse	W	W	9.09
Other graded coarse aggregate	W	W	4.54
Fine aggregate (-¾ inch):			
Stone sand, bituminous mix or seal	W	W	9.09
Screening, undesignated	W	W	4.54
Unspecified:²			
Reported	2,680	\$12,200	4.54
Estimated	880	4,300	4.89
Total or average	4,110	21,400	5.20

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

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

²Reported and estimated production without a breakdown by end use.

TABLE 3b

NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	W	W	\$6.76
Filter stone	W	W	2.37
Coarse aggregate graded:			
Concrete aggregate, coarse	W	W	1.16
Bituminous aggregate, coarse	W	W	7.88
Railroad ballast	W	W	17.47
Other graded coarse aggregate	W	W	4.53
Fine aggregate (-¾ inch):			
Stone sand, concrete	W	W	17.61
Stone sand, bituminous mix or seal	W	W	6.61
Screening, undesignated	W	W	4.54
Coarse and fine aggregates, crusher run or fill or waste	W	W	7.99
Unspecified:²			
Reported	2,980	\$13,500	4.52
Estimated	910	4,400	4.88
Total or average	4,750	24,000	5.06

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

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

²Reported and estimated production without a breakdown by end use.

TABLE 4a
 NEW HAMPSHIRE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	136	\$1,230	\$9.02
Asphaltic concrete aggregates and road base materials	636	3,730	5.87
Fill	468	2,530	5.41
Snow and ice control	78	399	5.12
Railroad ballast	4	32	8.00
Other miscellaneous uses ²	111	799	7.20
Unspecified: ³			
Reported	2,360	9,850	4.17
Estimated	4,700	23,000	4.83
Total or average	8,470	41,200	4.86

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

²Includes snow and ice control and railroad ballast.

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

TABLE 4b
 NEW HAMPSHIRE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	327	\$2,630	\$8.04
Asphaltic concrete aggregates and other bituminous mixtures	361	2,850	7.90
Road base and coverings	602	3,660	6.08
Fill	742	4,640	6.26
Snow and ice control	158	1,100	6.98
Other miscellaneous uses ²	10	123	11.79
Unspecified: ³			
Reported	2,530	11,300	4.47
Estimated	4,200	20,000	4.81
Total or average	8,940	46,600	5.21

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

²Includes railroad ballast.

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